SCOTTISH HOSPITALS INQUIRY

# Bundle of documents for Oral hearings commencing from 19 August 2024 in relation to the Queen Elizabeth University Hospital and the Royal Hospital for Children, Glasgow

# Bundle 17 - Procurement History and Building Contract PPP

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**NHS Greater Glasgow and Clyde**

**New South Glasgow Hospitals (NSGH) Project**

# INVITATION TO PARTICIPATE IN COMPETITIVE DIALOGUE

## VOLUME ONE

## PROJECT SCOPE AND COMMERCIAL DOCUMENT

## Invitation to Participate in Competitive Dialogue

**Foreword**

NHS Greater Glasgow and Clyde provides high quality services to our patients and we are proud of our numerous achievements in healthcare related activities as well as the skill, dedication and professionalism of our workforce in the delivery and support of our services.

Throughout this decade the Board has been developing its Acute Services Review ("ASR") to modernise the acute adult health service in Glasgow. The ASR proposals were approved in 2002 and subsequently updated in 2006 to reflect the decision that the New Children's Hospital would be located on the Southern General site.

The New South Glasgow Hospitals (NSGH) Project is the major element of the second phase of the ASR. Following on from the successful completion of phase one, namely the building of the new West of Scotland Beatson Cancer Centre at Gartnavel General Hospital and the commissioning of the two new build Ambulatory Care Hospitals to replace the major parts of Stobhill Hospital and Victoria Infirmary. In all phase one comprised investment of some £330million in state of the art health care facilities.

We are committed to the success of this Project in order to provide further new facilities and create one of the most modern healthcare campuses in the UK that not only local community, patients and staff can be proud of but as a statement of the quality of healthcare in Scotland.

I am pleased that the Board are in a position to issue you this Invitation to Participate in Competitive Dialogue, and continue the process of design and construction of our new facilities.

The requirements of the Board are outlined in this document and we look forward to receiving your detailed proposals in due course.

**Robert Calderwood**

Chief Executive
NHS Greater Glasgow and Clyde
May 2009

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## 1.0 Introduction

1.1 The procurement of the New South Glasgow Hospitals (NSGH) Project (the "Project") comprises a new adult acute hospital, a new children's hospital, laboratory facilities, associated support areas and other site facilities and infrastructure on the existing hospital site at the Southern General in Govan, Glasgow.

1.2 The Project involves a capital investment estimated to be in the region of £550-600million to provide in the order of 175,000m2 of new hospital facilities for the Board's services comprising:

- a 1,109 bed adult hospital;
- a 240 bed children's hospital;
- laboratory facilities; and
- support accommodation, including energy and facilities management structures and infrastructure.

1.3 This Invitation to Participate in Competitive Dialogue (ITPD) has been developed to incorporate the relevant direction, guidance, information and documentation to facilitate the procurement of the design and construction of the Project. The ITPD follows approval of the Outline Business Case (OBC) for the Project by the Scottish Health Directorates (SGHD) on 21 May 2008 and the subsequent scoping, development and masterplanning of the requirements of the Board and shortlisting of bidders.

1.4 NHS Greater Glasgow and Clyde ("the Board") will procure the Project using the Competitive Dialogue procedure, under the Public Contracts (Scotland) Regulations 2006, which will provide for a structured and iterative approach to the procurement and provision of bids by the shortlisted bidders. The overall procurement will be conducted over a period of less than two years (from publication of the OJEU) with a specific strategy whereby the laboratory element of the Project will be on site within ten months of the issue of the ITPD documentation. The key stages of the procurement are set out below:

- pre-qualification to short-list bidders;
- issue of ITPD to short-listed bidders;
- opening of Competitive Dialogue;
- submission of Final Bids;
- evaluation and selection of the Contractor;
- commencement of Laboratory construction and design-development of adult and children's hospitals; and
- Full Business Case.

1.5 The procurement will be followed by the construction phase for the laboratory building and hospitals, to be operational in February 2012 and Summer 2015 respectively.

1.6 The Board has undertaken a considerable amount of masterplanning, exemplar design and scoping of its requirements in order to provide clarity to bidders. The Board believes that this approach will enhance the efficiency of the procurement process as well as reduce transaction costs and the length of the procurement timetable.

## 2.0 Document Structure and Scope

2.1 The ITPD is divided into three volumes:

| | |
|---|---|
| **Volume 1** | **Project Scope and Commercial Document** |
| | This provides an overview and outlines the scope and commercial parameters of the Project. It sets out the background to the Project, outlines the detailed procurement process and timetable, identifies the competitive dialogue process and incorporates the draft construction contract. The draft construction contract is based on the standard template NEC3 – Engineering and Construction Contract Option C Target Contact. |
| **Volume 2** | **Employer's Requirements** |
| | This sets out the technical and clinical requirements of the Board. These include Clinical Output Specifications for all departments, masterplan and exemplar design information, output specifications regarding the construction works, building and engineering services to be provided plus ADB Room Data Sheets, Schedules of Accommodation and Equipment Lists (by Group). Volume 2 is comprised of Volume 2/1 relating to the Hospitals and Volume 2/2 relating to the Laboratories. |
| **Volume 3** | **Bid Return and Evaluation** |
| | This details the range of deliverables required from bidders and the evaluation strategy and scoring approach that will be applied by the Board. |

## 3.0 ITPD Objectives

3.1 The purpose of the ITPD is to allow bidders to assess the Board's requirements and be in a position to respond to the Board's Invitation to Submit Final Bids (ISFB). The ITPD aims to:

- provide information to bidders on the Project and the opportunities available;
- set out clearly the Board's requirements;
- provide information on the Board's approach to the Competitive Dialogue procurement process, including a programme of workstreams and sessions;
- set out the deliverables required from bidders at the end of the bid period; and
- set out the evaluation criteria that the Board will use to assess bidders' responses to the bid deliverables.

## 4.0 Background to the Project and Strategic Context

### 4.1 NHS Greater Glasgow and Clyde

4.1.1 The Board is Scotland's largest health board. Formed in April 2006, it joined the Clyde region of the former Argyll & Clyde Health Board with the former Greater Glasgow Health Board to create NHS Greater Glasgow and Clyde. The Board has 40,000 staff serving a total population of 1.2million people, with a budget of £2.6billion.

4.1.2 Acute services are delivered from 10 hospitals, 3 of which lie within Clyde and the remaining 7 are located within the Greater Glasgow area. The geographical area covered includes West Dunbartonshire, Inverclyde, Renfrewshire, East Renfrewshire, East Dunbartonshire, Glasgow City, South Lanarkshire (Rutherglen & Cambuslang) and North Lanarkshire.

4.1.3 Within Glasgow, the Western Infirmary and Gartnavel General Hospitals operate in tandem delivering acute care in the west-end of the city. In the north-east of the city acute care is delivered from Stobhill Hospital and Glasgow Royal Infirmary. The Victoria Infirmary serves the south-east and the Southern General Hospital the south-west of the city. Services for children are provided centrally from the Royal Hospital for Sick Children, Yorkhill. Full adult Accident and Emergency services are provided at the Western Infirmary, Glasgow Royal Infirmary, the Victoria Infirmary and the Southern General Hospital. Stobhill Hospital has a casualty department which is covered by Consultant staff from Glasgow Royal Infirmary and the Western Infirmary.

### 4.2 Acute Services Review

4.2.1 Over the last ten years the Board has been developing its Acute Services Review ("ASR") to modernise the acute adult health service in Glasgow. The ASR proposals were approved in 2002 and subsequently updated in 2006 to reflect the decision that the New Children's Hospital would be located on the Southern General site. The strategy is to reduce the number of adult inpatient sites from the current five hospital sites to three, all of these providing acute receiving facilities, with two sites providing A&E and trauma services. The A&E and trauma services will be located at the Glasgow Royal Infirmary and the Southern General sites, with the acute receiving facility only at Gartnavel General. This will involve building a new inpatient hospital on the Southern General site and refurbishment/smaller builds at the Glasgow Royal Infirmary and Gartnavel General sites.

4.2.2 The ASR proposals are comprised of four distinct phases:

| Phase 1 | Phase 2 |
|---|---|
| • West of Scotland Cancer Centre at Gartnavel;<br>• Replacement of major elements of Victoria Infirmary and Stobhill Hospital with the development of new Stobhill and Victoria Hospitals;<br>• The transfer of Cardiothoracic Services to Golden Jubilee Hospital; and<br>• Laboratory development on Gartnavel site. | • New maternity build at Southern General Hospital allowing full closure of Queen Mother's Hospital;<br>• New Children's Hospital allowing full closure of Royal Hospital for Sick Children;<br>• New build major acute hospital for South Glasgow (enabling closure of Western Infirmary, Victoria Infirmary and Mansionhouse Unit); and<br>• New Build Laboratory Facility. |
| **Phase 3** | **Phase 4** |
| • Glasgow Royal Infirmary – redevelopment. | • Gartnavel General Hospital – redevelopment. |

4.2.3 ASR Final Configuration

The conclusion of the ASR programme will create the following final configuration:

- New cancer hospital at Gartnavel Hospital;
- Cardiothoracic service and interventional cardiology at Golden Jubilee Hospital;
- 2 maternity units (Princess Royal Maternity Hospital and Southern General Hospital);
- 2 new Ambulatory Care Hospitals (Stobhill/Victoria);
- 2 major acute sites (Southern General Hospital and Glasgow Royal Infirmary);
- 3rd acute inpatient site (Gartnavel General Hospital);
- New children's hospital; and
- Transfer of services and closure of Western Infirmary, Stobhill Hospital, Victoria Infirmary, Mansionhouse Unit, Queen Mother's Hospital and Royal Hospital for Sick Children.

## 4.3 Key Benefits

4.3.1 It is anticipated that the Project will deliver the following range of benefits for patients and staff:

- Provision of high quality services which are timely, accessible and consistently available by providing local access to core medical and surgical services and consolidating specialist and tertiary services on fewer sites within the city;
- Investment in high tech equipment and Information Technology;
- Attention to design and landscaping to improve the patients overall care;
- Facilities that are fully accessible to all and DDA (Disability Discrimination Act) compliant;
- Reduced waiting times for treatment through the provision of more efficient services increasing clinical capacity by investment in Information Technology (IT), the concentration of clinical teams onto fewer sites, optimising departmental and functional relationships and improving access to diagnostic services such as laboratory services;
- Access to highly specialised care provided by skilled staff facilitated through the centralisation of adult acute services;
- Rapid, one stop services through high volume processing of diagnostic tests and an extended working day to fit in with new models of care;
- The support of a progressive and consistent elective workload due to the segregation of emergency and elective treatments;
- Enhanced staff skills and knowledge through improved retention and recruitment due to a radically better working environment;
- Modern, fit for purpose facilities which meet the needs of patients, visitors and staff; and
- Enhanced University links through co-location of an academic centre with the New South Glasgow Hospitals. This will enhance teaching, and research and play a significant role in attracting and retaining high quality staff in all disciplines.

4.3.2 Further, the development is seen as a catalyst for wider economic and social regeneration activity, contributing to the creation of higher aspirations for the physical development of the local area as well as substantially contributing to the economy of the South West area of Glasgow and the wider locality.

### 4.4 Critical Milestones Reached

4.4.1 The following key milestones have been achieved in the procurement of the Project to date:

- Outline planning permission secured (subject to Section 75 Agreement, in relation to transportation issues) in April 2007;
- Outline Business Case approval by the Scottish Government in May 2008;
- Approval to proceed to market from Gateway 2 Review in January 2009;
- Publication of OJEU notice and Industry Day in February 2009;
- Return of Pre-Qualification Questionnaires and shortlisting of bidders in March/April 2009.

## 5.0 Project Scope

### 5.1 Introduction

5.1.1 As illustrated in *Appendix A – Hospital Site and Surrounding Area*, the Southern General Hospital site extends to some 28.6 hectares and is located within the Govan area, lying to the south-west of Glasgow City Centre adjacent to the residential neighbourhood of Drumoyne and the industrial areas of Shieldhall and King George V Dock. The site is located 500 metres south of the River Clyde. The site's northern boundary is defined by Renfrew Road/Govan Road with the eastern boundary defined by Moss Road/A739 (Clyde Tunnel approach road). Langlands Drive and residential developments delineate the southern boundary and Hardgate Road runs north-westwards to identify the western boundary of the site.

5.1.2 The development site for the Project extends to some 8.6 hectares and is located in the west-central area of the hospital site as identified in *Appendix B – Existing Site Plan.* The development site is bounded by operational healthcare buildings to three sides, with boundaries to neighbouring industrial areas to the north/north-west. The existing buildings within the development site (as identified in Appendix B) are to be demolished by the Board in advance of the Project, as described in section 2.2.3. below.

5.1.3 The project includes the provision of 1,109 adult and 240 children's beds, with target operational dates of February 2012 (Laboratories) and Summer 2015 (Hospitals). The bed numbers are illustrated below in *Table 1 – Proposed Bed Numbers – Adult and Children's Hospitals.*

| **Adult Hospital** | | **Children's Hospital** | |
|---|---|---|---|
| **Specialty** | **Beds** | **Specialty** | **Beds** |
| General Medicine (incl MHDU + AAU) | 405 | Inpatient (incl critical care areas) (*12 beds in maternity facility) | 193* |
| CCU | 20 | Short-stay (observation ward) | 20 |
| Stroke | 26 | Day Care/Day Surgery | 27 |
| Haematology | 14 | **Total Inpatient Beds** | **240** |
| Dermatology | 18 | | |
| Nephrology | 80 | | |
| Geriatric Medicine | 93 | | |
| Surgery & Vascular (incl AAU) | 164 | | |
| Urology | 39 | | |
| Orthopaedics/rehab | 139 | | |
| ENT | 31 | | |
| ITU | 20 | | |
| SHDU | 23 | | |
| Clyde/Contingency | 37 | | |
| **Total Inpatient Beds** | **1,109** | | |

*Table 1 – Proposed Bed Numbers – Adult and Children's Hospitals*

### 5.2 Masterplanning and Exemplar Design

5.2.1 The Board has carried out an extensive masterplanning exercise in respect of the Project, encapsulating the wider Southern General hospital site. This has been carried out to assist the scoping and planning of the Project by the Board as well as to satisfy the requirements of the Planning Department at Glasgow City Council.

5.2.2 Further, the Board has completed an exemplar design to illustrate the development of the brief and provide a working solution in drawn design terms for consideration by the bidders. The exemplar design is appended to Volume 2 of this ITPD and may generate queries during the dialogue process from bidders. The adjacencies identified in the drawn and written exemplar design must be adhered to.

### 5.3 Planning

5.3.1 As is noted above, Outline Planning was obtained in April 2007, subject to forty-three conditions and conditional on a Section 75 Agreement being concluded in respect of transportation issues.

5.3.2 The Section 75 Agreement Heads of Terms are agreed between the Board and the Council, the Heads of Terms for a proposed Fastlink service will be concluded by the Board as an aspect of the masterplanning prior to the conclusion of the competitive dialogue process.

5.3.3 The original consent from the Planners as well as a matrix detailing the current status and responsibility for each planning condition are appended to Volume 2 of this ITPD.

### 5.4 Accommodation Overview

5.4.1 New Adult Hospital

This will provide A&E services and acute specialist in-patient care as well as medical day services and out-patient clinics serving the local population. Key components of the facility will include:

- In Patient Accommodation
  Surgical beds (general surgery, orthopaedics, urology, vascular, ENT and renal); Medical beds; Acute Assessment Unit – 118 beds, ICU/HDU/CCU – 79 beds, Acute Stroke – 26 Beds and Care of the Elderly 93 beds.

- Out Patient Accommodation
  Full range of general outpatient clinics including, among others, diabetic unit, respiratory, orthopaedics and urology.

- Day Services
  22 medical day bed area; 30 station dialysis unit.

- Treatment & Diagnostic Services
  Emergency Department, 20 operating theatres, imaging, and endoscopy.

- Clinical Support Services
  Pharmacy dispensary, medical physics, medical illustration. Laboratory services linked to the hospital by underground route and pneumatic tube system, aseptic unit within the children's hospital. The pneumatic system to extend across the abutment with maternity and the link to neurosciences to provide for expansion of the system to these areas.

- Non Clinical Support Services
  Main entrance, medical records, administration, chaplaincy, social work, staff changing, switchboard, estates, facilities, security, catering, portering, domestic, management and energy centre.

5.4.2 New Children's Hospital

This will provide A&E services and a comprehensive range of inpatient and day case specialist medical and surgical paediatric services on a local, regional and national basis. The new development will also have outpatient facilities. The care strategy is that all of Glasgow's Children's Services (up to the age of 16 and up to 18 years where appropriate) will be provided at the New Children's Hospital. Of the 240 beds planned, around 20% of the beds will be for day patients and the balance for inpatient requirements.

Key components of the facility will include:

- Outpatient Accommodation
  Full range of Children's outpatient clinics including audiology, general paediatrics, orthopaedics, ENT etc;

- Day Services
  Circa 10 medical day beds; 4 dialysis stations and circa 25 day surgery beds;

- Treatment & Diagnostic
  Accident and Emergency, minor injuries, Imaging, 9 theatres, rehabilitation;

- Clinical Support Services
  Aseptic unit, pharmacy, medical physics, medical illustration;

- Non Clinical Support Services
  Facilities, ancillary services, administration, spiritual services, medical records, staff change, staff dining.

5.4.3 Laboratory Facilities

The new facilities will be one of two major laboratory sites in Glasgow (the other at Gartnavel General). The services to be delivered from the new laboratory build include biochemistry, haematology, medical genetics, microbiology, mortuary and post mortem. The mortuary and post mortem facilities includes the re-provision of the Glasgow City mortuary which also provides forensic services for the city of Glasgow. Road infrastructure to support the operation of the laboratory function requires to be completed with the laboratory build aspect of the overall project.

5.4.4 Facilities Management Building and Energy Centre

These key support accommodation areas are included in the site masterplan and the operational needs of the Board in relation to the facilities management building are identified in Volume 2 of the ITPD. The Board require the separation of service (FM) traffic from patient and public traffic, and the facilities management building will be linked to the main hospitals building via an underground tunnel system, this to provide for goods in and goods out as well as transfers to the laboratory and mortuary areas. The Board is desirous of a robotics (automatic material handling systems) solution for the movement of certain goods and this will be developed with bidders during the competitive dialogue process. The approach to energy provision is that the new facility will provide energy on a site wide basis, the extent of this and relevant considerations are identified in Volume 2 of this ITPD.

5.4.5 Retained Facilities

The remainder of the site will retain approximately 630 beds within the institute of neurological sciences, maternity, spinal injuries, mental health facilities and Langlands buildings. The Langlands facility provides older people's services, dermatology and services for the young physically disabled.

The new hospital will abut the neo-natal/maternity building to provide a physical link as well as link to the neurosciences building at Level 1.

### 5.5 Site Investigations and Existing Site

5.5.1 The Board commissioned a site investigation (SI) of areas of the existing campus and the site. The resulting SI information is available to bidders and the benefit of this work will be provided to the Contractor. The SI is appended to Volume 2 of this ITPD.

5.5.2 The Board will carry out certain enabling works in relation to the existing site to support and prepare for the construction period of the scheme. This includes:

- demolition of the existing structures on the site (including the former residences, the catering/dining facilities and the conference facility);
- removal of foundations and roads within the site; and
- the diversion of the majority of the existing utilities from the site.

It should be noted that the diversion of the culvert and relocation of the waste compound (to a position agreed with the Board) will be a responsibility of the Contractor, as will demolition of the existing surgical block.

5.5.3 The Southern General is a live hospital site, and as such the Contractor and his team will face certain constraints in the delivery of the Project. Essential 'blue light' and other access routes will require to be kept clear and unobstructed by the Contractor at all times for the duration of the construction period, with interface protocols, communications plans and emergency/contingent planning to be discussed and agreed with the Board during the dialogue process to ensure clarity over these critical issues.

### 5.6 Equipment and ICT

5.6.1 Equipment requirements are appended to Volume 2 of this ITPD, listings per equipment Group. The Contractor shall supply and fit Group 1 equipment, Group 2 shall be free issue by the Board and fitted by the Contractor, and the Board shall supply (and fix where relevant) Group 3 and Group 4 equipment. The Contractor is required to provide all necessary fixings, supports and services connections and requirements to support all of the groups of equipment listed.

5.6.2 It should be noted that Information Management and Technology (IM&T) is out with the scope of this Project. The Board is procuring software and end-use hardware as part of a separate IM&T project. The Contractor shall, however, provide the requisite hard infrastructure to support the Board's IM&T requirements, as detailed in Volume 2 of this ITPD.

### 5.7 Energy and Sustainability

5.7.1 The Board have developed energy and sustainability strategies and targets in relation to the Project. These have been developed through consultation with the Carbon Trust, Waste Resources Action Programme (WRAP) and other agencies and are contained in Section 8.0 and Appendix M of Volume 2 of this ITPD.

5.7.2 Energy and sustainability issues are very important to the Board at a project and corporate level and will attract a commensurate level of review and consideration in the bid evaluation and design development of the scheme. The Carbon Management Plan of the Board is contained in Appendix P of Volume 2 of this ITPD and bidders are required to adhere to the principles and requirements therein.

### 5.8 Community Engagement

5.8.1 The Project Team and the Board's Community Engagement Managers have established the required community benefit considerations for incorporation in the procurement of the Project. These have been developed in line with the Scottish Government's Guidance on Community Benefits in Public Procurement. In particular the Board will seek to work in partnership to develop initiatives around the following:

- Targeted recruitment & training;
- Developing Small and Medium Enterprises (SMEs); and
- Developing Social Enterprises.

## 6.0 Project Management

### 6.1 Project Management

6.1.1 The Board has established a project organisation structure to oversee the implementation of the ASR, including this Project. The ASR Programme Board is responsible for the implementation of the ASR strategy. The ASR Programme Board consists of the Chief Executive; the Acute Services Chief Operating Officer; the Director of Acute Services Strategy, Implementation and Planning; the Project Director; Divisional Directors; Finance Director; Executive Medical and Nursing Directors; Partnership Representation; and a Senior Civil Servant.

6.1.2 A Project Director, who has executive responsibility for the implementation of the Project, and a Project Team have been appointed by the Board. The New South Glasgow Hospitals Executive Board has been established to ensure that all the governance and Project milestones are achieved.

6.1.3 The Project Team includes a range of staff from clinical, operational, planning, facilities, finance and estates areas and is responsible for the co-ordination of all workstreams, reporting to the Board through its governance structures. The Project Team is led by the Project Director and is supported by legal, financial and technical advisors, as identified in *Table 2 – Key Board and Advisory Roles* below.

| Role | Individual/Organisation |
|---|---|
| Senior Responsible Owner | Ms Helen Byrne<br>Director of Acute Services Strategy, Implementation and Planning |
| Project Sponsor | Mr Robert Calderwood<br>Chief Executive |
| Project Director | Mr Alan Seabourne<br>Project Director – New South Glasgow Hospitals Project |
| Project Technical Lead | Mr Peter Moir<br>Head of Major Projects |
| Board Technical Advisor | Currie & Brown UK Limited |
| Board Legal Advisor | Shepherd + Wedderburn LLP |
| Board Financial Advisor | Ernst & Young LLP |

*Table 2 – Key Board and Advisory Roles*

**6.2 A number of groups have been set up to support the Project as follows:**

6.2.1 New South Glasgow Hospitals Executive Board

The New South Glasgow Hospitals Executive Board ("Executive Board") will have delegated authority to make executive decisions on critical points in the Project's process. The role of the Executive Board will be to oversee the overall process of the Project and to co-ordinate work streams. The Board will meet bi-monthly or more frequently depending upon the stage of the project and will report into the ASR Programme Board.

6.2.2 ASR Systems Redesign Group

The development of the New South Glasgow Hospitals will result in a number of radical changes not just in reconfiguring clinical services across Glasgow but also in working practices and the way in which patients receive their treatment. A comprehensive and co-ordinated process will be developed to take forward the re-design aspects and in an integrated fashion with staff, human resources and workforce planning to ensure both staff involvement and that the right number of staff and skills are available to support the new ways of working.

6.2.3 Procurement and Finance Group

This has been established to meet the requirement for specialist skills in relation to taking the procurement process forward, as well as with regard to the funding, affordability and value for money aspects.

6.2.4 Joint Project Team

The Joint Project Team is responsible for managing the day to day complexities of the Project. The Joint Project Team reports to the Executive Board and, where necessary, to the ASR Programme Board, the ASR Systems Redesign Group and the Procurement and Finance Group. The Joint Project Team will be responsible for planning the following:

- Designing a plan;
- Identifying activities;
- Estimating;
- Scheduling;
- Commissioning;
- Analysing risk; and
- Completion of plans.

6.2.5 Site Programme Co-ordinating Group

There is a very substantial construction programme planned over the next six years at the Southern General Hospital. The site will continue to operate during the full construction programme and therefore there is an established group to monitor, co-ordinate and control all on-site works.

6.2.6 Site Planning Group

The Site Planning Group provides a mechanism for all site project leads, technical advisers, operational staff and health & safety advisors to meet as a group and enable projects to be progressed and developed in a safe and co-ordinated way.

## 7.0 Programme

The outline timetable for the procurement is as follows:

| Event | Milestone |
|---|---|
| Publication of OJEU (incl MoI and PQQ) | 10 February 2009 |
| Closing date for responses to PQQ | 20 March 2009 |
| Evaluation of PQQ responses and shortlisting of bidders | 08 April 2009 |
| Issue of Invitation to Participate in Competitive Dialogue (ITPD) to bidders | 01 May 2009 |
| Tender Return | 11 September 2009 |
| Evaluation of Bids and Contract Award | November 2009 |
| Stage 1 (Design + Construction of New Laboratories) commences | November 2009 |
| Stage 2 (Detailed Design of Adult, Children's and Infrastructure to FBC Submission) commences | November 2009 |
| Stage 2 completion, FBC and approval to proceed with Stage 3 | November 2010 |
| Stage 3 (Engagement to carry out the construction of the Adult, Children's and Infrastructure) commences | November 2010 |
| Stage 1 Completion (Construction) - Laboratory Facilities | December 2011 |
| Operational Date – Laboratory Facilities | February 2012 |
| Stage 3 Completion (Construction) – Hospitals | January 2015 |
| Operational Date – Hospitals | Summer 2015 |
| Stage 3A (Demolition of Surgical Block and associated buildings, and completion of soft landscaping) commences | Summer 2015 |
| Stage 3A completion | Summer 2016 |

## 8.0 Procurement Strategy

### 8.1 Procurement

8.1.1 The Board's procurement strategy will use the competitive dialogue procedure to facilitate discussion with bidders around pre-determined technical and commercial matters. The outcome of the competitive dialogue will be the selection of a preferred partner who will contract with the Board under an NEC agreement to (i) design and construct the new laboratory building and (ii) design and construct the new Adult and Children's Hospital under a target price arrangement.

8.1.2 This arrangement provides for the contract to be awarded following evaluation of the bids to be submitted in September 2009. Post contract award, concurrent activities of the Contractor commence of designing and building the Laboratories element of the Project whilst under taking design development of the Hospitals element of the Project. The (design development) culminates in the FBC compilation and approvals: this forming an essential gateway which must be achieved to allow the commencement of the construction of the Hospitals element of the Project.

8.1.3 The terms of the contract awarded (including the overall target price for the works and programme dates and activity schedule milestones) is based on the preferred contractor's final tender response at the end of the competitive dialogue process. As is noted above, specific gateway criteria (including necessary business case approvals) will be incorporated into the design development, programme and activity schedule in the contract through to the commencement of construction of the Adult and Children's Hospital.

8.1.4 During the dialogue the Board would like to discuss the detail and proposals for an extended defects liability period and this shall form a workstream for discussion with bidders.

8.1.5 The Board has considered the time and cost implications of the bidding market in its procurement strategy and considers that the route being adopted reflects market requirements and the commercial drivers of bidding a scheme of this size, nature and type: this is supported by the market sounding and engagement that took place with regard to the scheme. The Board has identified the particular aspects of the Project that will form the basis of discussion during the competitive dialogue, these are detailed in Section 9.0. Further, the Board has developed certain levels of Works Information (contained in Volume 2) aimed at minimising transaction time and costs for Bidders.

8.1.6 Design development of the laboratory facility will continue by the Board during the bid period after the Competitive Dialogue is closed. The designers and the further developed design will then be novated to the Contractor.

8.1.7 In summary the stages of the procurement can be summarised in outline as follows:

| Stage | Heading | Outline Activities/Milestones |
|---|---|---|
| Stage 0 | Competitive Dialogue | Bid and design development leading to submission of technical and cost information in final tenders. Identify maximum target price and agree pain/gain share. Select contractor – contract award. |
| Stage 1 | Construct Laboratories | Consecutive to Stage 0 and concurrent with Stage 2. |
| Stage 2 | Detailed Design of Adult, Children's and Infrastructure to FBC Submission | Design development of adult and children's hospitals. |
| Stage 3 | Construct Adult and Children's Hospital | Consecutive to Stage 2. |
| Stage 3A | Demolition of Surgical Block and associated buildings and completion of soft landscaping | Consecutive to Stage 3. |

*Table 3 - Stages of Procurement*

**8.2 Construction Agreement**

8.2.1 This contract is based on the standard template NEC3 – Engineering and Construction Contract Option C Target Contract with Secondary Option Clauses as stated in Contract Data.

8.2.2 The contract covers the design development and construction of:

- Laboratory Buildings;
- Adult Hospital;
- Children's Hospital; and
- Associated Infrastructure.

8.2.3 The Target Price for the Project will be agreed prior to the contract award and will comprise three distinct areas with separate Programme and Activity Schedule details, namely:

- Conclusion of design and construction of the Laboratory Buildings;
- Design Development to FBC Stage for the Adult and Children's Hospitals; and
- Conclusion of design and construction of the Adult and Children's Hospitals.

The Construction Contract is contained in Appendix C to this ITPD Volume 1.

## 9.0 Competitive Dialogue Strategy

### 9.1 Competitive Dialogue

9.1.1 The Board is procuring the Project using the competitive dialogue procedure under the Public Contracts (Scotland) Regulations 2006.

9.1.2 The overall project programme is outlined in Section 7.0, however the specific requirements of the Dialogue process include particular key dates and processes. These are illustrated in a weekly planner of the Dialogue process included below at Section 9.2 and a detailed daily programme for the Dialogue included in Appendix E of this Volume 1 of the ITPD (this identifies the specific dates and sessions for each Dialogue Issue).

9.1.3 The key dates for this process are summarised below:

| Milestone | Date |
|---|---|
| ITPD Issue | 01 May 2009 |
| Dialogue Period | 01 May – 17 July 2009 |
| Final Bid Submission | 11 September 2009 |
| Selection of Preferred Solution | 23 October 2009 |
| Contract Award | November 2009 |

### 9.2 Overview of the Competitive Dialogue Procedure

9.2.1 The purpose of this Section 9.0 is to give Bidders an understanding of how the Board envisages the competitive dialogue procedure ("the Dialogue") working in practice.

9.2.2 The Board have considered the application of Dialogue and the implications in time and cost as well as the areas that require discussion. As a result the Board have chosen to limit the Dialogue to the under noted aspects of the project, together the "Dialogue Issues".

9.2.3 The Board will use the Dialogue to develop, refine and finalise its requirements, and assist Bidders in developing their proposals, on the Dialogue Issues before it invites Bidders to submit their final bids. The process for dealing with the Dialogue Issues is described more fully in Section 9.3 below.

| Design/Site | Topics | Aspects |
|---|---|---|
| | Design Brief | Clarifications and requests by the Bidders. |
| | Design Proposals | Clarifications and requests by the Bidders / Programme. |
| | Specification | Clarifications and requests by the Bidders. |
| | Services Strategy | Essential systems / Robotics. |
| | Masterplan | Coverage / Strategy. |
| | Planning/Other Consents | Coverage / Status / Risk share. |
| | Utilities and Sustainability | Strategy / Timings. |

| Logistics | Topics | Aspects |
|---|---|---|
| | Site Facilities/Welfare | Location / Timing / Coverage. |
| | Flexible Site Accommodation | Co-location / Lifespan. |
| | Deliveries/Materials | Parameters / Constraints. |
| | WRAP | Approach / Coverage. |
| | Traffic Management | Parameters / Constraints. |
| | Utilities (to temporary accommodation) | Proposals / Timings. |

| Laboratories/FM Facilities | Topics | Aspects |
|---|---|---|
| | Buildability | Logistics / Programme. |
| | Interfaces | Build phase / Operational phase / Interaction with main hospital. |

| Commercial | Topics | Aspects |
|---|---|---|
| | Contract | Compliance / Proposals |
| | Pain/Gain Share | Proposals / Ratios. |
| | Payment/Activity Schedules | Coverage / Content / Detail. |
| | Risk | Acceptance / Allocation. |
| | Extended Defects | Extent / Timescales. |
| | KPIs | Level / Coverage. |
| | Performance Damages | Items / Impacts. |

9.2.4 The Board's requirements on the remaining aspects of Project are fixed as per this ITPD document. Bidders' proposals for meeting these requirements will be developed during the Dialogue Period but out with the "Dialogue" process itself. Bidders will be entitled to attend clarification meetings with the Board and its advisers to assist in the development of these aspects of their proposals. The process for these clarification meetings is described more fully in Section 9.4 below.

9.2.5 Within 5 days of receiving this ITPD, Bidders wishing to participate in the Dialogue must return the following documentation to the Board (submit to [redacted]):

- Confidentiality Agreement (Appendix F, Part1);
- Receipt of ITPD Documents Form (Appendix F, Part 2);
- The Certificate of Acceptance of Form of Bid Conditions (Appendix F, Part 3); and
- The Certificate of Confirmation of PQQ Submission (Appendix F, Part 4).

9.2.6 Thereafter the Board will engage with Bidders about its requirements and the Bidder's proposals for the Project through a structured series of Dialogue and Clarification meetings (see Sections 9.3 and 9.4 below).

9.2.7 When the Board considers that the Bidders' proposals are sufficiently developed, it intends to close the Dialogue with the Bidders and invite Final Bids.

9.2.8 Bidders will be required to return bids on the basis of the requirements specified in Volume 3 of this ITPD. The Board anticipates that it may develop and refine its position on the Dialogue Issues through Dialogue with Bidders. If it does so, the Board will inform all of the Bidders of its amended requirements prior to requesting Final Bids. The Board's position on all other aspects of the Board's requirements, which are not covered within the Dialogue Issues, is fixed. These will be subject to clarification in accordance with the process described in Section 9.4, below, and again will be confirmed in writing prior to Final Bids being requested.

9.2.9 The final bids will be evaluated against the criteria specified in Volume 3 of this ITPD to determine which Bid is the most economically advantageous.

9.2.10 Following the submission of the Final Bids and prior to Contract Award, the Board's scope for further discussion with the Bidders will be limited to non-material clarifications of the Bids and no changes will be permitted to the basic features of any Bid at this stage.

9.2.11 On this basis, it will be the Dialogue stage that offers the most flexibility. The Board intends the Dialogue to be used for open and detailed discussion that will allow Bidders to develop proposals on the Dialogue Issues that translate into fully developed and detailed Bids.

9.2.12 Given the limited scope for discussion after the final bids have been submitted, it is essential that the Dialogue continues until the Board is confident that its requirements on the Dialogue Issues are sufficiently defined and the Bidders' proposals on the Dialogue Issues are sufficiently developed. The Board would welcome a constructive and focussed approach to resolving the Dialogue Issues and believes that this is crucial to the success of the programme to Contract Award, and to the Project more generally. Bidders should recognise the importance of resourcing their bid teams appropriately to ensure that the Board's objectives are met.

### 9.3 Dialogue Meetings

9.3.1 This Section 9.3 sets out the process for briefing the Bidders and the discipline to be applied to the regular meetings that will form the basis for interface between the Board and the Bidders on the Dialogue Issues. The process has been developed to:

- provide a framework discussions;
- ensure that the Bidders are treated equitably thus providing a level playing field with regard to the Bid requirements;
- minimise the number of Bid qualifications submitted;
- encourage Bidders to develop proposals that reflect fully the requirements set out in this ITPD and identify examples of deviation from the requirements during the Dialogue rather than following bid submission.

9.3.2 Close communication between the Board and the Bidders will be key to developing the Board's requirements and the Bidders' proposals in relation to the Dialogue Issues. To this end, a programme has been established for individual Dialogue meetings at which the Dialogue Issues may be discussed and resolved at the earliest opportunity. This will in turn enable Bidders to produce Bids that incorporate fewer qualifications and thus facilitate a more straightforward evaluation exercise.

9.3.3 Dialogue meetings will be held with the individual Bidders on agreed, nominated days to allow for forward planning. The programme of Dialogue meetings is contained in Appendix E and includes the identified time allocations for each bidder with regard to each Dialogue date. The summary 'weekly view' programme is illustrated below in *Table 4 – Competitive Dialogue Programme*. Please note that the arrangements for Dialogue meetings may be amended by the Board.

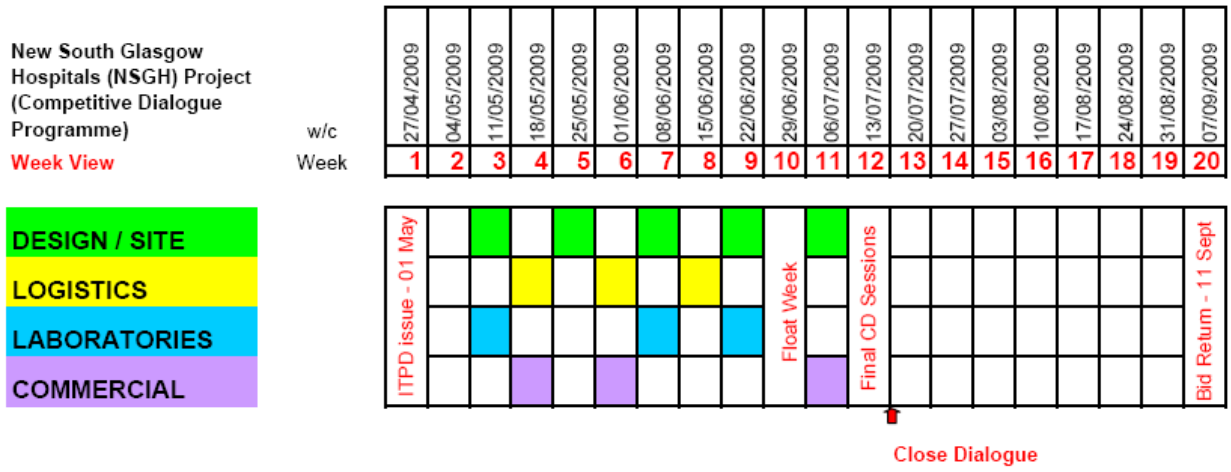



*Table 4 – Competitive Dialogue Programme*

9.3.4 To maximize the benefit of the Dialogue meetings for all parties, information setting out the parties' respective positions on the relevant Dialogue Issues should be exchanged between the parties in sufficient time to allow them to fully prepare for the meetings. In each of the following areas, the approach set out below will apply:

- Logistics – The Board will set the agenda for the first Dialogue meeting and will provide this to the Bidders by 5pm the Wednesday preceding the first meeting. Thereafter, the Bidders will be invited to propose agenda items and related supporting questions/queries for subsequent meetings, which proposals will be subject to comment by the Board. Bidders' agenda and related queries/questions must be received by the Board by 5pm the Wednesday the week preceding each relevant meeting;

- Laboratories – As above;

- Design/Site Issues – Bidders will be invited to propose agenda items and related queries/questions for Dialogue meetings. These must be received by the Board by 5pm the Wednesday the week preceding each relevant meeting.

- Commercial – Briefing papers will be issued by the Board by 5pm the Wednesday the week preceding each scheduled Dialogue meeting and Bidders will be required to submit questions, by noon the Monday of the week of the meeting, pertaining to the particular subject to be covered at the meeting. The Board's briefing papers will set out its objectives for each commercial issue. During Dialogue meetings, Bidders will be invited to comment on whether the Board's ambitions can be delivered and if not, why not and what alternative proposals can be offered by Bidders.

- The meetings held during the Dialogue will also allow the Bidders to demonstrate the general theme of their proposals. Bidders may produce drawings, models or other documentation to support their proposals and indeed may be required to do so by the Board in preparation for a Dialogue meeting. In discussing their proposals, Bidders are encouraged to demonstrate how they satisfy the requirements of this ITPD.

- Following a Dialogue meeting the Board may:

  - require a Bidder to prepare a written minute of the meeting for review by the Board;
  - require a Bidder to prepare a written submission on the relevant Dialogue Issue; and/or
  - schedule a further Dialogue meeting,

  as it deems necessary in order to finalise its requirements or develop the Bidder's proposals prior to final bid submission.

- All agendas and supporting query/question lists and minutes of Dialogue meetings must utilise the pro-forma contained in Appendix H. The pro-forma is a combined document that shall be used to firstly record the agenda and queries and post-meeting to host the minute. A dedicated document will be generated and recorded separately for each dialogue session in each Dialogue Issue (workstream) for all Bidders.

- Nothing said or intimated by the Board or its advisers at these meetings will provide the Bidders with any kind of approval for their proposals in relation to their adequacy in meeting the requirements of the ITPD (as developed throughout the Dialogue). The Board will provide advice where proposals are clearly likely to fail in the event that they proceed, unchanged, to Bid submission stage.

- The fact that the Board mentions or confirms that a Bidder may pursue a particular line or strategy does not mean that the same will necessarily score well on evaluation nor that it is or will be the Board's preferred route. All that it means is that it is not ruled out at this stage.

- Proposals put forward by different Bidders may be subtly different even if they appear the same. In any event all aspects of a Bid have to be read in context of the whole of the Bid. Accordingly, the fact that the Board replies to a question raised by a Bidder that a suggestion would not be acceptable does not mean it would be unacceptable if raised in another context by another Bidder.

- The Board may request that particular items are included in the agenda prepared by a Bidder for a dialogue meeting, may request that particular queries/questions are responded to by Bidders and may provide for particular information to be provided for discussion at a dialogue meeting. The Board shall advise Bidders of any specific requirements during the process in this regard.

- Questions submitted by the Bidders will be answered during the established programme of meetings. In the event that an issue raised is considered by a Bidder to require earlier attention, the Board will provide an appropriate response. Where the response to questions merely provides clarification of a specific aspect of the ITPD requirements, the response will be given to the Bidder asking the original question. Where the question requires a change to the ITPD requirements, the response, and the question that prompted it, will be provided to all Bidders.

- The Board reserves the right to request additional Dialogue meetings with one or more Bidders. Any Bidder wishing to arrange any additional meetings during the Dialogue shall propose their agenda and meeting date at least 7 days in advance. The Board shall endeavour, but shall not be obliged, to accommodate such requests.

### 9.4 Clarification Meetings

9.4.1 For those aspects of the Project that fall outside the scope of the Dialogue Issues, the following procedure will apply:

- General Principles of the Process – The Board will not enter into formal discussions over substantial elements of its bid requirements. Rather, it will be happy to consider requests for clarification, either in writing or in a meeting forum (to be followed up in writing, where appropriate), of particular aspects of this ITPD or other Project-related information provided by the Board to Bidders. Such clarifications will not modify substantial aspects of this ITPD.

- Requests for clarification – The process for formal written clarification requests is set out in Section 12.2 of this Volume 1 of this ITPD.

- Clarification Meetings – If a Bidder believes that a written response to its clarification request has been or will be insufficient to fully clarify its query, then that Bidder may request that the matter is raised as a separate agenda item at a Dialogue meeting (noting that the terms of this Section 9.4 will apply to the matter raised for clarification in that meeting) or dealt with in an additional clarification meeting. In either case, the Bidder should propose its agenda and meeting date at least 7 days in advance. The Board shall endeavour, but shall not be obliged, to accommodate such requests. The Board may utilise a Dialogue meeting to provide updates or information relation to clarifications – as a separate aspect of the meeting following the completion of Dialogue discussions at the relevant meeting.

- Clarifications raised by one Bidder may be made available to others – Please note that the applicable provisions of this ITPD, including those under Section 9.5, below, apply also to the clarifications process.

### 9.5 Overall Management of Procurement Process

9.5.1 The Board will conduct the procurement process in such a way as to ensure:

- Affordable and Value for Money Bids are received.
- Probity and accountability in the procurement process is achieved.
- Compliance with the Board's own financial regulations and/or procedural and contract standing orders.
- Compliance with the requirements of the Public Contracts (Scotland) Regulations 2006 (the 'Regulations') which require the procurement to be carried out:
    - with transparency;
    - with fairness between Bidders;
    - without discrimination between Bidders, and
    - in accordance with the procedural requirements of the Regulations.

9.5.2 The distinguishing feature of the competitive dialogue procedure developed for this Project is that it is still a competitive process involving a number of Bidders and the normal rules of public sector competitive tendering must be observed.

9.5.3 To comply with the above requirements, whilst there remains more than one Bidder in the competition, the procurement process will be conducted in accordance with the following principles: -

- Bidders may take into account only written information and instructions from those identified as having Board authorisation to issue such information and instructions.
- Clear records will be kept of all information requested and all information and instructions issued.
- The confidentiality of commercially sensitive information divulged by Bidders will be respected and protected and used only for the purpose for which it was provided.
- Any information provided to an individual Bidder that is or could be material to the Bid submission will be provided to the other Bidders. To avoid the risk of prejudicing a Bidder's position by divulging commercially sensitive information to competitors, Bidders will be notified whenever it is considered that an answer to their query would have to be provided to the other Bidder, and they will be given the option of either withdrawing their query or sharing their response with other Bidders.
- At any point in the process, no reference to proposals or prices submitted or referred to by one Bidder will be made to the other Bidders.

9.5.4 During the Dialogue and the evaluation of Bids, questions will arise in respect of the interpretation placed by Bidders on the requirements of the Board set out in the ITPD, how the Board might react to certain aspects of a proposal that a Bidder is considering, and the evaluation team's interpretation of Bidders' proposals. These points of clarification or confirmation will be dealt with as an integral part of the evaluation process, following the general procedural guidance set out above.

## 10.0 Guidance to Bidders

### 10.1 Confidentiality, Publication and Copyright

10.1.1 The information contained in this ITPD or otherwise provided to the Bidders by the Board is made available on the condition that it is treated as confidential by the Bidders and their directors, officers, employees, or advisers ("Bidder Party") and is not disclosed, copied, reproduced, distributed or passed to any other person at any time except for the purpose of enabling a bid submission to be made, for example, disclosure by a Bidder to its insurers or to actual or prospective Bidder Parties who are directly involved in the Project, provided they have each given an undertaking at the time of receipt of the relevant information (and for the benefit of the Board) to keep such information confidential.

10.1.2 Other than as specified above, the Bidders and the Bidder Parties shall not make any of the information available to any other parties in any circumstances without the prior written consent of the Board nor use it for any purpose other than that for which it is intended.

10.1.3 The Bidders acknowledge and agree that at key stages in the Project the Board will be obliged to disclose detailed information relating to the submissions to stakeholders and make available for public inspection key documents. The Bidders acknowledge and agree that, in accordance with the provisions of HDL (2002) 49 issued by the Scottish Executive's Health Department, the Board's Full Business Case will be made public together with a copy of the contract documents. Whilst the Board will act reasonably as regards the protection of commercially sensitive information, it can only do so in the light of the latest published guidance on this area.

10.1.4 All information submitted to the Board may need to be disclosed and/or published by the Board. Without prejudice to the foregoing generality, the Board may disclose information in compliance with the Freedom of Information (Scotland) Act 2002, (the decisions of the Board in the interpretation thereof shall be final and conclusive in any dispute, difference or question arising in respect of disclosure under its terms), any other law, or, as a consequence of judicial order, or order by any court or tribunal with the authority to order disclosure.

10.1.5 The Bidders shall be responsible for the confidentiality of their own information whilst on the Board's property. The Board cannot be held liable for loss or damage to any property of the Bidders arising whilst on the Board's premises or otherwise on the Site.

10.1.6 This ITPD is the copyright of the Board. The Bidders shall not reproduce any of the ITPD in any material form (including photocopying or storing it in any medium by electronic means) without the written permission of the Board, other than for the purpose of preparing their submissions in relation to the Project. This ITPD and any document at any time issued as supplemental to it shall remain the property of the Board and must be returned or destroyed upon demand.

10.1.7 The Bidders are required to sign the Confidentiality Agreement set out at Appendix F, Part 1 on receipt of this ITPD document and return it in accordance with Section 9.2.

### 10.2 Publicity

The Bidders must obtain approval from the Board's Project Director in writing before any disclosures are made to the press or in any other public domain. The Bidders will not undertake any publicity activities with any part of the media in relation to the Project without the agreement of the Board in writing, including agreement on the format and content of any publicity.

**10.3 Right of Rejection**

10.3.1 The issue of this ITPD in no way commits the Board to award any contract pursuant to the bid process. The Board is not bound to accept any bid received. Nothing in this ITPD shall oblige the Board to award a contract and the Board shall be able to withdraw from negotiations at any stage.

10.3.2 The subject matter of this ITPD shall only have any contractual effect when it is covered and contained in the express terms of an executed contract. Any such contract will be governed by Scots law.

10.3.3 The Board reserves the right, subject to relevant legislation, and at any time, to reject any Bid and/or to terminate discussions and negotiations with any Bidder.

**10.4 Definitions and Interpretation**

The Bidders are referred to The Contract Documents set out in Appendix C of this Volume 1 of the ITPD, which contains a series of definitions which shall apply throughout the ITPD.

**10.5 Precedence**

This ITPD sets out the Board's current requirements in respect of the Project. In the event of any inconsistency, this ITPD and its appendices shall take precedence over any documents previously issued by the Board.

**10.6 Law**

The law of Scotland shall apply to this ITPD, any bids received and the Project generally.

**10.7 Right to Cancel or Vary the Process**

The Board reserves the right to:-

10.7.1 cancel the selection and evaluation process at any stage;

10.7.2 require a Bidder or, where relevant, any member of its consortium to clarify its submission in writing and/or provide additional information. (Failure to respond adequately may result in the Bidder or member of its consortium being disqualified.)

10.7.3 amend the terms and conditions of the bid process.

10.7.4 The Board reserves the right to issue amendments or modifications to the ITPD until the Tender Return Date. These will be issued and bids received will be assumed to take account of any such modifications and amendments.

10.7.5 The Board intends to issue from time to time clarification notes to the Bidders. The purpose of these will be to keep the Bidders informed of amendments and clarifications to the ITPD. Bids received will be assumed to take account of any such clarifications notes.

10.7.6 The Board reserves the right to require the Bidders to clarify (with confirmation in writing if a clarification is given orally) any details of its submission.

10.7.7 The Bidders must notify the Board without delay of any information, matter, event or other happening which comes to light at any time and which causes or may cause any understanding of the Board or any information given to the Board to be inaccurate, incomplete or misleading. Should the Bidders wish to raise any further questions or obtain any further information not contained in the ITPD or the Data Room or not otherwise publicly available it must do so in accordance with the provisions set out in Section 12.3 of this Volume 1 of the ITPD.

10.7.8 Lastly, the Board reserves the right to introduce further bid stages and down-selection of Bidders during the Dialogue as it considers necessary to encourage the development of Bids that best meet its requirements for the Project, including value for money and affordability.

## 11.0 Conditions of Bid

### 11.1 Structure of Bidder

The Board is relying on the information provided by the Bidders in the pre-qualification concerning the members and structure of the Bidder. If, at any time during the bid period, there are any changes to the structure of any Bidder, the relevant Bidder must advise the Board as soon as practicable. The Board reserves the right to re-evaluate that Bidder on the basis of the pre-qualification assessment criteria.

### 11.2 Canvassing

If any Bidder or any Bidder Party, in connection with this Project:

11.2.1 offers any inducement, fee or reward to any member or officer of the Board or any person acting as an advisor for the Board or in connection with the Project; or

11.2.2 does anything which would constitute a breach of the Prevention of Corruption Acts 1889 to 1916; or

11.2.3 canvasses any of the persons referred to in paragraph (a) in connection with the Project; or

11.2.4 contacts any officer of the Board about any aspect of the Project, except as authorised by this ITPD, including (but without limitation) for the purposes of discussing the possible transfer to the employment of the Bidder of such officer for the purpose of the Project or for soliciting information in connection with the Project, the Bidder concerned will be disqualified from any further involvement in the Project (without prejudice to any other civil remedies available to the Board and without prejudice to any criminal liability, which such conduct by the Bidder may attract).

11.2.5 The Bidders will be required to sign the Certificate of Non-Canvassing included in Volume 3 of this ITPD when returning its Bid.

### 11.3 Non-Collusion

If any Bidder, in connection with the Project has done or does any of the following:

11.3.1 enters into any agreement or arrangement with any person (other than, where relevant, a member of its own consortium) with the aim of fixing or adjusting the amount of any bid or the conditions on which any bid is made; or

11.3.2 enters into any agreement or arrangement with any person with the aim of preventing bids being made; or

11.3.3 causes or induces any person to enter such agreement as is mentioned in either Sections 11.3.1 or 11.3.2 above; or

11.3.4 canvasses any of the persons referred to in Sections 11.3.1 or 11.3.2 above in connection with the Project; or

11.3.5 offers or agrees to pay or give or does pay or give any sum of money, inducement or valuable consideration directly or indirectly to any person for doing or having done or causing or having caused to be done in relation to any other bid or proposed bid for the Project any act or omission; or

11.3.6 Communicates to any person other than the Board the amount or approximate amount of its proposed bid (except where such disclosure is made in confidence in order to obtain quotations necessary for the preparation of the bid, for insurance or contract guarantee bonds and/or performance bonds or professional advice required for the preparation of a bid), the Bidder concerned may be disqualified (without prejudice to any other civil remedies available to the Board and without prejudice to any criminal liability, which such conduct by the Bidder concerned may attract).

11.3.7 The Bidders will be required to sign the Certificate of Non-Collusion appended to Volume 3 of this ITPD when returning their Bids.

**11.4 Signing of Certificates**

11.4.1 The Bidders should note that, save where Section 11.1 above applies and a satisfactory evaluation takes place, the Board is prohibited by EU procurement rules from entering into a contract with a legal body who was not invited to tender and did not submit a bid. Accordingly, the Bidders must ensure that the correct body or organisation signs the:

11.4.2 Certificate of Non-Canvassing (Appended to Volume 3 of this ITPD);

11.4.3 Certificate of Non-Collusion (Appended to Volume 3 of this ITPD);

11.4.4 Confidentiality Agreement (Appendix F, Part 1);

11.4.5 Certificate of Acceptance of Form of Bid Conditions (Appendix F, Part 2);

11.4.6 Certificate of Receipt of ITPD Documents (Appendix F, Part 3); and

11.4.7 Certificate of Confirmation of PQQ Submission (Appendix F, Part 4).

11.4.8 If it is proposed that a consortium will deliver the Project, but it has not yet been incorporated, the Certificates listed above should be signed by each of the companies or organisations who it is proposed would be members in the consortium.

**11.5 Conflicts of Interest**

The Bidders should advise the Board as soon as practicable in the event of a conflict of interest arising in respect of their Bids. In such circumstances, the Board may require further information from the Bidders but reserves the right to disqualify Bidders from further involvement in the Project.

**11.6 Costs and Expenses**

11.6.1 The Bidders remain responsible for all costs and expenses incurred by them or by any third party acting under their instructions in connection with their Bid, whether before or after the submission date and whether incurred directly by them or their advisors or subcontractors and regardless of whether such costs arise as a consequence direct or indirect of any amendments made to this ITPD by the Board at any time. For the avoidance of doubt, the Board shall have no liability whatsoever to the Bidders for the costs of any negotiations or communications in connection with this Project.

11.6.2 Any advisors appointed by the Board, whether legal, financial, technical or other, will not be responsible to anyone other than the Board, or its nominated officers, for providing advice in connection with the Project.

### 11.7 Reliance on Information and Liability of the Board

11.7.1 Information in this ITPD, together with any other information to be provided at any time during the procurement process is provided in the interests of assisting the Bidders to develop relevant bids. It is intended only as an explanation of the Board's requirements and is not intended to form the basis of the Bidders' decisions on whether to enter into any contractual relationship with the Board.

11.7.2 Accordingly, information provided does not purport to be all-inclusive or to contain all the information that a prospective contractor may require. The Bidders and their advisors must take their own steps to verify information which they use and must make an independent assessment of the opportunity described in this ITPD after making such investigation and taking such professional advice as they deem necessary.

11.7.3 None of the Board, the Board's directors, officers, employees, agents or advisors or any representative of any other NHS body who are involved with the procurement process shall be considered to make or be deemed to have made any representation or warranty as to the adequacy, accuracy, reasonableness or completeness of the information provided. The Board does not exclude any liability that it may have for fraudulent misrepresentation or any other liability not capable of being excluded by law.

11.7.4 Neither the Board nor its professional advisors shall be liable for any loss or damage arising as a result of reliance on the information provided or other information subsequently provided, nor for any expenses incurred by the Bidders at any time. No third party has been or will be authorised to accept or agree to accept on behalf of the Board any such liability.

### 11.8 Bid Validity

Bids shall remain open for acceptance until the last day of January 2010, or in the case of any re-submissions, from the date specified by the Board for receipt thereof.

### 11.9 Sub-Contractors

Where any Bidder intends to use sub-contractors, it will be the responsibility of the Bidder to provide the sub-contractor with all necessary information throughout the bid process.

## 12.0 Project Organisation and Communication

### 12.1 External Advisors

The Board has appointed the following external advisors:

12.1.1 Legal

Shepherd+ Wedderburn
155 St. Vincent Street
Glasgow G2 5NR
Contact: Rhona Harper
Tel: [redacted]

12.1.2 Financial

Ernst & Young
50 George Square
Glasgow G2 1RR
Contact: Michael McVeigh
Tel: [redacted]

12.1.3 Technical

Currie & Brown UK Limited
140 West Campbell Street
Glasgow G2 4TZ
Contact: James R Hackett
Tel: [redacted]

### 12.2 Lines of Communication

12.2.1 The Bidders may request clarification of matters covered by this ITPD or request further information in relation to the Project. These issues shall be raised in writing and addressed to the Board as soon as possible and in any event not later than 1 week prior to Dialogue or clarification meetings and no later than 2 weeks prior to the Tender Return Date in accordance with the procedures outlined below.

12.2.2 The Bidder may request clarifications either by e-mail.

12.2.3 Clarification requests should be addressed to the Board as follows:

| Name | Post/E-mail |
|---|---|
| Peter Moir | NHS Greater Glasgow and Clyde<br>St Andrew's House<br>80 Queen Elizabeth Avenue<br>Hillington<br>Glasgow<br>G52 4NQ<br><br>[redacted] |

12.2.4 On receipt of written clarifications, the Board may either address the query or refer the query to the appropriate member of the Board's Project Team. Where a Bidder is requesting specific information relating to the Project they should use the Request for Clarification Proforma set out at Appendix D of this ITPD. All requests for information must be dated and have a unique reference number per the instructions contained in Appendix D.

12.2.5 Communications not sent and addressed in accordance with the clarification procedure (set out above and in Appendix D) run the risk of being delayed. Within one week of receipt of this ITPD, the Bidder shall submit to the Board (to the e-mail account identified in 12.2.3 above) the name, contact details and designation of the nominated person within their own organisation through whom all communications with the Board will be directed during the bid period (the "Bidder's Nominated Person") as well as a nominated seconder in the event of illness of the Bidder's Nominated Person.

12.2.6 The Board will endeavour to respond to bidder's communications by way of formal clarification issued by the Board in a timeous manner. Any communications by telephone or in meetings shall only become valid communications if both the query and the reply are confirmed in writing (this to be via the RFI process, where the Contractor issues an RFI for Board confirmation). All formal amendments, updates, clarifications, questions and further information will be issued to the Bidders by the Project Manager (or such delegated persons). Formal communications directed to or between any persons within the Board's or the Bidders' organisations, including their respective advisers, other than through the Project Manager shall be deemed to be invalid.

**12.3 Access to Data**

12.3.1 The Board are using an electronic data management route to host and transfer project data.

12.3.2 The system being utilised is BIW, with access details for each individual bidder having been issued under separate cover.

## 13.0 Bid Returns and Evaluation

### 13.1 Submission Procedure

13.1.1 Bidders' Tenders must be delivered, together with all accompanying documents, to:

Carol Craig
NHS Greater Glasgow & Clyde
St Andrew's House
80 Queen Elizabeth Avenue
Hillington
G52 4NQ

Tel: [redacted]
Fax:
Email:

13.1.2 It is the Bidders' sole responsibility to obtain a receipt bearing the date, time and tender envelope reference for any bid delivered by hand. Any bid or accompanying document submitted after such date may not be considered.

13.1.3 Bids must be sealed and the boxes or packages must be affixed with the label provided by the Board in Appendix G, to be printed on white A4 paper by each Bidder and prominently placed on each box/package relating to their tender submission.

13.1.4 In case it is lost, the label reads:

**TENDER FOR NEW SOUTH GLASGOW HOSPITALS PROJECT**

**Carol Craig**
**NHS Greater Glasgow & Clyde**
**St Andrew's House**
**80 Queen Elizabeth Avenue**
**Hillington**
**G52 4NQ**

**NOT TO BE OPENED BEFORE 12 NOON ON 11 September 2009.**

13.1.5 No package or box shall bear on the outside any name or mark by which the Bidders can be identified including any name or mark appearing on the envelope by virtue of the method of delivery, such as Post Office Recorded Delivery or courier. The Bidder is requested to complete its response to this ITPD, including any supplementary information, and to provide [four] hard paper copies and ten electronic copies on CD-ROM (affixed to the hard copies) of its response, including all supplementary information. All responses must be in English.

13.1.6 Responses sent via e-mail will not be considered.

13.1.7 All documents and electronic submissions should be completed in:

- a format capable of being read by Microsoft Word, in Arial Font size 10 and Microsoft Excel 2000;
- electronic copies of drawn material must be AutoCad compatible; and
- all pages should be sequentially numbered.

13.1.8 All documents should include detailed lists of contents including cross-references to all supporting documentation.

13.1.9 All response documents must comply with the requirements prescribed in Volume 3 of this ITPD document. If any Bidder has not complied with the requirements set out in this ITPD, the Board may reject its Bid at any stage.

### 13.2 Incomplete Bids

On receipt of each Bidder's submission, the Board's Project Team will carry out an initial evaluation checking, inter alia, that all documents and matters requested have been fully and properly submitted. If any Bidder has not submitted all the information requested the Board may, at the Board's discretion, reject the relevant Bid at this stage. The Board may use its discretion to grant extra time to a Bidder to complete its bid by submitting any missing documents or information, such extra time, if granted, will require a Bidder to submit the missing documents or information to the Board within seven days of being notified by the Board of the missing documents or information. The Bidders must provide a single point of contact for clarifications in accordance with Section 12.2.5 of this Volume 1 of the ITPD.

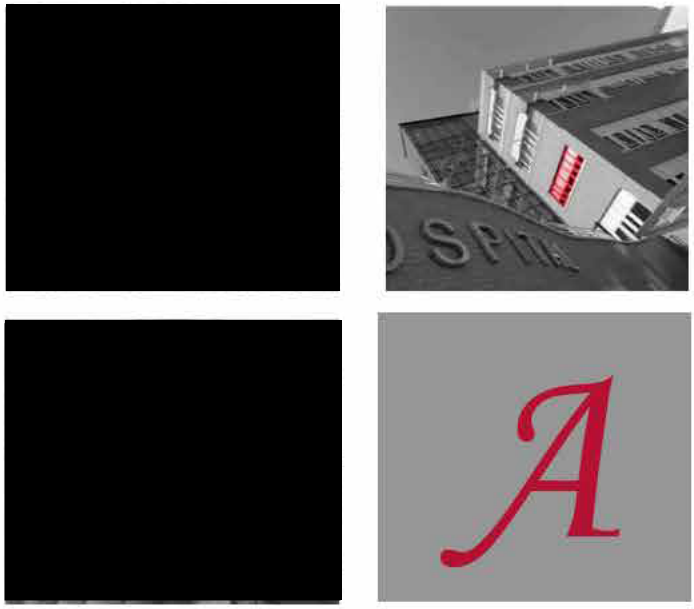
### 13.3 Presentations

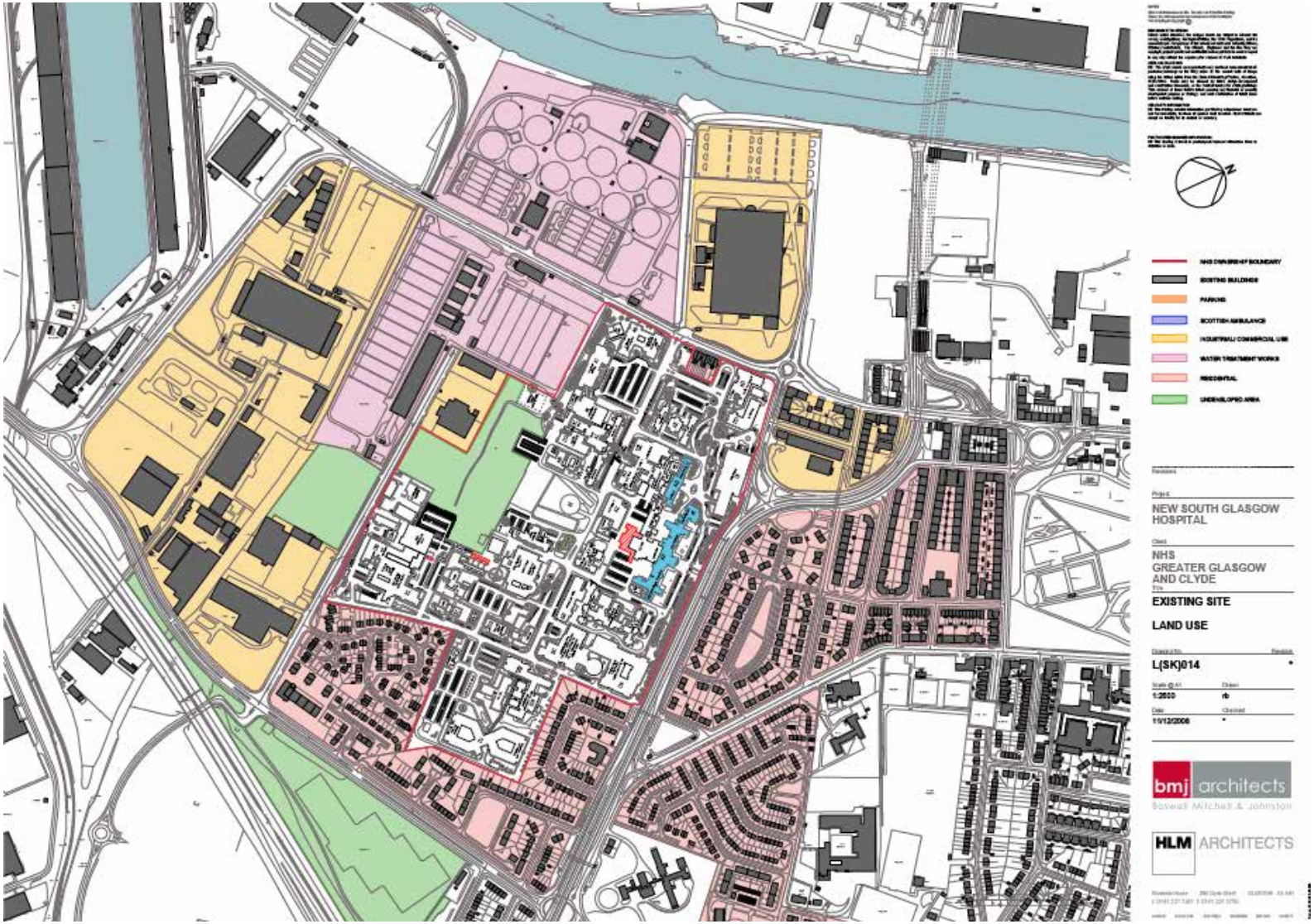
The Board reserves the right to call the Bidders to interview to present their proposals to an agenda set by the Board at any time during the process.

### 13.4 Bid Evaluations

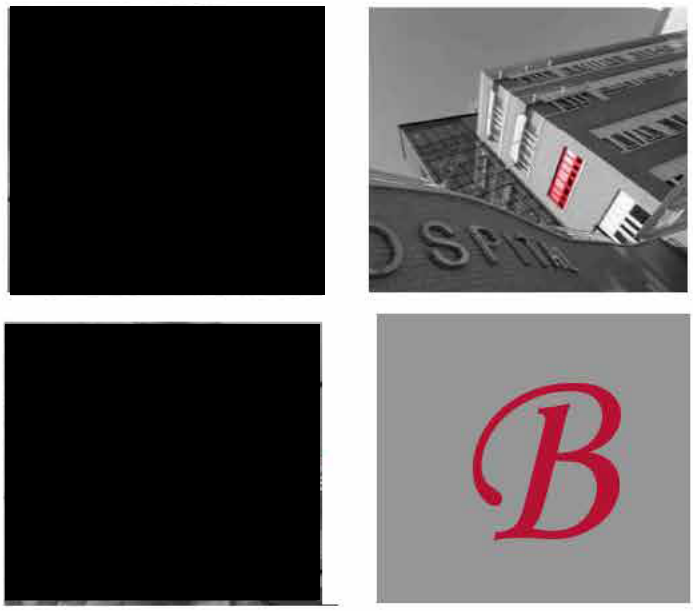
Following the initial completeness check in accordance with Section 13.2 above, the Board will further evaluate the submissions in accordance with the bid submission requirement and evaluation criteria set out in Volume 3 of this ITPD.

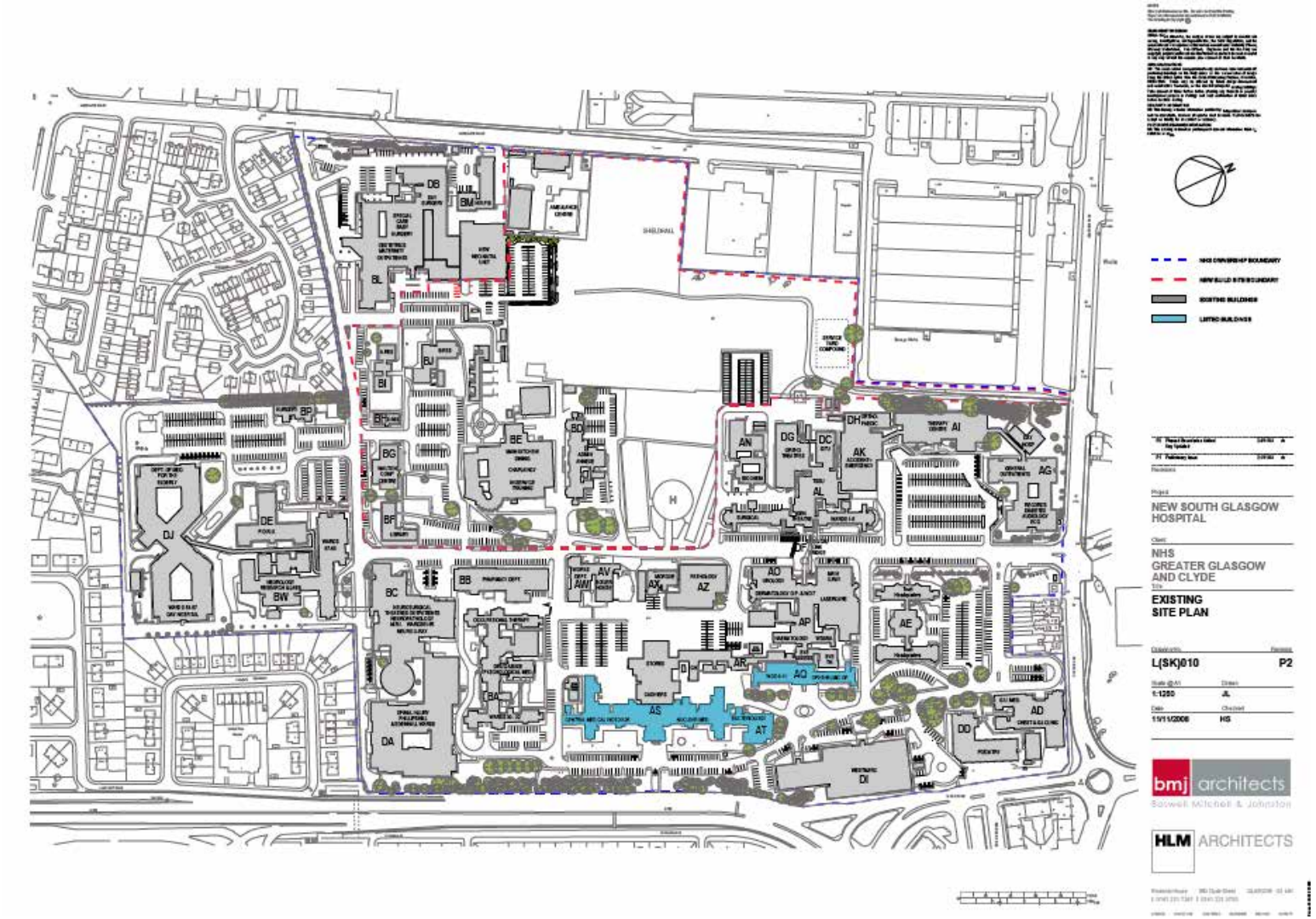
# Appendix A – Hospital Site and Surrounding Area



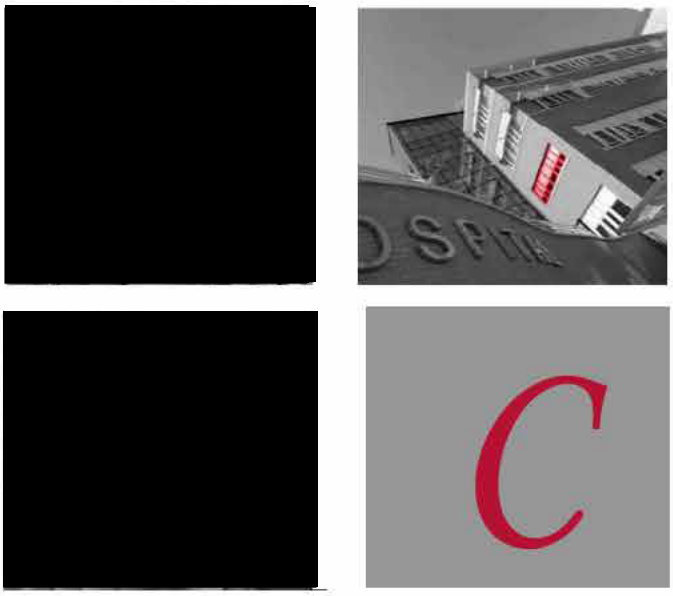

NEW SOUTH GLASGOW HOSPITAL
NHS GREATER GLASGOW AND CLYDE
EXISTING SITE
LAND USE
L(SK)014
1:2500
15/12/2006
bmj architects
Bowell Mitchell & Johnston
HLM ARCHITECTS

# Appendix B - Existing Site Plan




NEW SOUTH GLASGOW HOSPITAL
NHS GREATER GLASGOW AND CLYDE
EXISTING SITE PLAN
L(SK)010
P2
1:1250
15/11/2006
bmj architects
HLM ARCHITECTS

# Appendix C – The Contract Documents



**NEW SOUTH GLASGOW HOSPITALS PROJECT**

**THE CONTRACT DOCUMENTS**

PART ONE - The Proposed Procurement Framework for New South Glasgow Hospitals Project

1 Introduction
2 Overview
3 Funding and Business Case Approvals under the Contract
4 Key Documents and Processes Comprised within the Contract

PART TWO - The Contract

Form of Agreement
Contract Data part one – Data provided by the *Employer*

PART THREE – Gateway Procedures

Approval Gateways

PART FOUR - Schedule of Cost Components – Amended

Amended Schedule of Cost Components
Pro forma Fee Workbook

PART FIVE – MAXIMUM PRICE TARGET COST

Pro forma MPTC submissions

PART SIX – CASHFLOW & ACTIVITY SCHEDULES

Pro forma activity schedules
Pro forma cashflows

PART SEVEN - Works Information

1. Introduction
2. Description of *works*
3. Plant and materials
4. Health and Safety
5. *Contractors* design
6. Completion
7. Working with the *Employer* and Others
8. Sub-contracting
9. Programme
10. Tests
11. Title
12. Acceptance or procurement procedures
13. Commercial requirements, Accounts and record
14. Parent Company Guarantee

PART EIGHT – Site Information

1. Introduction
2. Access to Site Information
3. List of Site Information Available
4. Boundary Limits

PART NINE – CONTRACT ADMINISTRATION PROFORMA

Contract Administration Proforma

**PART ONE – THE PROPOSED PROCUREMENT FRAMEWORK FOR NEW SOUTH GLASGOW HOSPITALS PROJECT**

**THE PROPOSED PROCUREMENT FRAMEWORK NEW SOUTH GLASGOW HOSPITALS PROJECT GUIDANCE MANUAL**

**forming part of the Contract dated [ ……..2009 ]**

**and made between**

**NHS Greater Glasgow & Clyde (The Health Board)**

**[ • ] (The *Contractor*)**

# 1 INTRODUCTION

The purpose of this Guidance Manual is to provide background information on the procurement method for the New South Glasgow Hospitals project and the compilation and use of its contract documentation, to select a *Supply Chain Partner (SCP)* to act as the *Contractor* (NEC3) on the project.

This Guidance Manual is a contract document which sets out the procedure and method for completing the contract documents between the NHS Health Board and the *Supply Chain Partner (SCP)* engaged to act as the *Contractor* under the NEC3 Engineering and Construction Contract and as further defined in Works Information within this contract.

# 2 OVERVIEW

## 2.1 The Proposed Construction Framework for New South Glasgow Hospitals Project.

The Proposed NSGH project is a collaborative procurement method for the delivery of NSGH project through the application of best procurement practices. One of the key principles underpinning this collaborative approach is the establishment of an integrated project team made up of participants from both the public sector (i.e. the Health Board and its advisors) and the private sector (i.e. the Contractor and its supply chain selected by the Health Board). This integrated project team will work together in a non-adversarial manner to achieve the participants' common goal of delivering the NSGH project. The establishment of an integrated project team has many benefits, some of which are:

- Project management
- Cost certainty
- Time certainty
- Design quality
- Construction quality
- Value for money
- Skill development

## 2.2 The Supply Chain Partner and its Supply Chain

NHS Greater Glasgow and Clyde will select a Contractor to carry out the NSGH project through the OJEU process. The *Contractor* as part of its tender will provide details of its supply chain of pre-selected key sub-Contractors and sub-consultants ("the *Supply Chain Member's (SCMs*)") with which it is to have a pre-existing working relationship. SCM are likely to comprise the following disciplines:

- Architects
- Structural and civil engineers
- Mechanical and electrical engineers
- Mechanical and electrical specialist SCMs
- Any other relevant specialist sub Contractors / consultants

The purpose of ensuring there is a working relationship between the *Contractor* and its *SCMs* is to ensure the *SCMs* are involved in the design and development process. Once a *Contractor* has been appointed to the project, it may not change any of its *SCM*s without the Health Board's consent.

## 2.3 Reviews and Approvals

Once appointed to a project, the *Contractor* and Health Board will work together to finalise the detailed design for the project through each stage of the approval process.
The project will proceed in distinct stages (see paragraph 3 for further information) and the selected *Contractor* will, subject to the termination rights, carry out the works and services for all stages of the project.

This project is divided into separate stages and the Health Board has the right to terminate the engagement of the *Contractor* both during a stage and at the end of each stage for any reason.

**2.4 Payment under the Contract**

Throughout the contract the *Contractor* is paid its Defined Cost and fee together with Defined Cost of sub-contracted work and the sub-contracted fee, subject to target and maximum price thresholds for each Stage.

The pricing arrangement is structured to promote incentivisation through innovation and efficiencies, and is referred to a Maximum Price Target Cost (MPTC) which comprises:-

| | |
|---|---|
| Target Cost (Defined Cost + Overhead Element of Fee | The most realistic estimate of the likely final costs when the work is done, assuming an average level of efficiency. Costs are the *Defined Costs* (in accordance with Schedule of Cost Components), Contractor accepted risk allowance and *Fee* (overhead element only) |
| Target Profit (Profit Element of Fee) | The amount of profit (calculated as a percentage of Target Costs, but expressed as £'s) payable without adjustment if the actual costs come out at target Cost. |
| Target Price | The sum of the agreed Target Cost plus the agreed Target Profit |
| Shareline | The ratio in which the Employer and Contractor will share costs underruns (where actual costs are less than Target Cost) and overruns (where the actual cost exceeds the target Cost but are less than or equal to the Maximum Cost |
| Maximum Cost | Most pessimistic view of the final costs. It is the point where the Employer stops sharing costs overruns and where all such additional overruns fall to the Contractor. At this point the maximum price will have been reached |
| Maximum Price | Maximum Price is the maximum contracted liability of the Employer and is the sum of the Maximum Cost and the value of the profit payable at that point under the shareline provision |

The defined costs plus fee are compared to the MPTC and the *Contractor* shares in the gain where actual costs are less than Target and pain share where actual costs exceed Target but less than maximum. Above Maximum Price level the Contractor takes 100% of pain share. The *Contractor* is therefore incentivised to bring real value engineering and cost management skills to the project.

Separate MPTC's are calculated for each of the Stages, aggregated together to generate the contract MPTC. The *Contractor* must deliver the Works required for each Stage for the MPTC (note that the MPTC may be revised upward or downward where compensation events occur under the Contract).

**2.5 Open Book Accounting**

In support of its applications for payment it is not practical to expect the Health Board to be able to deal with the *Contractor's* monthly application by reviewing many lever arch folders of individual invoices and therefore the *Contractor* should provide a breakdown of its application for payment. This approach will be backed by the right for the Health Board, upon request, to audit the *Contractor's* books to verify the amounts which form any application for payment (this right may be exercised on an ad hoc basis by the Health Board, Advisors and / or its internal/external auditors).

The objective of both the *Contractor* and the Health Board will be to separate out (so far as is practical) prices (from the *Contractor* and its *SCMs*) into the separate elements of:

- the Defined Cost of works, materials and services;
- any risk allowances; and

- the Percentage Fee (overheads and profit) applied to such sums.

The aim underpinning this approach is to reduce costs by understanding the risks that may make it higher and managing / removing those risks and at the same time seeking to plan the services / works provided by the *Contractor* and its *SCM*s so that the construction stage (in particular) will be more effectively carried out.

**2.6 Maximum Price Target Cost**

The MPTC should represent a 'win – win' opportunity for both the *Contractor* and the Health Board. The MPTC should be affordable within the Health Board's budget.
The Health Board and its advisors will need to work closely with the *Contractor* to understand the estimated costs and the potential risks to the project and how they may be removed / managed.

The MPTC should offer a reasonable incentive for the *Contractor* to manage its *SCMs* (and wider sub Contractors and sub-consultants) effectively to deliver the required quality to time and, hopefully, for less than the Target Price so as to qualify for a share in any saving if the defined cost plus fee is less than the Target Price.

The Target Cost estimate forming part of the MPTC should reflect the level of price uncertainty in the cost estimates for the scope or works. The risk allowance forming part of the MPTC should reflect the discrete risk accepted by the Contractor and the potential cost impact on the Target Cost should they occur.

The Contract Data Part one sets out the details of the pain/gain share allocation which may apply to the project. As part of the tender submission the bidders have to propose their pain / gain share allocation that reflects their own MPTC submission.

Where a SCM's contract value is estimated to exceed £2,000,000 they should be engaged on similar terms to this Contract i.e MPTC arrangement, open book actual costs with incentivisation.

**2.7 Form of Contract**

The Contract is the NEC3 Engineering and Construction Contract Option C Target Contract with Secondary Option clauses as stated in the Contract Data Part one and as amended by the Z Clauses.

**3 FUNDING AND BUSINESS CASE APPROVALS UNDER THE CONTRACT**

**3.1 Approvals Process**

The processes contained in the Scottish Capital Investment Manual will apply to Stage 2 of this Contract.

Following submission of the relevant information to it by the relevant Health Board, the Scottish Executive Health Department will at end of Stage 2 confirm whether or not the Final Business Case submitted is approved.

**3.2 Business Cases**

The approval process for the funding and business cases impacts on the contractual structure for the project and the Stage 2 Final Business Case must be approved before Stage 3 construction can commence. The procedure requires the submission and approval of the following funding and business cases:

- Full Business Case ("FBC"): for the Adult, Childrens and Infrastructure works, approval means that funds are committed and that construction can begin.

**3.3 Stages under the Contract**

Acceptance of the *Contractor's* successful tender will be followed by a letter of appointment stating a time for agreeing an overarching contract for the entire project. The structure of the Contract reflects the approval process for the business and funding cases by providing for the following three stages of works and/or services:

- Stage 1 – Design and Construction of New Laboratory Building
- Stage 2 – Detailed Design of Adult, Childrens and Infrastructure to FBC Submission
- Stage 3 – Engagement to carry out the construction of the Adult, Childrens and Infrastructure
- Stage 3A : Demolition of Surgical Block & associated buildings, and completion of soft landscaping

**3.4 Health Board's right to terminate**

If a Health Board does not wish to proceed with the Contract, even if the *Contractor's* is not in breach, the Health Board has the right to terminate the Contract both during a Stage or at the end of each Stage and the *Contractor's* would not be entitled to claim for the loss of any anticipated profits should subsequent Stages not be awarded; the exception to this rule is the cancellation of the Scheme once Stage 4 has been awarded.

**4 KEY DOCUMENTS AND PROCESSES COMPRISED WITHIN THE CONTRACT**

**4.1 Works Information**

The documents containing the Works Information provided by the Health Board are identified in Part 7 of this Contract. Works Information for the *Contractor's* design is identified in the Contract Data Part Two by the *Contractor.*
Most of the information will be given in a specification and on drawings.
Works Information referred to in Contract Data Part One includes the following items:

- Introduction
- Description of *works* -scope
- Plant and materials - specifications and details
- Health and Safety - requirements
- *Supply Chain Partner's* design – parts of the *works* the *Contractor's* is to design
- Completion - work required to be done by the Completion Date
- Working with the *Employer* and Others
- Sub-contracting – procedures and Contract requirements
- Programme - procedures and Contract requirements
- Tests – testing and inspections
- Title – Plant and Materials outside the Working Areas
- Acceptance or procurement procedures
- Commercial requirements, Accounts and record
- Parent Company Guarantee

**4.2 Site Information**

The documents in which the Site Information is contained are identified in the Part 8 of this Contract. The Site Information includes the following:

- Sub-soil investigation, borehole, records and test results
- Reports obtained by the Employer on the physical condition within the site or its surroundings
- References to publicly available information about the site and its surroundings (e.g. published papers and interpretations of the geological survey)

- Information about plant and the services below the surface of the Site
- Information about piped and other services
- Information about buildings, structures, plant adjacent to and on the site

**4.3 Contract Data**

Contract Data referred to in the Contract is the data which exists at the date of the Contract. The data is not necessarily that issued by the Health Board (Data Part one) at OJEU notice stage or returned as part of the successful *Contractor's* tender (Data Part two).

The Contract Data defines details for the Contract. The terms and conditions of the Contract make provisions for certain changes to that data (e.g. replacement of key personnel, and amended completion date and replacement of an adjudicator etc).

Contract Data Part one is included at Part 3 of this Contract and, Contract Data Part Two for completion and return with the Tender by the *Contractor's* is the Bid Deliverables detailed in Volume Three of this ITPD.

**4.4 Z Clauses**

Z Clauses are the conditions of contract additional to the standard form NEC3 Engineering and Construction Contract Option C which the Health Board identifies in the Contract Data Part one. The Z Clauses contain additional conditions of contract as well as any project specific requirements.

**4.5 Activity Schedule**

In the Works Information issued with the ITPD the Health Board will set out an indicative list of the activities which it would expect the *Contractor* to perform at each Stage. The *Contractor's* selected for the Works provides an activity schedule and a price for each of the specified activities through each of its Stages and gateways totalling the Target Price.

For the avoidance of doubt, the *Contractor's* Fee (profits and overheads) are included in addition to the Defined Costs specified on the activity schedule.

**4.6 Schedule of Cost Components**

The *Contractor's* will be entitled to reimbursement of its Defined Costs throughout the term of the Contract. The Schedule of Cost Components under the NEC3 Contract sets out the basis on which the Defined Costs will be calculated, costs not identified are to be included in the Fee.

A schedule of cost components is included in Part 4 of this Contract.

**4.7 Risk Register and Risk Management**

Risk may be viewed as the combination of the probability of an event and its consequence and risk management as the process by which an organisation identifies, prioritises and develops management action to control the risks. Under this contract the *Contractor's* and Health Board are required to manage the risks which may arise proactively and collaboratively by the use of a risk register.

During Competitive Dialogue period, the *Contractor's* will discuss with the Health Board:

- the potential risks which may impact on the price, build programme and/or quality of the Scheme;
- the probability of the identified risks occurring;
- a financial estimate of each risk's most likely consequences; and

- whether the *Contractor's* or Health Board is best placed to manage the identified risk.

The key to the success of risk management is bullet point 4 above; it is not a question of each party seeking to push an unpalatable risk on to the other, the emphasis is on ensuring that the party best able to manage a risk assumes it.

The risks accepted by the *Contractor* will form part of MPTC for the project.

This risk allowance forming part of the MPTC should be a calculated allowance determined utilising modelling techniques. The use of Monte Carlo modelling is preferred, with the Target Price including a risk allowance based on 50% modelled probability, and the risk allowance included within Maximum Price based on 90% modelled probability. Actual process for risk cost estimating will be confirmed during Competitive Dialogue process.

The risk register will be reviewed and updated by the *Employer's Project Manager* and *Contractor's* at regular project meetings during each Stage.

**4.8 Achieving Excellence Design Evaluation Toolkit ("AEDET")**

AEDET is an NHS toolkit designed to assist the NHS in determining and managing their design requirements from initial proposals through to post-project evaluation by reference to a non-technical set of criteria. AEDET has three main categories: Functionality, Impact and Build Standard which are themselves subdivided into 10 sub categories: Use, Access, Space, Character and Innovation, Citizen Satisfaction, Internal Environment, Urban and Social Integration, Performance, Engineering and Construction.

Approval of the FBC will include an assessment of the design largely based on its compliance with the AEDET criteria.

AEDET (or a similar process proposed by the *Contractor*) will therefore be crucial to the *Contractor* and the Health Board in the development and maintenance of acceptable design throughout all Stages of the Contract. The *Contractor* will be required to submit its design to the rigours of AEDET.

**4.9 Contract Administration Pro forma (CAP3)**

CAP3 is an administration process toolkit designed to assist the Health Board and *Contractor's* to comply with the communication and notification requirements of NEC3.

The *Project Manager* and *Contractor's* use the pro forma within the toolkit for all contract communications and notifications, including acceptances, compensation events and recording of Defects and their correction.

The pro forma master register is used to inform the Health Board of the monthly status of the contract for matters of time, quality, cost and identification of any non-compliance with contract procedures.

**PART TWO – THE CONTRACT**

**AGREEMENT**

between

**GREATER GLASGOW AND CLYDE HEALTH BOARD** of Dalian House, 350 St Vincent Street, Glasgow G3 8YZ ("the *Employer*"); and

[ ] having its principal place of business at [ ] (the "*Contractor*").

WHEREAS: -

The *Employer* wishes to have the Contractor Provide the Works for the New South Glasgow Hospital Comprising: Management and delivery of design and construction services as follows: -

| Stage | Heading | Outline Activities |
|---|---|---|
| Stage 1 | Design and Construct Laboratories | Detailed design and construction of the Laboratories, FM Hub and Energy Centre (shell only). Concurrent with Stage 2. |
| Stage 2 | Design Development - New Hospitals Building | Detailed design of New Adult Acute and New Children's Hospitals and Kit Out of Energy Centre to Full Business Case Submission. Concurrent with Stage 1. |
| Stage 3 | Design and Construct New Hospitals Building | Design and Construction of New Adult Acute and New Children's Hospitals. Consecutive to Stage 2. |
| Stage 3A | Demolition of Surgery Block | Demolition of surgical block and associated buildings and completion of soft landscaping. |

**NOW IT IS AGREED THAT**

1. The *Contractor* will Provide the Works in accordance with the NEC Engineering and Construction Contract, Option C: Target contract with activity schedules, June 2005 (as the same are amended in accordance with this Agreement) ("the conditions of contract") and the principles stated in Appendix 1 of this Agreement.

2. The *Contractor* acknowledges and agrees that the final Price for Work Done to Date will not exceed the sum of £[ ] ("the Maximum Price"). If the effect of a compensation event is to increase the total of the Prices, the Maximum Price will be increased by that increase in the Prices multiplied by [*the percentage differential between the Prices tendered by the Contractor and the Maximum Price*]%. If the effect of a compensation event is to reduce the total of the Prices and Clause 63.11 of the conditions of contract applies, the Maximum Price will be reduced by that reduction in the Prices multiplied by [*the percentage differential between the Prices tendered by the Contractor and the Maximum Price*]%.

3. The *Employer* will pay the *Contractor* the amounts due for each Stage of the *works* in accordance with this Agreement, the conditions of contract, the Contract Data and as may be detailed in the Works Information.

4. The *Contractor* acknowledges and agrees that as at the Contract Date the Contractor shall be authorised to proceed with Stage 2 and Stage 2A only. The *Contractor* is authorised to commence and proceed with Stage 3 upon written authorisation given by the *Employer* in the form attached as Appendix 2 hereto. The *Contractor* is authorised to commence and proceed with Stage 3A upon written authorisation given by the *Employer* in the form attached as Appendix 3 hereto. In the event that the *Contractor* commences and proceeds with Stage 3 or Stage 3A without such written authority from the *Employer*, the *Contractor* does so at his own cost and risk.

5. The documents forming part of this Agreement are:

5.1 The *Employer*'s letter of appointment/award of contract dated
[Note this is the Contract Date unless otherwise stated]

5.2 the conditions of contract

5.3 Contract Data part one — data provided by the *Employer*

5.4 The *Contractor*'s Tender Return Submission, reference [ ] dated [ ] Including:

5.4.1 Contract Data part two - Data provided by the *Contractor* including Appendices [ ] to [ ]
5.4.2 The bid deliverables defined in Volume 3 Contract Documents and;
5.4.3 the following documents:
(*other documents to be listed here*)

IN WITNESS WHEREOF these presents consisting of this and the 2 preceding pages together with Appendices 1 and 2 and the Contract Data part one (including its Appendices) and Contract Data part two are executed as follows: -

EXECUTED for and on behalf of the *Employer* at [ ] on the [ ] day of [ ] 200[ ] as follows: -
(Authorised official) Before this witness: -
Full name …….
Address …….
…….
…….

EXECUTED for and on behalf of the *Contractor* at [ ] on the [ ] day of [ ] 200[ ] as follows: -
(Director/Authorised Signatory) Before this witness: -
Full name ……..
Address …….
…….
…….

**This is Appendix 1 to the foregoing Agreement between Greater Glasgow and Clyde Health Board**
**and**
**[Contractor]**

**Principles governing the Agreement**
**Definitions**

| **Defined Term** | **Definition** |
|---|---|
| "Overriding Objective" | means the objective set out in Paragraph 4. |
| "Overriding Principle" | means principle set out in Paragraph 1. |
| "Professional Advisor" | means any party providing specialist advice to the *Employer*. |
| "Supply Chain" | means the individuals and organisations appointed by the *Contractor* and approved by the *Employer* who will be responsible for the majority of the management and delivery of design and construction (and where appropriate operation) in relation to the *works* including the Specified Subcontractors and Specified Consultants. |

1. The Overriding Principle of this agreement is to work together with the Supply Chain and the *Employer* (and any Professional Adviser) in a co-operative and collaborative manner to achieve the Overriding Objective acting in good faith and in the spirit of mutual trust and respect.

2. In order to work together in co-operative and collaborative manner the *Employe*r and the *Contractor* agree that they should each give to and welcome from each other, the Supply Chain and any Professional Adviser feedback on performance and shall share information openly and highlight any difficulties at the earliest practical time. The parties shall support collaborative behaviour and confront behaviour that does not comply with the Overriding Principle.

3. The terms of the Agreement shall be interpreted according to their natural meaning but in the event of any ambiguity in their natural meaning they shall be interpreted so as to give best effect to the Overriding Principle.

4. In entering into the Agreement the parties' Overriding Objective is by working together in accordance with the terms of the Agreement to achieve the successful delivery by the *Contractor* of the *works*: -

4.1 to the standard and functionality defined or as reasonably inferred from the *Employer*'s requirements set out in the Works Information to a quality which meets or exceeds these requirements;

4.2 at a cost to the *Employer* that offers best value for money taking into account whole life (as well as capital) costs over the proposed design life of the *works* through the application of the principles of value engineering;

4.3 to the timescale acceptable to the *Employer* and agreed between the parties without compromising health and safety or the *Employer*'s required standards and the quality of the completed *works* and in any event before the Completion Dates set out in the Agreement; and

4.4 with an appropriate allocation of the risks associated with the *works* to the party best able to manage such risks.

5. The *Contractor* shall carry out the management and be responsible for the delivery, design and construction of the *works* in accordance with the Agreement and shall work and liaise with the *Employer*, the Supply Chain and any Professional Adviser as necessary or appropriate or as requested by the *Employer* in order to achieve the Overriding Objective.

6. The *Contractor* shall engage persons from the key people set out in the Contract Data — Part two in the performance of the *works* to be provided by the *Contractor* under the Agreement

and shall not replace any of the key people without the approval of the *Employer* (such approval not to be unreasonably withheld). The *Contractor* will ensure that where a member of its key personnel is replaced that they have the skills, qualifications, experience and ability to provide the best service to the *Employer*.

7. When engaging its Supply Chain the *Contractor* shall either use the appropriate contract from the NEC3 Suite of Contracts and where they do not use the NEC3 Suite of Contracts they shall ensure that the forms of contract used reflect the principles and procedures identified in the Agreement and the NEC3 Suite of Contracts.

8. In relation to personal data: -

8.1 The *Contractor* shall only undertake processing of personal data reasonably required in connection with the *works* and services, shall only process such personal data in accordance with the *Employer*'s written instructions.

8.2 The *Contractor* shall not disclose personal data to any third parties other than: -
8.2.1 to the extent required for the proper provision of the *works* and services; and/or
8.2.2 to the extent required by law or under a court order.
Provided that disclosure under Clause 8.2.1 is made subject to written terms substantially the same as and no less stringent than the terms contained in this clause 8.

8.3 The *Contractor* shall bring into effect and maintain all reasonable technical and organisational measures to prevent unauthorised or unlawful processing of personal data and accidental loss or destruction of or damage to personal data including but not limited to taking reasonable steps to ensure the reliability of staff having access to the personal data.

8.4 If at any time during the period of the Agreement the *Contractor* or any person or persons engaged by him (whether as an employee or an independent contractor):

8.4.1 is furnished by the *Employer* with or otherwise obtains (with or without the knowledge or consent of the *Employer*) access to confidential or personal or commercial data owned or held by the *Employer*, or
8.4.2 at any time makes improper use of or either directly or indirectly discloses the copies of any such data to a third party or allows the third party unauthorised access to it; or
8.4.3 is responsible for or causes the loss, damage, destruction of all or any such data;

the *Contractor* shall make good to the *Employer* any loss or damage suffered by the *Employer* and any cost and expenses incurred by the *Employer* in relation to any claims or proceedings brought against the *Employer*.

9. Throughout the period of the Agreement the performance of the *Contractor* shall in relation to the *works* be monitored against the Key Performance Indicators defined in the Works Information.

10. During the period of the Agreement amendments may be made to the Key Performance Indicators by agreement between the *Employer* and the *Contractor* except where the *Employer* is required by the Scottish Government or regulatory bodies to provide Key Performance Indicators. In such cases the *Employer* will provide information on any requirements to the *Contractor* as soon as reasonably practicable.

11. At **[2]** monthly intervals or at such other intervals as the parties may agree during the performance of the Agreement, the *Employer* and the *Contractor* shall undertake formal reviews of the performance of the *Contractor* against its Key Performance Indicators. [In addition the performance of the *Employer* against the *Employer*'s Key Performance Indicators as set out in the Agreement will be monitored.] The *Employer* and the *Contractor* will discuss any way in which the performance of the *Contractor* and/or the *Employer* may be improved.

12. The formal review process will also include an open book process where the *Contractor* will be subject to an independent ongoing review.

13. The *Contractor* shall keep a comprehensive record as specified by the *Employer* of all performance monitoring carried out under the Agreement in such form as the *Employer* may reasonably request for a period of 6 years after the expiry or earlier termination of this Agreement and shall provide copies of such records to the relevant Project Director for the works to enable him to record, disseminate and compare the performance of the *Contractor*. Each record shall be retained in a format that can be read and copied and kept with the IT requirements on an electronic based database.

14. Throughout the Agreement the *Contractor* will be required to operate an open book accounting regime providing the *Employer* or their nominated representative with access to such relevant financial or other information as may be required to provide evidence that the Overriding Principle is being applied and that the Overriding Objective is being met. This open book accounting regime will be applied to the Specified Subcontractors and the Specified Consultants therefore the *Contractor* should make all Specified Subcontractors and Specified Consultants aware of this requirement.

15. The open book regime referred to above will be achieved in three stages:

15.1 a detailed review on the valuation of the *Contractor* and the Specified Subcontractors and Specified Consultants processes, costing structures and accounts to ensure that systems are in place to enable the Contractor and the Specified Subcontractors and Specified Consultants to work within the Agreement.

15.2 ongoing financial audits to ensure that costs fall within the contractual definition of Defined Cost.

15.3 ongoing reviews of the procurement processes to ensure that all parties are operating systems for the delivery of the *works* in accordance with this agreement.

16. The *Contractor* shall throughout the period of the Agreement look for and seek to achieve in conjunction with the Supply Chain continuous improvement in the quality and functionality of the *works* while reducing low life costs, wastage, construction related accidents and the time taken to deliver the works. Innovation and best practice will be shared with the *Employer*.

17. To achieve the aim set out in Clause 16 the *Contractor* shall actively participate in the continuous improvement "learning sets" with the Project Director and the Supply Chain in relation to the Agreement. This commitment is likely to involve meetings at least once every **[3]** months in relation to the works and meetings at least once every **[6]** months in relation to the lessons to be learned. The *Contractor* shall also use reasonable endeavours to procure the involvement of members of its Supply Chain in such learning sets where considered appropriate.

**This is Appendix 2 to the foregoing Agreement between Greater Glasgow and Clyde Health Board**
**and**
**[Contractor]**

**GREATER GLASGOW AND CLYDE HEALTH BOARD** of Dalian House, 350 St Vincent Street, Glasgow G3 8YZ ("the *Employer*"); and

[ ] having its principal place of business at [ ] (the "*Contractor*").

WHEREAS

1. The *Employer* and the *Contractor* entered into the Agreement dated [ ] whereby the *Contractor* is to Provide the Works in connection with the New South Glasgow Hospital Project.

2. The *Employer* wishes the *Contractor* to continue to Provide the Works by commencing and carrying out:

| | | |
|---|---|---|
| Stage 3 | Design and Construct New Hospitals Building | Design and Construction of New Adult Acute and New Children's Hospitals. Consecutive to Stage 2. |

NOW IT IS AGREED THAT

1. The *Employe*r hereby authorises the *Contractor* to commence and carry out Stage 3 of the *works* ie the Design and Construction of the New Adult Acute and New Children's Hospitals.

2. The *Contractor* will continue to Provide the Works in accordance with the Agreement.

3. The Agreement is amended and modified to the following extent:-
**[***Any amendments to Works Information and/or Contract Data which will have come about during Stage 2 including adjusted target/Maximum Price***]**

EXECUTED for and on behalf of the *Employer* at [ ] 20[ ] as follows:-
……
(Authorised official)
Before this witness: -
…… ….. Full name
…… ….. Address

EXECUTED for and on behalf of the *Contractor* at [ ] day of [ ] 20 [ ] as follows: -
……
(Director/Authorised Signatory)
Before this witness: -
…….. Full name
…….. Address

**This is Appendix 3 to the foregoing Agreement between Greater Glasgow and Clyde Health Board**
**and**
**[Contractor]**

**GREATER GLASGOW AND CLYDE HEALTH BOARD** of Dalian House, 350 St Vincent Street, Glasgow G3 8YZ ("the *Employer*"); and

[ ] having its principal place of business at [ ] (the "*Contractor*").

WHEREAS

1. The *Employer* and the *Contractor* entered into the Agreement dated [ ] whereby the *Contractor* is to Provide the Works in connection with the New South Glasgow Hospital Project.

2. The *Employer* wishes the *Contractor* to continue to Provide the Works by commencing and carrying out:

| Stage | Heading | Outline Activities |
|---|---|---|
| Stage 3A | Demolition of Surgery Block | Demolition of surgical block and associated buildings and completion of soft landscaping. |

NOW IT IS AGREED THAT

3. The *Employer* hereby authorises the *Contractor* to commence and carry out Stage 3A of the *works* ie the Demolition of surgical block and associated buildings and completion of soft landscaping.

4. The *Contractor* will continue to Provide the Works in accordance with the Agreement.

5. The Agreement is amended and modified to the following extent: -

**[***Any amendments to Works Information and/or Contract Data which will have come about during Stage 2 including adjusted target/Maximum Price***]**

EXECUTED for and on behalf of the *Employer* at [ ] 20[ ] as follows: -

.....
(Authorised official)
Before this witness: -
..... ..... Full name
..... ..... Address

EXECUTED for and on behalf of the *Contractor* at [ ] day of [ ] 20 [ ] as follows: -

.....
(Director/Authorised Signatory)
Before this witness: -
..... Full name
..... Address

**CONTRACT DATA PART ONE —**
**DATA PROVIDED BY *THE EMPLOYER***

**Contract Data Part one - Data provided by the *Employer***
**Statements given in all Contracts**

**1. General**

- The conditions of contract are the core clauses and the clauses for main Option C, dispute resolution Option W2 and Secondary Options — X2, X4, X7, X13, X15, X16, X17, and Z of the NEC3 Engineering and Construction Contract (June 2005).
- The works are Management and delivery of design and construction services for the New South Glasgow Hospital Project as the *works* are more specifically referred to in the Works Information
- The *Employer* is
  Name: Greater Glasgow and Clyde Health Board
  Address: Dalian House, 350 St Vincent Street, Glasgow G3 8YZ
- The *Project Manager* is
  Name: Currie & Brown Limited
  Address: 140 West Campbell Street, Glasgow, G2 4TZ
- The *Supervisor* is
  Name: [tba]
  Address: [tba]
- The *Adjudicator* is
  Name: [tba]
  Address: [tba]
- The Works Information is in:
  ITPD Volume One, Appendix C — The Contract Documents: Part 7
- The Site Information is in:
  ITPD Volume One, Appendix C — The Contract Documents: Part 8
- The boundaries of the site are set out in
  ITPD Volume One, Appendix C — The Contract Documents: Part 8
- The *language* of the contract is English.
- The *law of the contract* is the law of Scotland subject to the jurisdiction of the Courts of Scotland.
- The *period for reply* to a communication is
  - Reply to *Contractor's* design package submitted for acceptance (Clause 21.2) six (6) weeks
  - Reply to a *Contractor* notification of a compensation event (clause 61.4, fourth paragraph, first bullet point) is four (4) weeks
  - Reply to all other communications unless otherwise stated in this contract two (2) weeks
- The *Adjudicator* nominating body is:

[The Royal Institute of Chartered Surveyors]

- The *tribunal* is the Scottish Courts
- The following matters will be included in the Risk Register:

  **[Items to be listed once agreed as Contractor Risks during Competitive Dialogue Period]**

**3. Time**

- The *starting date* is [Date]
- The access dates are

| | Part of the Site | Date |
|---|---|---|
| 1. | | |
| 2. | | |
| 3. | | |
| 4. | | |

- The Contractor submits revised programmes at intervals no longer than four (4) weeks alternatively calendar monthly

**4. Testing and Defects**

- The defects date is (i) in relation to structure, external fabric and finishes and internal fabric and finishes is [104] Weeks after Completion of the relevant section of the *works* and (ii) in relation to all services, lifts, plant and equipment [156] Weeks after Completion of the relevant section of the *works* .
- The defect correction period is two (2) weeks except that:
  - Subject to the following bullet, the defect correction period for accommodation occupied by the NHS for patients on an operational basis is 2 days unless notified as an urgent repair requiring immediate attention
  - The defects correction period for works which are urgent and might affect the safe and secure running of the site eg security systems, fire alarm systems, building heating systems, building potable water supplies, sanitation, building mains electricity supply systems (excluding works to be carried out by utility providers) is 24 hours.

**5. Payment**

- The *currency of this contract* is the pound sterling (£)
  The *assessment interval* is four (4) weeks alternatively calendar monthly.
  The interest rate is 5% per annum

**Optional Statements for Clause 5**

The Contractor's share percentages and the share ranges are

| *share range* | *Stage 1: Contractor's share percentage* | *Stage 2: Contractor's share percentage* | *Stage 3 and 3A: Contractor's share percentage* |
|---|---|---|---|
| Less than Target Price | [35 %] | [20%] | [20%] |
| Between Target Price and Maximum Price | [35%] | [40%] | [40%] |
| Greater than Maximum Price | [100%] | [100%] | [100%] |

The *Contractor* prepares forecasts of Defined Cost for the *works* at intervals no longer than four (4) weeks alternatively calendar monthly.

**6. Compensation Events**

The place where weather is to be recorded is: the Site
The weather measurements to be recorded each month are
the cumulative rainfall (mm);
the number of days with rainfall more than 5mm;
the number of days with minimum air temperatures less than Zero degrees Celsius;
the number of days with snow lying at 09.00 hrs GMT;
and these measurements:
The weather measurements are supplied by [The Met Office].
The weather data are the records of past weather measurements for each calendar month which were recorded at [ ] and which are available from [ ].

**Where no recorded data are available**

Assumed Value for ten years return weather data for each weather measurement for each calendar month are:

**8. Risks and Insurance**

The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the works, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the Contractor) caused by activity in connection with this contract for any one event is

**[£20,000,000.00 (twenty million pounds sterling)]**

The minimum limit of indemnity for insurance in respect of death or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with this contract for any one event is

**[£10,000,000.00 (ten million pounds sterling)]**

The amount of the minimum limit of indemnity for insurance (CAR) in respect of loss or damage to the works in connection with this contract is the replacement cost
And the amount for replacement of any Plant and Materials provided by the Employer is

**[£10,000,000.00 (ten million pounds sterling)]**

The amount of the minimum limit of indemnity for Professional Indemnity Insurance for design liability in connection with this contract for any one event is

**[in any one event / *in the aggregate of £20,000,000 (twenty million pounds sterling)]**

Contractor to provide documentary evidence to which insurance option is being provided

The *Contractor* provides all other insurances required by the law
[The *Employer* provides these insurances from the Insurance Table
1. **Insurance against:**
   Cover/indemnity is:
   The deductibles are:
2. **Insurance against:**
   Cover/indemnity is:
   The deductibles are:

The *Employer* provides these additional insurances
1. **Insurance against:**
   Cover/indemnity is:
   The deductibles are:
2. **Insurance against:**
   Cover/indemnity is:
   The deductibles are:] [Not required]

[The Contractor provides these additional insurances
1. **Insurance against:**
   Cover/indemnity is:
   The deductibles are:
2. **Insurance against:**
   Cover/indemnity is:
   The deductibles are:]

**Optional Statements**

**If the Employer has decided the completion date for the whole of the *works***

The Completion date for the whole of the *works* is 30 August 2016

**If no programme is identified in part two of the Contract Date**

The Contractor is to submit a first programme for acceptance within four (4) weeks of the Contract Date

**If the Employer has identified work which is to meet a stated *condition* by a *key date***

The *key dates* and *conditions* to be met are

| **Condition to be met** | **key date** |
|---|---|
| Stage 1: Completion of handover of labs | 31st January 2012 |
| Stage 2: Detailed design to FBC | 31st October 2010 |
| Stage 3: New Hospitals | 31st January 2015 |
| Stage 3A: Surgical Block | 30th August 2016 |

**If there are additional *Employer's* risks**

- These are the additional Employer's risks
  1. Completion is delayed as a result of a Contractor's insurable event; insurable events include fire, lightening, explosion, storm, tempest, flood bursting or overflowing water tanks, apparatus or pipes, earthquake, aircraft and other aerial devices or articles dropped there from.
     Clarification - limit of the Employer's risk:
     Where there is delay as a result of the Contractor's insurable event the completion date is changed, but there is no effect on the Prices; cost incurred in remedy of the event is a Disallowed Cost. The Project Manager notifies a compensation event if timing or sequence of operations is to be changed to alleviate the effect of the delay.
  2. Any variance in the rate of insurance due to market conditions, will form part of the project specific Maximum Price.
  3. The works are delayed or suspended due to an act of terrorism
  4. [*others*]

**If Options X5 and X7 are used together**

- Delay damages for the sections of the *works*

| Section | Description | Amount per day |
|---|---|---|
| 1 | Laboratories | |
| 2 | Detailed Design New Hospitals | |
| 3 | New Hospital | |
| 3A | Demolition of Surgical Block | |

**If Option X13 is used**

The amount of the performance bond is 5% of the Maximum Price

**If Option X16 is used**

- The retention percentage is

Stage 1 - 5%
Stage 2 - 10%
Stage 3 – 5%
Stage 3A – 3%

**[If Option X7 is used (whether or not Option X5 is also used)** - Project specific

- Delay damages for the whole of the works are [ ] per day**]**

**If Option X17 is used**

- The amounts for low performance damages are

| **Amount** | **Performance level** |
|---|---|
| | for |
| | for |
| | for |

**If Option Z is used**

*The additional conditions of contract are*

**Amendments and additions to existing Clauses:**

**Z 1 Additions to Clause 11.2 - Identified and Defined Terms**

11.2(34) "Collateral Warranty Agreement" is an agreement in the relevant form attached as Appendix Parts 1 and 2 hereto to be granted in favour of the *Employer* by the *Contractor* and (i) each Specified Subcontractor and (ii) each Specified Consultant.

11.2(35) The "Supply Chain Member (SCM)" *is* the individuals and organisations appointed by the *Contractor* and approved by the *Employer* who will be responsible for the majority of the management and delivery of design and construction (and where appropriate operation) in relation to the *works*.

11.2(36) "Law" is (a) any applicable statute or proclamation or any delegated or subordinate legislation; (b) any enforceable community right within the meaning of the European Communities Act 1972; (c) any applicable guidance, direction or determination with which the *Employer* and the *Contractor* is bound to comply to the extent that the same are published and publicly available or the existence or contents of them have been notified to the *Contractor* by the *Employer*; and (d) any binding judgment of a relevant court of law which is binding precedent in Scotland.

11.2(37) "Documents" includes, without limitation, all technical information (whether or not stored in computer systems), drawings, models, calculations, specifications, schedules, details, plans, programs, budgets, reports or other documents, work or other things provided or

to be provided by or on behalf of the *Contractor* in connection with the works

11.2(38) "Agreement" means the form of agreement entered into between the *Employer* and the *Contractor* in respect of the works forming part of this contract

11.2(39) "Hospital" means together the new acute adult hospital and the new children's hospital as the same are more specifically described in the *Works Information*.

11.2(40) "Laboratories" means the new laboratory block as the same is more particularly described in the *Works Information.*

11.2(41) "Laboratory Consultants" means [*BMJ* ]

11.2(42) "Novation Agreement" means an agreement in the relevant form set out in Appendix Part 3 hereto

11.2(43) "Specified Subcontractors" means those Supply Chain Members specified as such in the Works Information

11.2(44) "Specified Consultants" means those Supply Chain Members specified as such in the Works Information.

**Z 2 Amendment to clause 11.2 (25) - Identified and Defined Terms**

At end of first bullet point after 'records' add: 'including amounts for invoices that the Contractor is liable to pay but has not paid within 28 days from having been included in the Project Manager's assessment',

**Z 3 Amendment to clause 11.2 (29) - Identified and Defined Terms**

Delete "the Project Manager forecasts will have been paid by the Contractor before the next assessment date" and replace with "the Contractor has paid"

**Z4 Amendment to Clause 17.1 – Ambiguities and inconsistencies**

Add the following sentence to the end of Clause 17.1
"Instructions issued under this clause do not necessarily give rise to a compensation event"

**Z5 Addition to Clause 17 – Ambiguities and inconsistencies**

"17.2 The Project Manager and the Contractor agree that inconsistencies and ambiguities between (a) the NHS Mandatory Documentation and NHS Guidance Documentation and building control or (b) between the NHS Mandatory Documentation and NHS Guidance Documentation and the Schedules of Accommodation or (c) between the NHS Mandatory Documentation and NHS Guidance Documentation and any information issues to the Contractor by the Employer, dealt with in accordance with the procedures set out in the Works Information."

**Z6 Amendment to Clause 19 – Prevention**

Add new Clause 19.2
"Notwithstanding the provisions of Clause 60 and subject to Clause 19.4, the *Contractor*'s sole right to payment in respect of the occurrence of an event under Clause 19.1 is as provided in Clause 93."
Add new Clause 19.3
"The *Contractor* and the *Employer* take all reasonable steps to mitigate the effect of the occurrence of an event under Clause 19.1."
Add new Clause 19.4
"If the *Project Manager* instructs the *Contractor* to take steps to Provide the Works in a manner not prevented by the occurrence of an event under Clause 19.1, and such instruction changes the Works Information, the *Contractor* is entitled to notify a compensation event under clause 60."

**Z7 Amendment to Clause 21.1 - The *Contractor's* design**

At the end of the Clause add: "the *Contractor* designs the *works* using the degree of skill and care that would reasonably be expected of a competent professional

designer experienced in carrying out design activities of a similar nature, scope and complexity to those comprised in the *works*.

**Z8 Amendment to Clause 21.2 – The *Contractor's* design**

Add at the end "The *Project Manager* replies to the *Contractor's* submission within the *period for reply.* A failure by the *Project Manager* to reply within the *period for reply* is not deemed acceptance of the *Contractor's* design.

**Z9 Amendment to Clause 22.1 – Using the *Contractor's* design**

Delete and replace with: -

"22.1 Subject to Clause 21, the copyright and all intellectual property rights in the Documents remains vested in the *Contracto*r or the person responsible for the production (as the case may be).

22.2 Where documentation (including drawings) is (or are) provided by the *Employer* copyright and such documentation and drawings remain vested in the *Employe*r.

22.3 The *Employer* has an irrevocable, non-exclusive royalty free licence to copy and use the Documents and to reproduce the designs contained in them for any purpose relating to the *works* including (but without limitation) the construction, completion, maintenance, promotion, advertisement, reinstatement, repair, any extension of the *works* and for dissemination within the NHS as part of the feedback of information to better or enable the NHS to realise improvements in its methods and practice of construction and in the design and procurement of its construction.

22.4 The *Contractor* shall not be liable for any use of the *Employer* of the Documents for any purpose other than that for which the same is prepared and provided."

**Z10 Addition to Clause 31 – The programme**

"31.5 The *Contractor* complies with section 6.8 of the Employer's Requirement section of the Works Information in connection with commissioning and handover. The *Contractor* accepts and agrees that the *Project Manager* is not under any obligation to certify Completion unless and until the *Contractor* fully complies with such requirements."

**Z11 Amendment to Clause 51 – Payment**

In the first sentence of Clause 51.1 delete "one week" and replace with "two weeks".
In the first sentence of Clause 51.2 delete "three" and replace with "six".

**Z 12 Addition to Clause 51 - Payment**

51.5 If the Defined Cost plus the Fee at an assessment date exceeds the amount for the assessment interval as shown in the *Contractor*'s activity schedule based target price cash flow forecast, then the *Project Manager* certifies payment up to the amount forecast. Any amount exceeding the forecast is not certified but held over to the next assessment interval, where if the Defined Cost plus the Fee at the next assessment date again exceeds the *Contractor*'s activity schedule based target price cash flow forecast for the assessment interval the process is repeated. This clause does not apply where the Contractor provides a valid and acceptable reason for an exception to the limitation of the *Project Manager*'s assessment certification.

51.6 If the *Employer* intends to withhold payment of any amount due under the contract he notifies the *Contractor* no later than 7 days before the final date for payment of the sum due specifying:

- the amount proposed to be withheld
- the ground for withholding payment or
- if there is more than one ground, each ground and the amount contributable to it

**Z 13 Amendments to Clause 53 – The *Contractor*'s share**

In Clause 53.1, add at the end of the first sentence, "for each Stage"
In Clause 53.1, in the second sentence add after "of the Prices", "for each Stage"
In Clause 53.2, after "total of the Prices" where it appears twice, add "for each Stage"
In Clause 53.3 after "final total of the Prices", add "for each Stage"
In Clause 53.4 after "final total of the Prices", add "for each Stage"

**Z14 Amendment to Clause 60.1(19)**

Add new bullet point 6, "does not arise from a Sub-Contractor ceasing to trade or becoming insolvent (or other equivalent event)"
Add at the end, "provided that the occurrence of such event only entitles the Contractor to a change to the Completion Date or a change to a Key Date and not to a change in the Prices and Clauses 61 – 65 are interpreted accordingly."

**Z 15 Amendment to Clause 61.4 - Notifying of Compensation events**

In line 15 delete "two" and substitute "four"

**Z16 Amendment to clause 80.1 - Employer's Risks**

Bullet point 1, sub-bullet 1 – delete.
Bullet point 3, sub-bullet 1 second line after 'power,' add 'terrorism (except to the extent insured by the *Contractor* in relation to the works at the time of any loss or damage),'

**Z17 Addition to Clause 84.2 – Insurance cover**

Add at the end of line 3 before the full stop, "except in the case of professional indemnity insurance which is in the name of the *Contractor* and runs from the *starting date* to the date twelve years after Completion"
Add to the Insurance Table:

| | |
|---|---|
| Liability for negligent management or design – professional indemnity insurance | The amount specified in the Contract Data for any one claim or series of claims arising out of one single incident during any period of insurance which shall not be more than 12 months from the date the *Contractor* starts to Provide the Works for a period of twelve years from Completion, with insurers of good repute carrying on business in the European Union provided always that such insurance is available at rates and terms which are commercially reasonable to contractors of a similar size and standing in the UK In determining whether or not insurance is available as aforesaid, the financial characteristics and claims' record of the Sub-Contractor shall be ignored. |

**Z18 Amendment to Clause 91.7 – Reasons for Termination**

Add at the end "notwithstanding that a delay to the Completion Date has previously been notified to the Contractor in respect of such event"

**Z19 Addition to Clause 91 - Reasons for termination**

91.8 The Employer may terminate during or on completion of Stage 2 or if the submitted Full Business Case (FBC) proposal is not acceptable (R22)

**Z20 Addition to 92.2 - Procedures on termination**

P5 The Contractor hands over to the Project Manager all hard copy and electronic data for the Contractor's design including material prepared by a subcontractor, the Works Information for the Contractor's design and Site

Information obtained so far as prepared at termination. At such termination the Employer has the right to use such material for completion of the *works*.

**Z21 Termination Table — additions**

| Terminating Party | Reason | Procedure | Amount Due |
|---|---|---|---|
| The *Employer* | R22 | P1, P2 and P5 | A1 (excluding principle bullet point 3) and A2 |

**Z22 Amendment to Clause 93.7 - Payment on Termination**

Add new Clause: - "On termination, the *Employer* shall not be liable to the *Contractor* for loss of profit, loss of expectation of profit, loss of use, loss of production or indirect and consequential damages."

**Z23 Addition to Clause W2.1(1) – Dispute Resolution**

Add at the end: - "The word "dispute" in this Clause W2 includes any difference under or in connection with this contract".

**Z24 Addition to Clause W2.3(8) – the adjudication**

After "reasons" add the words, "(which will be in writing)"

**Z25 Addition to Clause W2.3(11) – The adjudication**

Delete the first sentence and replace with, "The decision of the *Adjudicator* is binding until the dispute is finally determined by the *tribunal* or by agreement."

**Z 26 New Clause — Assignation**

- The *Employer* has the right to assign this contract to another NHS body without having to seek the *Contractor*'s consent.
- The *Employer* notifies the *Contractor* of the intention to assign the contract to another NHS body.
- The *Employer* notifies the *Contractor* of the assignation of the contract to another NHS body

**Z27 New Clause - Confidentiality**

Z27.1 The *Contractor* shall not append their name or give authority to the appending of their name to any publicity concerning this agreement or the works or indulge in any publicity concerning the works without the prior written consent of the *Employer*.

Z27.2 The *Contractor* warrants the accuracy of all information of a legal, commercial or financial nature provided by them to the *Employer*. Details must be provided by the *Contractor* to the *Employer* regarding any matter as and when they take place, which affects the legal, commercial or financial standing of the *Contractor.*

Z27.3 The *Contractor* undertakes to treat any information derived from or obtained in the course of the Agreement as confidential and to take all the necessary precautions to ensure that its employees and sub-contractors and their employees treat any information as confidential and in doing so the *Contractor* shall ensure that its employees and sub-contractors and their employees keep secret and do not disclose information of a confidential nature by him or them by reason of the Agreement.

**Z28 New Clause – Data Protection**

Z28.1 The *Contractor* warrants and will at all times comply with the provisions of the Data Protection Act 1996 ("the 1996 Act") and any other subordinate legislation enacted pursuant thereto.

Z28.2 The *Contractor* shall only undertake such processing of personal data as is reasonably required in connection with the performance of its obligations under pursuant to the Agreement. To the extent required by the 1996 Act the *Contractor* shall notify the Information Commissioner of any processing which is being carried out and maintain any such notification in full force and effect.

Z28.3 The *Contractor* in its role as Data Processor undertakes to comply with the obligations imposed on a Data Controller under the 7th Data Protection Principle as set out in Part 1 of Schedule 1 of the 1996 Act in respect of all personal data processed pursuant to this Contract.

Z28.4 The *Contractor* shall not, other than in accordance with the 1996 Act, transfer any personal data to any country or territory outside the European Economic Area.

Z28.5 Terms defined within the 1996 Act shall have the same meaning when used in this clause.

**Z29 New Clause – Freedom of Information**

The *Contractor* co-operates, facilitates, supports and assists the *Employer* to comply with the Freedom of Information (Scotland) Act 2002 and any codes of practice applicable from time to time relating to access to public authorities' information. In the event that the *Employer* is required to provide information to any person as a result of a request made to it under such Act and/or codes, the *Employer* shall adhere to the requirements of such Act and/or codes in disclosing information relating to this Agreement, the Project Documents and the *Contractor*.

**Z30 New Clause: Collateral Warranty Agreements**

Z30.1 Immediately following execution by each Specified Subcontractor of its subcontract the *Contractor* delivers to the *Employer* Collateral Warranty Agreements from each Specified Subcontractor in favour of the *Employer* together with a copy of the relevant subcontract.

Z30.2 Within 10 days of request by the *Employer* the *Contractor* delivers to the *Employer* Collateral Warranty Agreements from each Specified Consultant in favour of the *Employer* together with a copy of the relevant appointment.

**Z31 New Clause – Novation Agreements**

On execution of the Agreement, the *Contractor* enters into a Novation Agreement with the *Employer* and the Laboratory Consultant. At the same time, the *Contractor* delivers to the *Employer* a Collateral Warranty Agreement from the Laboratory Consultant generally in terms of the relevant Collateral Warranty Agreement.

**Z32 New Clause – Failure to deliver Collateral Warranty Agreements and/or Novation Agreements**

Clause 50(3) applies when any subcontract, Collateral Warranty Agreement or Novation Agreement is not supplied as required pursuant to Clauses Z30 and Z31.

**Z33 New Clause – Third Parties**

The *Contractor* performs its obligations under this contract in such a manner and at such times that no act, omission or default of the *Contractor* in relation thereto constitutes, causes or contributes to any breach by the *Employer* of any third party agreement or any other obligation it may owe to a third party relating to the works, details of which the *Contractor* was made aware of prior to the Contract Date.

**Z34 New Clause - Inconsistencies**

In the case of any inconsistency between these Additional Conditions of Contract and the other terms of the contract, the Additional Conditions of Contract prevail. In the event of any inconsistency between the Core Clauses and any other term of this contract (except these Additional Conditions of Contract) the Core Clauses prevail.

**Z35 New Clause – Approval**

No inspection, testing, approval or review nor any omission to inspect, test, approve or review on the part of the *Employer* diminishes any duty or liability under this contract of the *Contractor*.

**Z36 New Clause – Set off**

Without derogating from its rights under this contract or at Law, whenever any sum of money is recoverable by the *Employe*r against the *Contractor*, such sum is deducted from any sum due or which may become due to the *Contractor* under this or any other contract with the *Employer*.

**Z37 New Clause – Security**

Z37.1 The *Contractor* submits to the *Project Manager* details of people who are to be employed by him and his Subcontractors in connection with the *works*. The details include a list of names and addresses, the capacities in which they are employer and other information required by the *Project Manager*.

Z37.2 The *Project Manager* may instruct the *Contractor* to take measures to prevent unauthorised persons being admitted on the Site. The instruction is a compensation event if the measures are additional to those required by the Works Information.

Z37.3 Employees of the *Contractor* and his Subcontractors are to carry an Employer's pass whilst they are on the parts of the site stated in the Contract Data.

Z37.4 The *Contractor* submits to the *Project Manager* for acceptance a list of the names of the people for whom passes are required. The *Project Manager* issues the passes to the Contractor. Each pass is returned to the *Project Manager* when the employee no longer requires access to that part of the Site or after the *Project Manager* has given notice that the employee is not to be admitted to the Site.

Z37.5 The *Contractor* does not take photographs of the Site or the *works* or any part of them unless he has obtained the approval of the *Project Manager*.

Z37.6 The *Contractor* takes the measures needed to prevent his and his Subcontractors' people taking, publishing or otherwise circulating such photographs.

**Schedule of Cost Components**

Delete the Schedule of Cost Components and replace with the Schedule of Cost Components in ITPD Volume One, The Contract Documents: Part 4.

This is the Appendix referred to in the foregoing Contract Data Part One

1. Form of Collateral Warranty Agreement from Specified Sub-Contractors
2. Form of Collateral Warranty Agreement from Specified Consultants
3. Form of Novation Agreement

**SUB-CONTRACTOR'S COLLATERAL WARRANTY**

This Agreement is among

(1) **GREATER GLASGOW HEALTH BOARD** of Dalian House, 350 St Vincent Street Glasgow, G3 8YZ ("the Beneficiary" which expression shall include its successors in title or permitted assignees under this Agreement)

(2) **[ ]** (Registered number [ ]) of [ ] (" Main Contractor" which term shall include any successor including any parties taking over the obligations of Main Contractor. under the Project Agreement)

(3) **[ ],** (registered number [ ]) whose registered office is at [ ] ("the Sub-Contractor")

WHEREAS:

A The Beneficiary has entered or is about to enter into an agreement with Main Contractor ("the Building Contract") in connection with the design and construction of the New South Glasgow Hospital, Govan, Glasgow ("the Project").

B The Main Contractor has engaged or is about to engage the Sub-Contractor under a [design and build] contract ("the Sub-Contract"), which expression shall include all documents incorporated therein and any agreed amendment thereto, to carry out [design and] works as more particularly described in the Sub-Contract ("the Sub-Contract Works"), which expression shall include any additional works performed by the Sub-Contractor under the Sub-Contract including in connection with any modifications or variations made thereunder.

C It is a condition precedent of the Building Contract that the Sub-Contractor, the Main Contractor and the Beneficiary enter into this agreement ("this Agreement").

NOW IT IS AGREED:

1 The Sub-Contractor warrants and undertakes to the Beneficiary that it has complied and will continue to comply with all the terms and obligations under the Sub-Contract on the Sub-Contractor's part to be performed and observed and shall complete the Sub-Contract Works in accordance with the Sub-Contract.

2. Without prejudice to Clause 1 of this Agreement, the Sub-Contractor further warrants and undertakes to the Beneficiary that:

2.1 it has exercised and will continue to exercise all the reasonable skill, care and diligence to be expected from a competent and qualified professional designer experienced in carrying out works similar in nature, size and complexity to the Sub-Contract Works in:

2.1.1 the design of the Sub-Contract Works; and

2.1.2 the selection of goods and materials for the Sub-Contract Works, and in particular in ensuring that it has not and will not specify for use in relation to the Sub-Contract Works any products or materials not in conformity with relevant British or European standards or Codes of Practice or which are at the time of specification generally known within the United Kingdom to an experienced professional designer of works such as the Sub-Contract Works to be deleterious to health and safety or to the durability of buildings and/or other structures and/or finishes and/or plant and machinery in the particular circumstances in which they are used;

2.2 the Sub-Contract Works will on completion satisfy all performance specifications and other requirements contained in the Sub-Contract;

2.3 the Sub-Contract Works and all materials and goods comprised therein will correspond as to description, quality and condition with the requirements of the Sub-Contract; and

2.4 the Sub-Contract Works will on completion comply with the requirements of the Sub-Contract in respect of compliance with Legislation, Guidance and Good Industry Practice (all as defined in the Sub-Contract);

Provided that:

2.5.1 the obligations of the Sub-Contractor under this Agreement shall be no greater in extent or quantity than if the Beneficiary had been named as joint employer with the Main Contractor under the Sub-Contract; and

2.5.3 the Sub-Contractor shall be entitled in any action or proceedings brought by the Beneficiary to rely on any limitation in the Sub-Contract and to raise the equivalent rights in defence of liability (excluding counterclaim and set-off in respect of amounts due to the Sub-Contractor under the Sub-Contract) as it would have if the Beneficiary had been named as joint employer with the Main Contractor under the Sub-Contract;

3. The Beneficiary has no authority to issue any direction or instruction to the Sub-Contractor in relation to the Sub-Contract unless and until the Beneficiary has given notice under Clauses 4 or 5, below. The Beneficiary or its appointee has no liability to the Sub-Contractor in relation to amounts due under the Sub-Contract unless and until the Beneficiary has given notice under Clauses 4 or 5.

4. The Sub-Contractor agrees that it will, if so required by notice in writing given by the Beneficiary, subject to Clause 6, below, accept the instructions of the Beneficiary or its appointee, as the case may be, (which for the avoidance of doubt and without limitation may include a third party appointed by the Beneficiary to act as "the Employer" under the Sub-Contract) to the exclusion of the Main Contractor in respect of the Project upon the terms and conditions of the Sub-Contract. The Main Contractor acknowledges that the Sub-Contractor shall be entitled to rely on a notice given to the Sub-Contractor by the Beneficiary under this Clause 4 and further acknowledges that such acceptance of the instructions of the Beneficiary or its appointee, as the case may be, to the exclusion of the Main Contractor shall not constitute any breach of the Sub-Contractor's obligations to the Main Contractor under the Sub-Contract.

5. The Sub-Contractor further agrees that it will not without first giving the Beneficiary not less than 35 days notice in writing exercise any right or purported right it may have to determine its employment under the Sub-Contract, treat the same as having been repudiated by the Main Contractor, or discontinue the performance of any duties or obligations thereunder. Further, the Sub-Contractor shall within 14 days of giving the said notice, provide statements to the Beneficiary containing the following:

   5.1 all amounts properly due and payable to the Sub-Contractor under the Sub-Contract on or before the date of issue of the said notice which remain unpaid;

   5.2 in the reasonable estimation of the Sub-Contractor, the amount of any monetary claim (if any) asserted by the Sub-Contractor against the Main Contractor under the Sub-Contract arising out of or in connection with the breach for which the said notice was served; and

   5.3 where the Sub-Contractor intends to terminate the Sub-Contract due to some default or breach of contract of a non-financial nature:

      5.3.1 the provision of the Sub-Contract alleged to have been breached or not fulfilled;

      5.3.2 supporting information in reasonable detail to enable the Beneficiary to identify the material facts;

5.3.3 the steps reasonably required to remedy the specified breaches or conditions not fulfilled;

5.3.4 the time within which the specified steps can reasonably be expected to be taken;

5.3.5 (if applicable) the amount of damages claimed and the basis of their calculation; and

5.3.6 (if applicable) the relief to be sought.

The Sub-Contractor warrants to the Beneficiary that to the best of the Sub-Contractor's knowledge and belief, having made all proper and appropriate enquiries, the statements submitted under this Clause 5 shall be true, complete and accurate statements of the amounts to which the Sub-Contractor considers itself entitled. In the event that the Sub-Contractor shall delay in giving such notice and information within the said 14 days, the period of 35 days shall be extended to correspond with the period of any such delay. The Sub-Contractor's right to determine its employment under the Sub-Contract or to treat the same as having been repudiated or to discontinue performance shall cease if, within the said 35 day period (extended as appropriate) and subject to Clause 6 the Beneficiary shall give notice in writing to the Sub-Contractor requiring the Sub-Contractor to accept the instructions of the Beneficiary or its appointee to the exclusion of the Main Contractor in respect of the Project upon the terms and conditions of the Sub-Contract.

6. It shall be a condition of any notice given by the beneficiary under clauses 4 or 5 above, that the beneficiary or its appointee, as the case may be, accepts liability for payment of the sums due under the sub-contract and detailed in the statements provided under clause 5 (and makes payment within a period of 28 days of such notice from the beneficiary), and for subsequent performance of the main contractor's obligations. Upon the issue of any notice by the beneficiary under clauses 4 or 5, the sub-contract shall remain in full force and effect as if no right of determination of its employment under the sub-contract, or any right of the sub-contractor to treat the sub-contract as having been repudiated by the main contractor. Had arisen and the sub-contractor shall be liable to the beneficiary and/or its appointee, as the case may be, under the sub-contract in lieu of its liability to the main contractor.

7. The beneficiary may at any time following the issue of any notice by the beneficiary under clauses 4 or 5, serve a further notice that following the expiry of 28 days from the giving of such notice the beneficiary will have no liability (save in respect of the beneficiary's antecedent breach) for any sums due or to become due to the sub-contractor in respect of the

period following expiry of the last mentioned 28 day period. The beneficiary may exercise any of its rights pursuant to clauses 4 or 5 on more than one occasion.

8. The sub-contractor shall maintain for the period expiring 12 years after completion (or equivalent event under the sub-contract) or until termination of the sub-contractor's employment under the sub-contract, professional indemnity insurance in an amount of not less than £[10]m [(ten million pounds)] sterling for any one claim or series of claims arising out of one single incident during any period of insurance which shall not be more than 12 months with insurers of good repute carrying on business in the european union provided always that such insurance is available at rates and terms which are commercially reasonable to contractors of a similar size and standing in the uk. In determining whether or not insurance is available as aforesaid, the financial characteristics and claims' record of the sub-contractor shall be ignored. The sub-contractor shall immediately inform the beneficiary if such insurance ceases to be available at rates and terms which are commercially reasonable in order that the sub-contractor and the beneficiary can consider alternative means of best protecting their respective positions in respect of the project in the absence of such insurance provided that the beneficiary shall be entitled to require the sub-contractor to maintain such lesser amount of professional indemnity insurance as is available to the sub-contractor at rates and terms which are commercially reasonable. As and when it is reasonably requested to do so by the beneficiary (but not more than once in any period of insurance) the sub-contractor shall produce for inspection documentary evidence satisfactory to the beneficiary (acting reasonably) that its professional indemnity insurance is being maintained.

9. The sub-contractor hereby grants to the beneficiary or its appointee and all those authorised by the beneficiary an irrevocable, non-exclusive and royalty-free licence (which shall be capable of assignation) to use and reproduce all technical information (whether or not stored in computer systems), drawings, models, calculations, specifications, schedules, details, plans, programs, budgets, reports or other documents, work or other things whatsoever provided or to be provided by the sub-contractor in connection with the project (the "**documents**") for any purpose relating to the project including (but without limitation) the construction, completion, maintenance, promotion, advertisement, reinstatement, repair and any extension of the project and for dissemination within the nhs as part of the feedback of information to better or enable the nhs to realise improvements in its methods and practice of construction and in the design and procurement of its construction. Such licence shall carry the right to grant sub-licenses and shall subsist notwithstanding that the sub-contract is terminated or the obligations and duties thereunder have been completed. For the avoidance of doubt, the grant of such licence or sub-licences shall not impose any additional liability on the sub-contractor. The sub-contractor will not assign or agree to assign the copyright in any of the documents without the prior written consent of the beneficiary. The sub-contractor shall on reasonable demand provide to the beneficiary or its appointee and those authorised by the

beneficiary additional copies of any documents on receipt of reasonable copying costs. The sub-contractor shall not be liable for any use by the beneficiary of any of the documents for any purpose other than those authorised by this clause.

10. This agreement may be assigned on a maximum of two occasions in whole or in part by the beneficiary to any party to whom the beneficiary's interest in the main contract or any part thereof is assigned or disposed to without the consent of the main contractor or the sub-contractor being required and any such assignation shall be effective upon written notice thereof being given to the main contractor and to the sub-contractor. No other or further assignation of this agreement, other than permitted by this clause, by the beneficiary or any other party shall be permitted. The sub-contractor shall not be entitled to assign or transfer any rights or obligations hereunder without the consent of the beneficiary.

11. The sub-contractor undertakes that it will not raise as a defence to any action by the beneficiary for alleged breach of this agreement the fact that the obligations of the main contractor to the beneficiary in respect of the design and construction of the sub-contract works have been released as a result of the termination of the building contract.

12. No failure, approval, act or forbearance on the part of the beneficiary in respect of any right of the beneficiary pursuant to this agreement shall constitute any waiver of any right of the beneficiary under or arising out of this agreement nor relieve the sub-contractor of any of its duties or obligations under or arising out of this agreement.

13. Any notice, consent or demand to be given or made by any party under this agreement (hereinafter called a **"notice"**) shall only be validly served if in writing and delivered personally or sent by pre-paid first class recorded delivery post to the following address and marked for the attention of the following person in the case of each party:

| Party: | **Address:** | Person: |
|---|---|---|
| Beneficiary | Dalian House, 350 St Vincent Street Glasgow, G3 8YZ | Head of Board Administration |
| Main Contractor | | |
| Contractor | | |

Any party may by Notice to the other party/parties change its address or the title of the person for whose attention Notices are to be given or made pursuant to this Clause. Any such Notice shall be deemed to have been received:

13.1 if delivered personally, at the time of delivery;

13.2 in the case of pre-paid first class recorded delivery post, on the first Business Day after the date of posting.

If any Notice is delivered after 5 p.m. on a Business Day, or at any time during a day which is not a Business Day, that Notice shall be deemed to have been received at 9 a.m. on the next Business Day. For the purposes of this Clause, "Business Day" means any day which is not a Saturday, a Sunday or a public holiday in Scotland. In proving service it shall be sufficient to prove that the envelope containing such Notice was properly addressed to the relevant party and either delivered personally to that address or delivered into the custody of the postal authorities as a pre-paid first class recorded delivery letter. For the avoidance of doubt, Notices shall not be validly served if sent by e-mail or fax

14 No action or proceedings for any breach of this Agreement shall be commenced against the Sub-Contractor after the expiry of twelve years from Completion or earlier termination of the Sub-Contractor's employment under the Sub-Contract.

15. The definitions of words and phrases used in this Agreement shall be those set out in the Sub-Contract except where expressly defined in this Agreement.

16. This Agreement shall be governed by and construed in accordance with Scots Law and the parties hereto submit to the exclusive jurisdiction of the Scottish Courts.

IN WITNESS WHEREOF these presents consisting of this and the preceding 8 pages have been executed as follows:

**SUBSCRIBED** for and on behalf of the said **GREATER GLASGOW HEALTH BOARD** at
on the day of 2009:

……. Authorised Signatory

……. Full Name

…….Authorised Signatory

……. Full Name

**SUBSCRIBED** for and on behalf of the said **[ ]** at
on the day of [ ] 2009
by:

…… DIRECTOR

…… FULL NAME

before this witness

…… Witness

…… Full Name

…… Address

**SUBSCRIBED** for and on behalf of the said **[ ]** at on the day of [ ] 2009:

under a Power of Attorney dated……

before this witness

…… Witness

…… Full Name

…… Address

…… Address

**CONSULTANT'S COLLATERAL WARRANTY**

This Agreement is among

(4) **GREATER GLASGOW HEALTH BOARD** of Dalian House, 350 St Vincent Street Glasgow, G3 8YZ ("the Beneficiary" which expression shall include its successors in title or permitted assignees under this Agreement)

(5) **[ ]** (Registered number [ ]) of [ ] (" Main Contractor" which term shall include any successor including any parties taking over the obligations of Main Contractor. under the Project Agreement)

(6) **[ ],** (registered number [ ]) whose registered office is at [ ] ("the Consultant")

WHEREAS:

A The Beneficiary has entered or is about to enter into an agreement with the Main Contractor ("the Building Contract") in connection with the design and construction of the New South Glasgow Hospital, Govan, Glasgow ("the Project").

B The Main Contractor has engaged or is about to engage the Consultant under an appointment ("the Appointment"), which expression shall include all documents incorporated therein and any agreed amendment thereto, to carry out [ ] services as more particularly described in the Appointment ("the Services"), which expression shall include any additional services performed by the Consultant under the Appointment including in connection with any modifications or variations made thereunder.

C It is a condition precedent of the Building Contract that the Consultant, the Main Contractor and the Beneficiary enter into this agreement ("this Agreement").

NOW IT IS AGREED:

1 The Consultant warrants and undertakes to the Beneficiary that it has complied and will continue to comply with all the terms and obligations under the Appointment on the Consultant's part to be performed and observed and shall complete the Services in accordance with the Appointment.

2. Without prejudice to Clause 1 of this Agreement, the Consultant further warrants and undertakes to the Beneficiary that:

2.1 it has exercised and will continue to exercise all the reasonable skill, care and diligence to be expected from a competent and qualified professional designer experienced in carrying out services similar in nature, size and complexity to the Services including in the selection of goods and materials for the Project; and

2.2 it has not and will not specify for use in relation to the Project any products or materials not in conformity with relevant British or European standards or Codes of Practice or which are at the time of specification generally known within the United Kingdom to an experienced professional designer of works such as the Project to be deleterious to health and safety or to the durability of buildings and/or other structures and/or finishes and/or plant and machinery in the particular circumstances in which they are used;

Provided that:

2.3.1 the obligations of the Consultant under this Agreement shall be no greater in extent or quantity than if the Beneficiary had been named as joint employer with Main Contractor under the Appointment; and

2.3.3 the Consultant shall be entitled in any action or proceedings brought by the Beneficiary to rely on any limitation in the Appointment and to raise the equivalent rights in defence of liability (excluding counterclaim and set-off in respect of amounts due to the Consultant under the Appointment) as it would have if the Beneficiary had been named as joint employer with the Main Contractor under the Appointment;

3. The Beneficiary has no authority to issue any direction or instruction to the Consultant in relation to the Appointment unless and until the Beneficiary has given notice under Clauses 4 or 5, below. The Beneficiary or its appointee has no liability to the Consultant in relation to amounts due under the Appointment unless and until the Beneficiary has given notice under Clauses 4 or 5.

4. The Consultant agrees that it will, if so required by notice in writing given by the Beneficiary, subject to Clause 6, below, accept the instructions of the Beneficiary or its appointee, as the case may be, (which for the avoidance of doubt and without limitation may include a third party appointed by the Beneficiary to act as “the Employer” under the Appointment) to the exclusion of the Main Contractor in respect of the Project upon the terms and conditions of the Appointment. The Main Contractor acknowledges that the Consultant shall be entitled to rely on a notice given to the Consultant by the Beneficiary under this Clause 4 and further acknowledges that such acceptance of the instructions of the Beneficiary or its appointee, as

the case may be, to the exclusion of the Main Contractor shall not constitute any breach of the Consultant's obligations to the Main Contractor under the Appointment.

5. The Consultant further agrees that it will not without first giving the Beneficiary not less than 35 days notice in writing exercise any right or purported right it may have to determine its employment under the Appointment, treat the same as having been repudiated by the Main Contractor, or discontinue the performance of any duties or obligations thereunder. Further, the Consultant shall within 14 days of giving the said notice, provide statements to the Beneficiary containing the following:

5.1 all amounts properly due and payable to the Consultant under the Appointment on or before the date of issue of the said notice which remain unpaid;

5.2 in the reasonable estimation of the Consultant, the amount of any monetary claim (if any) asserted by the Consultant against the Main Contractor under the Appointment arising out of or in connection with the breach for which the said notice was served; and

5.3 where the Consultant intends to terminate the Appointment due to some default or breach of contract of a non-financial nature:

5.3.1 the provision of the Appointment alleged to have been breached or not fulfilled;

5.3.2 supporting information in reasonable detail to enable the Beneficiary to identify the material facts;

5.3.3 the steps reasonably required to remedy the specified breaches or conditions not fulfilled;

5.3.4 the time within which the specified steps can reasonably be expected to be taken;

5.3.5 (if applicable) the amount of damages claimed and the basis of their calculation; and

5.3.6 (if applicable) the relief to be sought.

The Consultant warrants to the Beneficiary that to the best of the Consultant's knowledge and belief, having made all proper and appropriate enquiries, the statements submitted under this Clause 5 shall be true, complete and accurate statements of the amounts to which the Consultant considers itself entitled. In the event that the Consultant shall delay in giving such

notice and information within the said 14 days, the period of 35 days shall be extended to correspond with the period of any such delay. The Consultant's right to determine its employment under the Appointment or to treat the same as having been repudiated or to discontinue performance shall cease if, within the said 35 day period (extended as appropriate) and subject to Clause 6 the Beneficiary shall give notice in writing to the Consultant requiring the Consultant to accept the instructions of the Beneficiary or its appointee to the exclusion of the Main Contractor in respect of the Project upon the terms and conditions of the Appointment.

6. It shall be a condition of any notice given by the beneficiary under clauses 4 or 5 above, that the beneficiary or its appointee, as the case may be, accepts liability for payment of the sums due under the appointment and detailed in the statements provided under clause 5 (and makes payment within a period of 28 days of such notice from the beneficiary), and for subsequent performance of the main contractor's obligations. Upon the issue of any notice by the beneficiary under clauses 4 or 5, the appointment shall remain in full force and effect as if no right of determination of its employment under the appointment, or any right of the consultant to treat the appointment as having been repudiated by the main contractor. Had arisen and the consultant shall be liable to the beneficiary and/or its appointee, as the case may be, under the appointment in lieu of its liability to the main contractor.

7. The beneficiary may at any time following the issue of any notice by the beneficiary under clauses 4 or 5, serve a further notice that following the expiry of 28 days from the giving of such notice the beneficiary will have no liability (save in respect of the beneficiary's antecedent breach) for any sums due or to become due to the consultant in respect of the period following expiry of the last mentioned 28 day period. The beneficiary may exercise any of its rights pursuant to clauses 4 or 5 on more than one occasion.

8. The consultant shall maintain for the period expiring 12 years after completion of the services or until termination of the consultant's employment under the appointment, professional indemnity insurance in an amount of not less than £[10]m [(ten million pounds)] sterling for any one claim or series of claims arising out of one single incident during any period of insurance which shall not be more than 12 months with insurers of good repute carrying on business in the european union provided always that such insurance is available at rates and terms which are commercially reasonable to consultants of a similar size and standing in the uk. In determining whether or not insurance is available as aforesaid, the financial characteristics and claims' record of the consultant shall be ignored. The consultant shall immediately inform the beneficiary if such insurance ceases to be available at rates and terms which are commercially reasonable in order that the consultant and the beneficiary can consider alternative means of best protecting their respective positions in respect of the project in the absence of such insurance provided that the beneficiary shall be entitled to require the

consultant to maintain such lesser amount of professional indemnity insurance as is available to the consultant at rates and terms which are commercially reasonable. As and when it is reasonably requested to do so by the beneficiary (but not more than once in any period of insurance) the consultant shall produce for inspection documentary evidence satisfactory to the beneficiary (acting reasonably) that its professional indemnity insurance is being maintained.

9. The consultant hereby grants to the beneficiary or its appointee and all those authorised by the beneficiary an irrevocable, non-exclusive and royalty-free licence (which shall be capable of assignation) to use and reproduce all technical information (whether or not stored in computer systems), drawings, models, calculations, specifications, schedules, details, plans, programs, budgets, reports or other documents, work or other things whatsoever provided or to be provided by the sub-contractor in connection with the project (the "**documents**") for any purpose relating to the project including (but without limitation) the construction, completion, maintenance, promotion, advertisement, reinstatement, repair and any extension of the project and for dissemination within the nhs as part of the feedback of information to better or enable the nhs to realise improvements in its methods and practice of construction and in the design and procurement of its construction. Such licence shall carry the right to grant sub-licenses and shall subsist notwithstanding that the appointment is terminated or the obligations and duties thereunder have been completed. For the avoidance of doubt, the grant of such licence or sub-licences shall not impose any additional liability on the consultant. The consultant will not assign or agree to assign the copyright in any of the documents without the prior written consent of the beneficiary. The consultant shall on reasonable demand provide to the beneficiary or its appointee and those authorised by the beneficiary additional copies of any documents on receipt of reasonable copying costs. The consultant shall not be liable for any use by the beneficiary of any of the documents for any purpose other than those authorised by this clause.

10. This agreement may be assigned on a maximum of two occasions in whole or in part by the beneficiary to any party to whom the beneficiary's interest in the main contract or any part thereof is assigned or disposed to without the consent of the main contractor or the consultant being required and any such assignation shall be effective upon written notice thereof being given to the main contractor and to the consultant. No other or further assignation of this agreement, other than permitted by this clause, by the beneficiary or any other party shall be permitted. The consultant shall not be entitled to assign or transfer any rights or obligations hereunder without the consent of the beneficiary.

11. The consultant undertakes that it will not raise as a defence to any action by the beneficiary for alleged breach of this agreement the fact that the obligations of the main contractor to the

beneficiary in respect of the services have been released as a result of the termination of the building contract.

12. No failure, approval, act or forbearance on the part of the beneficiary in respect of any right of the beneficiary pursuant to this agreement shall constitute any waiver of any right of the beneficiary under or arising out of this agreement nor relieve the consultant of any of its duties or obligations under or arising out of this agreement.

13. Any notice, consent or demand to be given or made by any party under this agreement (hereinafter called a **"notice"**) shall only be validly served if in writing and delivered personally or sent by pre-paid first class recorded delivery post to the following address and marked for the attention of the following person in the case of each party:

| Party: | **Address:** | Person: |
|---|---|---|
| Beneficiary | Dalian House, 350 St Vincent Street Glasgow, G3 8YZ | Head of Board Administration |
| Main Contractor | | |
| Contractor | | |

Any party may by Notice to the other party/parties change its address or the title of the person for whose attention Notices are to be given or made pursuant to this Clause. Any such Notice shall be deemed to have been received:

13.1 if delivered personally, at the time of delivery;

13.2 in the case of pre-paid first class recorded delivery post, on the first Business Day after the date of posting.

If any Notice is delivered after 5 p.m. on a Business Day, or at any time during a day which is not a Business Day, that Notice shall be deemed to have been received at 9 a.m. on the next Business Day. For the purposes of this Clause, "Business Day" means any day which is not a Saturday, a Sunday or a public holiday in Scotland. In proving service it shall be sufficient to prove that the envelope containing such Notice was properly addressed to the relevant party and either delivered personally to that address or delivered into the custody of the postal authorities as a pre-paid first class recorded delivery letter. For the avoidance of doubt, Notices shall not be validly served if sent by e-mail or fax

14 No action or proceedings for any breach of this Agreement shall be commenced against the Consultant after the expiry of twelve years from Completion or earlier termination of the Consultant's employment under the Appointment.

15. The definitions of words and phrases used in this Agreement shall be those set out in the Appointment except where expressly defined in this Agreement.

16. This Agreement shall be governed by and construed in accordance with Scots Law and the parties hereto submit to the exclusive jurisdiction of the Scottish Courts.

IN WITNESS WHEREOF these presents consisting of this and the preceding 8 pages have been executed as follows:

**SUBSCRIBED** for and on behalf of the said **GREATER GLASGOW HEALTH BOARD** at
on the day of 2009:

…… Authorised Signatory

…… Full Name

……Authorised Signatory

…… Full Name

**SUBSCRIBED** for and on behalf of the said **[ ]** at
on the day of [ ] 2009by:

…… DIRECTOR

…… FULL NAME

before this witness

…… Witness

…… Full Name

…… Address

**SUBSCRIBED** for and on behalf of the said **[ ]** at
on the day of [ ] 2009:

under a Power of Attorney dated…….

before this witness

…… Witness

…… Full Name

…… Address

…… Address

**NOVATION AGREEMENT**

**amongst**

**NHS Greater Glasgow and Clyde** of Dalian House, St Vincent Street, Glasgow (hereinafter referred to as "the **Board**");

and

**[ ]**, incorporated under the Companies Acts (Company Number [ ]) and having its Registered Office at [ ] (hereinafter referred to as the "**Contractor**" which term shall include its successors and assignees);

and

**BMJ Architects Limited,** incorporated under the Companies Acts (Company Number SC255758) and having its Registered Office at 2 Central Quay, 89 Hydepark Street, Glasgow, G3 8BW (hereinafter referred to as "the "**Consultant**"");

WHEREAS

(A) By an agreement dated [ ] ("the Appointment") the Board has appointed the Consultant to carry out Services in connection with a new Laboratory Block forming part of the New South Glasgow Hospitals Project at the Southern General Hospital, Glasgow (the "**Project**").

(B) The Board and the Contractor have entered into or shall enter into a building contract ("the **Building Contract**") for, inter alia, the construction and completion of the Project, as more particularly described therein (hereinafter referred to as "the **Works**");

(C) It is intended that the Contractor will in terms of the Building Contract be responsible to the Board for all design and construction work required as part of the Project, including the Services undertaken or to be undertaken by or on behalf of the Consultant under the Appointment;

(D) It is a condition of the Building Contract and the Appointment that the Contractor and the Consultant shall enter into a Novation Agreement with the Board in respect of the Appointment in connection with the Works, under exception of the [Cost Consultant/Quantity Surveyor][*if required can be defined by reference to a schedule to the novation agreement*] (hereinafter referred to as the "**Excluded Services**".

(E) The Board, the Contractor and the Consultant have agreed to novate the Appointment, under exception of the Excluded Services, so that it shall be between the Contractor and the Consultant to the exclusion of the Board on the terms and conditions of this agreement

NOW THEREFORE the parties hereto DO HEREBY AGREE as follows: -

1. The Board hereby novates to the Contractor its entire rights, benefits, liabilities and obligations under and pursuant to the Appointment including its accrued rights, benefits, liabilities and obligations with the exception of (a) the right to receive, and obligation on the Consultant to perform the Excluded Services and (b) the Board's obligation to pay the Outstanding Fee if any (as hereinafter defined).

2. The Consultant and the Contractor hereby release and discharge the Board from any and all of the obligations and liabilities under the Appointment, past, present or future owed by the Board to the Consultant under or in connection with the Appointment with the exception of the Board's obligation to pay the Outstanding Fee if any (as hereinafter defined), provided that nothing in this clause shall operate to exclude or limit the liability or obligations of the Consultant to the Board in terms of the collateral warranty granted or to be granted to the

Board in terms of this Agreement or in respect of the Excluded Services whether such liabilities or obligations arise or occur before or after the date of this Agreement.

3. The Consultant shall provide the Services (with the exception of the Excluded Services) to the Contractor from the effective date specified in clause 10 of this Agreement.

4. Subject to Clause 1 the Consultant accepts the liability of the Contractor under the Appointment in substitution for the liability of the Board.

5. The Consultant hereby warrants and undertakes to the Contractor that it has performed and will continue to perform each and all of its obligations, duties and undertakings under and pursuant to the Appointment as and when required by and in all respects in accordance with the Appointment. The Contractor shall have the right to enforce its rights and remedies in connection with the Appointment and to pursue all claims and demands in connection with any breach, negligence, omission, default of the Consultant or those for whom it is responsible in connection with the Appointment and/or the Works irrespective of when losses, costs, expenses or claims occurred or the breach, negligence, omission or default occurred. For the purposes of this Clause 5, the expression "the Appointment" shall include the original appointment between the Board and the Consultant and the novated appointment between the Contractor and the Consultant.

6. The Contractor undertakes to the Consultant and to the Board that it accepts the past performance of the Services (with the exception of the Excluded Services) by the Consultant and undertakes to perform all the duties and obligations on the Board's part under the Appointment and to be bound by the terms of the Appointment as if the Contractor had been the employer under the Appointment from the date of commencement of the Services (with the exception of the Excluded Services) or the date of the Appointment, whichever is the earlier, in substitution for the Board.

7.1 The Consultant shall owe no greater duty to the Contractor hereunder than it would have owed to the Contractor if the Contractor had been named as employer under the Appointment from the outset in substitution for the Board.

7.2 The Consultant shall be liable to the Contractor subject to and in accordance with the terms of the Appointment for the Services (with the exception of the Excluded Services) and performance of its obligations under the Appointment whether performed prior to, on or after the effective date referred to in Clause 10 below and irrespective of: -

(i) to whom the relevant Service or obligation was performed;

(ii) whether or not any losses, costs, expenses or claims could be conceived as having been suffered by the Board or the Contractor and irrespective of whether attributable to the period before or after the effective date referred to in clause 10 or suffered or incurred by the Contractor;

(iii) the fact that the Board has suffered no losses, costs, expenses or claims or could not have suffered losses, costs, expenses or claims or in either case the losses, costs, expenses or claims caused, were in whole or in part attributable to an act, omission, breach, default or negligence in the period before or after such effective date or are different in extent, nature or otherwise from those suffered or incurred or which could have been suffered or incurred by the Board.

7.3 The Consultant shall not be entitled in defence or mitigation of any claim to state a defence of no loss or to state a defence that the Contractor has suffered or incurred a loss, which would not have been suffered or incurred by the Board.

8. For the avoidance of doubt, the parties hereto agree and undertake that save to the extent expressly provided otherwise, nothing contained in this Agreement shall:

(i) limit, vary or discharge any right or liability arising under or in connection with the Appointment save to the extent of the identity of the creditor and/or debtor in respect of the relevant right and/or obligation;

(ii) waive, discharge, limit or affect any of the rights, obligations or liability of the Consultant and any beneficiary under or in connection with any collateral warranty agreement issued pursuant to the Appointment;

(iii) adversely affect any right of step-in granted to any party under any collateral warranty agreement referred to above.

*9.* The Consultant acknowledges and agrees that save for the sum of £[ ] (the "Outstanding Fee") the Consultant has been paid the whole fee due to the Consultant by the Board in connection with the Appointment. The Board undertakes to pay the Outstanding Fee to the Consultant in accordance with the payment provisions contained in the Appointment [*or insert milestones for payment*].

10. The provisions of this Agreement shall take effect between the parties hereto on the effective date of the Building Contract notwithstanding the dates of execution hereof ("The Effective Date").

11. The Consultant hereby undertakes to the Board to execute and deliver to the Board a collateral warranty agreement in terms of that specified in the Appointment in favour of the Board within 14 days of a written request by the Board.

12. Words and expressions used in this Agreement shall, unless the context otherwise requires, bear the same meaning ascribed to them in the Appointment. The rules of construction and interpretation provided for in the Appointment shall apply to this Agreement. Save insofar as expressly amended hereby the terms of the Appointment shall continue in full force and effect.

13. This Agreement and the rights and obligations of the parties hereto shall be governed and construed according to the Law of Scotland and the parties hereby prorogate the non-exclusive jurisdiction of the Scottish Courts;:

IN WITNESS WHEREOF these presents and the preceding 2 pages are executed as follows: -

**Signed for and on behalf of NHS Greater Glasgow and Clyde**

at ..... on .....
by:

..... (Signature)

..... (Full name in CAPITALS)
Authorised Signatory

..... (Signature)

..... (Full name in CAPITALS)
Witness

..... (Full address - witness only)

.....

**Signed for and on behalf of [ ]**

at ..... on .....
by:

..... (Signature)

..... (Full name in CAPITALS)
Director/Company Secretary/Authorised Signatory

..... (Signature)

..... (Full name in CAPITALS)
Director/Company Secretary/Authorised Signatory/Witness

..... (Full address - witness only)

.....

**Signed for and on behalf of BMJ Architects Limited**

at ..... on .....
by:

..... (Signature)

..... (Full name in CAPITALS)
Director/Company Secretary/Authorised Signatory

..... (Signature)

..... (Full name in CAPITALS)
Director/Company Secretary/Authorised Signatory/Witness

..... (Full address – witness only)

.....

The following matters are examples of risk to be considered and discussed during the Competitive Dialogue process for inclusion in the agreed Risk Register.

| Risk Ref | Description |
|---|---|
| | **Character and innovation risks** |
| | Impact of change in design required by Operator (Hospital) |
| | The change in design required due to external influences specific to the NHS |
| | The introduction and incorporation of changes to SHA / Health Authority requirements |
| | Innovative design / materials solutions |
| | **Form and materials risks** |
| | External Materials not to required standard |
| | External detailing of building below expected quality |
| | Poor signage |
| | **Staff and patient environment risks** |
| | The introduction of technological change of elements of the building / Obsolescence |
| | The life expectancy of the asset |
| | Change in Environmental Standards / Green issues |
| | Privacy / Dignity issues not adequately addressed |
| | Consideration to staff and patient environment (e.g: views etc.) |
| | **Urban and social integration risks** |
| | Does the design fit well on the site |
| | Any unexpected changes in the epidemiology of the people in the catchment area |
| | **Performance risks** |
| | The discovery of latent defects in new building after handover |
| | The Performance of *CONTRACTOR* to build to expected standards |
| | Any disputes leading to adjudication |
| | The determination of the Contract by either Party |
| | The non performance of building functions on completion |
| | The incorrect estimate of cost of providing clinical services |
| | The incorrect estimated cost of maintenance of facility |
| | The incorrect estimated cost of energy used |
| | The impact of Patient Infection - other (inappropriate design) |

| Risk Ref | Description |
|---|---|
| | |
| | The non-performance of building services on completion |
| | The poor performance of building services on completion |
| | Any unexpected changes in medical technology |
| | **Engineering risks** |
| | The failure by *Contractor* to design to NHS Original Brief |
| | The change in the scope of work requirements of the NHS Brief |
| | The continuing development of design by the *Contractor* within the brief |
| | Will additional Mechanical Ventilation be required to deep plan spaces |
| | Failure by *Contractor* to co-ordinate of M&E Installations |
| | Failure by *Contractor* to co-ordinate M&E services with the building structure |
| | Impact of any additional works at links to buildings |
| | General Design quality by *Contractor* |
| | Impact of demolition works on design |
| | The requirement of additional plant (e.g. boiler) |
| | Adequacy of VIE plant (cryogenic vessel) |
| | Adequacy of security requirements (CCTV etc.) |
| | Adequacy of emergency generator provisions |
| | The additional costs associated with services rationalisation |
| | Incorrect Cost estimates for planning approval |
| | Imposed conditions by Government or Regulatory Bodies. |
| | The impact on service delivery due to late planning approval |
| | The effect on the scheme failure to obtain planning approval |
| | Consideration in Design to prevent cross infection (MRSA and similar infections) |
| | **Construction risks** |
| | The impact of incorrect program and duration by *Contractor* |
| | Failure to award contract on time |
| | The impact of unforeseen site conditions |
| | Archaeology - Impact due to significant find |

| Risk Ref | Description |
|---|---|
| | |
| | Archaeology - Impact due to small find |
| | Discovery of unforeseen ground conditions |
| | Discovery of unknown major services |
| | Any unforeseen ground/site conditions under the footprint of existing facilities |
| | Impact of delay in gaining access to the site |
| | Failure to maintain adequate on-site security (Project) |
| | Failure to maintain adequate site security (Hospital) |
| | The impact of Third Party claims (utilities etc.) |
| | The impact of "Compensation Events' to the *Contractor* (variations) |
| | The impact of Legislative/Regulatory change: NHS specific |
| | The compliance with any new Mandatory Standards |
| | The impact of Legislative/Regulatory change: non-NHS specific (Building Regulation) |
| | The compliance with Health & Safety Standards, CDM etc. |
| | The impact of changes in taxation |
| | The impact of changes in the rate of VAT |
| | The non-realisation of VAT reclaim and introduction of new Statutory costs |
| | Any other changes in VAT |
| | The impact of Contractor default (insolvency etc) |
| | The impact of delivery due to poor project management |
| | The Failure of *Contractor* to manage industrial relations |
| | The impact of incorrect program and cost estimates for decanting from existing premises |
| | The impact of incorrect program and cost estimates for commissioning new building |
| | Any additional infrastructure changes for utilities<br><br>(e.g. gas, water, electric, etc.) |
| | Failure to control dust (Aspergillus) |
| | **Use risks** |
| | The non-realisation of existing equipment transfer into new facilities |

| Risk Ref | Description |
|---|---|
| | The equipment costs exceed equipment budget |
| | Any unexpected sudden increases in demand, due to major incidents |
| | **Access risks** |
| | Impact on gaining access to site (non-construction) |
| | Fire services - The provision of any additional fire fighting requirements |
| | Fire services - The provision of any additional means of escape |
| | Complying with Section 106 / Transport strategy |
| | Delays caused by protester action groups |
| | Delay / Consultation caused by Local Resident's Groups |
| | **Space risks** |
| | The change to appropriate space standards |
| | The change to and flexibility of the building to meet future clinical delivery |
| | The changes in the volume of demand for patient services |

## PART THREE – GATEWAY PROCEDURES

### 1 Approval Gateways

In order to promote good management, controls of costs and to ensure compliance with Employers Requirements Design Approval Gateways are required at key stages in the programme

- Stage 1 – Design Approval Gateways will be required and these should be identified on the Contractors programme and align with key activities from the Priced Activity Schedule. A minimum of 4 Approval gateways are expected. The programme should identify periods allowed for Board review and comment.

- Stage 2 – Design Approval Gateways will be required and these should be identified on the Contractors programme and align with key activities from the Priced Activity Schedule. A minimum of 6 Approval gateways are expected. The programme should identify periods allowed for Board review and comment.

- Stage 3 – Design Approval Gateways will be required and these should be identified on the Contractors programme and align with key activities from the Priced Activity Schedule. A minimum of 12 Approval gateways are expected. The programme should identify periods allowed for Board review and comment.

- Stage 3A – Design Approval Gateways will be required and these should be identified on the Contractors programme and align with key activities from the Priced Activity Schedule. A minimum of 4 Approval gateways are expected. The programme should identify periods allowed for Board review and comment.

## PART FOUR – SCHEDULE OF COST COMPONENTS AMENDED

**(Clarification: Items struck through and noted as 'Deleted' are included in the Fee)**

This schedule is part of the conditions of contract only when Option C, D or E is used. In this schedule the Contractor means the Contractor and not his Sub-Contractors. An amount is included only in one cost component and only if it is incurred in order to Provide the Works

People 1 The following components of the cost of

- people who are directly employed by the Contractor and whose normal place of working is within the Working Areas and
- people who are directly employed by the Contractor and whose normal place of working is not within the Working Areas but who are working in the Working Areas.

Clarification – exclusion to People

Company executives, directors, managers and other people visiting the Working Areas for the purpose of meetings and liaison are excluded from the clarification in bullet two above. Their costs are included in the Fee.

11 Wages, salaries and amounts paid by the Contractor for people paid according to the time worked while they are within the Working Areas.

12 Payments to people for

(a) bonuses and incentives
(b) overtime
(c) working in special circumstances
(d) special allowances
(e) absence due to sickness and holidays

Note;

1. In the event of an extended period of absence and where payments to the person are not otherwise covered by a sickness benefit scheme reimbursement to the *CONTRACTOR* in respect of any payments to the person is limited to one (1) week

2 Holidays are those applying under statutory obligations and company schemes

~~(f) severance related to work on this contract.~~ deleted

13 Payments made in relation to people for

(a) travel
(b) subsistence and lodging
~~(c) relocation~~ Deleted
(d) medical examinations
~~(e) passports and visas~~ deleted
~~(f) travel insurance~~ deleted
~~(g) items (a) to (f) for dependants~~ deleted

(h) ~~protective clothing~~ Deleted and included within 25 - Payments for the purchase price of Equipment which is consumed.
(i) Meeting the requirements of the law
(j) pensions and life assurance
(k) death benefit
(l) occupational accident benefits
(m) medical aid
(n) a vehicle
(o) safety training.

14 The following components of the cost of people who are not directly employed by the Contractor but are paid for by him according to the time worked while they are within the Working Areas.

Amounts paid by the Contractor.

Equipment 2 The following components of the cost of Equipment which is used within the Working Areas (including the cost of accommodation but excluding Equipment cost covered by the percentage for Working Areas overheads).

21 Payments for the hire or rent of Equipment not owned by

- the Contractor,
- his parent company or
- by a company with the same parent company

at the hire or rental rate multiplied by the time for which the Equipment, is required.

22 Payments for Equipment which is not listed in the Contract Data but is

- owned by the Contractor,
- purchased by the Contractor under a hire purchase or lease agreement or
- hired by the Contractor from the Contractor's parent company or from a company with the same parent company open market rates, multiplied by the time for which the Equipment is required.

23 Payments for Equipment purchased for work included in this contract listed with a time-related on cost charge, in the Contract Data, of

- the change in value over the period for which the Equipment is required and
- the time-related on cost charge stated in the Contract Data for the period for which the Equipment is required.

The change in value is the difference between the purchase price and either the sale price or the open market sale price at the end of the period for which the Equipment is required. Interim payments of the change in value are made at each assessment date. A final payment is made in the next assessment after the change in value has been determined.

If the Project Manager agrees, an additional item of Equipment may be assessed as if it had been listed in the Contract Data.

24 Payments for special Equipment listed in the Contract Data. These amounts are the rates stated in the Contract Data multiplied by the time for which the Equipment is required.

If the Project Manager agrees, an additional item of special Equipment maybe assessed as if it had been listed in the Contract Data.

25 Payments for the purchase price of Equipment (including People 13 (h) protective clothing) which is consumed.

26 Unless included in the hire or rental rates, payments for

- transporting Equipment to and from the Working Areas other than for repair and maintenance,
- erecting and dismantling Equipment and
- constructing, fabricating or modifying Equipment as a result of a compensation event

27 Payments for purchase of materials used to construct or fabricate Equipment

28 Unless included in the hire rates, the cost of operatives is included in the cost of people.

Plant and Materials 3 The following components of the cost of Plant and Materials

31 Payments for

- purchasing Plant and Materials,
- delivery to and removal from the Working Areas
- providing and removing packaging and
- samples and tests.

32 Cost is credited with payments received for disposal of Plant and Materials unless the cost is disallowed.

Charges 4 The following components of the cost of charges paid by the Contractor

41 Payments for provision and use in the Working Areas of

- water,
- gas and
- electricity

42 Payments to public authorities and other properly constituted authorities of charges which they are authorised to make in respect of the *works*

43 Payments for

(a) cancellation charges arising from a compensation event
(b~~) buying or leasing land~~ Deleted
~~(c) compensation for loss of crops or buildings~~ Deleted

(d) royalties
(e) inspection certificates
(f) charges for access to the Working Areas
(g) facilities for visits to the Working Areas by Others
(h) specialist services
(i) consumables and equipment provided by the *Contractor* for the *Project Manager's* and *Supervisor's*

44 A charge for overhead costs incurred within the Working Areas calculated by applying the percentage for Working Areas overheads stated in the Contract Data to the total of people items 11, 12, 13 and 14. The charge includes provision and use of equipment, supplies and services, but excludes accommodation, for:-

(a) catering
(b) medical facilities and first aid
(c) recreation
(d) sanitation
(e) security
(f) copying
(g) telephone, telex, fax, radio and CCTV
(h) surveying and setting out
(i) computing
(j) hand tools not powered by compressed air.

Manufacture and fabrication

5 The following components of the cost of manufacture and fabrication of Plant and Materials which are:-

- wholly or partly designed specifically for the works and
- manufactured or fabricated outside the Working Areas.

51 The total of the hours worked by employees multiplied by the hourly rates stated in the Contract Data for the categories of employees listed.

52 An amount for overheads calculated by multiplying this total by the percentage for manufacturing and fabrication overheads stated in the Contract Data.

Design

6 The following components of the cost of design of the works and Equipment done outside the Working Areas.

61 The total of the hours worked by employees multiplied by the hourly rates stated in the Contract Data for the categories of employees listed.

62 An amount for overheads calculated by multiplying this total by the percentage for design overheads stated in the Contract Data.

63 The cost of travel to and from the Working Areas for the categories of design employees listed in the Contract Data.

Insurance

7 The following are deducted from cost:-

- the cost of events for which this contract requires the Contractor to insure and
- other costs paid to the Contractor by insurers.

**Pro forma Fee Workbook**

The pro forma Fee Workbook for calculation of the fee applicable to the Defined Cost is provided in the Tender Return Submission workbook (Excel format) for completion by the *Contractor* and inclusion with the Bid Deliverables noted in Volume 3 of this ITPD.

## PART SIX – MAXIMUM PRICE TARGET COSTS

### 1 Pro forma MPTC Schedule

1.1 The pro forma MPTC Schedule is provided in the Tender Return Submission workbook (Excel format) for completion by the *Contractor* and inclusion with the Bid Deliverables noted in Volume 3 of this ITPD.

## PART SIX – ACTIVITY SCHEDULES

### 1 Pro forma activity schedules

1.1 The pro forma activity schedules are provided in the Tender Return Submission workbook (Excel format) for completion by the *Contractor* and inclusion with the Bid Deliverables noted in Volume 3 of this ITPD.

# PART SEVEN - WORKS INFORMATION

## 1 INTRODUCTION

### 1.1 The *Employer's* objectives

The *Employer's* objectives for the contract are to;

- Appoint a the *Contractor* to undertake design of the required *works* and undertake delivery of the *works*;
- Appoint the *Contractor* as CDM co-ordinator to take over from the CDM co-ordinator current at the time of *Contractor* appointment
- Achieve Completion of the *works* by

| Stage | Heading | Outline Activities | Completion Date |
|---|---|---|---|
| Stage 1 | Construct Laboratories | Construction of the Laboratories. Concurrent with Stage 2. | 31st December 2012 |
| Stage 2 | Design Development | Design development of Adult and Children's hospital. Concurrent with Stage 1. | 31st October 2010 |
| Stage 3 | Construct Adult and Children's Hospital | Construction of the Adult and Children's Hospital. Consecutive to Stage 2. | 31st January 2015 |
| Stage 3A | Landscaping Completion | Completion of landscaping following full migration of clinical Services & Demolition of Surgical Block | 30th August 2016 |

and

- Provide, in a MPTC "risk and reward" contract strategy, an environment that will promote harmonious and cooperative conduct encompassing the whole of the human resources necessary to complete the contract.

### 1.2 The *Employer's* Strategy

(i) In entering into the Agreement the Parties' Overriding Objective is by working together in accordance with the terms of the Agreement to achieve the successful delivery by the *Contractor* of the *works*;

- to the standard and functionality to meet with the *Employer's* requirements set out in this Works Information to a quality which meets or exceeds these requirements;
- at a cost to the *Employer* that offers best value for money taking into account whole life (as well as capital) costs over the proposed design life of the *works* through the application of the principles of value

engineering, whilst providing the opportunity for the *Contractor* to make a return;

- to the timescale acceptable to the *Employer* and agreed between the parties without compromising health and safety or the *Employer's* required standards and the quality of the completed *works* and in any event before the c*ompletion date or dates* set out in the Agreement, and

- with an appropriate allocation of the risks associated with the *works* to the party best able to manage such risks.

**1.3 Contract philosophy and general principles of application**

(i) Contract philosophy:

- The basis of the contract is the NEC3 Engineering and Construction Contract Option C – Target contract with activity schedule stated in the Invitation to Participate in Dialogue (ITPD)

- Following selection of the *Contractor* by tender the contract is initiated by the *Employer's* letter of appointment and the *Contractor's* acceptance

- The Parties enter into the Agreement within the time stated in the letter of appointment

- The *Contractor* undertakes to carry out the design, management and be responsible for the delivery of and construction of the *works* in accordance with the Agreement, and

- work and liaise with the *Employer*, the Supply Chain and any Professional Adviser as necessary, appropriate or as requested by the *Employer* in order to achieve the Overriding Objective.

(ii) General principles of application

- The Contract will be awarded to the Contractor after the Competitive Dialogue Tender period and will comprise the Stages as outlined in Section 1.1. Approval to proceed with each Stage is required in accordance with the Contract.

- Phasing of the project necessitates structuring of the ITPD documents forming the contract in such a manner as will enable them to be reviewed and updated for each Stage within the Contract as work proceeds.

**1.4 The Contract documentation**

The specific documentation for the Contract includes:-

- Form of Agreement and Appendices

- *Contractor's* Tender Return Submission

- Contract Data Part one

- Contract Data Part two

- Attendant Appendices and/or Attachments

- Works Information referred to in Contract Data Part one - Data provided by the *Employer*.
- Site Information referred to in Contract Data Part one – data provided by the *Employer*.
- Maximum Price Target Cost
- Works Information referred to in Contract Data Part two. Data provided by the *Contractor* for the *Contractor's* design (i.e the Bid Deliverables as required by Volume 3 of this ITPD)

**1.5 The design**

The *Contractor* undertakes development of the design for the whole of the *works* through the applicable Stages of the Contract.

The *Contractor*:

- Maintains continuity of design staff in so far as may be reasonable.
- Impresses on all persons under his direction the need for dedication to completion of the contract.
- Maintains hard copy dossiers for Works Information for the design together with electronic data.

**1.6 Definitions**

For the purposes of this contract the following definitions apply:-

- 'Maximum Price Target Cost – the Price ceiling as per Clause 2 of the Contract
- 'Project' – one of the four Stages of work named within Works Information 2 (iii) - Description of *works*

**1.7 Performance**

The *CONTRACTOR* will be measured against the following Key Performance Indicators:

- Client Satisfaction – Product
- Client Satisfaction – Service
- Cost predictability – design and construction
- Time predictability – design and construction
- Safety (based on accident incident rates)
- Defects at handover

**2 Description of *works***

2.1 Introduction

(i) The general scope of work is for the *Contractor* to provide management and delivery of design and construction services for the whole of the *works*.

(ii) The *works* are undertaken in Stages as set out in Section 1.1

(iii) The *works* are as set out in ITPD Volume 2 Employer's Requirements.

2.2 CDM Co-ordinator

(i) The *Contractor* is required to take over the role of the current CDM co-ordinator from appointment of the Contract

(ii) The CDM co-ordinator prior to appointment of the *Contractor* is;

URS Corporation

The *Contractor* is to obtain all relevant data, including any pre-construction information, from the above named.

(iii) The *CONTRACTOR* provides a CDM Plan outlining:-

- the responsibilities of the individuals he nominates to assist in carrying out the duty of CDM co-ordinator
- identification of the lead designer
- proposed details of the design co-ordination process
- the contents and format of the Health and Safety File for the works within the contract.

**3 Plant and Materials**

3.1 Materials and workmanship specifications:-

- Materials and workmanship is to conform with requirements set out in ITPD Volume 2 Employers requirements

In addition:-

- The standards to be employed in the parts of the *works* designed by the *Contractor* are to be confirmed, identified and stated by the *Contractor* within the Works Information for the *Contractor's* design; to be submitted by the *Contractor* with his design packages for acceptance.

3.2 Items of Plant to be provided by the *Employer*

The *Employer* provides the following items for incorporation in the *works*:

- Group 2 Equipment (Refer to room Data Sheets and Equipment List – Volume 3 Appendix E & F)

3.3 Items of Materials to be provided by the *Employer*

The *Employer* provides the following items for incorporation in the *works*:

- None

3.4 Storage of Plant and Materials

The storage of Plant and Materials by the *Contractor* is to conform to requirements of the Vendor and the relevant specification.

3.5 *Employer's* requirements for provision of spares for Plant provided by the *Contractor* are set out in ITPD Volume 2 Employers Requirements

3.6 Vendor data for Plant provided by the *Contractor*

The *Contractor* ensures Vendor data for Plant incorporated in the *works* is available during commissioning and transferred to the *Employer* before Take Over of the *works* or section of the *works.*

**4 Health and Safety**

4.1 Construction (Design and Management) Regulations 1994

(i) The *Contractor* is appointed CDM co-ordinator for the *works*.

(ii) The *Contractor* acts as designer for the *works*

- The *Contractor* assumes the duty of the designer when he is appointed to the contract.

(iii) Principal Contractor

- The *Contractor* assumes the duty of Principal Contractor when he is appointed to the contract.

4.2 Health Board health and safety regulations for the *Employer's* facility where the *works* are being provided:-

(i) The Health Board health and safety regulations are contained in the following documents;

- Volume 3 Appendix P – Site Policies
- Volume 3 Appendix T – CDMC Pre Construction Information

4.3 The contract Pre-construction information:-

A CDM co-ordinator has been appointed prior to appointment of the *Contractor*

(i) The current Pre-construction information for each project is provided in documents supplied with the ITPD

(ii) The *Contractor* as CDM co-ordinator continues to;

- provide/continue to develop the pre-construction information during Stage 1, and during Stage 2 prior to commencement of Stage 3

4.4 The Construction phase plan in Compliance with Regulation 23 for

i) Stage 1 requires to be submitted at tender stage fully detailed in order to facilitate construction phase of Stage 1

ii) Stage 3 & 3A requires to be submitted in draft at tender stage and requires to

be developed during Stage 2

4.5 Employer constraints

(i) The following constraints on how the *Contractor* provides the Works are notified by the *Employer* and are to be considered and observed by the CDM co-ordinator in collation of the pre-construction information and incorporated in the *Contractor*'s construction phase plan;

- The safety of patients, staff and visitors is of absolute importance throughout the works
- All clinical services must be continuously provided throughout the duration of the works. Any necessary mains services shutdowns or other reasons for unavailability of any part of the buildings outside of the area within the *Contractors'*s site must be agreed with the *Employer* at least ten working days before implementation.
- All In-patient facilities are to be security tested and accepted prior to submission for handover.

4.6 Security

(i) The *Contractor* complies with NHS Client security policy and procedures for existing facilities.

- For *works* within the boundaries of existing NHS Client facilities the *Contractor* provides all regular contract employees with photo identification cards and installs a photo-recognition system for entry on to its site.
- Casual visitors are to be issued with day passes to be returned at the end of each day of the visit.
- The *Contractor* complies with the *Employer* specific security procedures.

## 5 The *Contractor's* Design

5.1 Design provided by the *Employer*

(i) The following elements of the design have been undertaken by the *Employer*:

- Stage 1 – Design to RIBA Stage D or E
- Stage 2, 3 & 3A – Design to Stage C

(ii) The *Employer* accepts no design responsibility for design issued with the ITPD

(iii) The *Employer's* design aims, functionality requirements and design brief for the contract are described in ITPD Volume 2 Employers Requirements

5.2 The *Contractor* assumes design responsibility for the *works* for the project from the point of contract award and in respect of providing the completed design for the contract is to:-

- provide the design for the *works* within the economic envelope of affordability for the contract.

- produce all required drawings to the appropriate degree of detail to allow completion of the works.

5.3 Procedures which the *Contractor* is to follow in carrying out his design

(i) The *Contractor* provides a Quality System for his design identifying

- Lead designer
- Number of design packages and their names to be submitted to the *Project Manager* for acceptance - Items of design to be undertaken by *Supply Chain Members (SCM's)* are to be separately identified
- The *Contractor* submits copies of all design packages direct to the *Project Manager* who will confirm acceptability or otherwise
- Designer responsible for each package
- Process for, each package, checking and certification prior to submission for acceptance
- Process for unique document reference
- Process for document transmittal (see (ii) following)

(ii) Electronic transmission of design documents to the *Project Manager.*

- Electronic transmission of design documents by the *Contractor* is only achievable where the *Project Manager* and the NHS Client have compatible systems available.
- For this Contract drawings are to be transmitted to the *Project Manager* through the project extranet and paper copies (5Nr)

(iii) The *Contractor* assumes design responsibility for the *works* and in respect of providing the design for the *contract*:-

- within the Maximum Price Target Cost submitted at time of tender

5.4 Works Information for the *Contractor's* design

(i) The *Contractor* provides Works Information for the *Contractor's* completion of the design, during all Stages

(ii) The Works Information for the *Contractor's* design is:-

- Provide for each Stage in a form that gives all necessary information to supplement the design drawings and identify the standards, specifications, codes of practice and construction requirements identified during production of the design and to be employed in Providing the Works.
- Hard copies of the relevant sections are made available/provided to the *Contractor's* staff supervising the *works*.

(iii) The Works Information for the *Contractor's* design includes:

- Those tests and acceptances to be undertaken during construction and commissioning.

- Those test and inspections the *Contactor* wishes the *Supervisor* to witness and accept.

## 6 Completion

6.1 Core clause **Identified and defined terms 11**, 11.2 (2) states, quote:-

"Completion is when the *Contractor* has:-

- done all the work which the Works Information states he is to do by the Completion Date and

- correctly notified Defects which would have prevented the *Employer* from using the *works* and Others from doing their work".

6.2 The work required to be done by the Completion Date for the whole of the *works*

(i) Whole of the *works*

Work to be done by Completion for each project, unless stated otherwise in (ii) below, is:

- Construction of the building and its services
- External work
- Commissioning of Plant, Systems and other installed equipment
- Handover of maintenance manuals
- Operator training
- Security systems proving and certification
- Interior decorations and furnishings
- Rectification of Defects which could affect security of the building and those requiring access to patient occupied areas

(ii) Sections of the *works*

Certain parts of the *works* require be undertaken as sections as noted below:-

| Stage | Heading | Outline Activities | Completion Date |
|---|---|---|---|
| Stage 1 | Construct Laboratories | Construction of the Laboratories. Concurrent with Stage 2. | 31st December 2012 |
| Stage 2 | Design Development | Design development of Adult and Children's hospital. Concurrent with Stage 1. | 31st October 2010 |
| Stage 3 | Construct Adult and Children's Hospital | Construction of the Adult and Children's Hospital. Consecutive to Stage 2. | 31st January 2015 |
| Stage 3A | Landscaping | Completion of landscaping | 30th August 2016 |

| | | | |
|---|---|---|---|
| | Completion | following full migration of clinical Services & Demolition of Surgical Block | |

(iii) Work that can remain to be completed after Completion for each Stage is:-

Stage 1:- Construct Laboratories

Work that can remain to be completed after Completion is;

None

Stage 2:- Design Development

Work that can remain to be completed after Completion is;

None

Stage 3:- Construct Adult and Children's Hospital

Work that can remain to be completed after Completion is;

None

Stage 3A:- Landscaping Completion

Work that can remain to be completed after Completion is;

None

**7 Working with the *Employer* and Others**

7.1 Development of the design and programme

Development of the design and associated construction programme, including for enabling works, will identify when the *Employer* and or Others will be occupying or requiring access to occupy parts of the *works* in order to carryout their work whether part of the *works* or not.

7.2 Details of Others identified by the *Employer* with regards to Stages 1 & 3

| Name of Other | Work to be Undertaken | Period of Occupation in the Working Areas |
|---|---|---|
| Group 3 Equipment | Installation & Commissioning | To be agreed during Stage 2 |
| IT Equipment & Testing | Installation & Commissioning | To be agreed during Stage 2 |
| | | |

7.3 The *Employer* provides the following services

(i) The *Employer* will provide no services, the Contractor is responsible for provision of all services required for the temporary and permanent works

7.4 The *Contractor* provides the following services & things

(i) The *Contractor* provides the following services to the *Employer* at the Site, as soon as practicable after the *access date*

- As set out in ITPD Volume 1 Employers Requirements covering temporary accommodation, meeting rooms, PPE etc
- The *Contractor* pays all charges and amounts

**8 Sub-Contracting**

8.1 Acceptable sub-contractors

(i) Acceptable sub-contractors are those sub-contractors identified in the *Contractor's* supply chain identified in his Tender Return Submission or as updated in line with Clause 26.

8.2 Work which should not be sub-contracted

It is recognised that much of the *Contractor's* work will be sub-contracted in accordance with Common practice. However, the following elements should not be wholly sub-contracted, that is where there is no direct *Contractor* management control over the operations:

- Overall responsibility for the duty of the CDM co-ordinator
- Management of the *works* including for design
- Health and Safety Management
- Quality control

8.3 Commercial requirements applicable to sub-contractors (*SCM's* including Consultants)

(i) The rates and percentages applicable are the tendered rates and percentages to be included in the sub-contract agreements. The tendered rates are, as shown in the tender work book for:

- *Contractor sub-contracted fee percentage*
- *SCM direct fee percentage*
- *SCM sub-contracted fee percentage*
- *SCM* rates for design

(ii) The engagement of *SCMs* and Consultants for the contract should consider the following:

- The NEC Suite of contracts (Pricing Option C) should be utilized for majority of works.
- All sub-contracts not based on the NEC suite of contracts should reflect the principles contained within this Contract.
- The *Contractor* obtaining a statement from *SCMs* that they are aware of and agree to comply fully with the provisions of this contract, including the obligation to act in a spirit of mutual trust and cooperation.
- *SCMs* and Consultants maintaining a system of records compatible with the *Contractor's* obligations in the contract.

- Use of the Shorter Schedule of Cost Components (SoSCC) for low value sub-contracts. If so this is stated in the sub-contract invitation.

- Adopting the Contract Administration Pro forma (CAP) procedure for communications and notifications appropriately amended for the sub-contract.

- Providing in each sub-contract / consultancy contract specific Works Information and Site Information documentation.

- Maintaining a complete documented record of all sub-contract / consultancy pre appointment communications for each proposed sub-contract / consultancy agreement. This should include records of pre appointment assessments for each proposed sub-contract / consultancy Agreement.

(vi) *SCM* / Consultant Early Warning notifications and Risk Reduction Meetings

- The *Contractor* adopts Contract Administration Pro forma (CAP) procedure for *SCM* and Consultant Early Warning notifications, and includes appropriately amended examples in the sub-contract / consultancy invitation.

- The *Contractor* maintains a register of *SCM* and Consultant Early Warning notifications and Risk Reduction Meetings and provides the *Project Manager* with information relevant to the Risk Register for this contract. The Risk Register for this contract is updated by the *Contractor* and made available to the Project Manager.

## 9 Programme

9.1 Introduction

(i) In complying with NEC3 clause 31.2 the *Contractor* working in collaboration with the *Project Manager,* provides the programme

- Reflecting the anticipated periods of pre-construction planning and design work together with anticipated sequences for the construction Stage for each of the Stages forming the Contract

- The programme is supported by a hierarchy of inter-dependant sub programmes

- In this contract the *Contractor* provides separate programmes for each Stage forming the Contract.

(ii) The programme and linked sub-programmes are provided in a format that can be electronically transmitted

(iii) The *Contractor* includes in the programmes any other activities he requires to Provide the Works and maintain the relationship with the *activity schedules for each Stage*

9.2 First programme for acceptance

(i) The early submission of the first programme for acceptance is required to confirm the entry Stage specific requirements and constraints.

(ii) On receipt of the *Employer's* letter of appointment the c*ontractor* consults with the *Project Manager* and prepares the first programme for acceptance for the whole of the *works*; incorporating known milestones and operations The First Programme will be the programme submitted at tender stage.

9.3 Stage programmes

(i) The first programme for acceptance includes a sub-programme for each Stage.

(ii) Sub-programmes specific to each Stage are closed out at the end of the relevant Stage.

(iii) During Stage 2 the *Contractor* consults with the *Project Manager* and develops the Accepted Programme to incorporate revised planning and any new activities established as a result of the continued planning and design of the contract. Stage 3 sub-programme is developed by the *Contractor* in consultation with the *Project Manager* for inclusion in the submission of Stage 2 deliverables.

(iv) The latest Accepted Programme for the whole of the *works* is identified in Contract Data Part two – Data provided by the *Contractor* to be submitted with applicable Stage 2 deliverables.

9.4 The programme

(i) The programme for acceptance for each Stage is support by a hierarchy of inter-dependant sub-programmes in the format previously described and includes;

- A programme for completion of the design
- A detailed construction programme
- The construction procurement programme linked to design and construction
- Sub-contract / Consultant procurement programme
- Commissioning programme, including Client / User interfaces
- Handover programme showing sectional or phased completions as identified
- Work that the Works Information states may be done after Completion.

9.5 Design programme

(i) Activities to be identified in the design programme are to include the following;

- *Contractor* quality procedures
- Planning meetings (including end users clinicians and others shown to have a legitimate interest in the design)
- Design co-ordination meetings required by the CDM co-ordinator where there is more than one designer

- *Contractor* review milestones
- Design validation by independent designers, including where required by the *Employer*
- Sub-contract / consultant design Stages
- Milestone dates for submission of design packages for acceptance
- Periods for *Project Manager's* acceptance of design packages
- Hold points for the *Employer* review
- Planning permission submission dates
- Submission for Gateway Reviews (Full Business Case) to the Scottish Government Health Department and Design Reviews by Architecture and Design Scotland, including contingency periods for responding to their comments.

(ii) Design programmes specific to each Stage are closed at the end of the relevant Stage, impacting information and milestones etc. are carried forward as necessary.

9.6 Procurement programme

(i) The *Contractor* provides a procurement programme within the sub-programme hierarchy.

(ii) The programme identifies *Contractor* procedures and timing for establishment of sub-contracts, utilities services, Plant and Materials; together with identification of *Employer* provided Plant and Materials, clinical or other specialist equipment

(iii) The programme identifies each item and service to be procured

(iv) Generally a procurement programme should identify

- Design completion dates
- Enquiry preparation and tender/quotation invitations
- Tender assessment period
- Placement of order – earliest / latest date
- Suppliers design programme
- Manufacturer design co-ordination meetings.
- Hold points
- Quality assurance and control procedures / audits
- Acceptance points

- Commencement/delivery dates
- Dates when the Title is to be transferred for items not yet delivered to the Site
- Installation dates
- Completion dates

9.7 *Employer* identified milestone dates and Key Dates

(i) The milestone dates identified by the *Employer* for inclusion in the contract programme are listed below. The *Contractor*, during the Stages of the contract, is required to monitor such dates against the developing requirements of the design and proposed construction schedule; where deviations are identified these are to be drawn to the attention of the *Project Manager* using the early warning procedure.

(ii) *Employer* identified milestone dates are;

- To be developed after Contract Award

(iii) Key Dates included in Contract Data Part one – Data provided by the *Employer;*

- Stage completion dates as identified in Section 1.1

**10 Tests**

10.1 Tests and inspections [40.1]

(i) Tests to be undertaken in this contract for Plant, Materials and workmanship are to be undertaken during the *works* and comply with the requirements of ITPD Volume 2 Employer's Requirements

(ii) The *Contractor* is required to consult with the *Project Manager* during the Stages to agree and schedule those tests to be applied in this contract. Such tests are to be included in the *Contractor's* quality plan for the contract

(iii) Each Stage is to be scheduled for acceptance testing and inspection by the *Supervisor* prior to the Completion Date for each Stage. Defects resulting from such inspections and tests are to be remedied prior to the Completion Date for each Stage and handover to or occupation by the *Employer*

10.2 Details of Materials, facilities and samples to be provided by the *Contractor* and by the *Employer* for tests [40.2] are set out in ITPD Volume 2 Employers Requirements

10.3 Details of Plant and Materials which are to be inspected or tested before delivery to the Working Areas, including details of the inspection or test [41.1] are set out in ITPD Volume 2 Employer's Requirements

10.4 Definition of tests of Equipment, Plant and Materials outside the Working Areas which have to be passed before marking by the *Supervisor* [41.1] are set out in ITPD Volume 2 Employer's Requirements

10.5 Details of the preparation of Equipment, Plant and Materials for marking by the *Supervisor* are set out in ITPD Volume 2 Employer's Requirements.

**11 Title**

11.1 Plant and Materials outside the Working Areas

The *Contractor* who requires to be paid for Plant and Materials prior to bringing such items to the Working Areas, identifies procurement of such items on the Accepted Programme as an activity.

11.2 Objects and materials within the Site

- Contractor has title to materials from excavation and demolition solely for use within the Site
- The *Contractor* submits proposals for the disposal of surplus materials from excavation and demolition
- Where the *Contractor's* proposals are for other than disposal at licensed tips and include for use or sale of such surplus outside of the Working Areas the *Contractor* credits all benefit to Defined Cost.

**12 Acceptance or procurement procedures**

12.1 The Prices at award of contract

The prices submitted at tender stage form the Contract Maximum Price Target cost as defined in Section XXX for all works required to deliver the scope of the project as defined in the ITPD tender documentation.

12.2 *Contractor's Fee Percentage* and Rates

(i) *Fee percentage*.

- The *Contractor's* (*fee percentage*) is to be entered in the table provided in Contract Data Part two.

(i) Hourly rates for design during Stage 2

- The *Contractor's* hourly rates for design are the Tendered Rate per hour
- Inflation is to be calculated in accordance with the Contract Data

12.3 *Contractor's SCM /*Consultant Gross Margin and rates

(i) The Agreement contains the *Contractor's* SCM/Consultant Gross Margins (*fee percentage*) and rates for design; these are to be the basis of the *Contractor's* design sub-contracts and entered in the appropriate contract agreement between the *Contractor* and SCM/Consultant (ECC Sub-contract/NEC Professional Services Contract).

(ii) *Fee percentage*.

- The *SCM/*Consultant (*fee percentage*) is to be entered in the Contract Data Part two.

(iii) Hourly rates for design during Stage 2

- The *SCM/*Consultant hourly rates for design are the Tendered Rate per hour.

- Inflation is to be calculated in accordance with the Contract Data.

(v) Engagement of *SCM* designers and other professionals as either *SCM's* or Consultants is dependant on the *Contractor's* procurement policy for the contract and in either case the appropriate NEC conditions are used unless agreed otherwise by the *Project Manager*.

12.4 *Contractor* resources - people

The *Contractor* engages persons from the key people set out in the Contract Data – Part two in the performance of any services to be provided by the *Contractor* under the Agreement and shall not replace any of the key people without the approval of the *Employer* (such approval not to be unreasonably withheld). The *Contractor* ensures that where a member of its key personnel is replaced that they have the skills, qualifications, experience and ability to provide the best service to the *Employer*.

12.9 Appointment of the *Contractor*

(i) The *CONTRACTOR* provides all resource necessary to complete the scope of work within the Accepted Programme included in the agreed MPTC.

12.13 Identification of risks

(i) Risk may be viewed as the combination of the probability of an event and its consequence and risk management as the process by which an organisation identifies, prioritises and develops management action to control the risks.

(ii) Under this Contract the Project Manager and the *Contractor* are required to proactively and collaboratively manage the risks which may arise during a Contract with reference to the risk register.

(iii) The *Employer* provides a generic Risk Matrix developed for development through the Competutive Dialogue period

(iv) Risks identified in Contract Data Part one and Contract Data Part two during the tender process and the allocation to employer or Contractor will form the basis for the Contractor's tender submission

(v) The *Project Manager* and the *Contractor* during the Competitive Dialogue period will undertake an initial qualitative and quantative risk assessment identifying the following:

- the potential risks which may impact on the costs, build programme and/or quality of the Contract;
- the probability of the identified risks occurring;
- a financial estimate of each risk's most likely consequences; and
- whether the *Contractor* or Health Board is best placed to manage the identified risk.

(vi) The key to the success of a risk register is bullet point 4 (v) above; it is not a question of each Party seeking to push an unpalatable risk on to the other, the emphasis is on ensuring that the Party best able to manage a risk assumes it.

(vii) After Contract Award the risk register is reviewed and updated by the Project Manager and *Contractor* at regular project meetings during each Stage. The *Contractor* attends and participates in the risk workshop, also arranging for SCMs / consultants and others in his supply chain to take part in the risk workshop and/or provide information required for the risk process.

(viii) Employer's risk as discussed during Competitive Dialogue is outside of the MPTC and brought into an amended MPTC by the Project Manager using the compensation event process.

12.18 Contract Quality Plan

i) The *Contractor* provides a contract Quality Plan

ii) The contract Quality Plan incorporates quality procedures and quality controls demonstrated by the *Contractor* during pre-qualification for ITPD process.

iii) The *Contractor* develops the contract Quality Plan submitted at tender stage to encompass all quality procedures and controls necessary to encompass and comply with the Works Information. In particular the Quality Plan should accord with the contract programmes established in Section 4 above.

(iv) Design submission and acceptance protocol

- Establishment of a work plan reconcilable with RIBA stages and NHS Design Development Protocol.
- Determination of the anticipated outputs of each Stage such as reports and / or register of drawings to be produced.
- Identification for each output the means of approval by the *Client*. This could be by a user group, by the Project Manager or requiring a workshop.
- Projected timescale for the issuing of each report and / or drawing, including return date for comments. It should be assumed that a workshop decision will require twenty working days for approval, a user group decision fifteen working days and a *Project Manager* decision ten days.

(v) The *Contractor's* legal and contractual obligations generally

- Construction (Design and Management) Regulations 2007
  - the *Employer*
  - Designer
  - Principle Contractor
  - Contractors
- The Agreement
- Works Information
- Design provided by the *Employer*/*Employer*

- The design provided by the *Contractor*
- NHS Client procedures applying to existing structures/plant/buildings etc.
- Interface with the *Project Manager's* quality plan/contract procedures
- Interface with the *Supervisor* and his duty

(vi) The *Contractor* issues the Quality Plan with sub-contract / consultant enquiries

(vii) SCMs and consultants comply with the Quality Plan.

12.19 Contract Execution Plan

(i) The *Contractor* prepares, develops and maintains a contract execution plan during the Stages of the *works.*

(ii) The plan should be limited to a general statement as to how and when the *works* will be carried out.

(iii) The plan should identify all target milestone dates, interfaces and obligations of the Parties so that a structured and more comprehensive knowledge base regarding proposed execution of the contract is available to *Contractor*, the *Employer's* staff and the *Employer's* User Groups for reference.

(iv) The plan could identify the existence and location of all manuals and procedures such as the

- Pre-construction information
- CDM - Construction phase Plan
- *Contractor's* Quality Plan
- *Contractor's* environmental management plan
- *Contractor's* design and construction manual

12.20 Handover

(i) The *Contractor* proposes the handover procedure.

(ii) Handover procedures are developed in conjunction with the *Employer* requirements for occupation. For the avoidance of doubt, with the exception of specialist equipment installation which requires joint working between the *Employer*, his specialist sub-contractors and the *Contractor*, the *Employer* will not take over any part of the *works* in advance of completion.

(iii) The handover procedure includes index and format of the Health and Safety File for each structure forming the contract.

(iv) Presentation of the Health and Safety file for each structure is included in the handover procedure.

(v) For this contract handover of the new buildings requires inspection and pre handover snagging to have taken place; and a certification of a Defect free condition to have been issued by the *Supervisor* prior to handover acceptance

**13.0 Commercial requirements, Accounts and records**

13.1 Forecast of Defined Cost, cash flow and expenditure projections

(i) The *Contractor* prepares forecasts of the total Defined Cost for the whole of the *works* as stated in Clause 20.4 of the Contract

(ii) The forecast of the total Defined Cost prepared by the *Contractor* is to individually identify the forecast of the total Defined Cost for each of the Stages comprising the whole of the *works*

(iii) Cash flow and expenditure projections are prepared by the *Contractor* in graphic format to coincide with the forecast of the total Defined Cost for each of the Stages and the whole of the *works*.

(iv) The cash flow and expenditure projections demonstrate the initial forecasts and current forecasts for each Stage at each assessment interval.

13.2 Records of Defined Cost

(i) The *Contractor* maintains a computerised Purchase Order driven cost allocation system showing order value and paid amount for each item.

(ii) The *Contractor* maintains copies of all goods received notes.

(iii) The *Contractor* maintains records of all amounts paid to SCMs and Consultants together with details of how the amounts were calculated.

(iv) The *Contractor* maintains records of all correspondence and meetings relevant to Defined Cost due to or paid to SCMs and Consultants.

(v) The *Contractor* keeps daily allocation records for his design and other staff for which he is reimbursed at Design rates to support all Defined Cost included in payment applications.

13.3 Assessment Procedures

(i) The *Contractor* submits an application for payment to the *Project Manager* prior to each assessment date.

(ii) The payment application does not exceed the amount forecast by the *Contractor's* expenditure profile and projection established for the agreed MPTC

(iii) The *Contractor* holds in readiness for review by the *Project Manager* all data and calculations supporting the payment application

.

(iv) The *Contractor* includes with each application for payment a list (aged creditors) showing those creditors with payments outstanding at the time of the application.

(v) The *Contractor* discusses and where appropriate adjusts the payment application with the *Project Manager's* cost advisor prior to the *Project Manager's* assessment.

(vi) The *Contractor,* on receipt of the *Project Manager's* certificate, submits his VAT invoice in the manner required by the *Employer*.

(vii) Invoices are to be submitted to:

[Address]

13.4 Early Warning / Risk Reduction Meetings

(i) The standard notification System Administration Pack (SAP) is used for Early Warning notifications. Notifications are not to be transmitted verbally or by other communication.

(ii) The *Employer* requires the *Contractor* limits Early Warning to the procedures stated in Clause 16.

(iii) Early Warning is not notified during progress or other meetings not specifically convened for the purpose of Early Warning.

(iv) Early Warning meeting discussion is to be limited to the matter notified and not expanded into more general discussion. Where more than one matter or risk is to be discussed each has its own agenda and individual record of the proposals considered and the decisions taken.

(v) Early Warning notifications or Risk Reduction Meetings are not normally given / held for compensation events that have been notified in accordance with the contract.

13.5 Compensation events

(i) Limitation of *Project Manager's* authority to accept or notify compensation events

- The *Employer* limits the *Project Manager's* authority to accept or notify compensation events to £10,000 per. event for all events that have a potential to increase the amount of the agreed MPTC.

- The *Contractor* accepts time for reply by the *Project Manager* in response to a *Contractor* notification for such an event expected to exceed £10,000 is amended to 2 weeks. This is to allow the *Project Manager* sufficient time to obtain expenditure authority from the *Employer.*

- If a compensation event in this contract has a potential to exceed the *Project Manager's* authority limit, the *Employer* endorses the *Project Manager's* notification of acceptance and instruction for the *Contractor* to submit a quotation.

- If a quotation for a compensation event in this contract exceeds the *Project Manager's* authority limit the *Employer* endorses the *Project Manager's* notification of acceptance of a quotation.

(ii) Compensation events are instructed / notified using the standard notification included in the System Administration Pack (SAP).

(iii) A compensation event is not considered to be instructed / notified if any communication other than the standard notification is used.

(iv) The original of the compensation event notification is a 'live' document and is transmitted between the parties as a record of submission, requirements and acceptance.

(v) Compensation event quotations are to be detailed and supported by contemporary records / allocation sheets where the effect of the event is on 'the Defined Cost of the work already done'.

(vi) Compensation events notified by the *Contractor* relevant to SCM / Consultant events are supported by the *Contractor's* statement of validity of contractual entitlement in accordance with the terms of the sub-contract / consultancy agreement.

(vii) Compensation event quotations that do not have an impact on Sectional Dates for Completion or the Completion Date do not require revision of the programme to be submitted with the quotation unless instructed by the *Project Manager.* .

(viii) The *Contractor* includes additional management resources in compensation event quotations only if the existing management structure and resources cannot contain the effect.

(ix) Met office weather records/data

The *Contractor* provides all data and records, supplied by the Met Office, where necessary to support identification and evaluation of a compensation event relating to the effects of weather.

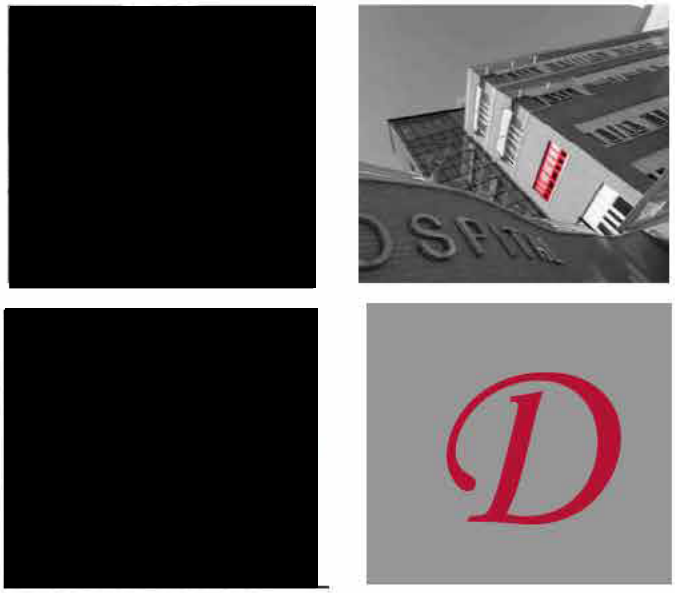
**14 Parent company guarantee**

14.1 Is to be provided by the *Contractor* in a format approved by the Health Board.

## PART EIGHT – SITE INFORMATION

**Site Information** is in ITPD Volume 3 Employers Requirements

# Appendix D – Request For Information Pro-Forma



**APPENDIX D – Request for Information Pro-Forma**

| Ref No: Date Raised: |
|---|

(Must be sequential)

| Topic: | Technical | | Administration | |
|---|---|---|---|---|
| | Legal | | Commercial | |
| | Financial | | Other | |
| | Clinical | | | |

| |
|---|
| |

| Please deliver response via: | Letter | | E-mail | |
|---|---|---|---|---|

| Raised on behalf of [ ] by: [ ] |
|---|

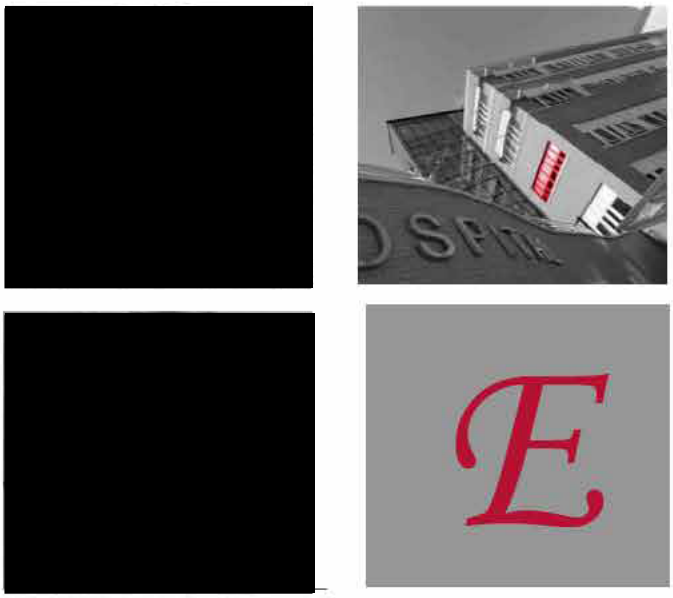
**For Board use**

| Board Ref No: | | Date Received: | |
|---|---|---|---|

| Passed to | Board Financial | | External Legal | | Scot Gov | |
|---|---|---|---|---|---|---|
| | Board Clinical | | External Technical | | Other | |
| | Board Technical | | External Financial | | | |

**Numbering of RFIs:** Every RFI issued by a bidder must be issued by the nominated contact (or the seconder) and shall be cross-referenced by sequential number issue = e.g. Bidder A RFI 001, Bidder A RFI 002, Bidder C RFI 0003…and so on. No differentiator in numbering shall be required for Topic.

# Appendix E – Competitive Dialogue Programme



## MAY 2009

| Week 1 | Dialogue Meeting |
|---|---|
| 01 Friday | |
| **Week 2** | |
| 04 Monday | Bank Holiday |
| 05 Tuesday | |
| 06 Wednesday | |
| 07 Thursday | |
| 08 Friday | |
| **Week 3** | |
| 11 Monday | |
| 12 Tuesday | Design Dialogue # 1<br>Bidder A – 0900 – 1200hrs<br>Bidder B – 1330 – 1630hrs |
| 13 Wednesday | Design Dialogue # 1<br>Bidder C – 0900 – 1200hrs |
| 14 Thursday | Laboratories/FM Dialogue # 1<br>Bidder C – 0900 – 1200hrs<br>Bidder A – 1330 – 1630hrs |
| 15 Friday | Laboratories/FM Dialogue # 1<br>Bidder B – 0900 – 1200hrs |
| **Week 4** | |
| 18 Monday | |
| 19 Tuesday | Logistics Dialogue # 1<br>Bidder B – 0900 – 1200hrs<br>Bidder C – 1330 – 1630hrs |
| 20 Wednesday | Logistics Dialogue # 1<br>Bidder A – 0900 – 1200hrs |
| 21 Thursday | Commercial Dialogue # 1<br>Bidder A – 0900 – 1200hrs<br>Bidder B – 1330 – 1630hrs |
| 22 Friday | Commercial Dialogue # 1<br>Bidder C - 0900 – 1200hrs |
| **Week 5** | |
| 25 Monday | Bank Holiday |
| 26 Tuesday | Design Dialogue # 2<br>Bidder C -1330 – 1630hrs |
| 27 Wednesday | Design Dialogue # 2<br>Bidder A - 0900 – 1200hrs<br>Bidder B - 1330 – 1630hrs |
| 28 Thursday | |
| 29 Friday | |

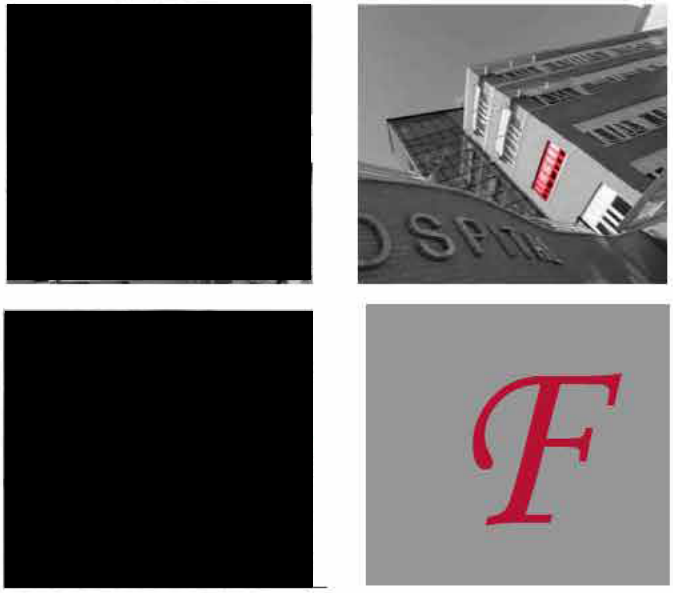
## JUNE 2009

| Week 6 | Dialogue Meeting |
|---|---|
| 01 Monday | |
| 02 Tuesday | Logistics Dialogue # 2<br>Bidder B – 0900 – 1200hrs<br>Bidder C – 1330 – 1630hrs |
| 03 Wednesday | Logistics Dialogue # 2<br>Bidder A – 0900 – 1200hrs |
| 04 Thursday | Commercial Dialogue # 2<br>Bidder A – 0900 – 1200hrs<br>Bidder B – 1330 – 1630hrs |
| 05 Friday | Commercial Dialogue # 2<br>Bidder C - 0900 – 1200hrs |
| **Week 7** | |
| 08 Monday | |
| 09 Tuesday | Design Dialogue # 3<br>Bidder C – 0900 – 1200hrs<br>Bidder A – 1330 – 1630hrs |
| 10 Wednesday | Design Dialogue # 3<br>Bidder B – 0900 – 1200hrs |
| 11 Thursday | Laboratories/FM Dialogue # 2<br>Bidder B – 0900 – 1200hrs<br>Bidder C – 1330 – 1630hrs |
| 12 Friday | Laboratories/FM Dialogue # 2<br>Bidder A – 0900 – 1200hrs |
| **Week 8** | |
| 15 Monday | |
| 16 Tuesday | Logistics Dialogue # 3<br>Bidder B – 0900 – 1200hrs<br>Bidder C – 1330 – 1630hrs |
| 17 Wednesday | Logistics Dialogue # 3<br>Bidder A – 0900 – 1200hrs |
| 18 Thursday | |
| 19 Friday | |
| **Week 9** | |
| 22 Monday | |
| 23 Tuesday | Design Dialogue # 4<br>Bidder A – 0900 – 1200hrs<br>Bidder B – 1330 – 1630hrs |
| 24 Wednesday | Design Dialogue # 4<br>Bidder C – 0900 – 1200hrs |
| 25 Thursday | Laboratories/FM Dialogue # 3<br>Bidder C – 0900 – 1200hrs<br>Bidder A – 1330 – 1630hrs |
| 26 Friday | Laboratories/FM Dialogue # 3<br>Bidder B – 0900 – 1200hrs |

## JULY 2009

| Week 10 | Dialogue Meeting |
|---|---|
| 29 Monday | |
| 30 Tuesday | FLOAT WEEK |
| 01 Wednesday | |
| 02 Thursday | |
| 03 Friday | |
| **Week 11** | |
| 06 Monday | |
| 07 Tuesday | Design Dialogue # 5<br>Bidder A – 0900 – 1200hrs<br>Bidder B – 1330 – 1630hrs |
| 08 Wednesday | Design Dialogue # 5<br>Bidder C – 0900 – 1200hrs |
| 09 Thursday | Commercial Dialogue # 3<br>Bidder C – 0900 – 1200hrs<br>Bidder A – 1330 – 1630hrs |
| 10 Friday | Commercial Dialogue # 3<br>Bidder B - 0900 – 1200hrs |
| **Week 12** | |
| 13 Monday | |
| 14 Tuesday | |
| 15 Wednesday | |
| 16 Thursday | |
| 17 Friday | Dialogue Closes |
| **Week 13** | |
| 20 Monday | Bank Holiday |
| 21 Tuesday | |
| 22 Wednesday | |
| 23 Thursday | |
| 24 Friday | |
| **Week 14** | |
| 27 Monday | |
| 28 Tuesday | |
| 29 Wednesday | |
| 30 Thursday | |
| 31 Friday | |

# Appendix F – Certificates



## APPENDIX F – Part 1 – Confidentiality Agreement

Name of bidder: ……

We undertake that we shall keep confidential and will not use for our own purposes or reveal to any person, firm or company the information contained in or sent with the ITPD issued by the Board in relation to the Project or which is made available in connection with any further enquiries in relation to that Project (the "Information Provided") unless we obtain in each case the prior written consent of the Board. Such consent shall not be required where the Information Provided is:

(i) disclosed on a "need to know" basis to such of our directors, officers, employees or advisers who are directly involved with the preparation of bids on our behalf provided that we shall inform each person to whom the Information Provided is made aware of the confidential nature of the Information Provided and the obligations under this Confidentiality Agreement and has given an undertaking at the time of receipt of the Information Provided to keep such information confidential;

(ii) in the public domain or shall come into the public domain otherwise than by breach of this undertaking or any other undertaking;

(iii) made available to us by a third party who is entitled to divulge such information and who is not under any obligation of confidentiality in respect of such disclosure; or

(iv) required to be disclosed by any applicable law provided that the party disclosing the information shall notify the Board of the information to be disclosed (and of the circumstances in which the disclosure is alleged to be required) as early as reasonably possible before such disclosure must be made and shall take all reasonable action to avoid and limit such disclosure.

We undertake at the request of the Board that we shall immediately return to the Board all Information Provided and all and any copies or any part thereof including any information derived or produced partly or wholly from the Information Provided which is in a tangible form. If any such information is not in a tangible form, the bidder shall destroy or permanently erase that information and all and any copies or part thereof including any information derived or produced partly or wholly from the Information Provided.

Without prejudice to any other rights or remedies which the Board may have, the bidder acknowledges and agrees that (a) damages would not be an adequate remedy for any breach by the bidder of the provisions of this undertaking and (b) the Board shall be entitled to the remedies of interdict and other relief for any threatened or actual breach of this undertaking.

Signed for and on behalf of [**bidder**] by [**name of signatory and nature of authority to sign**] and [**name of signatory and nature of authority to sign**] on the day of 2009.

……...

……...

NOTE: (i) Where the bidder is a company, to be signed by two directors or by a director and the secretary of the company, such persons being duly authorised for that purpose.
(ii) Where the bidder is a consortium yet to be established as a company, to be signed by persons duly authorised by each of the prospective members of the consortium.

**APPENDIX F – Part 2 – Certificate of Acceptance of Form of Bid Conditions**

Name of bidder: ……

In accordance with the requirements of the ITPD documents issued by the Board, we the undersigned, for and on behalf of [**the Bidder**], undertake to enter into dialogue with the Board for the development of our proposals, keeping our proposals open for the duration of such dialogue and up to the date of a contract being awarded by the Board in respect of the Project.

We recognise and accept that the Board is not obliged to accept any proposal and we undertake to bear all costs in the preparation of this submission and any dialogue in relation to the Project.

Signed for and on behalf of [**bidder**] by [**name of signatory and nature of authority to sign**] and [**name of signatory and nature of authority to sign**] on the day of 2009.

……...

……...

NOTE: (i) Where the bidder is a company, to be signed by two directors or by a director and the secretary of the company, such persons being duly authorised for that purpose.
(ii) Where the bidder is a consortium yet to be established as a company, to be signed by persons duly authorised by each of the prospective members of the consortium.

**APPENDIX F – Part 3 – Receipt of ITPD Documents**

Name of Bidder: ……..

We confirm receipt of [one hard copy accompanied by one copy in electronic format on compact disc][**to be confirmed with the Board]** of the Invitation to Participate in Dialogue documents as set out below:

Volume 1: Project Scope and Commercial Document

Volume 2: [ ]

Volume 3: Bid Deliverables and Evaluation

Signed for and on behalf of [**Bidder**] by [**name of signatory and nature of authority to sign**] and [**name of signatory and nature of authority to sign**] on the [ ] day of [ ] 2009.

……...

……...

NOTE: (i) Where the bidder is a company, to be signed by two directors or by a director and the secretary of the company, such persons being duly authorised for that purpose.
(ii) Where the bidder is a consortium yet to be established as a company, to be signed by persons duly authorised by each of the prospective members of the consortium.

**Appendix F – Part 4 – Certificate of Confirmation of PQQ Submission**

By [THE BIDDER] ("the Bidder")

To

[the Board name]
[the Board Address]

I/ We the Bidder hereby certify that any statement made in our PQQ submission remains true and accurate in all material aspects save as specified below: -

In the event of any changes to Bidder members, proposed equity holdings, advisors or funders since the PQQ submission, please complete all PQQ requirements.

Not Applicable Y/N (please circle)

Completed for [list any new/ changed parties]

1 SIGNED .....

POSITION ..... [Provider] .....

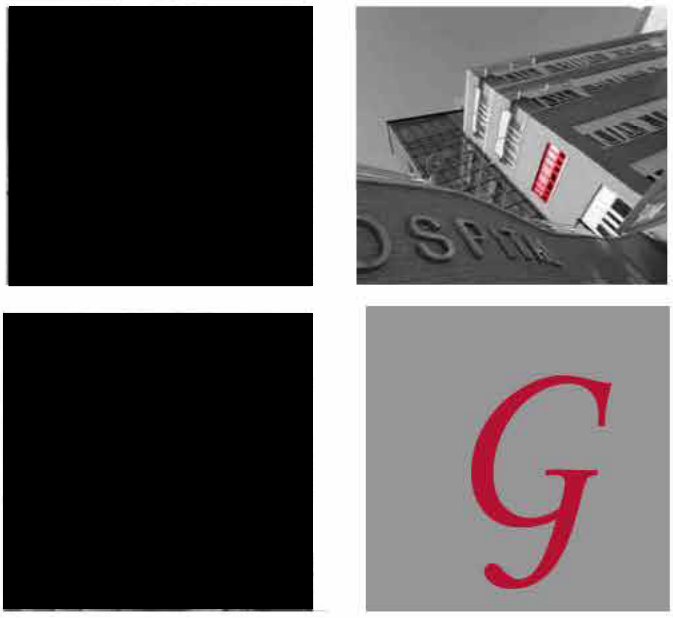
2 SIGNED .....

POSITION ..... [Provider].....

3 SIGNED .....

POSITION ..... [Provider].....

# Appendix G - Tender Return Label



## BIDDER A – BOX [nr] of [nr]

# TENDER FOR NEW SOUTH GLASGOW HOSPITALS PROJECT

**Carol Craig**
**NHS Greater Glasgow & Clyde**
**St Andrew's House**
**80 Queen Elizabeth Avenue**
**Hillington**
**G52 4NQ**

**NOT TO BE OPENED BEFORE 12 NOON ON 11 September 2009.**

# Appendix H - Competitive Dialogue Agenda Pro-Forma

# New South Glasgow Hospitals (NSGH) Project

## Dialogue Meeting Agenda – Bidder [A/B/C]

## Date:

## Time:

## Venue:

**Workstream:** Design/Site | Logistics | Laboratories/FM | Commercial

NHS Greater Glasgow & Clyde Attendees: [Complete at Meeting]

[Bidder Name] Attendees: [Complete at Meeting]

| Proposed Meeting Agenda | Objectives |
|---|---|
| 1. | |
| 2. | |
| 3. | |
| 4. | |
| 5. | |

## Proposed Meeting Query List in Support of Agenda Items

| | |
|---|---|
| Agenda Item 1<br>Query 1/1<br>Query 1/2 | |
| Agenda Item 2<br>Query 2/1<br>Query 2/2 | |
| Agenda Item 3<br>Query 3/1<br>Query 3/2 | |
| Agenda Item 4<br>Query 4/1<br>Query 4/2 | |
| Agenda Item 5<br>Query 5/1<br>Query 5/2 | |
| | |

## Minutes from NHS Greater Glasgow & Clyde Meeting

**Workstream:** **Bidder:**

Date: [Date] at [Time]

Venue [Insert]

## Attendees

| Bidder A | |
|---|---|
| Name: | Job Title: |
| | |
| | |
| | |
| | |
| **NHS Greater Glasgow & Clyde Attendees** | |
| Name | Job Title: |
| | |
| | |
| | |
| | |

Apologies:

**Agenda Items:**

## Minutes from Meeting on xx/xx/xx

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 1-1 | | | | | | | |
| 1-2 | | | | | | | |
| 1-3 | | | | | | | |
| 1-4 | | | | | | | |
| 1-5 | | | | | | | |
| 1-6 | | | | | | | |
| 1-7 | | | | | | | |
| 1-8 | | | | | | | |
| 1-9 | | | | | | | |
| 1-10 | | | | | | | |
| 1-11 | | | | | | | |
| 1-12 | | | | | | | |
| 1-13 | | | | | | | |
| 1-14 | | | | | | | |
| 1-15 | | | | | | | |
| 1-16 | | | | | | | |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 1-17 | | | | | | | |
| 1-18 | | | | | | | |
| 1-19 | | | | | | | |
| 1-20 | | | | | | | |
| 1-21 | | | | | | | |
| 1-22 | | | | | | | |
| 1-23 | | | | | | | |
| 1-24 | | | | | | | |
| 1-25 | | | | | | | |
| 1-26 | | | | | | | |
| 1-27 | | | | | | | |
| 1-28 | | | | | | | |
| 1-29 | | | | | | | |
| 1-30 | | | | | | | |

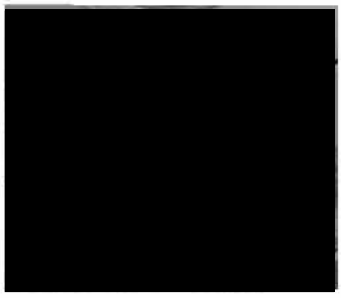
**NHS Greater Glasgow and Clyde**

**New South Glasgow Hospitals (NSGH) Project**

# INVITATION TO PARTICIPATE IN COMPETITIVE DIALOGUE

## VOLUME 2/1

## APPENDIX K – Design Development (FBC and OverallDesign Requirements)



Appendix K has been updated to reflect the requirements of the Board with regard to design development and now takes the form of Part 1 and Part 2, explained as follows:

Part 1 represents the minimum information that is required to be agreed with the Board in advance of FBC. A milestone requirement for FBC is planning approval (gained by the Contractor) and therefore the design development programme of the Contractor (to be submitted with Final Bids) is to provide for the necessary information to allow full planning to be sought and gained. In this regard it is acknowledged that the required information of the Contractor's design development programme may therefore include items in addition to those listed in the under noted Part 1.

Part 2 is the original Appendix K requirement, with some additions. This represents the minimum design information requirements of the Board. Design development programmes for the project (to be submitted with Final Bids) require to include for the provision of all of the listed information/items for all areas of the project.

**PART 1 - Information to be completed by the Contractor and agreed (where relevant) with the Board in advance of FBC:**

| **Generally** |
|---|
| **Contractors Proposals Report:**<br><br>A full and comprehensive response to the Employer's Requirements clearly demonstrating compliance.<br><br>**Full Production Information:**<br><br>Drawings as required by SGHD to achieve Full Business Case, including FPI of the drawings listed in this Appendix K.<br><br>**Specifications:**<br><br>Full NBS specifications. |
| **Architectural (including landscaping, fire and acoustics)** |
| **Location Plan 1:1250**<br><br>**Existing Site Plan(s) 1:500**<br><br>Indicating the following information;<br><br>• Reference Datum Point for levels<br>• Building Lines<br>• Existing buildings, trees, hedges surface materials<br>• Existing levels<br>• Existing services and drainage<br>• Dotted outline of new buildings<br>• Principal Setting out lines |

- Extent of Contractor's compound, fencing etc
- Contractor's site access
- Areas identified for stockpiling topsoil, turf, spoil etc
- Positions and references of trial holes, borings etc
- Site Boundary

**Site Plan as proposed 1:500;**

Indicating the following information;

- Site Boundary
- Existing buildings, trees, hedges to be retained
- Existing level or features to be retained
- New Buildings indicated referencing entrances and exits
- New roads, pavings, fire paths, hard landscaping etc
- New levels
- Outline of/or reference to soft landscaping proposals
- Reference grid including principal setting out lines
- Manhole covers, gulley gratings, service covers, underground ducts etc
- Lamp standards and lighting bollards

**Setting Out Plans 1:500/1:200;**

Indicating the following information;

- Setting out dimensions/coordinates for the new building perimeter, roads, pavings, fire paths, hard landscaping etc related back to reference grid.

**General Arrangement Floor and Roof Plans 1:100/1:50;**

Indicating the following information;

- Reference grid
- Structural columns and walls
- Lifts, ducts, staircases
- Windows, internal partitions, doors
- Room names and numbers
- Key section references
- Roof falls
- Plant equipment in outline
- Ridges, hips, eaves, parapets, gutters etc

**General Arrangement Elevations 1:100/1:50;**

Indicating the following information;

- Existing Ground Level/Finished ground level
- Floor levels
- Reference grid
- Walls ,doors , windows
- Roof structures
- Cladding/panel materials
- Movement joints
- Rainwater pipes , soil and vent pipes
- Outline of adjoining buildings

**General Arrangement Sections 1:100/1:50;**

Indicating the following information;

- Floor and roof construction
- Walls and windows
- Internal walls/partitions
- Floor to Floor heights
- Basements
- Service voids

**Key Elevations for Special Areas 1:50 e.g. Main Entrances, Ward Tower, Junctions of Key Building Materials;**

Indicating the following information;

- Components – cross referencing detail drawings
- Glazing and panel materials, blinds , louvers, opening windows etc
- Positioning or setting out of critical joints in materials

**Fire Drawings 1:50;**

Indicating the following information;

- Location of all fire compartment and sub compartment walls
- Location of fire stops in ceiling voids
- Areas with fire resisting sealed ceiling
- Fire doors including their fire rating and whether self closing
- Fire fighting equipment i.e. extinguishers , hosereels, fire blankets, dry riser inlets and outlets
- Fire lifts
- Reference to details

**Internal Plan Drawings 1:50; (in relation to the departmental layouts issued with the ITPD exemplar, Appendix I)**

Indicating the following information;

- Reference to structural grid
- Columns and structural walls, lift shafts, movement joints
- Changes in floor level
- External wall and window construction, window cills. Walls and openings – setting out dimensions.
- Internal glazed screen types and setting out
- Staircase plans – setting out
- Staircase and lift numbers
- Partitions and duct enclosures – positions and openings
- Doors – positions and swings, fire resistance and self closure
- Sanitary fittings, sizes and positions
- IPS sizes and positions
- Fixed mechanical and electrical equipment – types in outline
- Fixed fire fighting equipment – size and position
- Fire protection and means of escape requirements
- Access to crawlways, ducts, subways and trenches, plant etc
- Layout of lift pit, access ladders, stair/lift shaft smoke vents and lift motor room
- Fixed joinery and hardware
- Ceiling layouts incorporating all ceiling services and access requirements
- Wayfinding/Signage drawings indicating size and position
- Rainwater pipes, soil and vent pipes – dimensional position
- Reference to details through external walls, load bearing walls, window/door jambs, heads etc
- Cavity Barriers
- Internal finishes – floor, ceiling, walls (at 1:200/1:100)
-

~~**Detailed Roof Plan(s) 1:50;**~~

~~Indicating the following information;~~

- ~~Reference Grid~~
- ~~Levels and finishes types~~
- ~~Movement Joints~~
- ~~Roof pavings~~
- ~~Falls~~
- ~~Parapets, copings~~
- ~~Flashings, gutters and outlets~~
- ~~Handrails, changes in level, ladders and steps~~
- ~~Fire separation walls above or within the roof~~
- ~~Fire protections and means of escape requirements across or through roof~~
- ~~Roof lights~~
- ~~Enclosures for fire equipment or plant~~
- ~~Vent terminals, drainage vent pipes, flues, lightening protection, aerials~~
- ~~Fixed equipment above roof (i.e. window cleaning apparatus)~~
- ~~Fixed mechanical and electrical equipment and plant above roof~~

- Reference to details through eaves, ridges, balconies etc
-

**Detailed Sections 1:20/1:10;**

Indicating the following information;

- Window cill and head heights
- Balconies
- Roof construction and finish, drainage falls
- Eaves, parapets, gutters etc
- Rooflights, louvers, shading devices
- Lift pits
- Basement construction and tanking
- Damp proof coursing and membranes
- Partitions and doors – heights and junctions
- Datum for levels
- Existing ground/finishes ground level
- Reference to structural grid
- Floor to floor heights
- Suspended ceiling heights and profiles
- Movement joints
- Slab/beam construction
- Cavity Barriers

**Staircase and Lift Details 1:50/1:20;**

Indicating the following information;

- Reference to structural grid
- Setting out of treads risers , landings and relationship to structure, external wall, ceilings
- Lines of nosings with setting out dimensions to individual stair flights, landings and stairwell
- Non slip inserts or safety nosings etc
- Handrails
- Balustrades and fixings – setting out
- Reference to details
- Pit Details
-

**Detail Drawings 1:5;**

As required to sufficiently indicate key construction details.

**All 1:50 Room Layouts and RDS agreed with the Board**

**Fully loaded 1:50 Room Layouts and RDS (1:50s and RDS incl M&E/environmental) to be agreed with the Board for every room included in Appendix E and Appendix J of Volume 2/1.**

| Services Systems | |
|---|---|
| 1. | All of the items included for the original (Stage 0) main tender return~~stage one~~ with any proposed variations highlighted. |
| 2. | Detailed program of Information release |
| 3. | All work to complete outline, detailed, final proposal stages. |
| 4. | All input required for Detailed Planning and Building Regulation Compliance. |
| 5. | CLG Approved National Calculation Methodology Tool Compliance report on SPP6 and PAN84. |
| 6. | Full Dynamic modelling of the Building Environment |
| 7. | Provision of condensation analysis for each element of the building |
| 8. | Provision of comprehensive engineering solutions for the Mechanical, Public Health, Medical Gases, Electrical and Lift services solutions including:<br>• Design Calculations<br>• Detailed Design Drawings for all elements of the works (1:100~~ and 1:50~~);<br>• Detailed Specifications for all elements of the works;<br>• Detailed Plant schedules for all elements of the works;<br>• Construction drawings for all elements of the works (1:100~~ and 1:50~~);<br>• ~~Manufacturer's drawings for all elements of the works (1:20 and 1:50);~~<br>• Working drawings including:<br>• ~~General layout drawings of the complete works (1:50);~~<br>• ~~Builders work drawings (1:50):~~<br>• ~~Detailed l~~Layouts showing the location of all equipment including cable, cable tray, conduit, trunking in switchrooms and plant rooms (1:200);<br>•~~Assembly drawings of all factory built equipment and site built assemblies (1:20 and 1:50);~~<br>• System diagrams and circuit wiring diagrams for all installations and equipment (A1 to ensure legibility);<br>•~~Multi trade co-ordination drawings (1:20);~~<br>• Plantroom layout drawings (1:200); and<br>• Co-ordination sections at key "pinch" points (1:520). |
| 9. | Commissioning settings for all elements of the works, including microbiological testing proposals for operating theatres and specialist ventilation. |
| 10. | Risk assessments and detailed design statement in accordance with CDM. |
| 11. | Lift Installation proposals |
| 12. | |

| | |
|---|---|
| 13. | Issue of Co-ordination drawings to demonstrate compliance with health documents and integration of services within the building fabric and structural solution. |
| 14. | Acoustic report indicating solutions proposed for all elements of the works |
| 15. | Issue of fully integrated Asset management system for all elements of the works |
| 16. | ~~Fully integrated as fitted drawings for all elements of the works.~~ |
| 17. | ~~Fully integrated as operation and maintenance manuals for all elements of the works~~ |
| 18. | ~~Fully integrated Planned Preventative Maintenance System.~~ |
| 19. | ~~Completion of all testing and system warranty documentation~~ |
| 20. | ~~Building leakage testing~~ |
| 21. | ~~Server room air integrity test certificates~~ |
| 22. | ~~Building Log Book~~ |
| 23. | ~~Building user guides~~ |
| 24. | Confirmation that the design fully complies with the requirements of the Employers Requirements, M&E appendices 1 to 6, all HTM's, HBN's, SHTM's and current legislation. |
| | Proposals for environmental proving of all systems |
| | . |

**Civils and Structural**

**General External Infrastructure Works**

***Documents***

Schedule of Information that will be passed to NHS GG&C on completion of the works in respect of roads and drainage works

***Drawings***

Detailed 1:500 scale Phasing plans / temporary works plans for the implementation of roads and drainage infrastructure linked to programme

**Roads**

**Documents**

Stage 1 and Stage 2 Road Safety Audit
Specification for Roads and Hardstandngs

**Drawings**

*1:500 scale plans showing:-*
Curve Radii
Corner Radii
Swept Path analysis on bus routes and service accesses
Pedestrian Crossings
Footways, Cycleways, Cycletracks
Carriageway, footway and cycleway widths
Car Parking arrangements with distribution of spaces and use identified
Areas of differing Carriageway Construction
Traffic Signs and Road Markings
Kerbing Layouts
Roads Drainage system
All crossfalls, supereleveation and cambers
Indicative Signalised layouts at external roads

*Typical Sections and details to appropriate scale showing:-*
Carriageway Construction
Capping provision
Footway / Cycleway Construction
Pedestrian Crossing point arrangements

Kerb Types

***Drainage***

***Documents***

Flood Risk Assessment, undertaken by the Contractor but in the ownership of NHS GG&C.

Flood Risk Strategy

Drainage Management Strategy.

Deliverables for these reports as per Employers Requirements

Drainage maintenance schedule

Correspondence from SEPA confirming the Agency's approval/support of :-
SUDS Strategy
Flood Risk Assessment
Proposals for discharge to the watercourse
Proposals for re-alignment of the watercourses

Correspondence from Scottish Water confirming the Authority's approval/support of :-
Proposed discharge to the public drainage system

Correspondence from Glasgow City Council confirming the Council's approval/support of :-
Flood Risk Assessment
Flood Risk Management Strategy

Calculations for the whole sewerage system.

Calculations in support of the upgrading of culverts in the site

Specification for Drainage works, including proposals for the treatment of existing redundant drainage.

**Drawings**

*1:1250 (or greater) plans showing :-*
Drainage provision in support of SUDS and Drainage Strategy

*1:500 scale plans showing:-*
Culvert upgrading drawings
Amendments to the public sewerage system
Layout of roads and buildings
Layout of sewers, outfalls, underground storage, and SUDS features
Long sections showing proposed levels, existing ground levels, together with chambers, chainages, gradients, pipe sizes, pipe materials, and SUDS features
Structures or trees which are, or shall be, greater than 10m high within 10m of proposed

drainage.

Long sections should be to an exaggerated scale, with the horizontal scales the same as the plan

***Details***

Chamber Details
Pipe Bedding Details

**Traffic Management Strategy**

Written statement on maintaining access, Public Transport, Pedestrian flow, Ambulance access/routes, Public Safety including any proposals for the promotion of Traffic Regulation Orders.

**Acute Adults & Children's Hospital, Car Parks, Laboratory Building and Energy Centre**

**Documents**

Design Philosophy Statement taken from initial bid and expanded through to and agreed at FBC. Specific design detail should include information on:

- Loadings
- Imposed Movements
- Performance Requirements
- Construction Implications
- Design Interfaces
- Materials

In addition to initial bid document, the Design Philosophy Statement should include:

6. Modelling and Analysis
6.1 Description of overall structural behaviour
6.2 Description of modeling, analysis and design
6.3 Methods of design covering e.g. foundations, retaining walls, slabs, columns, staircases.
7. Calculations
7.1 Sample calculations undertaken
7.2 Software used
7.3 Standard details
8. Checking

**Drawings**

For FBC drawings should be developed that reflect the equivalent of RIBA Stage EF, Tender Status as a minimum. ~~Drawings status enable a robust cost to be agreed with Client.~~

**Specifications**

Full Tender Status specifications are required.

**Further Site Investigations.**

Detail any further site investigations proposed.

**Unknowns**

Method/strategy for advising of site unknowns encountered to Client, e.g. hospital waste (buried).

~~**Sub-Contracts**~~

~~List of major works to be sub-contracted.~~

**PART 2 - Information to be completed by the Contractor and agreed (where relevant) with the Board in relation to the Works ~~advance of FBC~~:**

| **Generally** |
|---|
| **Contractors Proposals Report:**<br><br>A full and comprehensive response to the Employer's Requirements clearly demonstrating compliance.<br><br>**Full Production Information:**<br><br>Drawings as required by SGHD to achieve Full Business Case, including FPI of the drawings listed in this Appendix K.<br><br>**Specifications:**<br><br>Full NBS specifications. |
| **Architectural (including landscaping, fire and acoustics)** |
| **Location Plan 1:1250**<br><br>**Existing Site Plan(s) 1:500**<br><br>Indicating the following information;<br><br>• Reference Datum Point for levels<br>• Building Lines<br>• Existing buildings, trees, hedges surface materials<br>• Existing levels<br>• Existing services and drainage<br>• Dotted outline of new buildings<br>• Principal Setting out lines<br>• Extent of Contractor's compound, fencing etc<br>• Contractor's site access<br>• Areas identified for stockpiling topsoil, turf, spoil etc<br>• Positions and references of trial holes, borings etc<br>• Site Boundary |

**Site Plan as proposed 1:500;**

Indicating the following information;

- Site Boundary
- Existing buildings, trees, hedges to be retained
- Existing level or features to be retained
- New Buildings indicated referencing entrances and exits
- New roads, pavings, fire paths, hard landscaping etc
- New levels
- Outline of/or reference to soft landscaping proposals
- Reference grid including principal setting out lines
- Manhole covers, gulley gratings, service covers, underground ducts etc
- Lamp standards and lighting bollards

**Setting Out Plans 1:500/1:200;**

Indicating the following information;

- Setting out dimensions/coordinates for the new building perimeter, roads, pavings, fire paths, hard landscaping etc related back to reference grid.

**General Arrangement Floor and Roof Plans 1:100/1:50;**

Indicating the following information;

- Reference grid
- Structural columns and walls
- Lifts, ducts, staircases
- Windows, internal partitions, doors
- Room names and numbers
- Key section references
- Roof falls
- Plant equipment in outline
- Ridges, hips, eaves, parapets, gutters etc

**General Arrangement Elevations 1:100/1:50;**

Indicating the following information;

- Existing Ground Level/Finished ground level
- Floor levels
- Reference grid
- Walls ,doors , windows
- Roof structures
- Cladding/panel materials
- Movement joints
- Rainwater pipes , soil and vent pipes
- Outline of adjoining buildings

**General Arrangement Sections 1:100/1:50;**

Indicating the following information;

- Floor and roof construction
- Walls and windows
- Internal walls/partitions
- Floor to Floor heights
- Basements
- Service voids

**Key Elevations for Special Areas 1:50 e.g. Main Entrances, Ward Tower, Junctions of Key Building Materials;**

Indicating the following information;

- Components – cross referencing detail drawings
- Glazing and panel materials, blinds , louvers, opening windows etc
- Positioning or setting out of critical joints in materials

**Fire Drawings 1:50;**

Indicating the following information;

- Location of all fire compartment and sub compartment walls
- Location of fire stops in ceiling voids
- Areas with fire resisting sealed ceiling
- Fire doors including their fire rating and whether self closing
- Fire fighting equipment i.e. extinguishers , hosereels, fire blankets, dry riser inlets and outlets
- Fire lifts
- Reference to details

**Internal Plan Drawings 1:50;**

Indicating the following information;

- Reference to structural grid
- Columns and structural walls, lift shafts, movement joints
- Changes in floor level
- External wall and window construction, window cills. Walls and openings – setting out dimensions.
- Internal glazed screen types and setting out
- Staircase plans – setting out
- Staircase and lift numbers
- Partitions and duct enclosures – positions and openings
- Doors – positions and swings, fire resistance and self closure
- Sanitary fittings, sizes and positions
- IPS sizes and positions
- Fixed mechanical and electrical equipment – types in outline
- Fixed fire fighting equipment – size and position
- Fire protection and means of escape requirements
- Access to crawlways, ducts, subways and trenches, plant etc
- Layout of lift pit, access ladders, stair/lift shaft smoke vents and lift motor room
- Fixed joinery and hardware
- Ceiling layouts incorporating all ceiling services and access requirements
- Wayfinding/Signage drawings indicating size and position
- Rainwater pipes, soil and vent pipes – dimensional position
- Reference to details through external walls, load bearing walls, window/door jambs, heads etc
- Cavity Barriers
- Internal finishes – floor, ceiling, walls (also to be provided at 1:200/1:100)

**Detailed Roof Plan(s) 1:50;**

Indicating the following information;

- Reference Grid
- Levels and finishes types
- Movement Joints
- Roof pavings
- Falls
- Parapets, copings
- Flashings, gutters and outlets
- Handrails, changes in level, ladders and steps
- Fire separation walls above or within the roof
- Fire protections and means of escape requirements across or through roof
- Roof lights
- Enclosures for fire equipment or plant
- Vent terminals, drainage vent pipes, flues, lightening protection, aerials
- Fixed equipment above roof (i.e. window cleaning apparatus)
- Fixed mechanical and electrical equipment and plant above roof
- Reference to details through eaves, ridges, balconies etc

**Detailed Sections 1:20/1:10;**

Indicating the following information;

- Window cill and head heights
- Balconies
- Roof construction and finish, drainage falls
- Eaves, parapets, gutters etc
- Rooflights, louvers, shading devices
- Lift pits
- Basement construction and tanking
- Damp proof coursing and membranes
- Partitions and doors – heights and junctions
- Datum for levels
- Existing ground/finishes ground level
- Reference to structural grid
- Floor to floor heights
- Suspended ceiling heights and profiles
- Movement joints
- Slab/beam construction
- Cavity Barriers

**Staircase and Lift Details 1:50/1:20;**

Indicating the following information;

- Reference to structural grid
- Setting out of treads risers , landings and relationship to structure, external wall, ceilings
- Lines of nosings with setting out dimensions to individual stair flights, landings and stairwell
- Non-slip inserts or safety nosings etc
- Handrails
- Balustrades and fixings – setting out
- Reference to details
- Pit Details

**Detail Drawings 1:5;**

As required to sufficiently indicate key construction details.

~~All~~**Fully loaded 1:50 Room Layouts and RDS (1:50s and RDS incl M&E/environmental) to be agreed with the Board for every room.**

| Services Systems | |
|---|---|
| 1. | All of the items included for stage one with any proposed variations highlighted. |
| 2. | Detailed program of Information release |
| 3. | All work to complete outline, detailed, final proposal stages. |
| 4. | All input required for Detailed Planning and Building Regulation Compliance. |
| 5. | CLG Approved National Calculation Methodology Tool Compliance report on SPP6 and PAN84. |
| 6. | Full Dynamic modelling of the Building Environment |
| 7. | Provision of condensation analysis for each element of the building |
| 8. | Provision of comprehensive engineering solutions for the Mechanical, Public Health, Medical Gases, Electrical and Lift services solutions including:<br>• Design Calculations<br>• Detailed Design Drawings for all elements of the works (1:100 and 1:50);<br>• Detailed Specifications for all elements of the works;<br>• Detailed Plant schedules for all elements of the works;<br>• Construction drawings for all elements of the works (1:100 and 1:50);<br>• Manufacturer's drawings for all elements of the works (1:20 and 1:50);<br>• Working drawings including:<br>• General layout drawings of the complete works (1:50);<br>• Builders work drawings (1:50):<br>• Detailed layouts showing the location of all equipment including cable, cable tray, conduit, trunking in switchrooms and plant rooms (1:20);<br>• Assembly drawings of all factory built equipment and site built assemblies (1:20 and 1:50);<br>• System diagrams and circuit wiring diagrams for all installations and equipment (A1 to ensure legibility);<br>• Multi-trade co-ordination drawings (1:20);<br>• Plantroom layout drawings (1:20); and<br>• Co-ordination sections at key "pinch" points (1:20). |
| 9. | Commissioning settings for all elements of the works, including microbiological testing proposals for operating theatres and specialist ventilation. |
| 10. | Risk assessments and detailed design statement in accordance with CDM. |
| 11. | Lift Installation proposals |
| 12. | Issue of Co-ordination drawings to demonstrate compliance with health documents and integration of services within the building fabric and structural solution. |
| 13. | Acoustic report indicating solutions proposed for all elements of the works |
| 14. | Issue of fully integrated Asset management system for all elements of the works |

| | |
|---|---|
| 15. | Fully integrated as fitted drawings for all elements of the works. |
| 16. | Fully integrated as operation and maintenance manuals for all elements of the works |
| 17. | Fully integrated Planned Preventative Maintenance System. |
| 18. | Completion of all testing and system warranty documentation |
| 19. | Building leakage testing |
| 20. | Server room air integrity test certificates |
| 21. | Building Log Book |
| 22. | Building user guides |
| 23. | Confirmation that the design fully complies with the requirements of the Employers Requirements, M&E appendices 1 to 6, all HTM's, HBN's, SHTM's and current legislation. |
| 24. | Proposals for environmental proving of all systems |
| | . |

**Civils and Structural**

**General External Infrastructure Works**

***Documents***

Schedule of Information that will be passed to NHS GG&C on completion of the works in respect of roads and drainage works

***Drawings***

Detailed 1:500 scale Phasing plans / temporary works plans for the implementation of roads and drainage infrastructure linked to programme

**Roads**

**Documents**

Stage 1 and Stage 2 Road Safety Audit
Specification for Roads and Hardstandngs

**Drawings**

*1:500 scale plans showing:-*
Curve Radii
Corner Radii
Swept Path analysis on bus routes and service accesses
Pedestrian Crossings
Footways, Cycleways, Cycletracks
Carriageway, footway and cycleway widths
Car Parking arrangements with distribution of spaces and use identified
Areas of differing Carriageway Construction
Traffic Signs and Road Markings
Kerbing Layouts
Roads Drainage system
All crossfalls, supereleveation and cambers
Indicative Signalised layouts at external roads

*Typical Sections and details to appropriate scale showing:-*
Carriageway Construction
Capping provision
Footway / Cycleway Construction
Pedestrian Crossing point arrangements
Kerb Types

### *Drainage*

***Documents***

Flood Risk Assessment, undertaken by the Contractor but in the ownership of NHS GG&C.

Flood Risk Strategy

Drainage Management Strategy.

Deliverables for these reports as per Employers Requirements

Drainage maintenance schedule

Correspondence from SEPA confirming the Agency's approval/support of :-
SUDS Strategy
Flood Risk Assessment
Proposals for discharge to the watercourse
Proposals for re-alignment of the watercourses

Correspondence from Scottish Water confirming the Authority's approval/support of :-
Proposed discharge to the public drainage system

Correspondence from Glasgow City Council confirming the Council's approval/support of :-
Flood Risk Assessment
Flood Risk Management Strategy

Calculations for the whole sewerage system.

Calculations in support of the upgrading of culverts in the site

Specification for Drainage works, including proposals for the treatment of existing redundant drainage.

**Drawings**

*1:1250 (or greater) plans showing :-*
Drainage provision in support of SUDS and Drainage Strategy

*1:500 scale plans showing:-*
Culvert upgrading drawings
Amendments to the public sewerage system
Layout of roads and buildings
Layout of sewers, outfalls, underground storage, and SUDS features
Long sections showing proposed levels, existing ground levels, together with chambers, chainages, gradients, pipe sizes, pipe materials, and SUDS features
Structures or trees which are, or shall be, greater than 10m high within 10m of proposed drainage.

Long sections should be to an exaggerated scale, with the horizontal scales the same as the plan

***Details***

Chamber Details
Pipe Bedding Details

**Traffic Management Strategy**

Written statement on maintaining access, Public Transport, Pedestrian flow, Ambulance access/routes, Public Safety including any proposals for the promotion of Traffic Regulation Orders.

**Acute Adults & Children's Hospital, Car Parks, Laboratory Building and Energy Centre**

**Documents**

Design Philosophy Statement taken from initial bid and expanded through to and agreed at FBC. Specific design detail should include information on:

- Loadings
- Imposed Movements
- Performance Requirements
- Construction Implications
- Design Interfaces
- Materials

In addition to initial bid document, the Design Philosophy Statement should include:

| | |
|---|---|
| 6. | Modelling and Analysis |
| 6.4 | Description of overall structural behaviour |
| 6.5 | Description of modeling, analysis and design |
| 6.6 | Methods of design covering e.g. foundations, retaining walls, slabs, columns, staircases. |
| 9. | Calculations |
| 9.1 | Sample calculations undertaken |
| 9.2 | Software used |
| 9.3 | Standard details |
| 10. | Checking |

**Drawings**

For FBC drawings should be developed that reflect the equivalent of RIBA Stage F, Tender Status as a minimum. Drawings status enable a robust cost to be agreed with Client.

**Specifications**

Full Tender Status specifications are required.

**Further Site Investigations.**

Detail any further site investigations proposed.

**Unknowns**

Method/strategy for advising of site unknowns encountered to Client, e.g. hospital waste (buried).

**Sub-Contracts**

List of major works to be sub-contracted.

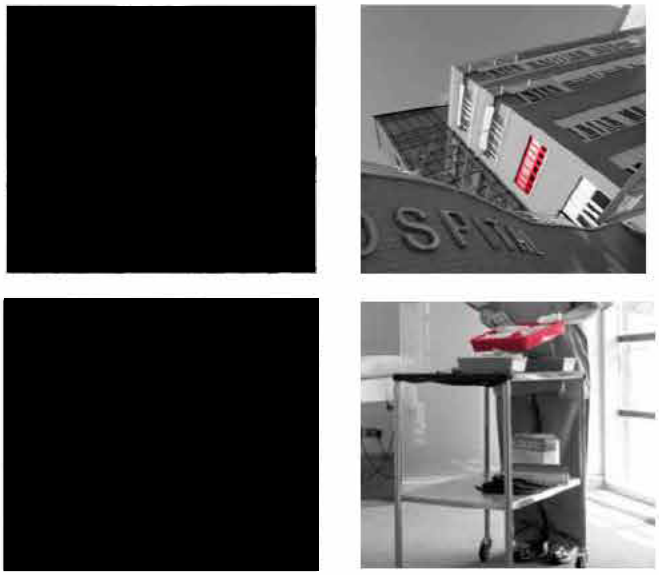
**NHS Greater Glasgow and Clyde**

**New South Glasgow Hospitals (NSGH) Project**

# INVITATION TO PARTICIPATE IN COMPETITIVE DIALOGUE

## VOLUME 2/1

## APPENDIX M&E.1
## NEW HOSPITAL BUILDING SERVICES AND UTILITY CONNECTIONS



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## 1.0 Introduction

### 1.1 Introduction

This document has been prepared to collate the available information and provide an insight into the proposed Utility and Site connections required to allow the contractor to formulate the detailed requirements and commence negotiations with the Utility Companies.

In addition we have recorded were additional information is required and also set out the hospital building services system interconnection requirements.

## 2.0 Services Diversions & Construction Site Supplies

### 2.1 Services Diversions

Prior to the commencement of the construction phase the buildings within the site boundary are to be demolished and the majority of existing utility and inter-site services are to be diverted, made redundant or removed by the Board. Refer to drawing G1700X G(52) combined –Site for locations of the known services.

### 2.2 Construction Site Requirements

All temporary utility services including Water / Electricity / Gas/ Comms for all construction and Technical Commissioning operations shall be provided by the Contractor at his sole cost.

### 2.3 Phased Site Handover

Areas of the site shall be retained in the Board's control to allow ongoing operations of the retained estate, the services in these areas shall be protected during the works and the Contractor shall develop a removal strategy for discussion with the Board.

## 3.0 Electricity

### 3.1 Introduction

The Board have appointed DSSR consulting engineers to negotiate the reconfiguration works required to clear the site, this work is ongoing and shall be completed prior to commencement of the main project.

The Board shall reconcile existing power connections to suit retained estate.

Special care shall be required in the vicinity of the relocated services and attention is drawn to the 11kV power cables which have been diverted to the boundary adjacent to the Laboratory site. These shall be reconfigured by the Contractor as soon as a safe route can be agreed.

### 3.2 Power Strategy

- The base load information is detailed in appendix M&E2.
- The Utility Company establishes a new Primary Sub-station with central metering based on twin feeds from the Govan grid connection point.
- The Primary Sub-station may be provided as a shared or sole asset and Scottish Power have advised that detailed proposals will be available for discussion during the tender.
- The Primary Sub-station shall be sited in the area adjacent to the present Scottish Ambulance Centre. As noted elsewhere discussions are ongoing to purchase land occupied by Scottish Ambulance Centre, if these are successful the area will be re-planned in line with the Master Plan and the Primary Sub-station will be integrated with the car park proposed for that area.
- The Primary Sub-station shall be rated to allow connection of the whole site including future proposals and the Laboratory, As a contingency a separate 11kV supply shall be procured for the Laboratory in the event that the Primary Sub-station is not available to suit the build program.
- The Contactor shall include for all aspects of the power connection including construction of a high quality building to house the Primary Sub-Station arrangement and all site trenching from public boundary of the existing hospital site to the connection point within new development and all distribution routes.
- Refer to drawing G1274/E(60)01 for proposed schematic interconnections.
- Refer to drawing G1274/U(96)01 for proposed incoming cable routes.

- Builderswork drawings shall be made available to allow the Contractor to construct the Primary Sub-station.

## 4.0 Gas

### 4.1 Introduction

The Board have appointed DSSR consulting engineers to negotiate the reconfiguration works required to clear the site, this work is ongoing and shall be completed prior to commencement of the main project.

The Board shall reconcile existing gas connections to suit retained estate.

### 4.2 Gas Strategy

- The base load information is detailed in appendix M&E2.
- A new gas supply shall be provided from a new meter position to be established in a purpose build building at Govan road. Gas shall be run in a combined services trench with connections to the Laboratories and Energy Centre, resilient pipework shall be routed from the Energy Centre to the new hospital buildings to meet the equipment and services demand e.g. steam humidifiers, sterilisation units and future proving etc.
- Scotland Gas Networks (SGN) have provided a budget quotation reference 210297 dated 20 January 2009, this is based on the initial loads considered at that time, and does not include the requirements of the secondary energy centre. The Contractor shall negotiate with SGN to allow for a quotation based on the loads including the full design requirements for their selected heating and CHP mediums and provide an assessment for all gas requirements for the works together with a further supply to meet the requirements of the second energy centre which shall be developed by the Contractor to meet the retained estate and planned new works as set out in appendix M&E2.
- Refer to drawing G1274/M(54)01 for proposed schematic interconnections.
- Refer to drawing G1274/U(96)01 for proposed incoming pipe routes.
- The Contactor shall include for all aspects of the gas connection including construction of a high quality building to house the governor/meter arrangement and all site trenching from public boundary of the existing hospital site to the connection point within new development and all distribution routes.

## 5.0 Water

### 5.1 Introduction

The Board have appointed DSSR consulting engineers to negotiate the reconfiguration works required to clear the site, this work is ongoing and shall be completed prior to commencement of the main project.

The Board shall reconcile existing water connections to suit retained estate.

Contact has been made with Scottish Water and a dialogue has been opened up regarding the philosophy for servicing the site.

After the strategy has been discussed / agreed, the Contractor shall acquire the water supplies and meters etc through the normal channels i.e. through the licensed provider (e.g. Business Stream)

### 5.2 Water Strategy

- The base load information is detailed in appendix M&E2.
- New water supplies shall be provided from new meter positions to be established at Govan and Hardgate roads. Water shall be run in a combined services trench with connections to the Laboratories and Energy Centre, resilient pipework shall be routed from the Energy Centre to the new hospital buildings to meet the equipment and services demand.
- Refer to drawing G1274/P(53)01 for proposed schematic interconnections.
- Refer to drawing G1274/U(96)01 for proposed incoming pipe routes.
- The Contactor shall include for all aspects of the water connection including all site trenching from public boundary of the existing hospital site to the connection points within new development and all distribution routes.

### 5.3 Filtered Water

The full water requirement for the Hospitals and Laboratories shall be filtered in accordance with Section 8 of the Employers requirements.

## 6.0 Voice

### 6.1 Introduction

The Board have appointed DSSR consulting engineers to negotiate the reconfiguration works required to clear the site, this work is ongoing and shall be completed prior to commencement of the main project.

The Board shall reconcile existing voice connections to suit retained estate.

### 6.2 Voice Strategy

- The main voice services shall be provided by VOIP which shall be interconnected by the Data Network Connection, Emergency fall back Telephones and general Analogue requirements shall be provided via direct service from the network Utility Companies.
- New voice incomers shall be provided from at Govan and Hardgate roads. Voice shall be run in a combined services trench with connections to the Main Hospital Buildings, Laboratories and Energy Centre,
- Refer to drawing G1274/U(96)01 for proposed incoming duct routes.
- Structured cabling shall be utilised for the main telephony requirements supplemented by Wireless connectivity.
- All voice patching (Analogue lines) shall be colour co-ordinated.

## 7.0 Data

### 7.1 Introduction

The Board have appointed DSSR consulting engineers to negotiate the reconfiguration works required to clear the site, this work is ongoing and shall be completed prior to commencement of the main project.

The Board shall reconcile existing data connections to suit retained estate.

### 7.2 Data Strategy

- The main data services shall be provided by CAT6A - RJ45 outlets with power over Ethernet facility.
- New Network incomers shall be provided from at Govan and Hardgate roads. Data shall be run in a combined services trench with connections to the Main Hospital Buildings, Laboratories and Energy Centre,
- Refer to drawing G1274/U(96)01 for proposed incoming duct routes.
- Structured cabling with power over Ethernet facility shall be utilised for the main data requirements supplemented by Wireless connectivity.
- All voice patching shall be colour co-ordinated.

SGN Connections
A Scotia Gas Networks Company

Wallace Whittle Ltd.
8 Elmbank Gardens
Glasgow
Lanarkshire.
G2 4NQ

4 Queen Anne Drive
Lochend Industrial Estate
Newbridge
EH28 8LH

Tel: [redacted]
Fax: [redacted]

Quotation Reference: N/A
SGN Quotation Reference: 210297
20/01/2009

Dear: **Mr Brian Rutherford**

**Re: New Glasgow South Hospitals, 1345 Govan Road, Glasgow, Lanarkshire. G51 4TF**

Thank you for requesting a quotation for the above address. We received your quotation request on 06/01/09. I am writing to advise you that we have carried out an initial investigation of your request, and I am pleased to be able to provide you with a budget indication of the likely costs.

**Description of works:**

SGN Connections to lay 150m x 355mm / 100m x 315mm PE LP Main from an Ex 18" CI LP main in roadway.
SGN Connections to also lay 26m x 315mm LP PE single service & terminate to an external location (kiosk & bases provided by others).
SGN Connections to excavate & reinstate in public only.
Customer to excavate and reinstate within site boundary.
This quote does not include for a gas meter.

End user to provide all outlet pipework and a suitable external kiosk/meter housing (and base) to IGE/GM/6 & 7 and IGE/SR/25.
The customer should contact their gas supplier to arrange for the installation of a suitable gas meter and associated ancillary equipment.

Budget indication is subject to customer obtaining any necessary easements/servitude/wayleaves/consents at no additional charge to SGN Connections.
Budget indication does not include for any isolations / diversions that may be required.
Budget indication does not take into account any future potential loads.

The budget indication is £49,007.99 to carry out the works, and does not represent an offer to carry out the works. We may provide a firm quotation that is significantly different from the budget indication. As a guide the price is deemed to be accurate within +/- 10%.

If you would like a firm quotation please contact the SGN Connections Front Desk on [redacted] or fax number [redacted]. We look forward to hearing from you in the near future.

It may be possible to obtain an alternative quotation from the Gas Transporters or Utility Infrastructure Providers (UIPs) for the provision of this work. A list of registered UIPs can be obtained from the Gas Industry Registration Scheme website www.GIRS.co.uk (follow the Lloyd's Register link). The Society of British Gas Industries can also provide information on alternative installers at www.sbgi.org.uk. A list of Gas Transporters can be found on the Ofgem website www.ofgem.gov.uk.

Yours sincerely,

[redacted]

**Tony Smith**
**Design & Quote Engineer**

24 hour gas escape number 0800 111 999*
*Calls will be recorded and may be monitored

SGN Connections Limited is part of the Scotia Gas Networks group
Registered in England No. 5913935
Registered Office: St. Lawrence House, Station Approach, Horley, Surrey RH6 9HJ
Also: www.scotiagasnetworks.co.uk

**NHS Greater Glasgow and Clyde**

**New South Glasgow Hospitals (NSGH) Project**

# INVITATION TO PARTICIPATE IN COMPETITIVE DIALOGUE

## VOLUME 2/1

## APPENDIX M&E.2
## NEW HOSPITAL BASE BUILDING LOADS

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## 1.0 Introduction

### 1.1 General

This document has been prepared to collate the available information and to provide an insight into the ratings utilised for the Utility enquires.

These calculations are for guidance only the Contractor shall incorporate their low, zero carbon and site renewables proposals within their overall energy strategy, assess the actual building loads and select the plant accordingly.

The reference to particular technologies is not prescriptive and the Contractor shall put forward their scheme design proposals to meet the loads and performance criteria together with a comprehensive base load calculation package to back up their main plant selection.

All systems proposed by the Contractor require to be proved in use with benchmark sites available for review.

The works incorporate two energy centres, the first energy centre layout has been developed schematically to highlight the requirement for system interfaces, Boiler/CCP/Generator flue requirements and special water proofing. The contractor shall develop the scheme for both energy centres and provide a working detailed plant layout drawings and schematic drawings to indicate their proposals.

### 1.2 Renewables and LZCT

Refer to Appendix M&E 4 for site renewables and LZCT information.

## 2.0 Integrated CHP / Boiler Load for the Children's and Adult Acute Hospitals

### 2.1 Heating Load

Heating Load is 11,200kW based on:-

| | Floor area |
|---|---|
| Acute Adult | 104,500m² |
| Sick Children | 35,500m² |
| | 140,000m² |

### 2.2 Ventilation AHU Load

Assume average building floor height = 2.7m

Total calculated building volume 140000 x 2.7 = 378000m³

Ventilation Load is 8007kW based on building volume and 60% heat recovery. (1), (2)

The proposal shall be based on actual heights and a detailed ventilation proposal.

### 2.3 Cooling Load

The Cooling requirement shall be developed by the Contractor for the standard and max temp mandatory variant bids, all cooling shall be provided by the most efficient method including, absorption chillers, free cooling etc.

### 2.4 Hot Water Service Loads

Adult Acute Hospital is based on 1190 beds.

Children's Hospital is based on 245 beds.

Loads based on HTM 04-01 Part A.

Total DHW Load based on Plate Heat Exchangers = 5793kW

## 2.5 Integrated CHP / Boiler Sizing

| | | |
|---|---|---|
| Heating | 11,200kW | From 2.1 |
| AHU Loads | 8,007kW | From 2.2 |
| DHW | 5,793kW | From 2.3 |

25,000kW Total

Total estimated load 25,000kW ÷ 5 = 5000kW say 5000kW for boiler sizing purposes.

e.g. 5 duty and 1 standby (6 boilers required in total)

## 3.0 Integrated CHP / Boiler Load for the Retained and Future Estate

3.1 Combined Heating and Hot Water demand to meet the following requirements:-

| **Retained Estate** (4) | **Floor Area ($m^2$)** | **Estimated Load in KW** |
|---|---|---|
| Maternity | 11,704 | 1400 |
| Neonatal | 4,750 | 475 |
| PRDU | 1,345 | 160 |
| Neurology | 6,672 | 670 |
| Neuro surgical | 13,999 | 1400 |
| Spinal | 4,992 | 600 |
| Stepdown | 539 | 65 |
| Acute Medical Block | | 900 |
| Total | | 5670 |

| Proposed Estate (5) | **Floor Area ($m^2$)** | **Estimated Load in KW** |
|---|---|---|
| Labs | 17,000 | 1,700 |
| Education Building | 20,000 | 2,000 |
| Offices | 15,000 | 1,500 |
| Clinical Research | 5,000 | 500 |
| Total | | 5700 |

3.2 Integrated CHP / Boiler Sizing

| | |
|---|---|
| Retained Estate | 5 670kW |
| Proposed Estate | 5700kW |
| | 11,370kW Total |

Total estimated load 11,370kW ÷ 3 = 3790kW say 4000kW for boiler sizing purposes.

e.g. 3 duty and 1 standby (4 boilers required in total)

## 4.0 Heating Oil Storage

4.1 Energy Centre 1

Fuel based on 35 sec oil to last 7 days. (3)

Load based on serving Children's and Adult Acute Hospitals.

Total Load = 25MW as per overview of Site Energy/Plant solutions report.

Allow boilers to run for one week (7 days)

5 Boilers running on full load for a week based on 5000kW boiler fuel consumption @ 560l/hr = 560,000 litres

This quantity of storage shall be incorporated in a combined pool which shall be sized to allow the standby generators to operate for 200hours.

Two tanks commercial sizing 10m x 10m x 3m High = 300,000 litres each or equivalent shall be provided.

Also a third tank of similar size shall be provided for fuel management and serve the retained Hospital Estate.

One of the tanks shall be provided early for beneficial use by the Board during the Construction Works to allow removal of the existing site Vertical Oil Tanks.

The system shall include fill points, delivery points, delivery point transfer pump sets and controls.

4.2 Energy Centre 2

Fuel based on 35 sec Oil to last 7 days. (3)

Load as tabulated above

Total Load = 11.5MW.

Allow boilers to run for one week (7 days)

3 Boilers running on full load for a week based on 4000kW boiler fuel consumption @ 448 l/hr = 225,792 litres

This quantity of storage shall be incorporated in a combined pool which shall be sized to allow the standby generators to operate for 200hours.

Two tanks commercial sizing 10m x 7m x 3m High = 210,000 litres each or equivalent shall be provided.

The system shall include fill points, delivery points, delivery point transfer pump sets and controls.

## 5.0 Electrical Load

The main power shall be delivered to a new primary sub-station located on the Southern General Hospital site, it shall be rated to feed the full hospital campus with load allocated for future development as outlined below.

| Building | Estimated Load |
|---|---|
| Acute Adult | 6,792 kVA |
| Sick Children | 2,307 kVA |
| Laboratories | 2,380 kVA |
| Maternity | 585 kVA |
| Neonatal | 250 kVA |
| PRDU | 100 kVA |
| Neurology | 250 kVA |
| Neuro surgical | 700 kVA |
| Spinal | 250 kVA |
| Step down | 33 kVA |
| Acute Medical Block | 450 kVA |
| Education Building | 2,000 kVA |
| Offices | 1,500 kVA |
| Clinical Research | 500 kVA |
| Car Park Lifts | 20 kVA |
| Drainage systems | 20 kVA |
| Sub total | 18,137 kVA |
| 25% uplift (for Main Hospitals only) | |
| Total generating capacity | 20,500 kVA |

The load estimates for the new hospitals have been based on the design solution report figure of 48VA/m² which is based on Edinburgh Royal Infirmary, this has been crossed checked with the typical range of power densities within HTM 06-01 which indicate a range of 30W/m² - 65W/m².

The upper range (65W/m²) has been selected as noted below to allow for ongoing growth.

The Contractor shall provide an update on the loads in line with the design development.

| Building | Floor Area | Load @ 65VA/m² |
|---|---|---|
| Acute Adult | 104,500 m² | 6,792kVA |
| Sick Children | 35,500 m² | 2,307kVA |

## 6.0 Standby Power Load and Oil Storage

### 6.1 Generation

The standby switchgear and distribution infrastructure shall be rated to accommodate the new hospital buildings together with the full Southern General Campus Site including the estimated future buildings.

The standby power shall be delivered from the new energy centres which shall be located adjacent to the Laboratories facility and in the area presently occupied by the Morgue.

The initial energy centre shall be configured to accommodate generation capacity for the new hospital buildings together with an element of the retained capacity, the second energy centre shall be configured to accommodate generation capacity for the remainder of the retained facilities together with capacity for the future buildings estimated load as indicated below.

The Contractor shall provide a comprehensive design including HV works, general electrical, earthing, control, SCADA, ventilation, sound attenuation, fuel distribution, space planning and building integration for the full generation capacity spread across the two energy centres.

Replacement generation capacity for the second element of retained estate and new buildings will be provided on a phased basis by the Board.

| Building | Standby Integrated in the Contractor's new HV grid infrastructure | Generation incorporated in Energy Centre 1 | Space and services for Generation incorporated in Energy Centre 2 | Generation incorporated in local building |
|---|---|---|---|---|
| Acute Adult | ✓ | ✓ | × | × |
| Sick Children | ✓ | ✓ | × | × |
| Laboratories | ✓ | × | × | ✓ |
| Maternity | ✓ | ✓ | × | × |
| Neonatal | ✓ | ✓ | × | × |
| PRDU | ✓ | × | ✓ | × |
| Neurology | ✓ | × | ✓ | × |
| Neuro surgical | ✓ | × | ✓ | × |
| Spinal | ✓ | × | ✓ | × |
| Step down | ✓ | × | ✓ | × |
| Acute Medical Block | ✓ | × | ✓ | × |
| Education Building | ✓ | × | ✓ | × |
| Offices | ✓ | × | ✓ | × |
| Clinical Research | ✓ | × | ✓ | × |
| Car Park Lifts | ✓ | ✓ | × | × |
| Drainage systems | ✓ | ✓ | × | × |

Special consideration is required with possible integration of CHP and emergency generation. The Contractor is not prohibited from developing this but if proposed the developed system must not deviate from the high resilience and N+1 redundancy required for all elements of electrical distribution.

## 6.2 Generator Fuel Storage

6.2.1 Energy Centre 1

Generator fuel based on 35 sec Oil.

The volume of diesel fuel oil stored within the day tank and arranged for gravity feed of fuel oil to the engine should be no more than the greater of 750l or the equivalent of 10 hours' full-load (maximum capacity) running of the generating set.

In addition, a fuel oil main reserve for 200 hours full-load running for each standby generator set should be available on site. (A load factor may be applied to allow for plant redundancy.)

| | Fuel storage (based on 2MVA units) |
|---|---|
| Input to generator = | 423.5 litres per hour for one set at full load |
| 200 hours storage = | 84,700 litre of storage per set |
| 8 sets (allow 7 running) = | 592,900 litre storage |

This shall be provided in a combined pool with the heating back- up storage rather than duplicated on the basis that a limited storage capacity is acceptable if both gas and power incomers are unavailable simultaneously.

6.2.2 Energy Centre 2

Generator fuel based on 35 sec Oil.

The volume of diesel fuel oil stored within the day tank and arranged for gravity feed of fuel oil to the engine should be no more than the greater of 750l or the equivalent of 10 hours' full-load (maximum capacity) running of the generating set.

In addition, a fuel oil main reserve for 200 hours' full-load running for each standby generator set should be available on site. (A load factor may be applied to allow for plant redundancy.)

| | Fuel storage (based on 2MVA units) |
|---|---|
| Input to generator = | 423.5 litres per hour for one set at full load |
| 200 hours storage = | 84,700 litre of storage per set |
| 5 sets (allow 4 running) = | 338,800 litre storage |

This shall be provided in a combined pool with the heating back- up storage rather than duplicated on the basis that a limited storage capacity is acceptable if both gas and power incomers are unavailable simultaneously.

## 7.0 Water

### 7.1 Filtered Cold Water Storage

| | | |
|---|---|---|
| Adult Acute | 1109 Beds = | 1,084,602 litres |
| Children's | 245 Beds = | 144,550 litres |
| | | 1,229,152 litres |

Storage based on HTM 04-01 Part A.

Allow 1/3 of total to be stored locally within each building say basement and pumped up the building.

2/3 central storage within the Energy Centre = 811,240 litres

Water filtration plant and the associated break tank shall be provided within Energy Centre One and will feed the central storage tank facility which in turn, shall supply via a pumped main the local storage tanks within the basement of the respective buildings.

### 7.2 Renal Water

Water treatment plant and storage shall be provided to meet the renal demands as indicated in the SHTM's. Plant shall be resilient modular type with integrated redundancy to allow maintenance without loss of supply. Plant to be as close as possible to point of use.
Refer to Appendix M&E 6.

## 8.0 Steam Services

Steam shall be provided inline with clinical requirements for humidification (where required) and sterilisation from gas fired plant, with electrical back up for use only in the event of loss of gas supply. Plant shall be local to the point of use of resilient modular type with integrated redundancy to allow maintenance without loss of supply.

## 9.0 Medical Gases

The plant shall be sized to accommodate the Clinical requirements of the new hospitals.

**References**

(1) All areas assumed to have mechanical ventilation with an average value being utilized for an air change rate; this has been used to provide heating requirements for initial calculation purposes. (The works scheme shall be based on actual heights and a detailed ventilation proposal).

(2) Heat recovery allowed at 60%, this value could vary dependent on the type of heat recovery selected for the Air Handling Plant which will be driven by space constraints and specific plant selection.

(3) Boilers hours run is based on worst case scenario with all plant and equipment running at more or less full capacity over a week period.

(4) All retained estate loads are estimates for use in the contractors initial design, the Contractor shall include for a detailed load assessment to be carried out on each of the facilities and liaison with the Board during the detailed design stage to ensure that the proposals meet the full system requirements at the time of requirement.

(5) The proposed estate loads are estimates for use in the contractor's initial design. The Contractor shall include for a liaison with the Board during the detailed design stage to ensure that the proposals meet the full system requirements at the time of requirement.

**NHS Greater Glasgow and Clyde**

**New South Glasgow Hospitals (NSGH) Project**

# INVITATION TO PARTICIPATE IN COMPETITIVE DIALOGUE

## VOLUME 2/1

## APPENDIX M&E.4
## SUSTAINABLE DESIGN CONSIDERATIONS

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## 1.0 Introduction

During the design development of the new hospital facilities various investigations, reports and discussions have taken place. The purpose of this section of the Employers Requirements is to summarise this information to assist the Contractor in addressing this key element of his design.

Given the nature of this subject the fact that it has to form a fundamental keystone of the contractor's proposals and is significantly influenced by the Building Design Solution. It is critical that the Contractor treat these notes as guidance only and provide bespoke solutions within his design solution.

The proposals shall be closely linked to the BREEAM excellent rating requirement, refer to paragraph 3.10.4 and the low carbon tracker which is provided under separate cover.

## 2.0 General Obligations and Objectives

The sustainability and low carbon designs are fundamental to the design quality evaluation of the project and bids will be scored significantly on these aspects. This section sets out the requirements.

A BREEAM "Excellent" is a fundamental requirement and achievement of the final rating, as defined in later sections, will be part of the building acceptance procedure. Furthermore, there is a requirement for a Low Carbon design process which will be monitored and evaluated by a Carbon Trust accredited consultant. There are both design and operational energy targets which are to be met as part of the building acceptance procedures.

The process for integrated design, calculation and modelling, disclosure and auditing is set out in this section and confirmation of acceptance of these procedures without qualification or condition is an explicit part of the tender evaluation.

Refer to the main contacts of Volume 2/1 and the associated appendices for Building and M&E Services.

It is the contractor's responsibility to provide commentary and clear proposals in the submission on any actual or perceived conflicts in requirements.

In general terms the contractor shall:

- Implement an Environmental Management System (EMS) in line with the principles of ISO 14001 accreditation in relation to the design, management construction materials procurement, supply chain management and site processes for this project
- Respect the local landscape and protect natural habitat and species taking due account of the UK Biodiversity Action Plan;
- Avoid sources of ionising and electromagnetic radiation and any design features associated with sick building syndrome;
- Develop and implement a Site Waste Management Plan (SWMP) in line with DEFRA and WRAP guidance
- Maximise the opportunity for waste minimisation, through design and in construction, following good practice guidelines.
- Maximise the opportunity for incorporating higher levels of recycled input into components, and for high waste recovery (reuse and recycling)
- Maximise efficient and effective removal and transport of waste;
- Adopt maintenance regimes which maintain optimum performance;
- Avoid the use of harmful building products and processes;
- Undertake integrated low carbon and passive design
- Explore the use of prefabricated elements to achieve good quality control, ease and speed of installation and flexibility for future use.

**The Contractor shall comply with the following NHS and related publications:**

- The Development of a Local Environmental Strategy in line with Sustainable Development in the NHS;
- Environmental Management Policy for NHS Scotland (SEHD) 2002; HDL (2006)21, and the documents referred to therein.
- Encode;SHTM 07-02
- Carbon / Energy Management in Healthcare
- BREEAM Healthcare. The following publication provide guidance in the approach to design and procurement and will be useful/essential in the low carbon design and BREEAM Environmental Purchasing in Practice guidance for organisations September 2002
- Good Corporate Citizen (Sustainable Development Corporation publication)Sustainable Development in the NHS
- "The Green Book" APPRAISAL AND EVALUATION IN CENTRAL GOVERNMENT Treasury Guidance LONDON: THE STATIONERY OFFICE
- The Role of the Physical Environment in the Hospital of the 21st Century: A Once-in-a-Lifetime Opportunity (a) Roger Ulrich*, Xiaobo Quan, Center for Health Systems and Design, College of Architecture, Texas A&M University Craig Zimring*, Anjali Joseph, Ruchi Choudhary, College of Architecture, Georgia Institute of Technology

## 2.1 Materials resources efficiency

NHS Greater Glasgow and Clyde is committed to improving the environmental performance of their construction projects. Designs and specifications should consider the environmental impact of all elements of the design including choice of materials. One important contribution to sustainability goals is the efficient use of finite natural resources, diverting waste from landfill. This can be achieved by meeting good practice levels of waste minimisation and management throughout the project in accordance with WRAP guidelines and by adopting the most significant cost-neutral opportunities to increase waste recovery. Opportunities should be investigated under two streams:

- Reused and recycled content
- Site construction waste management and minimisation

**Reused and Recycled Content**

To deliver measurable performance, the contractor should exceed a threshold outcome defined as follows: At least 10% of the total value of materials used in the construction project must be derived from recycled and re-used content in the products and materials selected.

The contractor should identify and implement the most effective cost-neutral opportunities (Quick Wins) to increase the value of materials deriving from recycled and re-used content, and quantify the improvement in the total recycled content above ‘baseline practice’ for the project. The contractor shall specifically investigate the use of demolition material resulting from existing structures on site to contribute and exceed this target.

Further definition of recycled content and the most common quick win opportunities can be obtained from WRAP published guidance. To assess the baseline recycled content level of the project and identify the quick wins, the WRAP Net Waste Tool should be utilised.

**Waste Minimisation and Management**

The Contractor is required to implement where possible cost-effective methods of good practice waste minimisation during the design of the project and thereafter during construction. As a minimum, the Contractor should:

- Identify appropriate methods of waste minimisation in design before detailed design commences and report to the Contract Manager on the economic and practical implications of adopting these methods during the development of the design.
- Agree with the Contract Manager which methods of waste minimisation to implement at the appropriate design stage and demonstrate how the methods have been incorporated into the design.
- Include a list of measures within the Site Waste Management Plan (see requirements below) to minimise waste generated from on-site operations (for example, damage, theft etc) and demonstrate how these measures have been implemented.

The Contractor is also required to meet specified minimum waste recovery rates for the waste streams with the largest cost-effective recovery potential (selected Quick Wins). The Contractor is required to identify and agree with the Contract Manager the key opportunities for Quick wins on the project and set minimum recovery rates to be achieved. Specifically, the Contractor's responsibilities (in association with his trade sub-contractors and waste management contractors where appropriate) shall:

- Identify, and continually review as the pre-construction design develops, the waste streams with the largest cost effective recovery potential and estimate likely recovery rates for each waste stream
- Agree with the Contract Manager before the commencement of construction those waste streams that will provide the most significant opportunities for cost-effective recovery (to be known as 'selected Quick Wins') and the minimum recovery rates to be adopted for the project
- Meet the agreed minimum recovery rates for the selected Quick Wins unless otherwise agreed in writing by the Client
- Measure waste arising during the works and compare with the minimum recovery rates set for the project and then report these findings to the Employer's Agent
- Appoint trade sub-contractors and waste management contractors with the same liability as under the Employer's Requirements to meet minimum recovery rates (where applicable) and to support the Contractor to measure, monitor and report actual waste arising during the works

To assist the effective delivery of the above requirements, the Contractor should develop and implement a Site Waste Management Plan (SWMP) to achieve good practice waste management on the project. Specific Contractor responsibilities will be to:

- Provide and agree a methodology with the Contract Manager before detailed design commences regarding how the SWMP will be developed and implemented with specific reference to the constraints of the project, the management of these constraints, their supply chain, programme of key steps and reviewing performance. This should take into account good practice guidance published by WRAP and other organisations;
- Develop the SWMP as the design progresses in accordance with the agreed methodology for completion prior to construction commencing. A copy of the completed SWMP should be provided to the Contract Manager prior to construction commencing
- Implement the SWMP during construction in accordance with the agreed methodology
- Ensure compliance of all appointed trade sub-contractors and waste management contractors with the legal requirements under the Duty of Care regulations and take all reasonable actions as appropriate for non-compliance.

The SWMP should be developed and implemented following the DEFRA and WRAP guidelines and incorporating the good practice measures above. Implementation of the SWMP can be facilitated through the use of the WRAP Template (Excel based freely available template) for SWMPs. The Contractor is free to use other tools or templates for implementing the SWMP.

Where relevant, the Contractor should employ a systematic approach to good practice in the recycling and re-use of locally available construction, demolition and excavation waste materials (on-site and from nearby sites) – for example, applying the methodology outlined in the Demolition Protocol (published by ICE, London Remade and Envirocentre).

Further guidance on recycled content, good practice waste management and minimisation and the SWMP can be obtained from WRAP and Envirowise.

## 2.2 Low Carbon Design – General Requirements

### 2.2.1 General Requirements

The contractor shall implement fully an integrated approach to low carbon design as contained in section 2.1. In summary this is as follows:

- Project plans to include requirements for low carbon design, energy targets and auditing at key stages.
- Set and record a design and operational energy target for each project.
- Undertake calculation and modelling of the target at key stages
- Cooperate with monitoring and review mechanisms for the design and operational energy target and note that failure to provide calculations and failure to meet targets are contractually significant.
- Use a set of ADB sheets as a model to set the project requirements and negotiate these with users. Use in conjunction with the overarching technical brief.

- Use a design monitoring tool such as a tracker to ensure the brief is being adopted.
- Use the modelling specification to ensure adequate reporting and consistency of results
- Confirm that the appointed team, team leader and individuals working on the project have a sufficient skill set and access to adequate software for the demands of the project.

## 2.3 Design Energy Targets

### 2.3.1 Design energy targets

1. The design energy target is an asset rating of no more than 40 as per Part L2A EPC classification this is required for BREEAM excellent and could lead to Design compliance with Scottish Building Regulations Section 6.1 and an approximate Scottish EPC Asset Rating of B.

2. The operational energy target is 80kgCO2/m2 per annum as measured at the incoming energy meters to the energy centre and taking into account the emissions from the actual performance of any CHP plant which may be installed when calculating and measuring electrical consumption.

3. This target relates to the new building, taking into account the efficiency of the central plant in the energy centre and district mains interconnecting the two. The seasonal efficiency used in the calculation must accurately reflect the chosen plant, the proportion and availability of low and zero carbon technology and the efficiency of the distribution mains. All these must be clearly reported and supported by manufacturer's details and designers modelling calculations.

4. The energy calculation shall be undertaken using a full dynamic model to level 5. See following section for modelling requirements.

5. Formal reporting is required at the following key points

    a. Façade development and 1:100 layouts – the comparative energy implications of different window sizes, glazing types, shading, natural ventilation solutions, passive cooling, daylighting etc should be considered and reported to the client. This is the most critical stage as once a scheme proceeds to detail design; the opportunity for iteration is lost. Architects must present façade and internal layout solutions which address energy implications and not just aesthetics and functionality. Note that the design programmes must allow enough time for this process. The calculation methodology would be full dynamic modelling of rooms and façade modelling

b. Early detail design/ full business case: once the façade is set and layouts are reasonably agreed, the full model should be built. The contractor should understand clearly that models will need to be revised and iterations undertaken. The detailed energy prediction must not be left until late in the detailed design to avoid additional work. Permission to proceed to detailed design will not be granted until the contractor can confirm that the stated design and operational energy target will be met. Note that if BREEAM excellent is required, confirmation from the assessor for the business case that the scheme is in line to achieve the rating will be unreliable without confirmation of the energy score.

c. Late detail design: the contractor must confirm through revision to the above model that the design meets the design and operational energy targets

d. Late construction – the as built model should be produced which will provide the final EPC and the operational target confirmed based on actual equipping.

6. Operational energy – at each of the above reporting stages, a check on the operational energy target should be calculated on the following basis as a minimum: Build up the likely energy use from the design targets. This needs a thorough understanding of the defaults in the NCM methodology. Once the building is modelled, the model shall be corrected for the actual zone usage as agreed during the competitive dialogue process and realistic and auditable allowances made for equipping. Any other variables to the design model to predict actual usage shall be declared and agreed with the client's auditor. The contractor is however free to propose alternative methodologies provided that they are likely to predict accurately actual energy use.

7. All calculations and models shall be open access and available at any reasonable time for evaluation by the client's auditor.

8. Training and awareness of energy issues relating to the building shall be given by the contractor to the building users and the maintenance staff – the format and content of this shall be established through the competitive dialogue process

9. Operational energy shall be measured and reported for every 3 months for 3 years from occupation of the building by the contractor with weather normalisation undertaken by reference to an agreed thermal model containing actual weather data for the year in question. Should operational energy be found to exceed predicted operational energy, then investigation and remedial action will be required to be undertaken by the contractor

10. The investigation shall consist of the following: a report shall be prepared consisting of monthly logs from each sub meter for 3 months which shall be compared with predicted usage to detect where excessive energy use is occurring. This shall be followed by a review meeting with the clients' auditor to discuss findings and agree corrective action.

11. If findings are not conclusive, further logs and reports shall be undertaken until a clear cause can be identified. If a clear cause cannot be found within 6 months of the start of the investigation, further investigation shall be undertaken which may include, but not be confined to thermographic imaging, data and environmental logging either by the BMS and/or external loggers, by behavioural auditing and monitoring of usage, manufacturer's reports and similar non intrusive methodologies.

12. If causation is behavioural, evidence shall be presented and the client will undertake training of staff and users.

13. If causation is due to building services systems, commissioning, building fabric or any other matter relating to design and construction of the facility, the contractor shall undertake remedial action including recommissioning, replacement and upgrading as may be required to reduce the energy consumption to the operational target, and log energy usage for at least 12 months to demonstrate that corrective action has been successful.

14. The design energy target is based on the National Calculation Methodology which includes standardised operational data. Hence further operational energy targets are also set which relate to actual usage of the hospital.

## 2.4 Operation Energy Targets

To be verified at design stage also and include all areas/volumes relative to the new facilities:

- 55 GJ/100 $m^3$

### 2.4.1 Modelling requirements

Modelling shall be undertaken at the stages required above for energy, thermal comfort and daylighting, complex ventilation solutions and facade development.

The following extract from CIBSEE AM11 provides a useful basis of expectation with respect to reporting of modelling results. The contractor shall:

1. Undertake frequent meetings with the client to determine modelling requirements.
2. While only relevant data should be presented, it is necessary for the modeller to be aware of a more detailed interpretation, e.g. to avoid the possibility of presenting peak temperatures occurring during an unoccupied period.
3. In the case of several design variants, clearly define the reference case against which parameter variations have been made.
4. Quantify where possible — e.g. number of hours of overheating, lux level contours for standard overcast sky.
5. Explain results — e.g. if a model change increases energy consumption, explain the causes.

6. Presentation: each report should have:

   (i) statement of objectives
   (ii) summary of main findings
   (iii) brief details of relevant capabilities of program used (with version number etc.)
   (iv) description of the model, including a description of how the model was formed and the principal operational characteristics (with reference to details in appendices)
   (v) details of the assumptions made in the model and results of sensitivity analyses where appropriate
   (vi) clear description of design variations tested and changes made
   (vii) graphical and tabular results (see examples in case studies in section 6 of CIBSE AM 11)
   (viii) Conclusions against stated objectives; outline pros and cons of design variations.

All the above must be reported at a point in the design process where changes to provide a more energy efficient design can still be undertaken without abortive design costs.

Methodology requirements:

The overarching requirement is that the results of modelling are appropriate for the stage of design, reliable and reproducible. The reporting required is above and the methodology, applicable to any form of dynamic modelling including CFD, is as follows. A more detailed methodology can also be found in CIBSE AM11 and IEA Annex 21 from which the following is a summary.

Requirements for modelling are as follows:

1. The process should use the same software and version of software throughout the process to enable comparison to be made. This should be explicitly stated in each report.

2. The objectives of the study should be defined and agreed.

3. The extent of modelling should be clearly defined and agreed in advance – it should be clear whether sample rooms, whole floors or whole buildings have been considered and whether individual zones, activities and systems have been incorporated.

4. All approximations and assumptions must be explicitly stated and peer reviewed. If the limitations of the program being used mean that assumptions and approximations will not yield a reliable outcome, the modelling should not proceed and alternative programmes with adequate capability should be selected.

5. Sensitivity analysis shall be undertaken. This shall include as a minimum consideration of different weather scenarios, changes to occupancy patterns and where appropriate, the sensitivity of key assumptions, simplifications and approximations.

6. A record shall be kept as output from the programme of all data input, and of all non alterable data. When iterations are undertaken, QA procedures shall be used to ensure that only the iterated factors are changed. Where outcome is critical, duplicate models shall be iterated to ensure consistency of results.

7. The architect and or engineer must know exactly what the building will be used for. Any special features which may influence the design or its performance (e.g. atria, pool, orientation, need for 100% fresh air ...) should be identified and agreed with the client. The level of thermal comfort should established and agreed with the client (e.g. room temperatures should not go below 18 OC in winter for longer than 2 hours at a time, or higher than 26 $^{o}$C in summer for more that 50 hours in total, but not on successive days, similar criteria for humidity, glare and level of lighting).

8. Each and every aspect of design, as defined in the modelling brief should be considered and defined (e.g. what is meant by overheating, what is the objective with respect to energy use etc.).

9. The iterations that should be considered should then be established and recorded – for example, increasing or decreasing % glazing, altering orientation, increasing mass, effect of different weather files etc.

10. The method of presentation should be agreed with the client – this may be graphical, 3D, 2D etc, but expectations should be managed and agreed in advance.

11. When interpreting the results, the output data must be clearly understood. For example definition of the time for which results are reported and, if appropriate, the way results are averaged over the reporting period must be clearly defined and understood. For example, the number of hours of overheat must be for occupied hours only.

12. Error checking shall be undertaken for larger and complex simulations. Errors of an order of magnitude can be trapped by using simple tests and range checking. For example, comparing the results of a steady state simplified calculation of the total heat loss of a building, with that of a dynamic program when used to emulate steady state may reveal order of magnitude errors in the input.

13. Comparison of results with those of previous similar projects would always help identify major errors. For example, building floor area entered as a separate input item could be checked against the sum of floor area of rooms within the building.

14. The qualifications, training and experience of the modeller and their peer reviewer should be appropriate of the simulations and programmes being used and these should be stated in each report.

### 2.4.2 Overarching technical specification for low carbon design

#### 2.4.2.1 General considerations

1. This section provides a statement of expectations and processes relating to achieving low carbon design. It is not intended to override any HTM or NHS publication, statutory standard, ISO or BS, and must be used with the professional judgement of architects and engineers. It does not endorse any product or system.

2. Designers and constructors must assume that compliance with the required performance will be demonstrated in operation. There will be post-completion certification of conformance with design objectives, and that compliance will be contractually significant.

3. The building must comply with all statutory requirements.

4. In all cases where advice is offered below, designers, constructors and operators shall satisfy themselves that the advice is relevant and appropriate, and is consistent with all their professional duties and statutory requirements.

5. Designers shall state all grant-aid, design support sources and tax-efficient arrangements they have accessed / intend to access in the design, construction and operation of this building.

6. Advice is given that design considerations should, wherever possible, favour simple and robust design solutions that can be reasonably be expected to survive in competent low carbon emissions operation for extended periods. Design approaches that depend on the long-term availability of specialist labour, equipment and materials are not preferred. It is appreciated that the simple and robust design solutions may not achieve the lowest possible achievable carbon emission during operation. The designers shall identify such situations, and prove that the proposed solution offers the lowest cost of ownership.

7. Note that where temperatures are referred to, these are operative temperatures as defined in CIBSE Guide A, except where there are direct quotations from HTM standards.

8. The responsibility remains with the contractor to ensure that the individuals in the team have the required level of competence to undertake the tasks to produce the desired outcome. If a shortfall is identified, then the client should be notified at the earliest opportunity.

## 3.0 The Priorities for Low Carbon Design

The priorities are broadly as follows in order of the least amount of capital expenditure for the most amount of carbon saved, although position in the list should not be seen as an absolute as importance will depend on clinical usage:

- Passive / demand items are focussed on reducing carbon demand and are the highest priority in considering strategy
- User expectations and requirements, including foreseeable changes in use / occupancy
- Building form and orientation, massing
- Function relationships and internal planning of clinical/non clinical spaces to ensure that areas which can benefit from daylighting and natural ventilation are position on the periphery
- Structure thermal properties, including exposed mass
- Architectural arrangements for maximising use of daylighting to displace artificial lighting
- Passive ventilation strategy
- Reduced Air Leakage
- Exposed Mass
- Glazing Spec
- Increased Shading
- Increased Insulation
- Controlling equipping loads ( this may occur earlier in the list for buildings with high equipment loads)
- Heat recovery ( this may occur earlier in the list for buildings with high fresh air requirements)
- Lighting Controls
- Building services controls
- Metering and monitoring

Overall site energy strategy and choice of central/ decentralised plant, CHP, cooling strategy.

Choice of distribution media
Solar Hot Water Generators
Local CHP
Other renewable energy sources

It is essential that each heading is considered from feasibility stage through to final design and action taken. The low carbon design tracker shall be used as a reporting tool through the design process and developed to encompass the construction and operational phases. Each item should be considered in terms of whole life cost and not just capital expenditure.

## 3.1 Methodology

The design approach to be adopted is:

- Target energy and water efficiency measures to reduce resource demand through best practice design and passive design strategies.
- Locally offset the minimised resource demand through effective supply from Low and Zero Carbon (LZC) technologies and water recycling.

### 3.1.1 Essential tasks

1. Project management structure – ensure this includes a project management tool for low carbon design and that the manager is tasked and reports to the project board regularly on progress
2. Programme – ensure this allows for modelling and reporting in time to modify the design to meet energy targets
3. Budget structure – allow report and modelling cost, whole life costing, cost for renewables if appropriate and sufficient cost for addressing as many of the low carbon factors above, noting that many may not increase the cost above conventional design if addressed early enough in the process
4. Targets/KPI's – set before appointing team and ensure team have adequate skills, expertise and enthusiasm.
5. Tools – use management tools such as trackers and ensure team have access to adequate WLC data and modelling tools. Ensure that WLC data is appropriate for task, There is serious concern that the majority of existing WLC data refers to single action / single benefit source data, that is not appropriate where sequencing of savings is involved when multiple benefits exist / seasonal aspects apply.
6. Key stage audits – set these at the outset
7. Measuring outcome – as above
8. Sustainability auditor – appoint/ second to each scheme.

## 3.2 Passive Design Strategies

Passive design strategies should be considered in order to reduce energy demand associated with cooling and mechanical ventilation by offsetting building cooling loads whilst proving fresh air for occupants.

Successful passive design relies on early coordination of the architectural design and building services solution. Typically openable windows equivalent to 5% of the gross internal floor area of a space could be required. This can be on one side if the space is less than 7m deep. For spaces between 7m-15m deep, the openable windows should be on opposite sides of the space and distributed evenly to promote cross-ventilation. For spaces greater than 15m deep an internal atrium is typically required to ensure adequate cross flow of air.

Facade performance and solar shading should also be considered to optimise thermal performance, reducing solar heat gain, while maintaining a good level of daylight and limiting the risk of overheating.

With regard to daylight the building façade should be analysed to aid the selection of an appropriate glazing type and the positioning of fenestration with the objective of maximising daylight penetration.

Where natural ventilation is proposed for clinical areas a Computational Flow Dynamic (CFD) model shall be provided to confirm projected operational performance.

## 3.3 Technical Considerations – minimum standards technical brief for low carbon design

### 3.3.1 Daylighting

1. At least 80% by floor area of the staff and public areas has an average daylight factor of 2% or more.

2. At least 80% by floor area of the occupied patient's areas (dayrooms, wards) has an average daylight factor of 3% or more.

3. The provision of daylight shall be designed in accordance with the guidance in CIBSE Lighting Guide 10 Daylighting and window design, BS8206 Part 2 and the BRE Site Layout Guide.

4. All electric lighting fittings to perimeter areas shall incorporate linked dimming to take full advantage of daylight

5. Transient and unoccupied areas such as stores, utility rooms etc. shall not be located on the perimeter of the building if there are internal occupied areas which could benefit from daylighting.

6. Clinical areas with controlled environmental conditions, e.g. operating theatres, delivery rooms or pathology where solar gain will increase the air-conditioning load should not normally be day lit as above but may benefit from a limited view of sky.

7. Visual comfort shall be in conformance with best practice identified in EN 12464.

8. The maximum solar gain from beam radiation, averaged over each occupied space, in May, June, July, August and September is not to exceed 25W/m2 at any time during occupied hours.

9. Designers shall identify surface reflectances for building fabric, fixtures and fittings that form the basis of their calculations that identify daylighting as the main source of lighting energy, and require these to be maintained during repair and refurbishment.

10. Designers are advised that they should give high priority in their design progress to the avoidance of 'blinds-down / lights-on' use of main spaces by occupants.

3.3.2 Artificial lighting

1. The most efficient light source should be chosen appropriate to the usage. Tungsten and tungsten halogen sources should not be used.

2. A DEER value within the values for level A should be achieved calculated in line with the Society of Light and Lighting Guide 2 following the procedure in section 1.2.2 of that document for at least the minimum areas stated.

3. Occupancy or presence controls should be used to intermittently occupied areas over 4m2 unless there are overriding health and safety concerns. Areas such as toilets, en-suites, internal corridors, ward kitchens etc. should incorporate for this type of control. Controls must be accurately positioned and of sufficient quality to avoid lighting going off when persons are present in the space. Lights must strike immediately to adequate levels.

4. Reduced levels of lighting to a specified minimum may be appropriate with presence controls to step up the lighting level on detection of presence in situations where there is a requirement for lighting at all times such as main ward corridors, hospital street etc.

5. Daylight dimming controls should be provided to all areas benefiting from adequate daylight, in conjunction with presence or occupancy controls where possible.

6. Time and/or photocell controls should be provided to all external lighting.

7. Areas should not be over lit – there needs to be a balance between standardisation of fittings across a scheme and choosing the most appropriate fitting for a particular area.

8. There is however scope for variation in lighting levels and colour to specific areas such as prescription writing and long stay patient areas to reduce the risk of errors and improve recovery and mental well being. For fuller detail refer to "Lighting and Colour for Hospital Design" ( Dalke, Littlefair, Loe)

9. Switching zones should enable sub areas in larger spaces to be controlled separately, for example sets of up to 4 workstations in open plan offices, serveries and dining areas, reception and waiting areas. Manual controls should be local to occupants where possible.

10. Visual comfort shall be in conformance with best practice identified in EN 12464.

11. Designers must explicitly identify the building's overall annual effective W/m2 for artificial lighting during working hours, taking full account of displacement of artificial lighting energy by daylight. (4 $W/m^2$ displacement shall be the maximum unless otherwise agreed.

12. Every opportunity shall be taken to use localised task lighting with lowered overall light level including switch able override to the presence detection on signal.

3.3.3 Heating during occupied hours (including circulation spaces)

1. The heating system (including but not necessarily limited to heating emitters and controls) shall not input paid-for heating energy to any occupied spaces that contribute to space temperatures to more than 2ºC above the desired inside temperature for more than a total of 20 minutes on any day.

2. If boilers are used as the source of energy for heating, then the total standing losses of the boilers and heating distribution system must not exceed 15% of annual heating energy consumption during occupied hours.

3. Heating energy calculations shall identify the energy (kWh/m2.year) required for the required occupancy related volumes of ventilation air, the extent of heat recovery (kWh/m2.year) on ventilation air, and identify the contribution of each source of internal gains (kWh/m2.year).

4. Designers shall identify the maximum fan power (if any) during occupied hours in Watts/litre.second, and the average annual fan power during occupied hours the heating season in Watts/litre.second. Designers should identify how the full benefits of variable speed control of fan volume are to be achieved.

5. Designers shall identify the peak energy consumption of pumps Watts/litre.second), and identify the annual pumping energy (kWh/m2.year). Designers are advised that they should identify how the full benefits of variable speed pumping are to be achieved.

3.3.4 Pre-heat energy and pre-heat rate of rise – intermittently occupied areas of buildings

1. Pre-heat energy should be minimised whenever possible by allowing internal gains to overheat the building the previous day's occupancy by up to 2ºC, and to use this stored heat to minimise or avoid the need for pre-heat energy.

2. Optimum start accuracy should achieve the desired inside temperature within 30 minutes of the start of occupancy for more than 60% of heating starts during the heating season.

3. The rate of rise of internal air temperature of the building and its contents, when unoccupied, under design conditions, must not be less than 0.3ºC per hour.

3.3.5 Air infiltration

1. The air infiltration maximum allowable infiltration rate shall not exceed 5m3/m2 of façade at 50Pa and testing shall be undertaken as required in the Scottish Technical Handbook 6 for projects where air tightness values have been specified which are lower than that which can be satisfied by robust detail methods

2. Designers using draught lobbies shall explicitly consider the separation between internal and external doors. Door separation and closing times must be arranged to minimise the possibility of both doors remaining open with single person passage.

3. In buildings with mechanical ventilation, inside to outside air pressure differences shall be adjusted such that the maximum air velocity though fully open main doors is less than an average of 0.2m/s under non-gusting wind conditions.

3.3.6 Hot Water Service

1. Fossil fuel based hot water service shall be achieved at a system efficiency that exceeds 50%. That is, heat in the hot water issuing at taps must be greater than 50% of the fuel input.

2. Electrically heated hot water boilers for occupant's use in making hot drinks should not have a standing loss exceeding 10W per occupant

3.3.7 Summertime overheat - design considerations

1. The use of mechanical cooling shall be avoided wherever possible. HTM 03-01 requires that “patient areas only should not exceed 28Cdb for more than 50 hours per annum” but also that “it can generally be assumed that for a naturally ventilated building, the internal temperature will be approximately 3 K above the external shade temperature. For a building with simple mechanical ventilation, the internal temperature can never be less than the external shade temperature and will invariably be higher. Where calculations indicate that internal temperatures will exceed the selected design for a period that exceeds the building design risk, methods of reducing temperature rise should be implemented. Options include:

    - reducing solar and casual gains;
    - the use of chilled beams or ceilings;
    - increasing ventilation rates; or
    - providing mechanical cooling.
    - In some situations it may be possible to alter the thermal mass of the structure to “move” the peak temperature event time so that it occurs outside of the occupancy period.”

2. From the above it can be concluded that a fully cooled building is not necessary to satisfy the HTM and that passive options must form part of the decision making process. A report on the options must be submitted at feasibility stage and enhanced at Stage C before decisions are made to fully mechanical cool any areas other than those listed in HTM 03-01 as requiring mechanical cooling

3. Calculations using appropriate building physics tools must be supplied. In line with BREEAM expectations, credit HEA10, full dynamic simulation is required at detailed design stage with an appropriate weather file for the area,

4. There should be differentiation between areas requiring cooling and areas which can be satisfied by either natural ventilation, mixed mode or mechanical ventilation. Where practically possible, even within a department, cooling should be provided only to the areas having a clinical need and all other areas supplied by other means.

5. Differentiation in system provision should also be made between areas which are continuously occupied, areas to which 24 hour access is required, but which may not be continuously occupied and areas which are intermittently occupied. For further information see sections 4 and 5 of HTM 07-02.

6. The onus is for the designers to be able to demonstrate numerically that the chosen solution is the most carbon efficient that will satisfy the application for each type of accommodation and to design the building accordingly. Reporting by exception is required to highlight to the client where compromise has to be made and to justify why it has been necessary.

7. Whilst infection control is paramount, and the requirements of HAI SCRIBE and HBN 30 must be adhered to, designers should note that there is a body of research which indicates that in low risk situations effective natural ventilation is very much more effective than mechanical ventilation which has not addressed fully reverse flow, failure and poor maintenance issues.

3.3.8 Natural ventilation

1. Where used, the strategy should be developed along with the building footprint. See section 4 of HTM 07-02 for a detailed treatment of the requirements.

2. Air velocities adjacent to occupants must not exceed 0.5m/s for natural ventilation

3. Where natural ventilation is proposed for clinical areas a Computational Flow Dynamic (CFD) model shall be provided to confirm projected operational performance.

3.3.9 Humidification and humidity control (requirement subject to discussion during competitive dialogue)

1. Note that HTM03-01 does not require humidification to any areas including operating theatres, except for specialized applications. Humidification and humidity control adds significantly to both capital and operational energy and maintenance costs and therefore, in line with the HTM, there should be a presumption against the provision unless a special need can be established.

2. The HTM does require however that provision for retrofit of humidification is made to operating theatre air handling units in terms of space and capped drainage. ( clause 3.14)

3. For most developments, this means that there is no longer a requirement to maintain a steam distribution network to serve steam humidifiers, unless required elsewhere for process loads such as sterilisers.

4. The HTM further states that in terms of full temperature and humidity control that “Room temperature and humidity sensors control the heater-battery, humidifier, cooling coil and a re-heater-battery in sequence to maintain a specific room condition regardless of the room load. This is very expensive in energy and can rarely be justified. In healthcare it is only likely to be considered for specialized research facilities.” ( clause 4.89)

5. For operating theatres, note that the HTM allows the supply air humidity to swing between 35% and 70% saturation ( clause 7.19) and the room humidity to swing uncontrolled between 35% and 60% saturation. This allows the most efficient mode of operation and coil sizing to be chosen.

6. All psychometric sizing and controls strategies should therefore take the above into consideration.

3.3.10 Energy recovery devices

1. Energy recovery devices should be fitted to all fresh air systems and all extract systems over and including 1m3/s operating for more than 12 hours /day and plant space allowances and location of supply and extract systems must be calculated to allow this provision by the most efficient means possible. Lack of space on new developments for this provision is not acceptable as a reason for failing to fit a suitable device and architects should make adequate provision for plant rooms and distribution ductwork.

2. HTM 03-01 gives minimum efficiencies for devices and suitable device applications.

3. Controls should allow for recovery of cooling as well as heating energy where applicable.

4. Process heat recovery shall be included where practical to reduce energy e.g. Clinical System Cooling, Specialist water treatment etc. The Contractor shall allow for all interfacing with the specialist and shall provide all heat recovery and interface plant.

3.3.11 Air-conditioning and ventilation systems and controls

1. Filtration standards should not be specified beyond that required by HTM03-01 as this adds maintenance cost and increased energy use. There should be a balance between the cost of the filter and the cost of energy in setting the maximum dirty filter resistances for the BMS alarms – this may vary depending on the motor rating and cost of replacement filters.

2. Note that HTM 03-01 does not specify outright belt driven fans – there are options for direct driven fans as long as provision for prevention of over-temperature by a thermister and lockout relay is made. When selecting a fan drive type, whole life costing should be applied taking into consideration the efficiency of the fan and motor selection and heat gain to the supply system as direct drive fans are often more efficient overall than belt driven, even taking into consideration the heat gain to the air.

3. Note that HTM03-01 does not require belted running standby fans except for life critical applications – see clause 4.61. This again reduces the energy consumed by the fan.

4. When comparing air handling units, total system pressure should be compared and preference given to the selection with the lowest total and lowest fan power as this will provide the lowest fan running costs over the life of the plant. There can be considerable variation between manufacturers due to coil selection and configuration of units

5. Frost/fog coils should, in accordance with HTM 03-01, be set to operate at minimum off coil temperatures to maximize heat recovery efficiency.

6. Humidifiers where fitted should be interlocked with cooling coils to prevent simultaneous operation. If there is no dehumidification function, heating and cooling coils should also be interlocked.

7. Local cooling systems should be interlocked with heating within the space to prevent simultaneous operation.

8. Systems incorporating mechanical cooling and ventilation systems providing a cooling function should be controlled such that simultaneous heating and cooling cannot take place when heating is provided by a separate system.

9. Air velocities adjacent to occupants must not exceed 0.25m/s for forced ventilation systems

10. Advice is given that ceiling level ventilation with substantive opening area within 150mm of ceiling level should be provided to minimise hot air trapped at ceiling level if natural ventilation is used. If the hot air is trapped at ceiling level, this will increase the internal environmental temperature.

11. For intermittent buildings only, if fans are used for night-time cooling, it is not expected that fan power should exceed 0.4W/litre.second, or that ventilation rates exceeding 10ach/hr be used. Noise from fans used for night-time cooling must not cause annoyance to occupants of neighbouring properties. Refer to planning guidance – increase generally less than 5db at boundary over existing night time level.

3.3.12 Electrical energy other than lighting

1. The ratio of electrical energy consumption in kW when un-occupied to kW when occupied (excludes pre-heat and essential loads) must be <7%.

2. High efficiency motors should always be specified for new developments.

3. When selecting transformers and selecting the location, consideration should be given to the transformer efficiency. Oil filled transformers, if a suitable location can be found away from buildings, are more efficient than dry transformers as well as being more compact and require less ventilation. Consideration of losses should be part of the evaluation.

4. Cable installations should be specified according to the guidance of British Standard 7450:199120, equivalent to IEC 1059:1991, 'Economic Optimisation of Power Cable Size', which gives useful guidance on the optimum costing of cable installations. This standard needs to be a requirement of management procurement policy and included in contractual documents in order to avoid the false economy of 'lowest first cost' attitudes. The standard points out that: 'Rather than minimising the initial cost only, the sum of the initial cost and the cost of losses over the economic life of the cable should be minimised.

For this latter condition a larger size of conductor than would be chosen based on minimum initial cost will lead to a lower power loss for the same current and will, when considered over its economic life, be much less expensive.'

3.3.13 Medical and Non medical equipment selection process

1. BREEAM credit Ene15 for non medical equipment shall be achieved.

2. For medical equipment, a schedule shall be prepared identifying any major energy consuming items ( >3kw heat rejection to plantrooms or occupied spaces and/or >10kw rated total energy input) For these items, tender schedules shall require an estimate of energy consumption per year or per cycle as applicable and preference shall be given to the product having the lowest energy consumption provided that the item's performance meets specified requirements.

3. For all equipment, priority must be given to the use of equipment that does not require close control of temperature and humidity.

3.3.14 Computer and other heat generating equipment

1. Provision must be made for direct extract of heat by duct from equipment cabinets in server and communications equipment rooms and where possible for imaging equipment cabinets.

2. Process equipment plantrooms such as sterilizers, reverse osmosis, renal etc should be located on external walls with provision for natural ventilation to remove heat. Mechanical cooling to such spaces must be avoided unless no viable alternative exists.

3. The design team should ensure that adjacent spaces do not suffer from unacceptable heat gain from any plant or equipment areas.

4. Any form of equipment likely to cause additional load to cooling or an unacceptable summertime temperature should be located in a ventilated or unoccupied separate space. This includes items such as photocopiers, chilled water dispensers, refrigerated cabinets etc all of which can reject heat into occupied spaces.

5. All process pipework likely to cause a heat gain to a plant room or occupied space should be insulated.

6. Equipment cabinets must be specified for direct extract from top of equipment cabinets.

7. Priority shall be given to free-cooling over mechanical cooling.

8. Computer and communication rooms shall have a PUE (Power Utilisation Efficiency) no more than 1.6.

9. Subject to fire, acoustics and infection control considerations, consideration should be given to heat recovery from equipment gains into occupied spaces during the heating season.

10. Note must be taken of recent papers from authoritative sources such as Intel, Sun, HP and Cisco that identify supply air temperatures in computer rooms without loss of reliability. Where permitted, external air may be the cooling medium for all but the hottest days.

3.3.15 Metering and monitoring

1. Metering shall be provided as required by BREEAM credits E2 and E3, but in addition a strategy shall be provided by the design team in collaboration with the site energy manager at the start of detail design to ensure that the metering provision not only accounts for the substantive energy uses but also provides cost centre information that is helpful to the client in controlling energy use in operation.

2. Metering shall include power, gas and cooling at all large scale medical equipment.

3. All Energy meters to report to the BMS with integrated target and actual consumption maps provided for each element and point of use.

3.3.16 Cooling Systems

1. If it is established as defined in preceding sections that there is a net cooling need that cannot be met by any combination of fresh air, night cooling, thermal mass alone, then some form of cooling system will need to be considered.

2. Water extracted from bore hole without further upgrading through heat pumps should be considered early in any scheme likely to require cooling as this will require comprehensive site investigation which should be undertaken at feasibility stage.

3. If this is proved not to be viable, ground linked, ground or water source heat pumps should be considered, with storage options to offset peak loads and take advantage of off peak tariffs. .

4. Absorption cooling linked to CHP is to be included in the life cycle cost review to ensure that it is careful costing against a realistic load profile for both cost and carbon savings to ensure that it sized and engineered correctly to provide a meaning full input into the low energy strategy.

5. Chilled water temperatures should be evaluated based on cooling alone unless there is a proven specialized system need for dehumidification.

6. Heat gains to chilled water mains must be calculated and minimized when calculating running loads. Externally run unshaded mains or mains run adjacent to hot services in unventilated spaces will not be considered acceptable.

7. Designers are expected to calculate and specify economic thickness of insulation and continuity of vapour barriers to all chilled services.

8. All the above should be considered as part of a detailed feasibility steady which will be required prior to any agreement to proceed based on conventional chiller system.

3.3.17 Energy profile of alternative products and systems

1. Where through ongoing value engineering alternative products or systems are being proposed, the Contractor and his design team must ensure that an equivalent or better whole life carbon performance will be achieved and should be prepared to commit to the client in writing that this is the case.

2. This applies not just too individual components but also to consequential effects for example, the effect a reduction in specification of glazing has on lighting, heating and cooling carbon emissions.

## 3.3 Building Form and Fabric

The building fabric should be considered as a passive method of limiting unwanted heat transfer. The construction materials and U-values should be selected on this basis. In addition the thermal mass of the structure should be considered as a possible heat sink to store energy which can then be released slowly over time in order to stabilise internal room temperatures and reduce heating and cooling demands.

The building air permeability should be reduced beyond maximum allowable levels in the Building Regulations, from 5 $m^3/h/m^2$ 3at 50Pa. This is to be subject to air pressure testing to demonstrate achievement at practical completion.

## 3.4 Energy Efficiency

The following measures should be considered for the hospital as a minimum in line with best practice building services design:

3.4.1 HVAC

- Where mechanical ventilation is required outdoor air rates to be 12 l/s/person and supplied via a variable flow system based on occupancy detection.
- Energy recovery on all exhaust air streams.

- Free cooling systems.
- High efficiency, modularised, variable flow, central plant providing water for heating and cooling.
- Thermal zoning with individual time and temperature controls.
- Direct cooling of equipment where possible.

3.4.2 Lighting

- T5, energy efficient lamps, with high frequency dimmable ballasts to supplement day lighting.
- Control of artificial lighting via user friendly manual and automatic control by means of photocell, time clocks, PIR, localised 'on/off' and dimmable switching.
- Efficient external lighting that switches off automatically; building access lighting to be a minimum of 50 lamps lumens/watt and car parks 70 lamps lumens/watt.

3.4.3 Potable Water

- Design risk assessments to be provided to back up any use of flow restrictors on sanitary ware.

- Shut off valves to toilet blocks to reduce potable water consumption.

3.4.4 Materials

- Insulation to have a Global Warming Potential (GWP) and Ozone Depleting Potential (ODP) of zero.

## 3.5 Low Energy HVAC

As noted above the use of comfort cooling should be avoided where possible. If required low energy options should be considered such as;

Chilled Beams/Chilled Ceilings (with suitable mitigation to avoid condensation risk)

Take advantage of higher chiller plant COP's due to the chilled water operating temperatures. A further advantage is the improved thermal comfort.

Low Energy Motors

Inverter Drives

Etc.

## 3.6 Displacement Ventilation

To again reduce air handling fan energy and take advantage of higher chiller plant COP's due to the chilled water operating temperatures. This system could lead to an improved internal environment quality as pollutants could be removed directly from the space without further mixing of air.

## 3.7 Low & Zero Carbon Technology

Feasibility studies are to carried out into the potential use of low and zero carbon technologies to reduce carbon emissions associated with the operation of the building. The following example technologies are to be considered;

- Solar Water Heating

  - to preheat domestic hot water.

- Ground Source Heat Pumps

  - to meet heating and cooling demands.

- Combined Heat & Power plant

  -to meet electrical demand, heating and cooling loads (absorption chiller)

- Biomass Boiler

  -alternative fuels to reduce carbon emissions

- Wind Power & Photovoltaics

  -renewable electricity generation

## 3.8 ADB sheet process relating to environmental conditions and low carbon design

### 3.8.1 General principles to apply to ADB sheets

The ADB sheets are a fundamental tool for briefing a design team and have considerable contractual significance in many cases. The environmental sheets in the set should bring together the requirements of the various SHTMs and confirm the overall technical brief for the scheme as well as incorporate any special requirements particular to the scheme. The standards ADBs may conflict with the technical specification requirements.

The contractor shall update the environmental section of the ADB sheets in line with current HTMs, CIBSE guides, in particular LG2, and address the following issues. A sample set will be made available during competitive dialogue.

1. Temperatures are, in general, stated as absolute values. This does not allow a range which can be beneficial when considering passive options.

2. Temperatures are often not defined for summertime - these need to be added.

3. The temperature measure is not defined – this should in general be operative temperature as defined in CIBSE guide A

4. Hours of operation of area and thus plant operating hours and hours for which casual gains are to be applied are not defined. Whilst this may be in the access statement, the actual usage of the room needs to be more closely defined for calculation rather than access purposes.

5. The environmental section of sheets is not up to date with latest HTMs or HBN's. It is understood from the administrator of the ADB sheet licenses that this is planned in the current year, but in the meantime for live projects, designers must bring the set into line.

6. There is no option to qualify whether an area should be naturally ventilated, mixed mode, or mechanically cooled – this should be explicitly stated and agreed with users and client's project manager.

7. Daylighting standard should be specified.

8. Occupancy is defined but not in all cases. It should be clear in all cases from the sheets what level of occupancy is to be assumed for the purposes of environmental calculations.

9. The quality of lighting and mode of control is not defined. General principles can be set but for frequently occurring or specialised rooms, more detail may be useful.

To address the above issues, the following is suggested.

1. State a range for summer temperatures in line with HTM 03-01, relevant HBN's and CIBSE guide A. This has been undertaken for the sample set

2. As above

3. A definition sheet has been provided.

4. Hours of plant operation and occupancy to be stated on each room environmental data sheet. See sample template.

5. This has been undertaken for temperatures and humidity which affect low carbon design for the sample set but needs to be undertaken for all other environmental data such as water, acoustics, fire etc.

6. This can be stated in the notes on the room environmental data sheet. See sample template.

7. This can be stated in the notes on the room environmental data sheet. See sample template.

8. For all sheets other than in transient spaces, state the number of occupants with the room name (as is normal for many spaces). If this is unrepresentative of normal occupancy, for example in a waiting area, where seats may be provided for a maximum, but average is lower, this can be qualified in the notes on the room environmental data sheet.

### 3.8.2 Definition sheet for use with Room Environmental Data ADB sheets

1. Hierarchy of documents relating to the environmental conditions shall be, in order of precedence: statutory standards, latest issue of HTMs, HBNs and any directives, advice or other documentation from the DoH or NHS, the overarching technical specification and finally ADB sheets. Should any conflict in requirements arise, it is the responsibility of contractor to make the client aware and provide best practice advice in the resolution of the requirements.

2. All temperatures stated are operative temperatures.

3. Where lighting levels are stated, refer also to the maximum point illuminance, UGR and position of measurement in table 1 of SLL lighting guide 2.

4. Where summertime temperatures are stated, the upper limit stated is not to be exceeded for more than 50 occupied hours. This does not imply that mechanical cooling is required unless all other means of reducing overheat are not viable. Where mechanical cooling is required, this should be stated explicitly. See clause 3.24 of HTM 03-01.

5. In some instances a range of temperatures is given over which the temperature can float. If this range is in italics, this is the range over which the temperature should be capable of being controlled in line with appendix 2 of HTM 03-01. Care should be taken in evaluating simultaneous plant loads in that the peak plant load is not likely to be the summation of the extremes of the stated range.

6. Unless humidity is stated, the humidity should be assumed to be uncontrolled. Humidity should only be specified where there is a specialised need - see HTM 03-01.

7. Filtration standards shall be based on appendix 2 of HTM03-01. Note that these are supply filtration standards. There may be specific environmental pollution issues or infection risk issues which require either extract filtration as well or increased supply filtration standards. These should be briefed specifically for areas affected.

## 3.9 BREEAM requirements

### 3.9.1 Process and general issues

The contractor shall undertake a BREEAM Healthcare assessment of the main hospital development. The client has employed a BREEAM Healthcare assessor to undertake monitoring of the assessment and assist the client in provision of client side information. The contractor shall however employ their own assessor to undertake the assessments through to final certification. All costs associated with this including all BREEAM QA fees, licensing, training and any other charges that BRE may levy in the course of the contract shall be included in the contract cost.

Where BREEAM Excellent is referred to, this shall mean the final certificate rating obtained following post construction review.

The requirement is to achieve a BREEAM excellent and the contractor shall ensure that the design, management, processes, coordination and execution of the works achieve this rating.

### 3.9.2 Resources, access and information

These requirements shall be read in conjunction with the full BREEAM for Healthcare 2008 manual which is freely available from the BREEAM website. The scheme shall be registered as a 2008 assessment, and the design stage assessment completed within 5 years of registration.

The main contractor shall provide all necessary resource, staff, materials etc to fulfil these obligations, including attendance to the client's assessor for periodic site visits and review meetings as may be requested by the client's Contract Manager and as may be required to satisfy the client's assessor that the process is being undertaken in a timely and satisfactory manner. Review meetings must be attended by the contractor's assessor and project manager. Progress reports, predicted and actual running scores shall be made available to the client's assessor as requested, and in any case not less than every three months.

The contractor shall make available to the client's assessor any evidence in used in support of the assessment on request and within 2 weeks of such a request being made.

The BREEAM certificates at design and post construction stage shall, on receipt be immediately issued as original documents to the client's project manager. 2 copies are required.

Access to the site shall be permitted at all reasonable times subject to safe access being possible to facilitate building/ site inspection and photographic. Site inductions & personal protection equipment should be provided for all building / site inspections, with complete access to all areas.

The contractor shall assist and be proactive in obtaining information from the client. The clients and their assessor will endeavour to provide all required information. Some client side credits may however not be possible to provide due to regional and organisational factors. The client side credits which are to be achieved shall be agreed during competitive dialogue. The remainder of the credits which are required for the excellent rating shall include a margin such that the achievement of the rating is not wholly dependent on the client side credits. This margin shall also be agreed during competitive dialogue.

The detailed requirements set out the contractor's responsibilities, however it is the contractors responsibility to ensure that the latest version of BREEAM Healthcare 2008 is used, which may vary these requirements and to ensure that all addendums, variations and process notes are incorporated in the assessment and reports.

### 3.9.3 Changes

Where changes have occurred since design stage assessment for whatever reason, the amended features should still comply with the BREEAM requirements.

It is required that no changes to any feature, design, process, material , supplier etc. which affects the BREEAM score shall be implemented unless the impact is fully disclosed to the Contract Manager and clients assessor and an updated score provided to demonstrate that the excellent rating has not been compromised.

### 3.9.4 Compulsory and Mandatory credits

The standard mandatory credits required for excellent ratings must be achieved. These are not specifically noted through the following text as BRE may vary these from time to time.

In addition, credits which may not be mandatory, but which contribute to low carbon design shall also be achieved. These are as follows:

Man 1 commissioning – 2 credits
Man 12 Whole life costing – 2 credits
At least one credit for Hea 1 Daylighting
Hea 7 - Potential for natural ventilation – 1 credit
Hea 10 - Thermal comfort – 1 credit
Ene 1 – CO2 emissions 6 credits ( these are mandatory for excellent rating)
Ene 2 – sub metering of substantial energy uses – 2 credits ( 1 credit mandatory for excellent rating)
Ene 3 – sub metering of areas – 1 credit
Ene 4 – external lighting – 1 credit
Ene 5 – LZC technologies – 2 credits, which includes for 10% of the total building energy demand to be met form a LZC source, unless otherwise instructed by client. ( 1 credit mandatory for excellent rating)
Ene 8 – Lifts – 2 credits
Ene 15 - provision of energy efficient equipment where part of the contract– 1 credit

All other credits are to be achieved at the discretion of the contractor and shall be evaluated against cost, benefit and clinical or operational need as required to achieve the excellent rating.

## 4.0 Low Carbon Technologies

### 4.1 Solar Water Heating

Solar hot water heating is considered potentially suitable for the development as there is year round domestic hot water demand, during daytime occupied hours, that can be meet without the need for gas or electrical plant.

Solar thermal panels could be roof mounted, ideally south facing at an angle between 30 º and 40 º, and could capture solar energy to generate domestic hot water.

The system comprises of; thermal panels, distribution pipework, pump and storage cylinder. A gas boosted standby system cold also be included to ensure supply and avoid legionella risk.

### 4.2 Ground Source Heat Pumps

Ground Source Heat Pumps (GSHP's) should be considered for the development to reduce the central plant heating and cooling loads. An underground network of piping could allow the earth to be used as a heat source/sink.

Energy recovered or removed from the earth could be upgraded via an electrically driven heat pump in order to generate useful water temperatures for both heating and cooling.

The heat pumps would be terminal and linked to the water loop or the heat pumps could be central and the water loop connected to terminal fan coil units...and/or....active beam system etc.

A closed loop system has been considered as a potential source. The closed loop system circulates water (or another fluid) through a system of buried pipework exchanging heat with the earth, the borehole field being located in the substantial landscape areas of the new development.

Geothermal Bore hole testing has been undertaken as part of the SI works and reference should be made to these results when undertaking evaluation of this potential heating/cooling source.

### 4.3 Co-generation/Tri-generation

Co-generation should be considered for the development to reduce the site $CO_2$ emissions. Co-generation is the production of electricity on site using a reciprocating gas engine combined with the effective use of the heat produced in the electricity generation process.

It is considered suitable for this application as the waste heat recovered can be used to meet the space heating and domestic hot water demand ...and/ offers the opportunity for the waste heat to be coupled with an absorption chiller, in tri-generation mode, to generate chilled water to meet the cooling demand.

Co-generation is a very efficient way of generating electricity, heat and cooling from natural gas, which has the lowest greenhouse gas co-efficient of the fossil fuels, a 15-40% energy saving is achieved compared with the separate production of electricity and heat.

The associated $CO_2$ emissions are further substantially reduced when bio-fuels are considered.

It should be noted that the current outline designs for the laboratory building consider the use of tri generation which could obviously be adopted elsewhere on site.

### 4.4 Biomass

Biomass has been considered for the development as an alternative fuel to gas for the boilers. Biomass fuel is typically either wood chips or wood pellets and as a replenishable source which absorbs $CO_2$ it is considered a carbon neutral fuel. Wood chips or wood pellets could be used in the boiler to directly generate hot water for space and domestic hot water heating.

Current investigations have suggested that the transport movement associated with biomass could impose some significant site traffic issues. As a consequence this solution has not been developed. However, the potential use of bio liquid fuel is a potential solution and should be evaluated.

### 4.5 Wind Power

Electricity generation via wind power could be considered for the development as a $CO_2$ free method of generation. A building mounted wind turbine is considered most appropriate due to development location...or a standalone wind turbine is considered most appropriate due to the development location.

Wind power is a very effective method of electricity generation and outputs range from Watts to Megawatt outputs. The rotation of the blades drives a generator either directly or via a gearbox using a DC to AC inverter to supply the development directly, charge batteries for future consumption or supply the grid.

Excess electrical consumption can be sold back to the grid which could improve the system payback or alternatively stored. A grid connection could be provided as back up as wind power is an intermittent supply.

The exemplar building form would appear to offer real opportunities for wind turbine usage, however we would draw attention to the Planning Condition 35 which refers to the requirements to comply with Aviation Authority Guidelines and the helipad requirements.

### 4.6 Photovoltaics

Electricity generation via Photovoltaics (PV) is considered a potential source for the development as a $CO_2$ free method of generation. Electricity could be generated from solar energy via semiconductor cells mounted on roof (and/ or) facade integrated. These could be ideally south facing at an angle between 30° and 40°.

Multiple PV connected modules could be required, with a maximum achievable efficiency of 15-18%. The DC output could be converted into an AC output through an inverter for direct use or to charge batteries. A grid connection could be provided as back up as it is not expected that the PV's could meet the whole building load.

## 4.7 Rainwater Collection

Rainwater collection should be considered for non clinical areas to offset potable water demands for toilet and urinal flushing. Rainwater collected from the roof of the development filtered and then stored in a tank potentially located in the main building basement.

The storage tank would be topped up with mains water when the collected rainwater cannot meet demand. The mains water top controlled by an electronic level indicator incorporating an overflow to the sewer during times of high rainfall.

The system can reduce potable water use and subsequent water and sewer charges.

**NHS Greater Glasgow and Clyde**

**New South Glasgow Hospitals (NSGH) Project**

# INVITATION TO PARTICIPATE IN COMPETITIVE DIALOGUE

## VOLUME 2/1

## APPENDIX M&E.5
## INTEGRATED BUILDING MANAGEMENT SYSTEM

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## 1.0 Introduction

### 1.1 General

This document has been prepared as a benchmark to allow each contractor to formulate compliant BMS proposals and commence their system design based on the appropriate criteria.

The contractor shall provide a comprehensive specification and system proposal document for the BMS indicating the level of system integration proposed.

### 1.2 System

An independent Internet Protocol network shall be provided throughout the building to support communication, interaction, data transfer, and data retrieval from and between the various engineering systems that provide service to the buildings. The Building Management System shall be fully integrated with this network and shall provide control over the engineering plant and facilities to enable the management of maintenance and energy usage.

At this stage of the development, the following systems shall be fully compatible with or at the very least be provided with fully functional gateways to the engineering network. (Fully functional means the ability to graphically interrogate each system down to component level from the BMS GUIWS's):

- Heating, Ventilating and Air Conditioning systems
- Local Steam Generation Plant
- Sustainability Plant
- Chilled Water plant
- Heat Pumps
- Site Renewables
- Metering
- Standby Generation plant
- UPS and IPS
- MV and LV switchgear and transformers
- Fire Detection and Alarm
- Smoke Control and Dampers
- Access Control
- CCTV
- Intruder Detection
- Medical Gases
- Nurse Call
- Staff Alarms
- Pagers
- Medical Cabinet Alarms
- Lifts and Escalators

- Blood Fridge management & monitoring system.
- Emergency lighting management system including automatic testing and recording functions.
- General lighting controls, day light controls & presence detection.
- Room occupancy control where required
- Decontamination services RO plant
- Decontamination tracking system
- Decontamination AER cycle management system
- Main water supply, pressure monitoring status
- Sub-Systems indicated in section 4 below.
- Any other systems that would traditionally have been considered for inclusion in a BMS system

### 1.3 Changing Behaviour

The BMS shall provide and integrate technology to facilitate change in building occupant's behavior which is mandatory to reach the future energy targets.

Individual occupant room set point adjustment shall be provide for BREEAM credit HW.

Information shall be presented at department receptions, in ward staff bases and in single bed accommodation to provide a level of comfort control via temperature set point adjustment, this shall be matched with a presentation of the forecasted energy saving for each half degree of set point change.

The display will provide measurement of CO2 level, humidity, temperature and indicate if natural ventilation is available via opening of windows.

## 2.0 Engineering Network

The network shall comprise a series of hubs, provided to suit the building layout and wiring topology generally located in plant areas, linked to a core switch and server located in the FM Office within the Energy Centre. The network shall be totally independent of the building IT network save for an interface, which shall be engineered via the server.

Each hub shall comprise a switch which shall communicate with local field devices via Category 6A copper cable infrastructure and shall communicate with other hubs and the server via multi pair single mode blown fibres.

The contractor shall provide a fully functioning network, which shall operate entirely on its own or shall seamlessly form part of the wider hospital network if so required. In any case the network shall be fully equipped to enable access from a remote PC via the hospital IT network and via the World Wide Web.

The exact specification of core switches, switches and other “active” equipment shall be agreed at the time of order to take advantage of continual market development. Allowance shall be made to cover for expected developments in pricing and for ensuring that the selected equipment is fully compatible with the Hospital IT network to enable future integration if required. The Board’s advice shall be sought in this respect.

All of the above systems shall be configured to interface in compliance with the internet protocol.

The final wiring between the field devices and the Engineering hub shall be to the ratified Category 6A standard UTP cabling presented at RJ45 outlets. Before going to contract a further review of ratified standards shall be undertaken to assess whether a newer standard has been ratified and whether it is appropriate to adopt such newer standard. The structured cabling arrangement shall be configured according to the recommendations of the Health Guidance Note: “Structural Cabling for IT Systems”.

The installation shall be carried out by an authorised system house installer in order to ensure future compatibility with the Hospital IT network if required. The installer shall use only single supplier Premise Networks components connected together in a system as intended by the supplier. The complete installation shall be provided with the supplier’s manufacturer’s system warranty. The installation shall be carried out to ensure that the requirements of the warranty are met in all respects.

Engineering Hubs shall be located in plant areas on all floors to ensure that the 90 metre rule for the run out of the final circuit shall not be exceeded. The plant areas shall be provided with adequate passive ventilation.

The Engineering Hub cabinets shall be adequately sized to accommodate the required equipment with allowance for 25% future expansion. The cabinet shall be equipped with the necessary Category 6A patch panels to serve the area, the necessary fibre patch panel to connect to the core switch/server, the necessary hub switch and a 10 way power distribution socket outlet strip supported by a 2 kVA UPS with 10 minute standby capacity.

All Engineering hubs located in the building shall be meshed vertically with 7-chamber fibre optic tubing from the Core switch/server cabinet in the FM office within the Energy Centre.

The FM office shall be provided with adequate ventilation and cooling. The core switch/server cabinet shall be equipped as the Engineering hub cabinets and in addition shall include the core switch necessary to operate the network and interface it with the Hospital IT Network. The cabinet shall also include the server which shall be sized to store and run all necessary proprietary software associated with the connected systems, all necessary software to run the network, data storage for all associated systems, including, energy usage logs, plant usage logs, Access Control databases, CCTV image recordings, etc. The contractor shall review the load of the equipment in this cabinet and size the UPS to support this load with a 1 hour standby capacity.

A fully functional workstation, complete with all necessary peripherals including both A4 black and white printer and A3 colour printer shall be provided and located in the FM Office. This work station shall be configured as the master control station for the overall system.

Each Engineering hub shall be connected to the core switch/server cabinet via duplicate backbone single mode fibre optics blown into the tubes. (Single mode and blown fibre selected to ensure compatibility over the full site with the Boards network cabling). Fibre optics shall comply with EIA 568 Building Wiring Standard.

**Fibre Optic Installation**

The fibre network shall be configured in star topology from the core switch hubs.

Fibre optic tubing shall be flame retardant, low smoke and fume zero halogen standard and the installed fibres shall offer the following characteristics:

- Minimum band width 500 MHZ KM @t 1300 nm, 200 MHZ KM @ 850 nm
- Attenuation less than 3.2dB/KM @ 850 nm and 0.8 db/KIM @ 1300 nm
- Refractive index 1.495 @ 850 nm and 1.490 @ 1300 nm.

Fibre optics shall retain their initial specification performance over the range of temperature -10°C to +40°C for a minimum period of 25 years.

The minimum bending radius that any fibre optic shall be subjected to either during installation or when fully installed shall be 10 x the overall diameter of the tubing.

Different colours shall be used to distinguish BMS from ICT cabling.

All fibres shall be labelled at each end. The text format shall be agreed prior to the commencement of the installation.

A standard termination interface shall be used for fibre cabling.

Multi pair Single Mode Fibres shall be terminated using standard ST-11 duplex connectors on a 1U patch panel cassette. A 1U horizontal cable management bracket is to be installed underneath each patch panel.

Individual patch panels shall be supplied and installed for the termination of all fibre optic cables within the patch cabinets.

Every panel shall be equipped with a slide and tilt drawer that allows easy access to the inner patch panel during and after installation. The drawer shall be firmly locked into its closed position by two quick release nylon snap latches.

All patch panels shall be labelled and labels shall be fixed directly onto each outlet on the patch panel. The text format shall be agreed prior to the commencement of the installation.

## 3.0 BMS Standards

The building management system shall comply with the following: -

- The Building Regulations, including Section 6 Energy
- Health Technical Memorandum 2005
- NHS Model Engineering Specification C54
- The BMS shall have regard to SHTM 2005, and to the requirements of other SHTM's & HTM's including HTM 06-01, 06-02, 06-03, SHTM 2007, SHTM 2014, HTM 03-01, and SHTM 2027.
- EMC Directive 89/336/EEC

Functional guidance in relation to the works can be found in: -

- British/European Standards
- British Standard Codes of Practice
- CIBSE Guides / Codes – Commissioning /metering etc.
- BSRIA Publications
- BREEAM
- SPP6
- PAN 84

## 4.0 BMS Overview

The computer-based system shall provide Direct Digital Control (DDC) to control, monitor and provide historic data logs for the relevant equipment and processes. The BMS shall utilise a network of standalone DDC controllers associated with each equipment/plant system. Controllers shall communicate using an open communication protocol in accordance with ISO 16484-5 and CEN TC247 at management and automation levels. Use of open protocols shall also allow the integration of plant manufacturer's bespoke controllers/control strategies where applicable.

The BMS shall communicate with the existing system(s) within the estates department and must be fully compatible, allowing full access to view, edit and configure all parameters within the system. The contractor shall allow for an additional P.C front end for administration and programming. The front end shall connect to network controllers via the Engineering network. The front end shall be covered by the 1hr UPS back up for the Engineering Network server.

The BMS front end shall access real time data from the BMS network and have password security and allow users to view and edit all BMS values via user friendly colour graphic displays as well as receive alarms and logged data.

Network controllers shall be located in major plantrooms and key riser locations and connect to a field network of DDC controllers associated with each equipment/plant system. The network controllers shall also provide custom ASCII communication drivers for communication to third party systems and devices to provide a monitoring function via software interface in place of hardwired where appropriate.

Consideration shall be given to adopting a wireless field network for the DDC controllers. Such a wireless network would be based on the IEEE 802.15.4 standard and use a frequency range of 2.4GHz. Each network node shall function as a router and the mesh network shall have a proactive discovery function to constantly search for and remember optimal linkages, providing a diverse routing capability. The BMS contractor shall provide a wireless network graphical commissioning and maintenance tool, where network display screens graphically present the mesh network, all the devices in it and their connectivity levels. A facility to map the wireless network onto floor plans shall be provided to accurately reflect the location of each wireless node.

The DDC controllers shall also communicate on a 'peer to peer' network level with frequency inverters to allow full bi-directional data transfer to eliminate BMS point duplication and provide more efficient performance, monitoring, alarming and metering.

The BMS shall include the facility to monitor intelligent utilities meters via an industry standard protocol interface (e.g. Bacnet or Modbus), whereby all available metering information shall be available on the BMS.

Information shall be presented at department receptions, in ward staff bases and in single bed accommodation to provide a level of comfort control via temperature set point adjustment, this shall be matched with a presentation of the forecasted energy saving for each half degree of set point change.

The BMS shall generate escalating alarm screens when plant is run under manual control.

The BMS systems software must be fully integrated and interfacing with all major systems including: -

- Fire Detection and Alarm
- Smoke Damper Control System
- Local Steam Generating Plant
- Stair Pressurisation Systems
- Chillers and Heat Pumps
- Sustainability Plant
- Plug & Play' AHU Control Systems
- Boilers and Pumping Equipment
- Gas Boosters
- Boosted Potable Water Pumps
- Water Storage Tank Levels
- Water Storage Tank Temperatures
- Helipad Fire-fighting Systems
- Packaged HWS Generator Plant incorporating Solar Panels
- Water Filtration Plant
- Renal Water Plant
- Generators
- Meters
- Inverters
- MV/LV Electrical Switchgear
- Power Change Over Units
- Transformer Temperatures
- Fuel Storage Tank Levels and Fill Alarms
- Intruder Detection and Alarm
- Access Control
- Closed Circuit Television
- Nurse Call
- Medical Gas Alarms
- Sprinklers
- Gas Fire Extinguishing Systems
- IP Telephony
- Asset Location System
- Staff Alarms
- Staff Pagers
- Staff Voice Communication
- IPS
- UPS
- Site Renewables

- LZC systems
- EPC
- Nurse Base Information
- Water Storage
- Renal Water
- Isolation Room
- Surgeons Panels
- Water Storage and pressurisation equipment
- Water Distribution Leak Detection
- Energy Centre  Water Leak Detection
- Energy Centre  Fuel System Leak Detection
- Fuel Storage and pumping equipment.
- Automated Material Transfer Systems
- Pneumatic transfer systems
- Specialist AC systems
- Entertainment Systems
- Lifts
- Escalators
- Blood Fridge management &  monitoring system.
- Emergency lighting management system including automatic testing and recording functions.
- General lighting controls, day light controls & presence detection.
- Room occupancy control where required
- Decontamination services RO plant
- Decontamination tracking system
- Decontamination AER cycle management system
- Main water supply, pressure monitoring status
- Major Health Equipment

Integrated systems information shall be presented in a layered presentation format using standard layouts, symbols and colour schemes agreed with the client. The minimum level of functionality required for the integrated systems is shown in the table below: -

| **Integrated System** | **Indication** | **Graphic Interaction** |
|---|---|---|
| Fire Detection and Alarm | Addressable device status (normal, alarm, fault) for all devices. Fire panel fault, test, and override. | Monitor progress of fire over split screens with alarm history and ongoing mapped events, Isolate, Silence, evacuate, test, link to maintenance schedule |
| Smoke Damper Control System | Damper open/closed/fault status. Fully automated complete with reset facility.<br>Fireman's override switch status. | View status and alarms. link to maintenance schedule. |

| **Integrated System** | **Indication** | **Graphic Interaction** |
|---|---|---|
| Local Steam Generation Plant | Operating status and efficiency<br>Energy consumption<br>Alarms<br>Temperatures, flow switches etc. | View status and alarms. link to maintenance schedule |
| Stair Pressurisation | System inputs and operating status,<br>Alarms | Monitoring, link to maintenance schedule |
| Fireman's override | Switch status | Monitoring, link to maintenance schedule |
| Chillers and Heat Pumps | Operating status and efficiency<br>Energy consumption<br>Alarms<br>Temperatures, flow switches etc | Monitoring, Scheduling set point adjustment and link to maintenance schedule |
| Sustainability Plant | Operating status and efficiency<br>Energy consumption<br>Alarms<br>Temperatures, flow switches etc | Monitoring, Scheduling set point adjustment and link to maintenance schedule |
| 'Plug & Play' Air Handling Units with Integral Controls | Operating status and efficiency<br>Energy consumption<br>Alarms<br>Temperatures, flow switches etc<br>Pressure Regimes | Monitoring, Scheduling set point adjustment and link to maintenance schedule |
| Boilers and Pumping Equipment | Operating status and efficiency<br>Energy consumption<br>Alarms<br>Temperatures, flow switches etc | Monitoring, Scheduling set point adjustment and link to maintenance schedule |
| Boiler House | Laired presentation schedule, local steam generation plant. | Interface with PM5 compliant unmanned boiler house alarm system. |
| Gas Boosters | Operating conditions<br>Alarms | Monitoring, set point adjustment and link to maintenance schedule |
| Water Pumps | Operating conditions<br>Alarms | Monitoring, Scheduling set point adjustment and link to maintenance schedule |

| **Integrated System** | **Indication** | **Graphic Interaction** |
|---|---|---|
| Helipad Fire-fighting Systems | Status (normal, alarm, fault). Fire panel fault, test, and override. | View status and alarms. Link to maintenance schedule |
| Packaged HWS Generator Plant incorporating Solar Panels | Operating conditions i.e. temperature, flow rates<br>Pump Status<br>System Alarms<br>Power Output | Monitoring, Scheduling set point adjustment and link to maintenance schedule |
| Generators | Operating conditions<br>Alarms<br>Power Output | Monitoring, Scheduling, link to maintenance, link to plant reinstatement and load shedding |
| Meters | Metered data | Monitoring, link to Utilities Management software |
| Inverters | Operating status<br>Motor current consumption<br>Power consumption<br>Speed and frequency<br>Manual Override | Scheduling, link to maintenance, speed control, changeover with flying start and link to Utilities Management software |
| HV/LV Switchgear | ACB status/tripped<br>Bus Coupler status<br>Power consumption<br>Load profile information<br>Logged data<br>ASCO switch status<br>Fault and alarm conditions<br>UPS/IPS and battery status | Monitoring, link to Utilities Management, load management software and link to maintenance schedule |
| | Laired presentation schedule, HV & LV switch gear | Include voltage profile monitoring, alarm and trend recording. |
| Intruder Alarm | Alarm zone status (set/ unset/ fault/ alarm)<br>Alarm panel fault | Monitoring , arm/disarm zones<br>Adjust zone time schedules |

| Integrated System | Indication | Graphic Interaction |
|---|---|---|
| Access Control | Door status, forced entry, invalid attempt, antipassback violation, areas, personnel, reports, event log, personnel details. | Card allocation, enrolment, video badging, set access privileges, set areas, set time zones to doors personnel and areas. Link to maintenance schedule |
| CCTV | View live and recorded CCV images embedded within graphical displays. Matrix display with simultaneous playback from multiple cameras. | Camera/image selection, PTZ camera control, smart searching of selected footage. Link to maintenance schedule |
| Nurse Call | Alarm and fault | Monitoring. Link to maintenance schedule |
| Medical Gas Alarms | Alarm and fault | Mimic gas alarms, monitoring plant status, and local valve alarms link to maintenance schedule |
| Sprinklers | Valve and System Status | Monitoring.system opearation and faults, link to maintenance schedule |
| Gas Fire Extinguishing System | Operating Status | Monitoring.system opearation and faults, link to maintenance schedule |
| IP Telephony | Alarm and fault | Fault Monitoring |
| Asset Location System | Location via Mapping within 3m accuracy. | Location Monitoring via RFID, link to maintenance schedule |
| Staff Alarms | Operating Status<br>Fault | Monitoring, alarm annunciation, link to maintenance schedule |
| Staff Pagers | Operating Status<br>Fault | Fault monitoring, link to maintenance schedule |
| Staff Voice Communications | Operating Status<br>Fault | Fault monitoring, link to maintenance schedule |
| IPS | Operating Status<br>Alarm/Fault | Monitoring, link to maintenance schedule |
| UPS | Operating Status<br>On Battery/Fault | System status monitoring, link to maintenance schedule |

| Integrated System | Indication | Graphic Interaction |
|---|---|---|
| LZC Systems | Operating status<br>Power consumption<br>Energy provided | Monitoring, Scheduling set point adjustment and link to maintenance schedule |
| EPC | System summation and graphic display | Monitoring and remote display |
| Nurse Base Information | Electrical, Heat and Cooling Energy summation and graphic display | Monitoring, set point adjustment and local display |
| Department Information | Electrical, Heat and Cooling Energy summation and graphic display | Monitoring, set point adjustment and local display |
| Renal Water | Operating Status<br>Power and Water consumption<br>Fault | Active mimic of each system front end, monitoring and link to maintenance schedule |
| Isolation Room | Operating Status. Pressure differentials.<br>Power and Water consumption<br>Fault | System monitoring, display at entrance door, link to maintenance schedule |
| Surgeons Panels | Mimic of panel Indications. Clocks, lighting, IPS/UPS, mains power, generator power, UCV/HVAC status, Temperature, Humidity, air sampling, Medical gas alarms and AGS system indicators. | Active mimic of each surgeons panel. |
| Water Storage and pressurisation equipment | Operating status and efficiency<br>Energy consumption<br>Alarms<br>Temperatures, flow switches etc | System monitoring, scheduling and link to maintenance schedule |
| Water Distribution Leak Detection | Major leak detection in water and heating service Pipework from energy centre. | Monitoring. link to maintenance schedule |
| Energy Centre Water Leak Detection | Leak detection in water tank bunds within energy centre. | Monitoring. link to maintenance schedule |
| Energy Centre Fuel System Leak Detection | Leak detection in fuel tank bunds within energy centre. | Monitoring. link to maintenance schedule |
| Fuel Storage and pumping equipment. | Operating status, Fuel consumption, Fuel levels. Fill point and level alarms | System monitoring, scheduling and link to maintenance schedule |

| **Integrated System** | **Indication** | **Graphic Interaction** |
|---|---|---|
| Automated Material Transfer Systems | System healthy.<br>Power Supplies healthy | Operational monitoring. link to maintenance schedule |
| Pneumatic transfer systems | System healthy.<br>Power Supplies healthy | Monitoring. link to maintenance schedule |
| Specialist AC systems | Temperature, Humidity, plant status, fire status, leak detection environment alarms | Monitoring, Scheduling, set point adjustment and link to maintenance schedule |
| Entertainment Systems | System healthy.<br>Power Supplies healthy | Monitoring. link to maintenance schedule |
| Lifts | System healthy.<br>Power Supplies healthy | Monitoring. link to maintenance schedule |
| Escalators | System healthy.<br>Power Supplies healthy | Monitoring. link to maintenance schedule |
| ICT Server Rooms | Temperature, Humidity, plant status, Vesda status, leak detection environment alarms | Monitoring, Scheduling, set point adjustment and link to maintenance schedule |
| ICT Node Rooms | Temperature, plant status, Vesda status, leak detection environment alarms | Monitoring, Scheduling, set point adjustment and link to maintenance schedule |
| Blood Fridge management | Serial and volt free contacts | Monitoring and recording status & faults |
| Emergency lighting | System management | Automatic testing and recording functions. |
| General lighting controls | System management | Day light controls preset dimming and presence detection |
| Room occupancy control | System management | Monitoring and recording status outputting signals to room management systems |
| Decontamination services | System Monitoring | Monitoring and recording status & faults |
| Decontamination tracking | System Monitoring | Monitoring and recording status & faults |
| Main water supply | System Monitoring | Pressure monitoring and alarm annunciation |
| Major Health Equipment | Operating Status<br>Power consumption<br>Fault | Monitoring |

The system shall also contain facilities to incorporate asset protection software.

Certain levels of interaction are required between the above systems, particularly between intruder, access and CCTV where camera presets are required to respond to particular intruder alarms or access violation events, switching from low to high frame rate.

The integrated control platform shall reflect all system interactions within the graphical environment to display the relevant information on the same graphical display to provide a user friendly and intuitive format together with clear instructions where required.

Tenderers shall provide details, including project references for BMS integration and interfacing capabilities in accordance with the above requirements.

## 5.0 BMS Equipment and Facilities

The BMS equipment shall generally consist of the following: -

- Graphical User Interface Work Station – Front Ends (GUIWS) will be located within Estates Office, Fire Control Room & Energy Centre.
- Server
- Data Storage
- Portable User Interfaces (Laptops, PDA's, portable keypads etc)
- Network Controllers
- DDC Controllers housed in distributed control enclosures
- Frequency Inverters
- Motorised Control Valves and Damper Actuators
- Sensors, Switches and other field mounted control & monitoring devices
- Interactive behavior changing displays

### GUIWS

The graphical user interface Work Station shall provide the following facilities:

- Alarm annunciation, management, logging and reporting
- Plant operating status monitoring, logging and reporting
- Energy metering and monitoring
- Environmental conditions monitoring, logging and reporting
- Scheduling, adjustment and configuration.

Alarms shall be categorised depending on their criticality and at least 5 categories shall be available, with user defined routing and annunciation options for each alarm. Highly critical alarms shall be routed to a 24hr-manned position and the BMS shall have the facility to send alarms via SMS text message, email or to portable PDA.

A reports generation facility shall be provided whereby reports may be generated automatically at a scheduled time or triggered by an event. The reporting function shall also allow custom, user-defined report generation.

The BMS shall log energy consumption via the connected utility meters throughout the hospital. The BMS shall have the facility to export energy data to third party software to demonstrate the energy performance of the building in accordance with stipulated requirements.

### Server

The server shall be sized to store and run all necessary proprietary software associated with the connected systems, all necessary software to run the network, data storage for all associated systems, including, energy usage logs, plant usage logs, Access Control, CCTV etc.

**Storage**

The storage shall be sized to accommodate copies of all necessary proprietary software associated with the operation of the BMS and all interface systems together with all input data to allow access of system archive information for a period of 24 calendar months.

The storage shall be industry standard raid configuration with resilience and automatic redundancy.

Archive information shall include:
Energy usage logs, water usage logs, plant usage logs, plant alarm logs, zone temperature logs, zone humidity trend logs, access control databases, CCTV image recordings, etc.

**Portable User Interfaces**

Local interrogation and adjustment shall be carried out by portable user interfaces. Wireless connection shall provided in the main plantroom areas or otherwise via data connection at the local DDC controller or controls enclosure. Local adjustment and overrides shall be notified and logged at the G.U.I P.C. The BMS shall be designed generally to prevent unauthorised tampering and cases of manual override causing excess energy consumption.

**Network controllers**

Network controllers shall be as described in the overview above and shall be located at key locations throughout the hospital.

**DDC Controllers In Distributed Control Enclosures**

DDC controllers shall carry out the control and monitoring of plant and equipment as well as local metering and logging functions. The controllers shall be housed in control enclosures in a distributed configuration to suit the staged delivery and the off site fabrication and testing of the plant systems served. This shall comprise for example one enclosure per AHU and so on.

Each enclosure shall have a system Auto/Off selector switch, panel live and common fault indication lamps and local reset pushbutton.

DDC Controllers (with the exception of terminal control and monitoring only) shall incorporate three position manual override switches to allow selection of On, Off or Auto for each output state. These switches shall form an integral part of the controller and provide feedback to the BMS. In addition each analogue output shall be equipped with an override potentiometer to allow manual adjustment of the signal over it's full range, when the three position switch is set to the 'On' position.

Each distributed enclosure shall have space to cater for a 25% expansion in BMS points by means of the addition of appropriate plug in input/output modules.

**Frequency Inverters**

Frequency inverters shall be fed directly from section boards and mounted adjacent to the motors served to provide soft start, metering and operational performance monitoring capabilities via open protocol links to the BMS DDC controllers. All motor drives above 1.1Kw shall be provided with an inverter.

**Motorised Control Valves and Damper Actuators**

Motorised control valves and damper actuators shall be suitably selected and sized. Manual overrides, spring return and auxiliary switches for interlocking shall be provided where required. (System alarm to be generated and escalted when manual override is activated)

**Sensors, Switches and Field Devices**

Sensors, switches and field devices shall be connected to control enclosures and shall perform the control and monitoring functions listed in section 5. Where the BMS can derive accurate status information by intelligent means for example via protocol interface or intelligent alarming functions these shall be favoured to remove single point of failure.
Sensors shall be calibrated and maintenance to include corrections for drift and recalibration.

**Meters**

The BMS shall be linked to the various system meters and equipment drives to log and indicate energy usage throughout the Hospital and Energy Centre buildings including the following minimum requirements.

- Main Heating Systems fuel usage
- Secondary Heating Systems fuel usage
- Renewable source inputs
- Main Electrical consumption meters
- Main water consumption meters
- Main Cooling Systems power consumption meters
- Sub-metering of department power usage
- Sub-metering of department heating usage
- Sub-metering of department HWS usage
- Sub-metering of department cooling usage
- Sub-metering of high water usage department usage

The metering graphics shall be set up in parent-child configuration to map energy use from department layouts through building sectors to whole buildings and energy centre.

The metering shall also include all requirements for the Contractors targeted BREEAM credit.

**Automatic Monitoring and Targeting (AMT)**

The BMS shall be configured for Automatic Monitoring and Targeting with reporting to ensure efficient operation of the plant and systems especially during the commissioning and extended hand-over period.

The BMS shall also be interconnected to the Board's AMT system which is presently located within the site Clock Tower. The BMS software script shall be provided to ensure that all energy usage figures required for the AMT shall be available for use in the system.

**Power Autonomy and Emergency System Monitoring**

The BMS monitors all equipment and it is imperative that the information gathered is retained and is available in the event of loss of mains power.

All out stations, communications and network equipment shall be equipped with battery or UPS backup to provide one hour autonomy.

The main GUIWS and it's associated accessories, screens, and printer shall be equipped with a UPS backup to provide one hour autonomy.

The Contractor shall configure all elements of the system to allow monitoring of the emergency systems during all failure scenarios and this facility shall be demonstrated during the system Integration Testing. The Contractor shall carry out any modifications highlighted during the IST to ensure that the installed system provides full emergency system monitoring.

**Interactive Behavior Changing Displays**

Display units shall be provided at department receptions, in ward staff bases and in single bed accommodation to provide a level of comfort control via temperature set point adjustment, this shall be matched with a presentation of the forecasted energy saving for each half degree of set point change.

The display will provide measurement of CO2 level, humidity, temperature and indicate if natural ventilation is available via opening of windows.

Within single bedded accommodation the day lighting interface units shall be integrated in the display.

## 6.0 BMS System Control Strategies

The general design principal for this project is to provide local decentralised control panels to be purpose designed and integral with the 'stand-alone' plant and equipment and these shall be Form 4 wardrobe type. Generally, each major power consumer, e.g. Pumps, Fans etc. shall be supplied with their dedicated 'intelligent' invertor drive motors, to be used as the means of control and for direct interrogation of status, fault levels and energy consumption. These drives shall be powered by cables fed directly from section boards located in the respective plant rooms. All information abstracted from the invertors and other controllers shall be accessible via the BMS.

### MPHW/LPHW Systems

The MPHW/LPHW Plate Heat Exchangers have been specified as a 'Stand-alone' Package, manufactured off-site and delivered in sections where applicable on support skids ready to be mounted in position. The 'turnkey' systems shall incorporate all necessary power and controls wiring and accessories, pre-wired in the factory and field tested prior to shipping. The panel shall control and monitor associated pumps, pressurisation sets, system temperatures including primary steam and secondary circuit flow and return temperatures together with high / low temperature alarm limits.

As a minimum the BMS shall monitor faults, alarms, status, hours run, and energy consumption information, and shall include heating flow and return temperatures for each LPHW primary and secondary heating zone and circuit.

Hospital departments which are occupied on a part-day basis shall have a timed control of the appropriate heating zone and night setback.

Intermittently occupied areas within 24 hour areas departments shall be sub-zoned with controls and monitoring provided to match the usage profile.

Variable volume circuits shall be provided to control all secondary heating circuits, based on system demand.

The use of compensated circuits shall be employed where this feature assists the efficiency of a particular system operation and energy performance of the system.

Plant operation for out of hours occupation can be organised through an Estates Department making remote inputs as and when required.

**Hot Water Systems**

The Hot Water Generator have been specified as 'Stand-alone' Packages, manufactured off-site and delivered in sections where applicable on support skids ready to be mounted in position. The 'turnkey' systems shall incorporate all necessary power and controls wiring and accessories, pre-wired in the factory and field tested prior to shipping. The panel shall control and monitor associated pumps, pressurisation sets, system temperatures including non-storage plate heat exchangers, primary and secondary circuit Control, monitor and continuously record & trend flow and return temperatures as well as Circuit sentinel point automatic temperatures recording against time parameters limits as per parameters detailed in L8 ACoP.
The bidder shall also provide a cost alternative option utilising non invasive temperature measurement at each out let as per L8 ACoP thermal control regime requirements.

The controls will also integrate the Solar Water primary medium, controlled to maximise the free energy from the panels located at Level 11. The HWS dedicated plant management system shall connect to the BMS network and communicate operational and alarm information via open protocol.

The solar water heating shall be integrated with the renewables strategy.

**Cold Water Service**

The Bulk Cold Water Storage and water filtration plant system shall be located within the energy centre and locally within each building at Basement Level. The distribution pumping sets have been specified as 'Stand-alone' Packages, manufactured off-site and delivered in sections where applicable on support skids ready to be mounted in position. As a minimum the dedicated panels shall carry out the monitoring of the following:

- Status of all tanks (level indication)
- Efficient parallel sequence control of the delivery pumps.
- Logging of water consumption
- Status of pressurisation / booster units
- Temperature of stored water and incoming mains water
- Common fault status of water treatment plants
- Logging of filtration equipment status

The CWS dedicated plant management system shall connect to the BMS network and communicate operational and alarm information via open protocol.

Monitor temperature of cold stored water and alarm should the temperature of the water exceed 20 degrees Centigrade, trend & record bulk storage temperature as per parameters set out in L8 ACoP.

Circuit sentinel point automatic temperatures recording against time parameters limits as per parameters detailed in L8 ACoP.

The bidder shall also provide a cost alternative option utilising non invasive temperature measurement at each out let as per L8 ACoP thermal control regime requirements.

**Air Handing Plant**

The main air handling unit strategies adopted for the Hospital are as follows: - Theatre AHU's – Double-deck or single deck AHU to suit with individual temperature and humidity control per theatre, dedicated multizone units with pressure regime control via pressure stabilisers with heat pipe energy saving devices in winter and summer mode. Units are variable speed using invertor drive control with local control at Surgeon's Panel.

Isolation Room AHU's – Dedicated Single-deck AHU's with Individual temperature control heating and comfort cooling per suite, dedicated units with pressure regime control via pressure stabilisers complete with HEPA filter provision on the Lobby terminal supply unit. Units are variable speed using invertor drive control with local control within the Isolation Room. Isolation Room to have visible and audible alarms located at the entrance to the Lobby and duplicated at the Nurses Station. Alarms to indicate bedroom temperature deviation and pressure differential between bedroom and Isolation Lobby. The pressure alarm status shall be under the dictates of 'timed' inputs which represent the normal usage of the suite with respect to access to and from the Lobby and Bedroom, to minimise 'nuisance' alarms. The Extract Fan Unit shall be located at roof level or within the roof plantroom, power and BMS links shall be provided.

General HVAC – Air Handling units shall be provided with energy recovery devices in winter and summer mode. Units are variable speed using invertor drive control with summer humidity control, supplying air to systems to provide local comfort cooling (where required) and heating, using scheduled off-coil temperature. Areas off these systems requiring heating and cooling shall be temperature controlled via Active Chilled Beams.

The opening windows within the rooms with chilled beams installed, shall be provided with contacts, so as when the windows are open the chilled water control valve will close. This will ensure that the comfort cooling is not operational whilst the windows are open thus providing a saving energy by maximizing free cooling. This facility shall also be provided for heating control, whereby heating set point shall be set back while windows are open beyond trickle vent position.

All systems shall be full fresh air, with heat recovery where relevant and control scheduling to maximise free cooling when required.

Special individual room monitoring and logging facilities shall be provided for operating theatres and critical rooms and zones, which shall include temperature and humidity control where appropriate.

Heat Pipes shall be controlled to maximise efficiencies at all times, using air temperatures monitored across the system. Energy monitoring shall be calculated using flow rates abstracted from the Invertor drives and enthalpy detection to compare evaluate heat exchange between external air and room conditions. These values can be monitored either by means of proprietary enthalpy detectors or by calculation using temperature and humidity detectors.

The Air Handling Unit's dedicated plant management system shall connect to the BMS network and communicate operational and alarm information via open protocol.

**Chilled Water and Heat Pump Systems**

Sustainable cooling shall be used were possible with conventional chilling used as required as a top up and to provide system resilience, all lower carbon means of supplying cooling such as bore holes, piling systems and absorption chilling must be fully investigated and chosen if there is a carbon advantage over conventional cooling.

Chillers and Heat Pumps shall operate under the dictates of their own multiple chiller management controllers to ensure maximum efficiency is derived from the plant. The chiller management system shall connect to the BMS network and communicate operational and alarm information via open protocol. The BMS shall provide on/off enablement of the chiller management system and primary/secondary circulation pumps as well as controlled load shedding in the event of a single generator failure during a power outage. The BMS shall also log the chillers running time, energy use and calculated C.O.P.

Hospital departments that are only occupied on a part-day basis shall have a timed control of the appropriate chilled water zone.

Variable volume circuits shall be provided to control all secondary chilled water circuits, based on system demand.

Plant extended operation for out of hours occupation can be organised through an Estates Department making remote inputs as and when required.

Where cooling towers are put forward as part of the strategy these must be dry type.

**Medical and Surgical Air, Medical Gas and Vacuum Systems**

The BMS shall monitor the healthy and common fault status for all the medical gases and medical vacuum systems central plants.

**Standby Generators**

The standby diesel generators shall operate automatically under their own integral controls. The BMS shall monitor the status of each generator including the oil storage tanks and pumps, output (kW and cumulative kWh), voltage, frequency and oil consumption via protocol interface.

In the event of mains power failure, the BMS shall initially hold off all mechanical plant. When the standby generators have started up and restored power to the building electrical system, the standing load, comprising lighting and small power will be reconnected within 15 seconds. The standby generator control system will monitor this load and the start up performance of the engines and will give a signal as to when the engines are ready to accept further load up to their full rating. The BMS shall receive this signal from each engine and shall manage the reintroduction of mechanical plant loads up to the capacity of the available generators in accordance with an agreed priority schedule.

In order to manage power distribution availability in the event of subsequent generator failure the BMS shall monitor generator output and capacity versus the building's electrical load. This shall allow the BMS to instigate load shedding routines to manage non-essential chiller and AHU loads in the event of a single generator failure.

Facility to manually implement phased start up must be provided as a contingency in the event of control failure.

**Isolated Power Supplies (IPS)**

Isolated Power Supplies (IPS) shall be monitored for fault condition.

**Uninterruptible Power Supplies (UPS)**

Uninterruptible Power Supplies (UPS) shall be monitored for mains/battery status and fault condition.

## 7.0 BMS Detail Design

The BMS design shall be developed, incorporating levels of integration where appropriate, to meet the life cycle and environmental requirements of the project.

The following design activities shall be delivered in accordance with the methodology described within the contract.

### Key Principles

The following key principles shall apply: -

- Design shall comply with the relevant standards and any specific requirements of the specification.
- Design shall incorporate integration as deemed appropriate to the project following a detailed risk/benefit analysis involving all stakeholders.
- All aspects of the design shall be based on tried and tested solutions and shall incorporate industry standards throughout.
- Design shall be based on open protocols and incorporate future proofing as far as possible.
- Design shall be driven by commissioning, FM and energy considerations as well as cost and reliability.
- Design shall adopt best practice from other major UK hospital projects where this is considered appropriate for efficiency and standardisation and following a detailed risk/benefit analysis involving all stakeholders.
- All activities shall be coordinated with the contractors and consulting engineers.

### Detail Design Activities

The table below lists out the detail design activities: -

| | **Detail Design Activity** |
|---|---|
| 1. | Establish design criteria to include relevant standards, specifications and user requirements. |
| 2. | Set out the basis of the design, listing out performance criteria and design deliverables. |
| 3. | Establish generic plant system types for engineering development (e.g. AHU's , load centres etc). Confirm equipment standards for each system type (valve spec, control panel contents, electrical distribution and use of inverters etc). |
| 4. | Establish BMS software interfaces to M&E systems (chillers, electrical switchgear, metering, fire and smoke dampers etc). |

| | **Detail Design Activity** |
|---|---|
| 5. | Set up a database for design production, tracking and cost management. Set up suitable interface to the contractor's design, installation and commissioning programmes. |
| 6. | Work through generic system scope interfaces with consideration for off site fabrication, commissionability and maintainability. |
| 7. | Carry out GAP analysis on scope of works on a system-by-system basis in terms of procurement strategy to eliminate scope gaps and identify smart procurement possibilities. |
| 8. | Establish and agree Engineering Network standards, structure, LAN/WAN configuration, routing, network equipment and supervisory functions. Structure accommodate systems integration capabilities. |
| 9. | Confirm accreditation of network design in terms capacity and levels of redundancy. |
| 10. | Prepare metering strategy and schedules. |
| 11. | Check hydraulic zoning and prepare control valve schedule. |
| 12. | Prepare M&E plant electrical distribution schedules. |
| 13. | Establish terminal unit control scope and strategy. |
| 14. | Prepare BMS points schedules, metering strategy, equipment specifications and schedules, scope integration, management methodology and procurement plans. |
| 15. | Develop detailed system physical network architecture to include riser space allocation, installation and equipment protection requirements. |
| 16. | Establish the front end condition based monitoring; smart energy management and O&M integration. |
| 17. | Confirm compliance with cost plan following regular commercial reviews and value engineering workshops. |
| 18. | Establish software interfaces to other systems (Fire Alarm, Electrical, Generators, Nurse Call, Intruder, Access Control, CCTV, personal attack, etc). |
| 19. | Analyse content of potential systems to integrate onto common platform (Access, security, CCTV, lighting, fire, smoke damper control, nurse call, BMS etc). |

| | **Detail Design Activity** |
|---|---|
| 20. | Carry out risk/benefit analysis for each system integration and present to the team. |
| 21. | Develop design to include systems integration if required in conjunction with detailed methodology. |
| 22. | Provide interactive Asset Register for incorporation in an Estate wide system. |

**Methodology**

The contractor shall allocate two design support engineers dedicated to the project to carry out the detail design works. The engineers shall be present within the project offices when required to liaise with members of the team and likewise with the consulting engineers.

The engineers shall be of sufficient calibre to fully understand and incorporate the operational, availability and energy targets as well as the basic design and value engineering requirements of the project.

During the detail design support period the engineer shall proactively seek the information required to complete the detail design works via the appropriate document control system and otherwise through liaison with members of the team.

The contractor shall support the engineers where additional resource or technical support is required.

The engineers shall also act as the specialist representative within the whole design team to offer advice and support on technical and scope integration issues.

The detail design works shall be programmed to take place in the early part of the contract (typically the first 3 to 6 months depending on the extent of systems integration) in order to ensure sufficient time for procurement and implementation.

The contractor shall submit candidates for the role of design support engineer for approval by the Consulting Engineer prior to placing sub-contracts for the work.

The design support engineers shall remain available and fully involved throughout the procurement and implementation phases of the works and right through to system commissioning and handover.

Support engineers should be retained at least part time up to point where energy use is proven to be within operational targets- 2-3 years into full operation.

## 8.0 Scope of Works

The contractor shall provide the following equipment and services: -

- Detail Design works as detailed above.
- All power wiring and containment to mechanical plant from main distribution boards or section boards.
- All other power wiring and containment including lighting in packaged mechanical plant such as AHUs except main supply to section boards and distribution boards.
- All power and control wiring and containment (including local controls serving plant not controlled by the BMS – e.g. local extract fans) and all interlocks between plant and safety systems including automatic shut off valves in gas supplies.
- Power supply wiring/containment between local mechanical plant and fused spurs provided by the electrical contractor (including local fans, local heaters etc)
- All controls wiring and containment associated with input/output points detailed in the BMS point schedules.
- All communications network wiring including the IP communication Engineering Network (addressable energy meters, terminal controls etc)
- Design, manufacture, test, deliver, off load, position and install all local control panels, monitoring panels and all other controls enclosures.
- Size, select, supply and install all DDC controllers, sensors, switches, inverters, actuators necessary to form a complete and functioning system. Free issue valve bodies and immersion sensor pockets to Mechanical contractor for installation in pipework. Mechanical contractor to install copper pipework & fittings for liquid pressure devices.
- Head end hardware and software, including all protocol interfaces, systems integration software and web pages as required.
- Project Management, engineering, software and graphics configuration, installation, commissioning and handover of the system.
- Client training on site for a maximum of 6 staff for 5 days. Price list and course details to be provided for off site formal classroom training.
- System maintenance for the duration of the maintenance period following handover. (The period to be concluded as “Dialogue Issue”)
- System performance monitoring and optimisation, including seasonal commissioning during the maintenance period.

The contractor shall complete all necessary digital and analogue interfaces between the BMS and packaged plant as detailed in the point schedules, plant schedules, drawings and elsewhere in the specifications. Any apparent discrepancy between the specification, plant schedules and drawings shall be drawn to the attention of the contract administrator before or with the tender submission. Otherwise the contractor shall be deemed to have made the maximum allowance within his tender.

## 9.0 Graphics

A Graphical User Interface shall be provided at the Operator Workstation to enable the monitoring and adjustment of the BMS. The interface shall be capable of integrating and displaying real time information from other systems, namely:

- Fire Detection and Alarm
- Smoke Damper Control System
- Local Steam Generating Plant
- Stair Pressurisation Systems
- Chillers and Heat Pumps
- Sustainability Plant
- Plug & Play' AHU Control Systems
- Boilers and Pumping Equipment
- Gas Boosters
- Boosted Potable Water Pumps
- Water Storage Tank Levels
- Water Storage Tank Temperatures
- Helipad Fire-fighting Systems
- Packaged HWS Generator Plant incorporating Solar Panels
- Water Filtration Plant
- Renal Water Plant
- Generators
- Meters
- Inverters
- MV/LV Electrical Switchgear
- Power Change Over Units
- Transformer Temperatures
- Fuel Storage Tank Levels and Fill Alarms
- Intruder Detection and Alarm
- Access Control
- Closed Circuit Television
- Nurse Call
- Medical Gas Alarms
- Sprinklers
- Gas Fire Extinguishing Systems
- IP Telephony
- Asset Location System
- Staff Alarms
- Staff Pagers
- Staff Voice Communication
- IPS
- UPS
- Site Renewables
- LZC systems
- EPC
- Nurse Base Information
- Water Storage

- Renal Water
- Isolation Room
- Surgeons Panels
- Water Storage and pressurisation equipment
- Water Distribution Leak Detection
- Energy Centre  Water Leak Detection
- Energy Centre  Fuel System Leak Detection
- Fuel Storage and pumping equipment.
- Automated Material Transfer Systems
- Pneumatic transfer systems
- Specialist AC systems
- Entertainment Systems
- Lifts
- Escalators
- Blood Fridge management &  monitoring system.
- Emergency lighting management system including automatic testing and recording functions.
- General lighting controls, day light controls & presence detection.
- Room occupancy control where required
- Decontamination services RO plant
- Decontamination tracking system
- Decontamination AER cycle management system
- Main water supply, pressure monitoring status
- Major Health Equipment

In addition to the main graphical user interfaces the following portable devices shall be provided, one laptops and eight PDA's allowing system interrogation from any of the distributed controllers together with alarm annunciation..

All graphics shall be dynamic, forming part of a layered structure, which are consistent and provide a logical and intuitive navigation facility of the building's systems and show the following as a minimum: -

- HVAC plant temperatures, set points and status conditions.
- Ventilation System status
- Valve and damper control signal positions.
- Fire Safety System status
- Electrical System status
- Filter statuses
- Metered data
- Building plans
- Integrated systems information and facilities as previously described.

The GUI shall incorporate full graphics drawing and editing facilities to allow new graphics and changes to the structure of the graphics to be configured by the operator.

Links shall be provided from graphics to the electronic O&M manuals and associated asset register to assist fault finding and ordering of replacement components.

## 10.0 Interactive Support and Utilities Management

### Condition Based Monitoring

The BMS shall be linked to a condition based monitoring package capable of the following: -

- 24 hour alarm analysis
- Repeated alarm analysis
- Analysis of duration from alarm acknowledgement to clearance
- Analysis of unacknowledged alarm duration
- Hardware point alarm analysis
- Analysis of an alarm failure pattern
- Analysis of alarms regarding MTTR and MTBF
- Analysis of control loop performance and usage
- Analysis of optimiser performance at occupancy time
- Analysis of Terminal & BMS start-up and shut down times
- Analysis of user access to BMS
- Analysis of modified points and manual overrides on a per user basis
- Sensor calibration and avoidance of drift

The system shall automatically produce reports on the system performance in a user friendly, easily understood colour graphical format.

The site shall be linked to permanently manned 24/7 remote support centre, which shall carry out system performance analysis and recommend maintenance programmes in line with an agreed process of continuous improvement aimed at increasing plant availability and reducing energy consumption.

The remote support centre shall also carry out alarm acknowledgment and take action to correct the situation remotely where possible.

### Interactive Utilities Management

Smart utilities management software shall be provided, which has real time links to the utilities provider's billing system and can provide comparative analysis and profiling to check tariffs and charging with BMS metered data. Any invoice discrepancies can be highlighted and recovered by the client.

The submission shall expand on what constitutes a department and areas and what the breakdown of energy use in areas should be.

Profile analysis functions shall identify any abnormalities in energy consumption and report and alarm accordingly. Profiling shall be carried out by department and areas and by system as well as on a whole building basis. Links to plant operating logs and alarms shall be provided to assist investigation.

Load shaping reports shall be provided by department and areas, identifying peak demands, CO2 and carbon consumption.

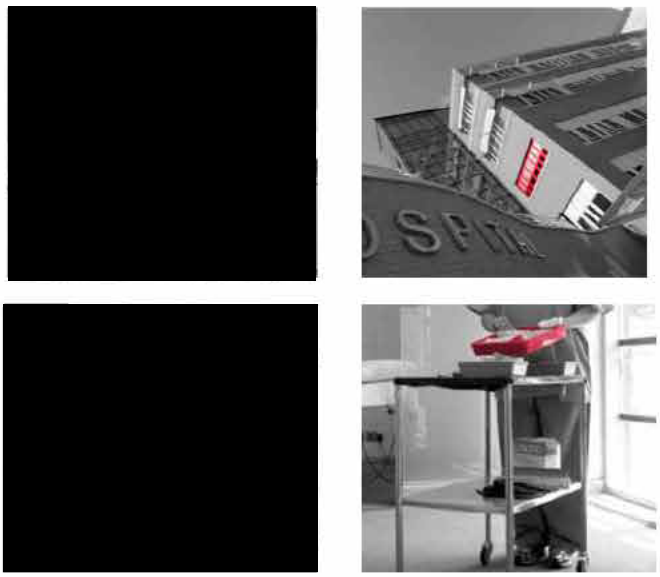
**NHS Greater Glasgow and Clyde**

**New South Glasgow Hospitals (NSGH) Project**

# INVITATION TO PARTICIPATE IN COMPETITIVE DIALOGUE

## VOLUME 2/1

## APPENDIX M&E.6
## RENAL WATER



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## 1.0 Introduction

This document has been formatted in line with the M&E appendices, the core information is taken from SGH Renal Central Water Plant Specification Version 2.1 procedures produced by Mr S F Campbell 18 March 2009.

The installation of the pure water distribution loops from the central water plant (CWP) must be fully coordinated in advance of the works with the structural design of the building and all services to minimise pipe route lengths.

Water metering and energy metering shall be integrated with the BMS to highlight excessive consumption. Water meters shall be provided at all inlets to the water treatment plant. Energy meters shall be located at appropriate locations with the resilient networks to record and allow tabulation of all electrical and heat source inputs.

## 2.0 Water Treatment System – Overview

2.1 The water treatment plant(s) will be required to supply ultrapure water suitable for on-line haemodiafiltration treatments to various areas of Renal Inpatients, Outpatients, preparation areas and Renal Technology maintenance area.

2.2 Renal **Inpatient** areas may be required to provide urgent treatments **24 hours per day, seven days per week**.

2.3 Renal **Outpatient** areas require to provide treatments **24 hours per day, six days per week**

2.4 Provision must be made for Inpatient and Outpatient areas to allow a number of treatments to be carried out overnight while still allowing automatic systems to provide appropriate regimes of disinfection, softener regeneration and carbon filter bed backwash. The number of dialysis stations which will require to provide patient treatment during periods of operation of these automatic systems will be advised in a separate document.

2.5 Automatic disinfection systems will require to have manual override provision, accessible to clinical staff, to allow priority to clinical requirements. Unless duplexed, for example duty / standby configuration, automatic softener regeneration and carbon filter bed backwash systems also require similar override provision. The status of these automatic systems must be displayed on the indicator panels at the Nurses' station and in the Renal Technologists' maintenance room

2.6 The number of dialysis stations required and their distribution over the various dialysis, preparation and Renal Technology maintenance areas will be advised in a separate document.

2.7 The number of haemodialysis machines which will require to be in treatment mode at any one time in each dialysis area and in each maintenance area will be advised in a separate document.

2.8 The number of haemodialysis machines which will require to operate in "Integrated" heat disinfect mode at any one time in each dialysis area and in each maintenance area will be advised in a separate document.

2.9 The volume of water supplied to each haemodialysis machine must be sufficient to maintain service regardless of treatment type, machine type and manufacturer.

2.10 Each haemodialysis machine requires to be supplied with water between 2.0 bar and a maximum of 5.0 bar pressure at a flow rate of **1.5 litres/min at 4°C.**

The quality of the water must be such that all current forms of renal replacement therapy can be performed, including "On-Line Haemodiafiltration".

The water quality must meet all relevant standards and guidelines which may be current at the time of system design being submitted and should also take into account newly developing standards, e.g. :-

1) UK Renal Association, 4th edition, 2007 “Clinical Practice Guidelines for Haemodialysis” and any changes which are included in the 2009 Update of the guidelines.

2) **ISO Working Document 23500 -*"Guidance for the preparation and quality management of fluids for haemodialysis and related therapies".***

The existing Standards also include the Association for the Advancement of Medical Instrumentation (AAMI), European Pharmacopoeia and Water for Haemodialysis ISO13959 and were endorsed by the Association of Renal Technologists.

To maintain an acceptable standard of water quality, regular analysis should be performed. This should monitor both incoming raw water and treated water for all chemical contaminants, Endotoxin levels and Microbial count. A sterilisation and cleaning system must be in place to prevent or deal with any raised or unacceptable levels of contamination. A “State of the Art” disinfection system should be incorporated which can be programmed to run automatically to prevent such problems and operate without nursing or technical intervention.

The water treatment system must have a 100% redundancy built in and include duplication of components. There must be appropriate “Bypass” systems installed, with adequate protection to ensure dialysis can take place safely, in the event of a failure of any part of the system

The raw water supply system must have the capability to issue a progressive warning signal if and when there is a problem with the volume of the supply. Intermediate and low level alarm provision is the minimum requirement.

Each point of use must have a media supply panel, which will include water supply stop valve and 2 drain connections which discharge into a drain protected by an air gap.

All media supply panels installed in the **Outpatient** areas, including the ready use / out lobby points and the test stations within the Renal Technology Laboratory, require central concentrate delivery (CCD) facility. The number of CCD connections required per media panel will be advised in a separate document.

CCD connections are **not** required for media panels installed in the **Inpatient** areas.

The requirement for such facilities on the media panel as, for example, oxygen, suction, nurse-call, 13 amp power outlets, lighting and T.V./radio will be advised in a separate document.

The system must include, mounted on the media panel at point of use, the provision of Walther stainless steel self sealing couplings for every water, drain and CCD point. Couplings shall **not** be supplied with **knurled** finish but must be specified with **plain** finish for reasons of cleaning and infection control.

The specifications for the couplings which are mounted on the Haemodialysis (HD) machines are shown below and appropriate **mating** couplings must be supplied on the media panel.

| Coupling function | Coupling description for Haemodialysis [HD] machine | Coupling Part No. for HD machine | Quantity | Coupling Requirement for Media Panel |
|---|---|---|---|---|
| Dialysis Water | Female self sealing quick release 316 stainless steel coupling | SP006-0-WR510-01-2 | 1 off | Mating **male** coupling |
| Dialysis Effluent | Male self sealing quick release 316 stainless steel coupling | SP006-2-SL009-01-2 | 2 off | Mating **female** couplings |
| Dialysis Acid | Female self sealing quick release 316 stainless steel coupling | LV004-0-SL004-01-2 | 1 for each concentrate | Mating **male** coupling (s) |

The Reverse Osmosis water treatment equipment must be C.E. marked and identified as a Medical Device.

**3.0 Technical Specification**

3.1 **Pre-Treatment :** A direct potable water feed of an appropriate pressure and flow should be provided into the plant room(s) by others **but this is to be confirmed**.

A break tank with appropriate air gap, intermediate and low level alarms is required. The break tank will feed duplexed pressure-booster pumps of an appropriate size to pass water to a water softening system and carbon filter bed GAC column(s). The GAC columns must provide a minimum of 12 minutes empty bed contact time (EBCT).

Automatic systems are required to provide appropriate regimes of softener regeneration and carbon filter bed backwash overnight. Unless duplexed, for example duty / standby configuration, these automatic systems will require to have manual override provision, accessible to clinical staff, to allow priority to clinical requirements

3.1.1 **Break Tank:** Supply volume alarms initially when reaching 90% capacity, and finally an alarm if and when the supply approaches exhaustion, perhaps when reaching 20% capacity. These alarms will show at the Nurses' and Technologists' alarm indicator panels.

3.1.2 **Pumps:** Duty/Standby pressure booster pumps with appropriate overpressure control and dry run protection.

3.1.3 **Softener system:** Automatic timed regeneration. Supplied with brine storage tank, isolation valves and a bypass loop. Unless duplexed, for example duty / standby configuration, automatic regeneration system must have manual override provision, accessible to clinical staff, to allow priority to clinical requirements.

3.1.4 **GAC Bed:** A **"**Bed" should consist of a Granulated Activated Carbon bed, providing a minimum of 12 minutes EBCT. Carbon supplied must be acid-washed. The system must have automatic timer controlled backwash and rinse to drain system with sample point, depressurisation facility, drain down, post bed pressure gauges, isolating valves and a bypass loop. Unless duplexed, for example duty / standby configuration, automatic backwash system must have manual override provision, accessible to clinical staff, to allow priority to clinical requirements.

3.1.5 **Particle Filters:** Appropriately sized filters shall be fitted including protection of the R.O. units from carbon fines. Filter systems to incorporate depressurisation facility, post filter element pressure gauge, isolating valves and a bypass loop.

**3.2 R.O.Units:** The output from the pre-treatment system should feed double-pass R.O. units. The output from the R.O. units will be enough to feed all dialysis machines at points of use at a minimum flow of **1.5 litres** per minute at each outlet with appropriate pressure being maintained throughout the pure water distribution ring.

The system must provide ***ultrapure*** water as per the standards and guidelines referred to in Section 1.4 100 % redundancy of function within the R.O. units is required.

The output from the R.O. units shall have direct feed to the distribution ring without the use of pure water storage.

3.2.1 Double pass (**2** sets of R.O. membranes in series) R.O. system with a final output capable of simultaneously supplying all haemodialysis machines, each at a flow of **1.5 litres per minute at 4°C** at a pressure of between **2.0 and 5.0 bar**.

3.2.2 The normal microbiological quality of the water shall be ***ultrapure*** as per the standards and guidelines referred to in Section 1.4. For the purposes of this project the microbial count shall not exceed **0.1 colony forming units (CFU/ml)** and endotoxin levels should not exceed **0.03 IU/ml.**

3.2.3 The normal chemical quality of the water must, as an absolute minimum, meet the standards referred to in Section 1.4

3.2.4 100% redundancy. The failure of one R.O. unit, or one set of membranes / pumps / control circuits should be by-passable and still maintain *ultrapure* water quality at output rate as detailed in 2.2.1

3.2.5 All R.O. membranes and distribution ring must be automatically disinfected by heated water. The system will also provide “Integrated heat” disinfection of the haemodialysis machines.

3.2.6 R.O. membranes shall be supplied pre-conditioned to heat disinfection, to minimise any possible reduction of output rate due to effect of routine heat disinfection cycles. Subsequent supplies of replacement membranes shall also be supplied pre-conditioned.

3.2.7 The system should have means of automatically detecting leaks and taking appropriate action.

3.2.8 The system will be capable of being monitored and logged remotely by P.C. and appropriate software will be provided to the client.

3.2.9 Microbiological sample ports should be provided between the two sets of membranes and at the output and return of the distribution ring.

3.2.10 Provision of a heat disinfectable **0.2u** particle filter within the ***ultrapure*** circuit would be an advantage

3.2.11 The R.O. system must be **CE** marked and identified as a **medical device**.

3.3 **Distribution Ring:** The distribution ring will be of a material suitable for regular heat disinfection and will be installed according to the manufacturer's recommendations. Dead space and areas of low flows such as pipe joints shall be minimised. All points of use require to be supplied with media panels. Media panels must each incorporate **4** Earth Potential Equalisation points to match hospital standard.

3.3.1 Material for the distribution ring should be **PEX** (crosslink polyethylene). All joints are to be bead and crevice free where possible.

3.3.2 Microbiological sample ports should be provided at the output and return of the distribution ring. Where the distribution ring is lengthy a third sample port should be provided at the middle of the loop.

3.3.3 The distribution ring shall be suitably insulated and enclosed.

3.3.4 Where more than one distribution ring is installed, each point of use must be clearly labelled; identifying to which distribution ring it is connected.

3.3.5 Media panels shall have isolation valves at point of use to haemodialysis machines. These valves should be "zero static" type to minimise dead space.

3.3.6 Media panel Earth Potential Equalisation points will be **DIN42801** standard. Preferable type is **POAG-ID6.** The 4 points on each panel must be mounted closely together in a single group to provide, in effect, a single common earth point.

3.4 **Disinfection System:** The disinfection system must provide independently programmable automatic heat disinfection of the R.O. membranes and the distribution ring. The system will also provide "**Integrated heat disinfection**" of the haemodialysis machines. The system must also have automatic chemical disinfection system with automatic chemical pickup.

3.4.1 Independently programmable automatic heat disinfection of the R.O. membranes.

3.4.2 Independently programmable automatic heat disinfection of the distribution ring.

3.4.3 System to allow haemodialysis machines of any manufacture to draw the required volume of hot water from the system via the connection hoses to heat disinfect themselves during the overnight system disinfection.

3.4.4 The temperature in the distribution ring during heat disinfection must not be less than **85°C** at the return to the hot water supply.

3.4.5 Automatic disinfection system must have manual override provision, accessible to clinical staff, to allow priority to clinical requirements.

3.4.6 Programmable automatic chemical disinfection with automatic chemical pick-up.

3.5 **Indicator Panels:** System status and alarm indicator panels will be installed at the Nurses' station and in the Renal Technologists' maintenance room. Where more than one distribution ring is installed, the indicator panel must also identify individually when a particular loop is affected by any regime of disinfection, softener regeneration or carbon filter bed backwash.

3.6 **Other Components:** Any other components planned to be used must be included in the proposal.

3.7 **Heat Input:** The heat input shall be provided by the most energy efficient manner via the MTHW/LTHW system. Electric heating is acceptable as a back up.

**4.0 Installation**

4.1 The designers shall allocate sufficient plant spaces to allow all plant to be installed, maintained, serviced and replaced in line with the manufacturer's recommendations without amendment to the building fabric or general building services and ensure that all associated plant is located with secure lockable dedicated plant rooms.

4.2 For the bacteriological integrity of the pure water system it is important to avoid the possibility of any "Bio-film" formation within the CWP distribution loops. It is therefore important to keep the loops as short as practical and to eliminate unnecessary bends.

To ensure minimal runs it should be avoided running the loops within a ceiling cavity and taking it down and back up again for each point of use. This approach greatly increases the length of the loop and also introduces up to 4 additional bends for each point of use e.g. Inpatient areas could incur more than 300 additional unnecessary bends for 80 points of use.

4.4 Ideally the loops should be installed, as far as practical, as continuous horizontal pipe runs at the same height as the media panels. If the structural design of the building cannot accommodate this within the wall cavities then I would strongly advise that the loops should be trunked externally on the wall surfaces.

4.5 The client shall be provided with a set of data demonstrating the correct functioning of components and compliance of the system with the required standards before the first clinical use of the system. Test procedures and results should be traceable.

4.6 Two copies of the Operators and Technical Manuals must be provided to the Renal Technologist Section Manager at no extra cost.

4.7 The Contractor shall provide an asset register for the full system, this shall be in the same format and system architecture as that developed for the Building Services systems, but with a separate data base and front end.

The asset register shall be linked to the Renal Water System As Fitted drawings via MiCAD drawing mapping, the MiCAD should also integrate with the LMS to provide a fully integrated system complete with interfaces to the equipment tagging system.

4.8 The Contractor shall provide a full asset tagging system in accordance with the NHS Scotland (HFS) National asset management requirements.

All installed system components shall be asset tagged by the contractor, entered into the PPM system and linked to its full specification and maintenance schedule.

4.9 The Contractor shall provide, as part of the contract, a full PPM manual and system (computer based software package) for the Renal Water installation, this shall be in the same format and system architecture as that developed for the Building Services systems, but with a separate data base and front end.

The PPM system shall be compiled at an early date with time and input included for three iterations of comments and workshops with the Renal Department to ensure that the system meets the various requirements of the Hospital Technical Publications, Clinical Practice Guidelines for Haemodialysis, Clinical Services and Estate's Department. The system shall be fully linked to the As Fitted drawings via MiCAD drawing mapping, to provide a fully integrated system.

**5.0 Other Requirements of the Proposal**

5.1 The proposal must include any installation requirements.

5.1.1 Input flow/pressures

5.1.2 Electrical supply

5.1.3 Heat supply

5.1.4 Footprint and weight of equipment

5.1.5 Temperature control

5.1.6 Site access

5.1.7 Any other requirements not included above

5.2 Warranty details including typical response time for callouts.

5.3 After sales service support on-going contract options for the entire plant.

5.4 Technical training for 4 Renal Technologists must be included in the proposal. Training to enable full system monitoring and sampling for chlorine/chloramine, trace elements, microbiology and endotoxins and to enable in-house replacement of particulate filters, carbon and brine salts.

5.5 Contact details (for reference purposes) of two existing users of the system in the U.K.

5.6 Indicative delivery and installation times

## 6.0 Format of Proposal Submission

6.1 Every item within this document must be individually and fully addressed and referred to by the bullet numbering used.

6.2 It must be clearly stated for each item whether or not the offered specification completely complies with the stipulated requirements of this document.

6.3 Where it is stated for an item that the offered specification does not completely comply with the stipulated requirements of this document it should be made clear what, if anything, is being offered instead.

| | **Outpatients + Ready Use + Lab.** | **Inpatients** | **Critical Care Area** |
|---|---|---|---|
| **No. Points of Use** | 30 + 5+ 8 = 43 | 84 | 10 |
| **Max. no. simultaneous treatments** | 40 | 24 | 2 |
| **Max. no. simultaneous treatments overnight** | 15 | N/A | N/A |
| **Max. no. simultaneous "integrated" heat clean** | 22 (Sun – Fri)<br>43 (Sat) | Same as max. no. simultaneous treatments + 5 | Same as max. no simultaneous treatments |
| **No. Points with Central Concentrate Delivery (CCD)** | 43 | 0 | 0 |
| **No. CCD concentrates** | 1 | 0 | 0 |
| **Weekly volume of concentrate use** | Approx. 3,000 Litres | 0 | 0 |

**NHS Greater Glasgow and Clyde**

**New South Glasgow Hospitals (NSGH) Project**

# INVITATION TO PARTICIPATE IN COMPETITIVE DIALOGUE

## VOLUME 2/1

## APPENDIX U – BREEAM Design Guide

**Appendix U – Detailed BREEAM requirements**

This Appendix relates to the main hospital building, which will be procured through a Competitive Dialogue 2-stage Design & Build procurement process

The laboratory building will be procured through design novation following RIBA Design Stage G and will be a bespoke scheme

**General obligations and objectives**

The sustainability and low carbon design are fundamental to the design quality evaluation of the project and bids will be scored significantly on these aspects. This section sets out the guidance in relation to the detailed BREAAM requirements and processes and is intended to provide assistance to the bidders in the requirements necessary to achieve a BREEAM "Excellent" rating.

It will remain the sole responsibility of the bidder to appoint a qualified BREAAM Assessor to manage the processes, and produce the requisite documentation in support of the bid submission at the following stages;

Stage 1: Competitive Dialogue – produce initial BREAAM Target Scoring matrix and supporting documentation indicating how BREEAM "Excellent" rating to be achieved.

Stage 2: Design Development – produce revised/interim BREAAM Target Scoring matrix and supporting documentation indicating how BREEAM "Excellent" rating to be achieved.

Stage 3: Handover of Facility – provide BRE BREAAM certificate confirming BREEAM "Excellent" rating achieved.

For the avoidance of doubt, a BREEAM "Excellent" rating is required for the project as a whole.

A BREEAM "Excellent" rating is a fundamental Board requirement and achievement of the final rating as detailed above, will be part of the building acceptance procedure.

Furthermore, there is a requirement for a Low Carbon design process which will be monitored and evaluated by a Carbon Trust accredited consultant. There are both design and operational energy targets which are to be met as part of the building acceptance procedures. The process for integrated design, calculation and modelling, disclosure and auditing is set out in this section and confirmation of acceptance of these procedures without qualification or condition is an explicit part of the tender evaluation.

Note that this Appendix overlaps/interacts with the following sections of the Employers Requirements;

- Section 7 – Architectural Requirements
- Section 8, Building Services Requirements, with particular reference to Appendix M, M&E4 – Sustainability & Energy Targets
- Section 9 – Civil & Structural Engineering requirements

and it is the Contractors responsibility to provide commentary and clear proposals in the submission on any actual or perceived conflicts in requirements.

In general terms the contractor shall:

- Implement an Environmental Management System (EMS) in line with the principles of ISO 14001 accreditation in relation to the design, management construction materials procurement, supply chain management and site processes for this project
- Respect the local landscape and protect natural habitat and species taking due account of the UK Biodiversity Action Plan;
- Avoid sources of ionising and electromagnetic radiation and any design features associated with sick building syndrome;
- Develop and implement a Site Waste Management Plan (SWMP) in line with DEFRA and WRAP guidance
- Maximise the opportunity for waste minimisation, through design and in construction, following good practice guidelines.
- Maximise the opportunity for incorporating higher levels of recycled input into components, and for high waste recovery (reuse and recycling)
- Maximise efficient and effective removal and transport of waste;
- Adopt maintenance regimes which maintain optimum performance;
- Avoid the use of harmful building products and processes;
- Undertake integrated low carbon and passive design
- Explore the use of prefabricated elements to achieve good quality control, ease and speed of installation and flexibility for future use.

The Contractor shall comply with the following NHS and related publications:

- The Development of a Local Environmental Strategy in line with Sustainable Development in the NHS;
- Environmental Management Policy for NHS Scotland (SEHD) 2002; HDL(2006)21, and the documents referred to therein.
- Encode;SHTM 07-02
- Carbon / Energy Management in Healthcare
- BREEAM Healthcare. The following publication provides guidance in the approach to design and procurement and will be useful/essential in the low carbon design and BREEAM Environmental Purchasing in Practice guidance for organisations September 2002
- Good Corporate Citizen (Sustainable Development Corporation publication) - Sustainable Development in the NHS
- "The Green Book" APPRAISAL AND EVALUATION IN CENTRAL GOVERNMENT Treasury Guidance LONDON: THE STATIONERY OFFICE
- The Role of the Physical Environment in the Hospital of the 21st Century: A Once-in-a-Lifetime Opportunity (a) Roger Ulrich*, Xiaobo Quan, Center for Health Systems and Design, College of Architecture, Texas A&M University Craig Zimring*, Anjali Joseph, Ruchi Choudhary, College of Architecture, Georgia Institute of Technology

**Detailed BREEAM requirements**

The following is intended as advice for bidders in connection with the achievement of a BREAAM "Excellent" rating, however, as detailed above, it is the bidders responsibility to appoint a qualified/certified BREAAM Assessor to review and implement the necessary processes to enable "Excellent" rating to be achieved.

**Man 1 – Commissioning**

- Appoint an appropriate project team member(s) / specialist contractor to monitor and programme pre-commissioning, commissioning and, where necessary, re-commissioning on behalf of the client.

- Commissioning will be carried out in line with current Building Regulations and BSRIA/CIBSE guidelines, where applicable and should be included within the main programme of works, account for the commissioning programme, responsibilities and requirements.

- The services to the building will be deemed complex if the following are included and a specialist commissioning manager will be required.

    - Air conditioning
    - Mechanical ventilation, displacement ventilation, complex passive ventilation
    - Building management systems (BMS)
    - Renewable energy sources
    - Microbiological safety cabinets and fume cupboards
    - Cold storage enclosures and refrigeration plant

- The commissioning manager for complex systems must be a specialist contractor rather than a general sub-contractor.

- Where BMS is specified, the following commissioning procedures must be carried out:

    - Commissioning of air and water systems is carried out when all control devices are installed, wired and functional.

    - Commissioning results include physical measurements of room temperatures, off coil temperatures and other key parameters as appropriate.

    - The BMS/controls installation should be running in auto with satisfactory internal conditions prior to handover

    - All BMS schematics and graphics are fully installed and functional to user interface before handover

    - The occupier will be fully trained in the operation of the system.

- Where specified, all built-in cold storage and chilled rooms are commissioned in accordance with the requirements for refrigeration equipment as set out in the Carbon Trust publication GPG347 *Installation and commissioning of refrigeration systems*. All cold storage and chilled rooms over 20m2 meet the requirements of Section 9.1 of the Cold Store Code of Practice, Part 1.

- Where specified, fume cupboards and microbiological safety cabinets are installed and commissioned in accordance with the following standards:

- Fume cupboards in accordance with BS EN 14175-2
- Microbiological safety cabinets in accordance with BS EN 12469 (2000).

- Appointment(s) should also include the following seasonal commissioning responsibilities over a minimum 12 month period, once the building becomes occupied:

  Complex Systems – Specialist commissioning manager

  a. Testing of all building services under full load conditions, i.e. heating equipment in mid-winter, cooling/ventilation equipment in mid-summer, and under part load conditions (spring/autumn)

  b. Where applicable, testing should also be carried out during periods of extreme (high or low) occupancy

  c. Interviews with building occupants (where they are affected by the complex services) to identify problems or concerns regarding the effectiveness of the systems

  d. Re-commissioning of systems (following any work needed to serve revised loads), and incorporating any revisions in operating procedures into the O&M manuals.

  e. Where specialist building services systems such as fume cupboards, microbiological safety cabinets and a cold storage system are present then these systems must be included in the specialist commissioning agent's responsibilities.

- Evidence required for Design Stage:

  - Provide a copy of a letter or commissioning responsibilities schedule confirming the appointment of [or commitment to appoint]:
  - Design team member(s) as commissioning monitor and scope of their commissioning role.
  - Specialist commissioning manager and scope of their commissioning role.
  - Provide a copy of the specification clause stating/ confirming:
  - The standards and codes of practice to which commissioning procedures are to comply with.
  - The managing contractor's responsibilities with respect to this requirement. Or, Managing contractor's commissioning responsibilities.
  - The stages of the BMS/Controls commissioning procedures.
  - The scope of seasonal commissioning responsibilities/tasks.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  o Provide Commissioning records/reports confirming:

- Monitoring actions carried out by the nominated design team member.
- Specialist commissioning manager's actions/role.
- Commissioning procedures executed in compliance with relevant standards.
- BMS/controls commissioning activities were carried out in compliance with the commissioning schedule/specification clause.
- Commissioning procedures executed in compliance with relevant standards.

- Provide a copy of the programme highlighting; Commissioning, performance testing and handover period.
- Provide a copy of the seasonal commissioning schedule/programme or a copy of the letter of appointment of commissioning specialist and scope of their responsibilities.
- The commissioning programme should be available at least 3 months prior to completion. The commissioning record/ reports and the seasonal programme / schedule should be available in final versions at completion.

**Man 2 – Considerate Constructors**

- Demonstrate a commitment to comply with best practice site management principles by achieving a minimum score as required under the considerate constructor's scheme. It is the responsibility of the main contractor to register and manage onsite all aspects of the CCS scheme. See checklist A2 in appendix A.
- Provide a copy of the relevant section of the specification confirming:
  - A requirement to comply with the CCS
  - The minimum score to be achieved in each CCS section.
  - This should be available prior to work starting on site
- Provide the formal certification from CCS, once available but no later than the completion date.

**Man 3 – Construction site impact.**

- Refer to checklist A3 in Appendix A
  - Achieve requirements for up to 6 of the listed impacts plus temporary site timber as required
  - Evidence required – as checklist plus
  - Proof of contractor's EMAS/ISO14001
  - Proof of environmental purchasing policy
  - Provide site records demonstrating monitoring and recording of the following:
  - Site energy/CO2 consumption from site activities

- Site energy/CO2 consumption from deliveries & all transport to and from the site.
- Site water consumption
- Provide evidence of the targets set for water and energy consumption for the project.
- Provide copies of the documented procedures used on site for working to best practice pollution management guidelines. This will take the form of a letter confirming:
- Procedures for pollution management and mitigation were implemented
- Name/job title of individual responsible for monitoring and managing construction site impacts throughout the project.

- Evidence required for Design Stage:
  - Provide a copy of the relevant section from the main contract specification confirming:
  - Contractor's obligations in respect to each item on the checklist
  - Site timber will be sourced from suppliers capable of providing certification to the level required for the particular tier claimed.
  - All timber will come from a 'legal source' and is not on the CITES list*.
- All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:
  - Provide a copy of the certification document or Chain of Custody (CoC) certificate(s) for the site timber. Where any non-certified timber is used, written confirmation from the supplier(s) confirming that:
  - All timber comes from a legal source.
  - All timber species and sources used in the development are not listed on any of the CITES appendices for endangered or threatened species (Appendix I, II, or III*).
- All the above should include all activates arising from site activities and any site clearance, that should be required.
- It is the responsibility of the main contractor to manage onsite all aspects of the construction site impact and to provide all evidence above.
- Targets for energy consumption during the construction process should be set using DTI's Environmental KPI benchmarks.
- As a minimum, monitoring will include checking of all meters and displaying some form of graphical analysis in the site office to show consumption over the project duration and how actual consumption compares to the targets set. The site management team will nominate an individual who will be responsible for the monitoring and collection of data.

- A site monitoring system will be in place to monitor and record deliveries. A nominated site individual will be responsible for the monitoring and collection of data. This system will record:

    - The number of deliveries
    - The mode of transport
    - The km/miles travelled for all deliveries

- Further information on best practice policies in respect of air can be obtained from DTI/BRE publications 'Control of Dust from Construction and Demolition Activities' and Pollution Control Guide Parts 1-5 provide good practice guidelines on construction related pollution

- Further information on best practice policies in respect of water can be obtained from:

    - PPG 1 - General guide to the prevention of pollution. Environment Agency

    - PPG 5 - Works in, near or liable to affect watercourses. Environment Agency

    - PPG 6 - Working at demolition and construction sites. Environment Agency

  All information should be available in final versions at completion.

**Man 4 – Building user guide**

- Produce a simple guide that covers information relevant to the tenant/occupants and non- technical building manager on the operation and environmental performance of the building.

- Evidence required for Design Stage:

    - Provide a copy of the specification clause confirming:
    - Requirement to develop a Building User Guide
    - Scope of the Guide's contents.

  All design stage information should be available prior to work starting on site

- Evidence required for Post Construction Stage:

- Provide written confirmation that the guide has been distributed to the building's owner, tenant(s) or fit out contractor for completion.

- A draft copy of the user guide should be available to the BREEAM assessor 3 months prior to completion and a final version to be available to the BREEAM assessor at completion.

- The user guide contents should include all of the below:

    1. Building Services Information

    a. General User - Information on heating, cooling and ventilation in the building and how these can be adjusted, e.g. thermostat location and use, implications of covering heating outlets with files, bags etc., and use of lifts and security systems.

b. FM – As above, plus a non-technical summary of the operation and maintenance of the building systems (including BMS if installed) and an overview of controls.

2. Emergency Information

a. General User - Include information on the location of fire exits, muster points, alarm systems and fire fighting systems.

b. FM - As above, plus details of location and nature of emergency and firefighting systems, nearest emergency services, location of first aid equipment.

3. Energy & Environmental Strategy

This should give owners and occupiers information on energy-efficient features and strategies relating to the building, and also provide an overview of the reasons for their use, e.g. economic and environmental savings. Information could include:

a. General User – Information on the operation of innovative features such as automatic blinds, lighting systems etc., and guidance on the impacts of strategies covering window opening and the use of blinds, lighting and heating controls

b. FM - As above, plus information on airtightness and solar gain (e.g. the impact of leaving windows/doors open in an air conditioned office, or use of blinds in winter with respect to solar gain); energy targets and benchmarks for the building type, information on monitoring such as the metering and sub-metering strategy, and how to read, record and present meter readings.

4. Water Use

a. General User – details of water saving features and their use and benefits, e.g. aerating taps, low flush toilets, leak detection, metering etc.

b. FM – As above, plus details of main components (including controls) and operation.

Recommendations for system maintenance and its importance, e.g. risk of legionella.

5. Transport Facilities

a. General User – details of car-parking and cycling provision; local public transport information, maps and timetables; information on alternative methods of transport to the workplace, e.g. car sharing schemes; local ‘green’ transport facilities.

b. FM - As above, plus information on conditions of access, maintenance and appropriate use of car parking and cycling facilities, e.g. number of spaces provided.

6. Materials & Waste Policy

a. General User – Information on the location of recyclable materials storage areas and how to use them appropriately.

b. FM – As above, plus information on recycling, including recyclable building/office/fit out components, waste storage and disposal requirements;

examples of Waste Management Strategies and any cleaning/maintenance requirements for particular materials and finishes.

7. Re-fit/Re-arrangement Considerations

a. General User – an explanation of the impact of re-positioning of furniture, i.e. may cover grilles/outlets, implications of layout change, e.g. installation of screens, higher density occupation etc.

b. FM - As above, plus environmental recommendations for consideration in any refit. Relevant issues covered in BREEAM should be highlighted, e.g. the use of natural ventilation, use of Green Guide 'A' rated materials, reuse of other materials etc., the potential impact of increasing occupancy and any provision made in the original design to accommodate future changes.

8. Reporting Provision

a. General User – Contact details of FM/manager, maintenance team, and/or help desk facility; and details of any building user group if relevant.
b. FM – As above, plus contact details of suppliers/installers of equipment and services and their areas of responsibility for reporting any subsequent problems.

9. Training

Details of the proposed content and suggested suppliers of any training and/or demonstrations in the use of the building's services, features and facilities that will be needed. This could include:

a. General User - Training in the use of any innovative/energy saving features.

b. FM – As above, plus training in emergency procedures and setting up, adjusting, and fine tuning, the systems in the building.

10. Links & References

This should include links to other information including websites, publications and organisations. In particular, the 'Carbon Trust' programme should be referenced and links provided to its website and good practice guidance.

11. General

Where further technical detail may be required by the FM Team or manager there should be references to the appropriate sections in the Operation and Maintenance Manual.

**Man 6 – Consultation**

- Participate and contribute to any consultation process that may happen throughout the project.
- Allow to include for any protection of any parts of the building (or site) having historic or heritage value in accordance with independent advice from the relevant body that is highlighted at the consultation stage.
- Evidence required for Post Construction Stage:
    - Provide written and photographic evidence confirming:

- Existence/installation of identified features on marked-up design plan or in specification.

- Evidence should be available to the BREEAM assessor 3 months prior to completion

**Man 8 – Security**

- Allow to consult with and seek the advice of the local police Architectural Liaison Officer (ALO) or Crime Prevention Design Advisor (CPDA) on designing out the opportunity for crime, in accordance with the principles and guidance of Secured by Design.

- Consultation with the ALO/CPDA should occur during the Outline Proposals stage (RIBA stage C) or equivalent.

- Comply with any recommendations from the Architectural Liaison Officer (ALO) or Crime Prevention Design Advisor (CPDA) from the local police force at the design stage consultation that should effect construction phase.

- Allow access to any Architectural Liaison Officer (ALO) or Crime Prevention Design Advisor (CPDA) from the local police force that need to inspect the building/ site, including inductions, supervision if needed & PPE.

- The Secured by Design equivalent for parking facilities is the Safer Parking Scheme. In addition to designing in accordance with SBD principles, the parking facilities should be designed in accordance with the principles and guidance of the Safer Parking standards.

- Evidence required for Design Stage:

  - Provide correspondence from or a copy of the report/feedback from the ALO/CPDA confirming:

  - Scope of their advice/involvement

  - The stage of design in which their advice was sought

  - Summary of their recommendations

  - Provide a marked-up copy of the site/design plan(s) highlighting examples of:

  - The development conforming to ALO/CPDA recommendations and SBD principles and guidance.

  All design stage information should be available prior to work starting on site

- Evidence required for Post Construction Stage:

  - Provide correspondence from the ALO/CPDA confirming:

  - The as-built development or design complies with their recommendations. Or, a copy of the development's 'Secured by Design' certificate.

  All PCR stage information should be available in final versions at completion

**Man 11 – Ease of maintenance**

- The specifications for the building and the building services/systems and landscaping should consider ease and efficiency of maintenance in line with best practice.

- All items identified for each of the key procurement stages in the checklist '*design guide to maintainable buildings*', outlined in Appendix 2 A1 of CIBSE *guide to ownership, operation and maintenance of building services,* should be addressed.

- A critical appraisal shall be completed at the feasibility stage of building procurement, covering the maintenance implications for different design options. The appraisal must comply with the following:

    a. Service life planning in accordance with ISO 15686 *Buildings and constructed assets* - Service life planning Part 1

    b. HTM 2023 Access and accommodation for engineering services.

- A maintenance strategy shall be developed from the critical appraisal and formulated at the design stage. The maintenance strategy must cover the extent to which maintenance can be designed out and how support systems can be built into the specification to facilitate efficient and cost-effective operation and maintenance.

- The strategy must include an indication on how all major plant and equipment is to be removed and replaced within the design life of the building, including the access openings, lifting arrangement and route to and from the plant room at a delivery point.

- Where there is a management plan for the landscaping (for example, as defined in credit LUE 6 Long term impact on biodiversity), this shall be included in the maintenance strategy

- Evidence required for Design Stage:

- Provide a formal letter confirming:

    - The of use and compliance with the CIBSE checklist at the feasibility, outline proposal, system design and detailed design stages

    - A signed, dated and completed copy of the checklist for the relevant stages.

    - Indicative examples of how items on the checklist were addressed at each stage of design for the building.

    - Compliance of the appraisal with the relevant standard(s).

    - Provide a copy of the feasibility stage appraisal for the design options.

    - Provide a copy of the maintenance strategy (including the landscaping plan if appropriate).

      All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

    - Confirmation of use and compliance with the CIBSE checklist preconstruction, construction and commissioning stages.

- Indicative examples of how items on the checklist were addressed at each stage for the building.

- Should any of the specified proposed products related to this credit be replace for a non specified product, it should comply fully with the performance specification and requirements originally approved. It is the reasonability of the organisation that proposed the change to prove that the new product meets the original specification or better and should allow 5 working days for approval by the relevant person.

- Provide preconstruction stage 3 months prior to completion, construction stage and commissioning stage at completion.

- If not already provided, provide a landscape maintenance plan (see also credit LUE6)

**Man 12 – Life cycle costing**

- Produce a Life Cycle Cost (LCC) analysis that has been carried out based on the proposals developed during RIBA Work Stages B/C (feasibility study/outline proposals), or equivalent.

- The Life Cycle Costs analysis based on the feasibility study proposals covers the following stages:
  a. Construction
  b. Operation - includes, as a minimum, utilities
  c. Maintenance - includes, as a minimum, planned maintenance, replacements and repairs, cleaning, management costs
  d. End of life

- The LCC analysis uses a study period of 25 or 30 (as applicable) **AND** 60 years, shown in real, discounted and non-discounted cash flow terms.

- The feasibility study demonstrates that at least two of the following issues have been analysed at a strategic and system level (as per figure 6, Different levels of analysis at different stages of the life cycle, ISO 15686-1), comparing alternative options:
  a. Structure
  b. Envelope
  c. Services
  d. Finishes

- The chosen solution is the one that best meets the performance requirements for the built asset.

- The option(s) with the lowest discounted LCC over the period is preferred, assuming that their selection results in at least one of the following:
  a. The lowest building energy consumption over the operational life span of the building (compared to other options/alternatives analysed)
  b. A reduction in maintenance requirement/frequency

c. Prolonged replacement intervals of services infrastructure/systems or building fabric

d. Dismantling and recycling or reuse of building components.

- The Life cycle cost analysis should be updated during RIBA Work Stages D/E (detailed/final proposals) or equivalent, as detailed above.
- The results of the feasibility study shall be implemented in the specification, design and final construction of the assessed building.
- Evidence required for Design Stage:
- Provide a copy of the feasibility stage LCC analysis, including the details of the cost consultant who has completed the analysis.
- Provide a formal letter from the design team or cost consultant confirming the preferred option.
- Provide an updated copy of the LCC analysis for the detailed and final design.
- A formal letter from the design team confirming:
    - The option(s) with the lowest discounted life cycle costs have been, or will be, implemented in the design and specification.
    - All design stage information should be available prior to work starting on site.
    - Evidence required for Post Construction Stage:
- Should any of the specified proposed products related to this credit be replace for a non-specified product, it should comply fully with the performance specification and requirements originally approved. It is the reasonability of the organisation that proposed the change to prove that the new product meets the original specification or better and provide LCC where necessary; they should allow 5 working days for approval by the relevant person.
- Should any changes occur provide an updated copy of the LCC analysis for the final design.
- All information should be available to the assessor as soon as approval for the change has been given by the relevant person and no later than completion.

**Man 13 – Good corporate citizen**

- During RIBA Stage K or equivalent, consult with design team and the client/senior management and staff representatives using the Good Corporate Citizen model, new building section.
- The development scores a minimum average of 6 under the Good Corporate Citizen model.
- The contractor must cooperate with the consultation process as detailed above during the entire project process.
- Evidence required for Design Stage:

- Provide a formal letter from the design team or letters of appointment confirming:
- Their commitment to consult with the relevant stakeholders using the Good Corporate Citizen model
- The minimum average score required.

All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:
  - Provide copies of agenda and minutes from the consultation meeting.
  - Provide a copy of the model output showing the score achieved.

All PCR stage information should be available in final versions at completion.

**Hea 1 – Daylighting**

- Design the building(s) and interior layouts so that at least 80% by floor area of occupied *staff* and *public areas* have an average daylight factor of 2% or more. And at least 80% by floor area of occupied *patient areas* (dayrooms, wards) and consulting rooms have an average daylight factor of 3% or more.
- The provision of daylight should be designed in accordance with the guidance in CIBSE Lighting Guide 10 Daylighting and window design, BS8206 Part 2 and the BRE Site Layout Guide.
- Where the compliance requirement specifies that 80% of office or other *occupied space* floor area must be adequately daylit, it refers to 80% of the total floor area of all the rooms that must be assessed i.e. the compliant area. If for example a development has 6 rooms that must be assessed, each 150m2 (total area 900m2) then 720m2 must comply with the requirements; this is equal to 4.8 rooms. The number of rooms that must comply must always be rounded up; therefore in this example, five rooms must meet the requirements to achieve the credit.
- For areas where borrowed light is used, calculations or results from appropriate lighting design software must be provided to demonstrate that such areas meet the BREEAM requirements (if contributing to the percentage of compliant area). Examples of borrowed light include: light shelves, clerestory glazing, sun pipes or internal translucent/transparent partitions (such as those using frosted glass).
- Clinical areas with controlled environmental conditions, e.g. operating theatres, delivery rooms or pathology can be excluded from the assessment of daylighting.
- Other than small health centres and GP surgeries it is expected that daylight modelling will be on software capable of producing average daylighting and uniformity ratios.
- All modelling should take into account surrounding buildings and any obstacles to daylighting, including overhanging structures and window reveals.
- Exemplary credit requirements:
  - At least 80% of the floor area (for the building spaces/room identified above in the standard requirements) will have an average daylight factor of 3% in multi-storey buildings and 4% in single-storey buildings.

- Evidence required for Design Stage:

  - Provide design plans for each floor in the building with each room/area appropriately labelled for use.

  - Provide daylight calculations from modelling confirming:

    - Building areas assessed
    - The daylighting variables/criterion measured
    - Average daylight factor for each area
    - Compliance with room depth criterion, uniformity ratio, view of sky (if required)
    - The daylight provision is in compliance with the relevant standards.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide at letter confirming that window specification, size and/or room layouts have not changed since the design stage assessment and appropriate 'As built' drawings.

  - Or, confirm full details of any changes that have been made, which should include design plans for each floor in the building with each room/area labelled for use, elevations & plans that show all windows size & location.

  - The organisation responsible for any changes is liable for any associated cost with recalculations.

  - All information should be available to the assessor as soon as approval for the change has been given by the relevant person and no later than completion.

**Hea 2 – View Out**

- Design the building(s) and interior layouts so that all workstations/benches and desks and at least 80% by floor area of public areas have an adequate view out.

- Design the building(s) and interior layouts so all *patient-occupied* spaces have an adequate view out.

- Areas of the building where there are, or will be, workstations/benches or desks for building users and relevant patient areas; this includes wards and dayrooms are within 7m distance of a wall with a window or permanent opening providing an *adequate view out*, where the window/opening is ≥20% of the total inside wall area

- The view out should ideally be through an external window providing a view of a landscape or buildings (rather than just the sky) at seated eye level (1.2 – 1.3m) in the *relevant building areas.* A view in to an internal courtyard or atrium will comply provided the distance from the opening to the back wall of the courtyard/atrium is at least 10m (therefore allowing enough distance for the eyes to refocus). The view cannot be an internal view across the room, as this is likely to become obstructed by partitions, filing cabinets etc.

- At least 80% by floor area of the following public spaces (excluding corridors and circulation) have an *adequate view* out:

  a. Waiting areas,
  b. Children's crèche,
  c. Café / dining / vending areas.

- For the above spaces to comply, any point within the space must be within 7m distance of a window or permanent opening providing a *view*. Where the room depth is greater than 7m, compliance is only possible where the percentage of window/opening is the same as or greater than the values in table 1.0 of BS 8206[2].

- In patient-occupied areas the distance between the wall with the window/opening and nearest external solid object (i.e. buildings, screens, walls/fences) is ≥10m.

- Roof lights and high level windows that do not provide an *adequate view out* do not meet the requirements.

- Evidence required for Design Stage:

  - Provide design plan and elevation showing:
  - All relevant building areas and room depths
  - Actual or notional workstations/desk layout
  - Window/open areas
  - Provide site plan showing, building location and proximity to external obstructions.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide As built drawings or a formal letter form the design team confirming, no changes have occurred since design stage; therefore design stage evidence demonstrates compliance post construction.

  All PCR stage information should be available in final versions at completion.

**Hea 3 – Glare control**

- Provide an occupant-controlled shading system (e.g. internal or external blinds) that is fitted to all windows, glazed doors and rooflights in areas with workstations/benches, desks and/or close work will be undertaken or visual aids used. This should also include 'bedded areas'.

- In all other *occupied areas* the potential for disabling glare has been designed out by one or more of the following measures:

  a. Brise-soleil
  b. Low eaves
  c. Bioclimatic design that provides shading from high level summer and low level winter sun.

- Evidence required for Design Stage:

  - Provide marked-up copy of the design plan(s) confirming, a description of the function of each of the building spaces.

  - Provide a copy of the relevant specification clause(s), window schedule or design plan confirming, Type of shading system(s) and control to be installed.

  - Marked-up copy of the design plan(s) demonstrating the design measures that limit glare in all other occupied areas.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  o Provide photographic evidence confirming installation of compliant glare control system.

  All PCR stage information should be available in final versions at completion.

**Hea 4 – High frequency lighting**

- Install high frequency ballasts are installed on all fluorescent and compact fluorescent lamps.

- Evidence required for Design Stage:

  o A copy of the specification clause or room data sheets confirming high frequency ballasts are installed.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  o Provide as built drawings or a formal letter confirming:

  o No changes have occurred since design stage; therefore design stage evidence demonstrates compliance post construction.

  o Any changes proposed to the original lighting specification on fluorescent and compact fluorescent lamps must be high frequency ballasts.

  The written confirmation of such should be available no later than completion.

**Hea 5 – Internal and external lighting levels**

- Illuminance (lux) levels in all internal areas of the building are specified in accordance with Part Two of the CIBSE Code for Lighting 2002 and its 2004 Addendum.

- For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 7 [2] sections 3.3, 4.6, 4.7, 4.8 and 4.9. This gives recommendations highlighting:

  a. Limits to the luminance of the luminaires, to avoid screen reflections. (Manufacturers' data for the luminaires should be sought to confirm this).

  b. For up-lighting, the recommendations refer to the luminance of the lit ceiling rather than the luminaire; a design team calculation is usually required to demonstrate this.

  c. Recommendations for direct lighting, ceiling illuminance, and average wall illuminance.

- Illuminance levels for lighting in all external areas within the *construction zone* are specified in accordance with CIBSE Lighting Guide 6, '*The outdoor environment*'.

- Evidence required for Design Stage:

  o Provide a copy of the specification or relevant room schedules confirming:

- The internal/external maintained illuminance levels.
- The standards that the illuminance levels are specified to.
- A formal written declaration of conformity from the relevant member of the design team confirming the maintained illuminance levels for each internal/external space are in compliance with the relevant Standard.

All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:
  - Provide a formal written declaration, or as built drawings/specification confirming:
  - Light fittings have been installed in compliance with the lighting specification.
  - No changes have occurred in the lighting specification used to demonstrate design stage compliance.
  - Where changes have occurred, a further declaration is required confirming that the revised lighting specification is in compliance with the BREEAM requirements. The organisation that proposes any changes from the lighting specification is responsible for confirming that the proposed lighting complying with the BREEAM requirements.

The written confirmation of such should be available no later than completion.

**Hea 6 – Lighting zones & controls**

- Allow to zone lighting control to allow for varying occupancy and/or uses within each space, appropriate to the usage of that space. In particular, lighting is zoned to allow separate user-control as follows:
  a. Wards/bedded areas: zoned lighting control for individual bed spaces and control for staff over groups of bed spaces
  b. Treatment areas, dayrooms, waiting areas: zoning of seating and activity areas and circulation space with controls accessible to staff
  c. Office and circulation spaces
  d. In office areas and consulting rooms, zones of no more than four workplaces
  e. Workstations adjacent to windows/atria and other building areas separately zoned and controlled
  f. Seminar and lecture rooms: zoned for presentation and audience areas
  g. Library spaces: separate zoning of stacks, reading and counter areas
  h. Auditoria: zoning of seating areas, circulation space and lectern area
  i. Dining, restaurant, café areas: separate zoning of servery and seating/dining areas

j. Retail: separate zoning of display and counter areas.

- Where the building consists entirely of small rooms/spaces (less than 40m2) which do not require any subdivision of lighting zones/control or meet the requirements by default.

- Evidence required for Design Stage:

  - Provide design plans for each floor of the building highlighting space arrangement and room type

  - Provide specification or design plans confirming:

  - Lighting zones

  - Location and scope of user-controls.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide a formal written declaration, or as built drawings/specification confirming:

  - No changes have occurred since design stage; therefore, design stage evidence can be used to demonstrate compliance at post construction stage.

  - Where changes have occurred since design stage, the amended features should still comply with the BREEAM requirements. The organisation that proposes any changes from the lighting specification is responsible for confirming that the proposed lighting complying with the BREEAM requirements.

  The written confirmation of such should be available no later than completion.

**Hea 7 – Potential for natural ventilation**

- *Occupied spaces* of the building should be designed to be capable of providing fresh air entirely via a natural ventilation strategy, demonstrated via EITHER of the following:

- The *openable window area* in each *occupied space* is equivalent to 5% of the gross internal floor area of that room/floor plate. For room/floor plates between 7m-15m depth, the *openable window area* is on opposite sides and evenly distributed across the area to promote adequate cross-ventilation. OR

- The design demonstrates (by calculation, using ventilation design tool types recommended by CIBSE AM10 [2]) that the natural ventilation strategy provides adequate cross flow of air to maintain required thermal comfort conditions and ventilation rates.

- For a strategy which does not rely on *openable windows*, or which has *occupied spaces* with a plan depth greater than 15m, the design must demonstrate (by calculation in accordance with requirement 1b above) that the ventilation strategy can provide adequate cross flow of air to maintain the required thermal comfort conditions and ventilation rates.

- The strategy should be capable of providing at least two levels of user-control on the supply of fresh air to the *occupied space* with higher rates of ventilation achievable to

remove short term odours and/or prevent summertime overheating. This would typically be demonstrated by providing a large enough area of manually opening windows or powered window actuators. Any opening mechanisms must be easily accessible and provide adequate user-control over air flow rates to avoid draughts.

- The *openable window area* is defined as the geometric free ventilation area created when a ventilation opening, e.g. window, is open to its normal operational fully designed extent (i.e. this excludes open areas created when reversible windows are opened for cleaning etc). It is not the glazed area of a façade or the glazed area of the part of the window that is openable (unless it opens fully).

- Rooms or departments where control of ventilation is required for prevention of cross infection and/or controlled environmental conditions can be excluded from the definition of *occupied spaces*, including:

  - Operating theatres
  - Laser surgery unit
  - Operative imaging unit
  - Intensive treatment unit
  - Infectious diseases isolation unit
  - Wards housing immuno-compromised patients
  - Manufacturing pharmacy
  - Specialised imaging, X-ray and scanning unit
  - Pathology containment laboratories
  - Mortuary and dissection suite
  - Research laboratories and associated animal houses;
  - Sterilising and disinfecting unit (SDU)
  - Emerging treatment technologies including gene therapy and stem cell units.

- Areas immediately adjacent to the above are excluded if it can be demonstrated that reverse air flow would be likely with natural ventilation.

- Other excluded areas are:

  - Swimming/hydrotherapy pools
  - Corridors
  - Stairwells
  - Store rooms
  - Plant rooms
  - Catering and small staff kitchens
  - Toilets
  - Any other areas which require mechanical ventilation to satisfy building regulations or HTMs.

- Evidence required for Design Stage:

  - Provide design plans and elevations, specification or calculations confirming:

    - Ventilation strategy in each *occupied space*
    - The depth of the room
    - Gross internal floor area of each *occupied space*
    - The type of window/ventilator and total *openable area* or Manufacturers'/suppliers' literature
    - The location of openings
    - The type and degree of user-control.
    - Provide a copy of the results from the appropriate software modelling tool demonstrating compliance.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide a formal written declaration, or as built drawings/specification confirming:

  - No changes have occurred since design stage; therefore, design stage evidence can be used to demonstrate compliance at post construction stage.

  - Where changes have occurred since design stage, the amended features should still comply with the BREEAM requirements. The organisation that proposes any changes from the specification is responsible for confirming that the proposed change complying with the BREEAM requirements.

  Provide written confirmation of such which should be available no later than completion.

**Hea 8 – Indoor air quality**

- Where the building is air-conditioned or mixed-mode the building's air intakes and exhausts are over 10m apart to minimise recirculation and intakes are over 20m from *sources of external pollution*.

- Where the building is naturally-ventilated all openable windows/ventilators are over 10m from *sources of external pollution*.

- The building should be designed to provide fresh air rates to dilute pollutants in accordance with the following good practice:

  a. In general office type areas fresh air is provided in accordance with the top of the range recommended in the British Council for Offices *"Guide to Best Practice in the Specification of Offices"* i.e. 12 litres per second per person.

  b. All clinical areas with controlled environmental conditions comply with HTM 03-01 "*Specialised ventilation for healthcare premises"*.

- Areas of the building subject to large and unpredictable or variable occupancy patterns such as Gyms or waiting rooms, have CO2 or air quality sensors specified and:

  a. In mechanically ventilated spaces, the sensor(s) are linked to the mechanical ventilation system and provide demand-controlled ventilation to the space.

  b. In naturally ventilated spaces, the sensors either have the ability to alert the building owner/manager when CO2 levels exceed the recommended set point, or are linked to controls with the ability to adjust the quantity of fresh air, i.e. automatic opening windows/roof vents.

- The distance requirement does not necessarily mean the plan distance, but the three dimensional distance around and over objects; e.g. on plan the air intakes may be less than 20m from a source of external pollution, but the intake may be on the roof of a 10 storey building and therefore over 20m from the source of pollution.

- Sources of external pollutions are:

  - Highways and the main access roads on the assessed site.
  - Car parks and delivery/vehicle waiting bays
  - Other building exhausts, including from building services plant industrial/agricultural processes
  - Vehicle pick-up/drop-off or waiting bays

- Service and access roads with restricted and infrequent access (for example roads used only for waste collection) are unlikely to represent a significant source of external pollution. These roads can therefore be excluded as sources of external pollution.

- Evidence required for Design Stage:

    - Provide a marked-up site plan highlighting:

        - Locations of intakes, extracts, openable windows, ventilators

        - Any existing or proposed sources of external pollution.

    - Provide calculations and/or performance specification requirements confirming:

        - The fresh air rate set for each space

        - That the fresh air rate can be met using the chosen strategy

        - The relevant standard(s) to which the design is in accordance.

    - Provide a copy of the design plans for the internal areas of the building and a copy of the relevant clause(s) of the specification confirming:

        - Air quality monitoring sensors

        - How these boost ventilation when set points are triggered.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

    - For a mechanically ventilated building, provide the commissioning manager's performance testing report confirming, the required fresh air rates are achieved.

- Provide as built drawings confirming:

    - Locations of intakes, extracts, openable windows, ventilators

    - Proximity of any sources of external pollution to the above.

- Provide as built drawings confirming installation of air quality sensors and the sensors boost ventilation when set points are triggered

  Provide all information drawings no later than completion.

**Hea 9 – Volatile Organic Compounds**

- All products below that are specified should meet the relevant standard for Volatile Organic Compound (VOC) emissions.

- Relevant products & standards are:

    - Wood panels, BS EN 13986:2002, Formaldehyde E1 Verify that regulated wood preservatives are absent and of the minimum content.

- Timber structures, BS EN 14080:2005, Formaldehyde E1
- Wood flooring, BS EN 14342:2005, Formaldehyde E1 Verify that regulated wood preservatives are absent and of the minimum content.
- Resilient, textile and laminated Floor coverings, BS EN 14041:2004, Formaldehyde E1 Verify that regulated wood preservatives are absent and of the minimum content.
- Suspended ceiling tiles, BS EN 13964:2004, Formaldehyde E1 No asbestos.
- Flooring adhesives, BS EN 13999-1:2007, Verify that carcinogenic or sensitising volatile substances are absent.
- Wall covering, BS EN 233:1999, BS EN 234:1989, BS EN 259:2001, BS EN 266:1992, Formaldehyde and Vinyl chloride monomer (VCM) release should be low and within the BS EN standard for the material. Verify that the migration of heavy metals and other toxic substances are within the BS EN standard for the material.
- Adhesive for hanging flexible wall covering, BS 3046:1981, No harmful substances and preservatives used should be of minimum toxicity.
- Decorative paints and varnishes, BS EN 13300:2001, VOC (organic solvent) content, requirement for Phase 2. Fungal and algal resistant.

  Testing requirement:
  1. BS EN 717-1:2004
  2. BS EN 13999-2:2007 - Volatile Organic Compounds (VOCs)
  3. BS EN 13999-3:2007 - Volatile aldehydes
  4. BS EN 13999-4:2007 - Volatile diisocyanates
  5. BS EN 12149:1997
  6. BS EN ISO 11890-2:2006

- Evidence required for Design Stage:
  - Provide a copy of the relevant specification clause confirming:
    - The VOC content of the relevant specified product types will comply with the standards specified above.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:
  - Provide for each relevant product, a formal letter from or copies of the manufacturer's literature confirming:
    - The standard(s) against which the product is tested
    - The VOC emissions achieved
    - The VOC emissions meet the required level.

- A draft copy of all information should be available to the BREEAM assessor 3 months prior to completion and a final version to be available to the BREEAM assessor at completion.

**Hea 10 – Thermal comfort**

- Thermal modelling should be carried out using software selected and applied in accordance with CIBSE AM11 "*Building Energy and Environmental Modelling*"

- The modelling should demonstrate that the building design and services strategy can deliver thermal comfort levels in *occupied spaces* in accordance with the requirements set out in HTM 03-01, Appendix 1. In particular, internal summer temperatures in patient areas do not exceed 28oC dry bulb for more than 50 hours per year as defined in HTM 03-01.

- The software used to carry out the simulation at the detailed design stage must provide *full dynamic thermal analysis*. For smaller and more basic building designs an alternative less complex means of analysis may be appropriate (such methodologies must still be selected and applied in accordance with CIBSE AM11).

- Evidence required for Design Stage:

  - Provide correspondence (e.g. letter, email or meeting minutes) from the design team confirming:

    - The name of the thermal comfort modelling software used.

    - The software has been selected and applied in accordance with CIBSE AM11.

    - Provide a copy of the results from the modelling demonstrating the internal temperatures in compliance with the relevant standards.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide formal written confirmation from the design team confirming:

    - No changes have occurred since design stage thermal comfort assessment was carried out; therefore design stage evidence demonstrates compliance at the post construction stage.

    - Or, where changes have occurred, provide an updated copy of the results from the modelling demonstrating the internal temperatures in compliance with the relevant standards.

  The written confirmation of such should be available no later than completion.

**Hea 11 – Thermal zoning**

- The heating/cooling system should be designed to allow occupant control of zoned areas within all *occupied spaces* in the building.

- The zoning should allows separate occupant control (within the *occupied space*) of each perimeter area (i.e. within 7m of each external wall) and the central zone (i.e. over 7m from the external walls).

- Where *long-lag systems* are specified, the system should be designed to service the base load only and a responsive secondary heating system and controls are provided, zoned in compliance with the above requirements.

- Exercise areas e.g. physiotherapy and hydrotherapy, can be considered to be single zoned spaces

- An occupied space is a room or space within the assessed building that is likely to be occupied for 30 minutes or more by a building user. The definition excludes areas where building users would not expect, or be expected, to control temperature in the space, including the following:

    a. Atria/association space
    b. Entrance halls/reception areas
    c. Circulation areas
    d. Storerooms

- Evidence required for Design Stage:

- Provide marked-up M&E drawings confirming:

    - Scope of the heating/cooling system
    - The type of user controls for the above systems
    - The scope of the controls i.e. control zone.

    All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

    - Provide photographic evidence confirming installation of user controls in each *occupied space*

    The written confirmation of such should be available no later than completion.

**Hea 12 – Microbial contamination**

- All *water systems* in the building should be designed in compliance with the measures outlined in the following standards:

    a. HTM 04-01 "The control of Legionella, hygiene, "safe" hot water, cold water and drinking water systems"

    b. Health and Safety Executive's "*Legionnaires' disease - The control of legionella bacteria in water systems*". Approved Code of Practice and guidance, 2008.

- Relevant water systems are:

    - Cooling towers
    - Evaporative condenser
    - Domestic hot and cold water systems
    - Other plant and systems containing water which is likely to exceed 20°C and which may release a spray or aerosol during operation or when being maintained, for example:
    - Humidifiers and air washers
    - Spa baths and pools
    - Car/bus washes
    - Wet scrubbers
    - Indoor fountains and water features.

- Evidence required for Design Stage:

    - Provide a copy of the relevant specification clause(s) confirming:

        - All types of water system in the building and on the assessed site.

- The standards to which all water systems in the building will be designed.

All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:
  - For all water systems in the building, provide a formal letter of declaration of the relevant systems confirming:
    - The design and installed systems comply with the HSE's ACoP.
    - If relevant, any existing water systems comply with the HSE's ACoP.
- A draft copy of all information should be available to the BREEAM assessor 3 months prior to completion and a final version to be available to the BREEAM assessor at completion.

**Hea 13 – Acoustic performance**

- The indoor ambient noise levels and airborne and impact sound insulation levels should achieve the recommended performance benchmarks outlined in Health Technical Memorandum 08-01 Part A: Design and Construction Considerations.
- Allow for a suitable qualified acoustician to perform pre-completion acoustic testing in accordance with HTM 08-01 Part B: Validation and Verification to ensure that all relevant spaces (as built) achieve the performance standards required, and allow any required remedial works in spaces that do not meet the standards are completed prior to handover and occupation
- Suitably qualified acoustician: Those organisations or individuals having UKAS accreditation or accredited by a European equivalent of UKAS. The definition includes organisations or individuals registered to schemes that are UKAS accredited, or equivalent, to ensure consistency and technical competence in sound testing. At the time of writing the Association of Noise Consultants (ANC) Registration Scheme is in the process of obtaining UKAS accreditation and can be deemed to comply with this requirement until advised otherwise.

Measurement/calculation procedures

- The following procedures must be followed by the acoustician when measuring or calculating the levels required to demonstrate compliance with this BREEAM issue (see also compliance note above on measurement procedures):
  - Noise from both internal sources (e.g. mechanical ventilation systems, plant noise) and external sources (e.g. traffic noise transmitted via the building façade) should be included, and, where windows are openable as part of the ventilation strategy, these should be assumed to be open for the purposes of calculations and open for measurements.
  - Noise from occupants and office equipment (e.g. computers) should not be included in the measurements.
  - Measurements should be made in at least four rooms in which noise levels can be expected to be greatest either because they are on the noisiest façade or because they are on a naturally ventilated façade.

- Where different ventilation strategies are used, measurements should be conducted in rooms utilising each strategy. Otherwise, measurements should be made in rooms on the noisiest façade.
- *T* in *L*Aeq,*T* is taken as the duration of the normal working day (typically 8 hours between 09.00 and 17.00).
- Measurements need not be made over a period of 8 hours if a shorter measurement period can be used. In this case, measurements should be made when external noise levels are representative of normal conditions throughout the day.
- Measurement periods shorter than 5 minutes should not be used.
- Measurements should be taken in a minimum of 3 locations in rooms at a height of 1.2 m above the floor level and at least 1 m away from any surface.

- Evidence required for Design Stage:
  - Provide a copy of the design plan for each level of the building with each room/area clearly labelled.
- Provide a copy of the acoustician's calculations confirming:
  - The specific performances standards achieved for each room/area
  - The standards comply with the levels required in HTM 08-01.
- Provide evidence that the acoustician is suitably qualified.
- Provide a programme of pre-completion acoustic testing by a *suitably qualified acoustician* that shall be commissioned.
- Where rooms/areas do not comply with the required levels, provide evidence of appropriate remedial works shall be actioned and completed.
- All design stage information should be available prior to work starting on site.
- Evidence required for Post Construction Stage:
  - Provide copies of acoustic field test report/results confirming:
    - The required performance levels have been achieved for each room/area of the completed building.
    - Where relevant, any remedial work/actions required to meet the performance standards.
    - Provide evidence, such as a formal letter from the acoustician or their test report confirming that they meet BREEAM's definition of a *suitably qualified acoustician*.
- Provide a formal letter confirming:
  - Any and all required remedial works have been carried out in accordance with the acoustician's recommendations.

  The written confirmation of such should be available no later than completion.

**Hea 15 – Outdoor Spaces**

- Allow for within the building(s) design outside space that:

  a. Is of adequate size

  b. Is accessible via safe pedestrian routes to all potential users of the building, regardless of age, disability or gender (as per Approved Document Part M)

  c. Is either an outdoor landscaped area, balcony or terrace

  d. Provides the building users with an external area that is private and not susceptible to disturbance from sources of noise e.g. building services, car parks, delivery areas

  e. Provides appropriate seating and areas that allows building users to gather and socialise.

  f. In the case of buildings with a crèche/nursery and in mental health facilities, the outdoor space is secure (with supervised access only) and of adequate size to allow a reasonable proportion of the staff and patients to sit outside.

- Adequate sized spaces provide enough amenity for the predicted number of building users during coffee/lunch breaks, or for other activities where such a space would be of use.

- Evidence required for Design Stage:

  - Provide a proposed site plan highlighting:
  - The design and layout of the outdoor amenity area.
  - The provision of seating
  - The accessibility of the space from the assessed building
  - Any potential sources of noise

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide photographic evidence confirming the provision of a compliant outdoor space.

- Provide all information no later than completion.

**Hea 19 – Arts in Health**

- Allow to appoint an art co-ordinator for this specific project. Consult with the trust to determine the appropriate person for the role, this maybe someone from the trust or an outside specialist art consultant

- Allow to produce an art policy and an art strategy that is prepared for the development at the feasibility stage i.e. RIBA stage B (or equivalent) and endorsed by the senior management level.

- The policy and strategy must address the following:

  a. Enhancing the healthcare environment
  b. Building relationships with the local community
  c. Building relationships with patients and their families

d. Relieving patient and family anxiety by contributing to treatment or recovery areas, e.g. post-operative areas, paediatric units, etc.
e. Greening the healthcare environment with inclusion of living plants (where appropriate)
f. Training generating creative opportunities for staff.

- The arts co-ordinator must:
  - Hold a relevant qualification in an arts or a related subject.
  - Have at least two years of relevant experience. Such experience should be related to the application of arts in a social context. Examples could be voluntary or paid work within healthcare or educational environments, or with ethnic minority, disabled, elderly or young communities.
- Evidence required for Design Stage:
  - Provide copies of correspondence from the design team or Trust confirming the name and qualifications of the appointed arts co-ordinator.
  - Provide a copy of the Trust arts policy and strategy.
- All design stage information should be available prior to work starting on site.

**Ene 1 – Reduction of CO2 emissions**

- Allow to supply and provide a copy of the EPC output from the *approved software* for the assessed building at the design stage and the *accredited energy assessor's* name and accreditation number
- Allow to supply and provide a copy of the final registered EPC from the *approved software* for the constructed building*.
- For buildings assessed in Scotland, allow to provide a copy of the EPC Output from the *approved software* demonstrating the building's CO2 Index.
- Provide the *accredited energy assessor's* name and accreditation number.
- *The final rating must account for any changes to the specification during construction; and the measured air leakage rate, ductwork leakage and fan performances (as required by Building Regulations).
- Accredited energy assessor: An individual trained and qualified to use *approved software* and produce EPC ratings for non-domestic buildings who are members of an accredited scheme. A register of non-domestic *accredited energy assessors* can be found here: https://www.ndepcregister.com/
- The design stage EPC and associated documents should be available before work starts on site. The final EPC and associated documents should be available no later than completion.

**Ene 2 – Sub-metering of substantial energy uses.**

- Provide and install separate *accessible energy sub-meters*, labelled with the end energy consuming use, are provided for the following systems (where present):

a. Space Heating
b. Domestic Hot Water

c. Humidification
d. Cooling
e. Fans (major)
f. Lighting
g. Small Power (lighting and small power can be on the same sub-meter where supplies are taken at each floor/department).

- Other major energy-consuming items where appropriate for example: swimming or hydrotherapy pools, kitchen plant, cold storage plant, laboratory plant, sterile services equipment or transportation systems (e.g. lifts & escalators).

- All energy sub-meters are connected to a Building Management System (BMS) or other automated control system, e.g. outstations linked to a central PC, for the monitoring of energy consumption.

- The energy meters must be located in an area of the building that allows for easy access to facilitate regular monitoring and readings by the buildings staff and facilities manager. Typically this will be the plant room, main distribution room or control room (where BMS is installed)

- Where the building uses a modular system and the rated input power of the lead boiler is less than the figure in table 1, but greater than 10kW (see additional information), sub-metering of the lead boiler is still required.

**Table 1: Size of plant for which separate metering would be required [1]**

| Plant Item | Rated input power (kW) |
|---|---|
| Boiler installation comprising one or more boilers or CHP plant feeding a common distribution circuit | 50 |
| Chiller installations comprising one or more chiller units feeding a common distribution circuit | 20 |
| Electric humidifiers | 10 |
| Motor control centres providing power to fans and pumps | 10 |
| Final electrical distribution boards | 50 |

- Evidence required for Design Stage:

- Provide specification document or technical drawings confirming:

  - Energy-consuming systems and their rated outputs

  - Metering arrangements for each system, type and location of meter specified.

  - If applicable, scope of BMS and its energy-monitoring capability.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide photographic evidence confirming location and labelling/function of the individual sub-meters or BMS.

- Provide all information no later than completion.

**Ene 3 - Sub metering of high energy load and tenancy areas**

- Allow to supply and install *accessible* sub-meters covering the *energy supply* to all tenanted, or in the case of single occupancy buildings, *relevant function areas or departments* within the building/unit.

- The meters are labelled with the end energy consuming use.

- All energy sub-meters should be connected to a Building Management System (BMS) or other automated control device, e.g. outstations linked to a central PC, for the monitoring of energy consumption.

- Relevant function areas/ departments include:

  - Operating department
  - X-ray department
  - Radiotherapy department
  - Pathology department
  - Dialysis department
  - Medical physics
  - Mortuary and post-mortem department
  - Rehabilitation, when including hydrotherapy pools
  - Central Sterile Supplies Department (or equivalent)
  - Process areas, e.g. commercial-scale kitchens and laundries
  - IT rooms
  - Pharmacy department
  - Laboratories
  - Tenancy areas.

- Evidence required for Design Stage:

  - Provide marked-up drawings and site plan detailing:
    - Building areas by department/function and/or tenancy
    - Location of meters.
  - Provide specification document or technical drawings confirming:
    - Metering arrangements for each department/function and/or tenancy area
    - Type of meter specified.
  - Provide specification document or technical drawings confirming:
    - Scope of BMS or other automated control system and its energy monitoring capability.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide photographic evidence confirming location and function of the individual sub-meters or BMS.

- Provide all information no later than completion.

**Ene 4 – External lighting**

- Where provided all external light fittings for the building, access ways and pathways have a luminous efficacy of at least 50 lamp lumens/circuitWatt when the lamp has a colour rendering index (Ra) greater than or equal to 60. Or 60 lamp Lumens / circuitWatt when the lamp has a colour rendering index (Ra) less than 60.

- All external light fittings to car parking areas, associated roads and floodlighting has a luminous efficacy of at least 70 lamp lumens/circuit Watt when the lamp has a colour rendering index (Ra) greater than or equal to 60. Or 80 lamp Lumens / circuitWatts when the lamp has a colour rendering index (Ra) less than 60.

- All external light fittings for signs and uplighting have a luminous efficacy of at least 60 lamp lumens/circuitWatt when the lamp wattage is greater than or equal to 25W. Or 50 lamp lumens/circuitWatt when the lamp wattage is less than 25W.

- External light fittings are controlled through a time switch, or daylight sensor, to prevent operation during daylight hours. Daylight sensor override on a manually switched lighting circuit is acceptable.

- Decorative lighting and floodlighting are not be exempt from the above requirements.

- Evidence required for Design Stage:

  - Provide marked-up site plan and building elevations showing:
  - Location and purpose of all external lighting fittings.
  - Provide lighting specification or lighting designer's calculations confirming:
  - Lamp lumens/circuit watt for each type of fitting as well as the colour rendering index Ra (where appropriate)
  - External lighting control strategy

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide as built drawings of site plan and building elevations showing:

    - Location and purpose of all external lighting fittings.

    - Provide as built lighting specification confirming:

    - Lamp lumens/circuit watt for each type of fitting as well as the colour rendering index Ra (where appropriate)

    - Provide as built external lighting control strategy.

- Provide manufacturers' literature confirming:

  - Technical spec for the installed external light fittings.

- Where changes have occurred, a further declaration is required confirming that the revised lighting specification is in compliance with the BREEAM requirements. The organisation that proposes any changes from the lighting specification is responsible for confirming that the proposed lighting complying with the BREEAM requirements.

- All PRC drawings and specifications should be available no later than completion.

**Ene 5 – Low or zero carbon technologies**

- Allow to provide a feasibility study considering local (*on-site* and/or *near site*) low or zero carbon (LZC) technologies and implement the results.

- The feasibility study has been carried out at RIBA stage C (outline proposals) or
- equivalent procurement stage.

- Achieve at least one credit for a compliant report and implementation of the results plus as may be specified elsewhere further credits for achieving the following contribution to total energy demand: 10% (1 Credit) / 15% (2 Credits) / 20% (3 Credits) reduction in the building's CO2 emissions as a result of the installation of a feasible local LZC technology.

- The feasibility study should be carried out by an *energy specialist* to establish the most appropriate local (on-site or near-site) LZC energy source for the building/development. This study covers as a minimum:

    a. Energy generated from LZC energy source per year
    b. Payback
    c. Land use
    d. Local planning requirements
    e. Noise
    f. Feasibility of exporting heat/electricity from the system
    g. Life cycle cost/lifecycle impact of the potential specification in terms of carbon emissions
    h. Any available grants
    i. All technologies appropriate to the site and energy demand of the development.
    j. Reasons for excluding other technologies.

- Technologies recognised by the Department for Business Enterprise and Regulatory Reform (BERR) Low Carbon Buildings Programme (LCBP) may be considered as part of a low or zero carbon emissions solution. The following list details the technologies recognised by the BERR, LCBP at the time of going to print:

- Solar

    - Solar hot water
    - Photovoltaics

- Water

    - Small scale hydro power
    - Tidal power
    - Wave power

- Wind

    - Wind turbines

- Biomass

    - Biomass single room heaters/stoves
    - Biomass boilers
    - Biomass community heating schemes

- Combined Heat and Power (CHP) for use with the following fuels:

  - Biomass
  - Natural gas
  - Sewerage gas and other biogases
  - CHP systems must meet the threshold criteria for good quality CHP as set by DEFRA's CHPQA programme[4].
  - Community heating, including utilising waste heat from processes such as large scale power generation where the majority of heating comes from waste heat (see also compliance notes below).

- Heat Pumps

  - Ground source heat pumps
  - Water source heat pumps
  - Geothermal heating systems
  - Air source heat pumps
  - For heat pumps to comply, the heat source (ground or water) must be from a renewable source, for example soil, outside air, ground water, or a river.

- Other

  - Fuel cells using hydrogen generated from any of the above 'renewable' sources

- Provide figures used for calculations of the percentage carbon reduction provided by LZC technology are based on the output from *approved energy modelling software*.

- 'Local' does not have to mean *on-site* and community schemes (near site) can be used as means of demonstrating compliance.

- Any electricity from an *onsite* LZC energy source that is exported to the grid may be included in the calculations as if it were used within the building.

- Energy Specialist: An individual who has acquired substantial expertise or a recognised qualification for undertaking assessments, designs and installations of low or zero carbon solutions in the commercial buildings sector; and is not professionally connected to a single low or zero carbon technology or manufacturer.

- Life Cycle Costs: the total cost of a building or its parts throughout its life, including the costs of planning, design, acquisition, operations, maintenance and disposal, less any residual value, in terms of carbon emissions.

- Life cycle impact: this is the requirement to look at the carbon balance of each technology over its whole life. Encouraging people to not just the savings or emissions over its operational life but also the savings or emissions over the whole life of the technology (from 'cradle to grave'), therefore reflecting the fact that different technologies have different life spans.

- Payback period: the period of time needed for a financial return on an investment to equal the sum of the original investment

- Evidence required for Design Stage:

  - Provide a copy of the feasibility study report.

  - Provide a letter from the energy specialist confirming:

    - Compliance with the definition of an energy specialist

    - The timing of the feasibility report within the plan of works

- Provide marked-up design plan or specification confirming:
  - Proposed installation of LZC energy technology.
  - Provide manufacturer's technical data and details or calculations stating the carbon savings as a result of the installed LZC technology.
- Provide a copy of the report produced by the *approved energy modelling software* illustrating;
- The name of the approved software used to carry out the modelling
- Confirmation of the expertise and experience of the individual carrying out the modelling
- Total CO2 emissions for the assessed building (without LZC energy technology).
- And Calculations/outputs from the manufacturer, supplier, engineer or *approved software* confirming:
- Total carbon savings as a result of the installed LZC technology.

All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:
  - Provide as built drawings and photographic evidence confirming:
    - Installation of LZC technology.
    - Where there have been changes to the proposed design or LZC technology specification, a copy of the as built report produced by the Building Regulations-compliant energy model confirming the same data as outlined at the design stage.

All PCR drawings and specifications should be available no later than completion.

**Ene 8 – Lifts**

- Allow for and provide an analysis of transport demand and patterns for the building has been carried out by the design team to determine the optimum number and size of lifts and *counterbalancing ratio* on the basis of anticipated passenger demand.
- Analysis the energy consumption for at least two types of lift or lift strategy 'fit for purpose' has been estimated and the system with the lowest energy consumption specified.
- Of the following energy-efficient features, the three that offer the greatest potential energy saving are specified:
  a. The lifts operate in a stand-by mode during off-peak and idle periods. For example the power side of the lift controller and other auxiliary equipment such as lift car lighting and ventilation fan switch off when the lift is not in motion.
  b. Where lift motors use a drive controller capable of variable-speed, variable-voltage, variable-frequency control of the drive motor.

c. The lift has a regenerative unit so that energy generated by the lift (due to running up empty and down full) is returned back to the grid or used elsewhere on site.

d. The lift car uses energy-efficient lighting and display lighting (>60 Lumens/watt or fittings that consume less than 5W e.g. LEDS).

- Evidence required for Design Stage:

  - Provide a copy of the relevant report or documentation detailing the analysis undertaken and findings/recommendations and a copy of the lift specification.

  - All design stage information should be available prior to work starting on site.

  - Evidence required for Post Construction Stage:

  - Provide confirmation that the lifts that have been specified have been installed and no changes have occurred.

  All PCR drawings and specifications should be available no later than completion.

**Ene 15 - Provision of energy efficient equipment**

- Where specified as being provided by the contractor, the following equipment has been procured in accordance with OGC's Sustainability Mandatory Standards – Quick Wins and ECG72: *Energy consumption in hospitals*.

  a. Office equipment
  b. White goods
  c. Supplementary electric heating
  d. Small powered equipment.

- The procurement of *Large scale equipment* (where present) and sets of electrical equipment (where numbering more than 50) has been informed and selected by life cycle costing analysis in accordance with EnCO2de, Chapter 3.0 [1].

- For each piece of equipment at least two options '*fit for purpose'* have been analysed and the option(s) specified are those that demonstrate better performance in terms of:

  a. Direct running costs
  b. Indirect running costs and additional administration costs
  c. Cost of disposal
  d. Spending to save
  e. Recyclability
  f. Improved manageability
  g. Energy performance
  h. Reduced harmful emissions to the atmosphere
  i. Improved services, comfort and productivity.

- White goods: Domestic appliances such as washing machines, fridges and freezers, tumble dryers etc. This also includes smaller equipment such as kettles, toasters, electric cookers etc.

- Small powered equipment: Includes staff and patients' vending machines, TV and music systems, air-movement fans, etc.

- Evidence required for Design Stage:

- Provide a copy of the relevant clause from the specification or the occupying stakeholders compliant Environmental Procurement Policy. Or provide a formal letter from the project team confirming the specific undertaking.

- Provide the scoring matrices for selection of equipment indicating that energy performance is a consideration (10% or greater weighting) in the selection decision-making process.

- Provide equipment documentation showing schedules of performance which are to be completed by each equipment supplier.

All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide a formal letter confirming
  - Makes and models of equipment installed.
  - The procurement of equipment based on lowest LCC
  - The installation of equipment selected in accordance with the policy and LCC study.

  All PCR drawings and specifications should be available no later than completion.

**Ene 16 - CHP Community Energy**

- Allow for and provide a study that is carried out to explore the feasibility of:

  a. Connecting the building to an existing local community CHP system or source of waste heat or power, or,

  b. Specifying a building/site CHP system or source of waste heat or power with the potential to export excess heat or power via a local community energy scheme.

- Where the scope exists to specify a CHP system or make use of an existing system or source of waste energy, the feasibility study covers as a minimum:

  a. Economic appraisal, including as a minimum simple payback period, annual capital, operating and maintenance expenditures and annual revenues from the sale of heat and electricity (where applicable)

  b. Local planning requirements / initiatives

  c. Expected net energy yield per annum of the proposed system

  d. Life cycle impact of the proposed system in terms of carbon emissions.

- Evidence required for Design Stage:

  - Provide a copy of the feasibility study.

  All design stage information should be available prior to work starting on site.

**Tra 1 – Provision of public transport**

- Evidence required for Design Stage:

- Provide scale map / site plans highlighting the location of the building and all public transport nodes in proximity of the buildings main entrance.
- Provide timetables for each service at each public transport node considered.

All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:
  - Provide information as above, but updated to latest relevant information.

All PCR information should be available no later than completion.

**Tra 2 – Proximity to amenities**

- Evidence required for Design Stage:
  - Provide marked-up site plan or map highlighting:
    - Location of assessed building
    - Location and type of amenities :

      a. Grocery shop and/or food outlet.
      b. Post box.
      c. Cash machine.
      d. Pharmacy)
  - The route to the amenities
  - Plan/map scale
- Where the amenities do not currently exist, but are due to be developed, provide a letter confirming:
  - The location and type of amenities to be provided
  - The timescale for development of the amenities.

All design stage information should be available prior to work starting on site.

**Tra 3 – Cyclist facilities**

- Supply and install covered, secure and well-lit cycle storage facilities for all *building users*.
- The number of *compliant cycle storage spaces* provided is as follows:

  a. 10% of *building users* up to 500 PLUS
  b. 7% for *building users* in the range of 501 – 1000 PLUS
  c. 5% for *building users* over 1000

AND

- Buildings designed for outpatients only:

  d. 1 *compliant cycle storage space* provided for every two consulting rooms, subject to a minimum of 4 compliant cycle storage spaces.

OR

- Buildings designed for inpatients:

  e. 1 *compliant cycle storage space* provided for every 10 beds, subject to a minimum of 4 compliant cycle storage spaces.

- Also at least two of the following *compliant facilities* must be provided for the *building users*:

  a. Compliant showers
  b. Compliant changing facilities and lockers for clothes
  c. Compliant drying space for wet clothes
  d. Compliant cycle storage space:
  e. Compliant cycle storage facilities are those that meet the following:

  - The space is covered overhead and protected from the rain.
  - The covered area and the cycle racks are set in or fixed to a permanent structure (building or hardstanding) and allow both the wheel and frame to be locked securely (e.g. Sheffield type). Or racks are located in a locked structure fixed to or part of a permanent structure with CCTV surveillance.
  - There is a minimum distance of 1.0m between cycle racks, where the racks allow for two-sided parking, and 0.8m for one-sided parking to enable bikes to be easily stored and accessed.
  - Racks positioned in a circular array are spaced in accordance with the guidance in the New Metric Handbook [5].
  - There is a minimum distance from any obstruction e.g. wall (located either to the side of the stand or in front of it) of 300mm for single sided use and 900mm for double-sided use.
  - Adequate lighting is provided in accordance with BS5489 Part 1 – *Lighting of roads and amenity areas*.
  - The facilities are in a prominent site location that is viewable from the building.
  - The majority of the cycle racks are within 100m of a building entrance (ideally within 50m).

- Non compliant cycle racks:

  - These types of cycle storage devices do not comply:
  - Hooks and wall attachments
  - Single wheel (butterfly) bike rack holders (these racks provide less security and can cause damage to bike wheels).

- Compliant showers:

  - One shower must be provided for every 10 cycle storage spaces and both male and female users catered for i.e. either separate showers within shared gender-specific facilities or single shower cubicles and changing space for mixed use. The showers can be available for others to use in addition to cyclists.

- Changing facilities & lockers:

- Changing facilities and locker requirements;
  - For each shower provided, there is a minimum of 1m2 of changing space adjacent to the shower(s) with hooks for hanging clothes.
  - The number of lockers is at least equal to the number of cycle spaces provided.
  - Lockers are either in or adjacent to compliant changing rooms. Where the changing space is a cubicle the locker(s) must not be located within the cubicle.
  - Each locker is at least 900mm X 300mm X 450mm, or a locker with dimensions that provide an equivalent volume of storage space.
  - Both male and female users are catered for i.e. either gender specific, shared facilities or single changing cubicles in mixed use areas.
  - Toilet/shower cubicles do not count as changing facilities.

- Compliant drying space:
  - The drying space (for wet clothes) must be a specially designed and designated space with adequate heating/ventilation. A plant room is not a compliant drying space.
  - Minimum number of facilities:
  - Where more than the minimum number of compliant cycle spaces is provided, it is not necessary to also provide more than the minimum number of showers/lockers/changing facilities.
  - Sites in city centre locations can reduce by 50% the requirements for *compliant cycle spaces* where at least three of the available BREEAM credits for provision of public transport (T1) have been awarded.
  - Sites in rural locations can reduce by 50% the requirements for *compliant cycle spaces* where the average building user commuting distances are likely to be greater than 10 miles. A rural location is one where the site is on land clearly not within or on an urban boundary; this includes village locations and green field sites.

- Evidence required for Design Stage:
  - Provide site plan, design drawings and/or a copy of the specification confirming:
  - Provide the location of the cycle storage facilities
  - The number of cycle spaces provided
  - The type, dimensions and layout of cycle racks
  - The materials and construction specified for the facility.
  - The lighting for the facility is in accordance with BS5489 Part 1.
  - Building occupancy or, where relevant, net lettable/floor area.

- Provide design drawings or a copy of the specification confirming:

- Number of showers
- Changing room
- Secure locker locations, dimensions and numbers
- Drying space

All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide photographic evidence confirming the installation of the compliant facilities.

All PCR information should be available no later than completion.

**Tra 4 – Pedestrian and cyclist safety**

- Where external site areas form part of the assessed site and these areas contain vehicle access roads, parking and/or pedestrian access to the building, adequate cycle lanes and pedestrian pathways must be provided.

- Cycle access requirements:

  - The cycle lanes have been designed and constructed in accordance with the guidance in the National Cycle Network "*Guidelines and Practical Details – issue 2*", Sustrans[1] and the relevant parts of Appendix VI *NCN Design and Construction Checklist*

  - The cycle lanes and pedestrian paths meet the following minimum width dimensions:

    a. Where pedestrian and cycle routes are shared the minimum total width of the combined path is 3.0m

    b. Where the cycle lane is segregated from both the pedestrian route and carriageway the minimum width of the cycle path is 2.0m and the minimum width of the pedestrian path is 1.5m

    c. Where the cycle route forms a part of the carriageway, the minimum width of the lane is 1.5m

- Minimum widths should not be regarded as the design target, where possible best practice as detailed in the Sustrans[1] and DfT[2] guidance must be aimed for.

- Cycle lanes provide direct access to any cycle storage facilities provided on the site, without the need to deviate from the cycle path and, if relevant, connect to offsite cycle paths where these run adjacent to the development's boundary.

- Pedestrian access requirement:

  - Onsite footpaths connect to public footpaths off site, providing access to local transport nodes and other offsite amenities (where present).

  - Where provided, drop-off areas are designed off the access road and provide direct access to pedestrian pathways/areas, therefore avoiding the need for the pedestrian to cross vehicle access routes.

- Where dedicated pedestrian crossing of a vehicle access route is provided, the road is raised to the pavement level (i.e. the pavement is not lowered to road level).
- For larger developments with a high number of public users/visitors, pedestrian pathways must be signposted to other local amenities off site, including public transport nodes.

- Combined cyclists and pedestrian access requirements:
  - Delivery areas are not accessed through parking areas and do not cross or share pedestrian and cyclist routes and other outside amenity areas accessible to building users and general public.
  - Lighting design of pedestrian pathways and cycle paths on site are in compliance with CIBSE Lighting Guide 6, 1992 (LG6)[6] and BS5489 Part 1[5].

  NCN Design and Construction checklist can be downloaded from:
  http://www.sustrans.org.uk/webfiles/guidelines/appendix.pdf

- Evidence required for Design Stage:
  - Provide a scaled proposed site plan, specification and/or design details highlighting all necessary features and dimensions.
  - Provide a copy of the specification or scaled proposed site plan confirming:
  - Cycle routes have been or will be designed in accordance with the best practice guidance [1]
  - Provide a signed and dated copy of the *NCN Design and Construction Checklist* from the design/project team (or completed by the assessor using design information).
  - Provide a copy of the specification, site plan and/or manufacturer's technical details confirming the external lighting design strategy.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:
  - Provide as built site plan and design details.
  - Provide a signed and dated post construction copy of the *NCN Design and Construction Checklist* from the project team.

  The written confirmation of such should be available no later than completion.

**Tra 5 – Travel plan**

- Co-operate with and implement any relevant outcomes from the travel plan that will developed as part of the feasibility and design stages which considers all types of travel relevant to the building type and *users.*

**Tra 6 – Maximum car parking capacity**

- Design Car parking facilities to meet the following requirements:

- Buildings designed for inpatients e.g. acute, teaching, specialist, mental health hospitals

- The maximum number of parking spaces provided must not be greater than the total of the following:

  a. One parking space for every four staff. PLUS
  b. One parking space for every four beds. PLUS
  c. Two parking spaces for each consulting, examination, treatment, therapy room and A&E cubicle PLUS
  d. One parking space for every two staff residential beds.

- Disabled, mother & baby & motorbike spaces:

  - Parking spaces for these building users can be excluded from the assessment of this issue provided these spaces are dedicated for this use and they are sized accordingly with the appropriate signage/markings.

- Car share spaces:

  - Car share spaces can be excluded from the assessment provided these spaces are dedicated for this use with the appropriate signage and the future building occupier confirms they have an enforceable car share policy. A copy of the policy and related documentation must be provided.

- Evidence required for Design Stage:

  - Provide a site plan or copy of the specification confirming number and type of parking spaces provided for the building.

  - Provide relevant documentation or correspondence from the design team or client confirming:

    - The maximum number of staff using the building during a typical shift
    - The number of patients' and residential beds
    - The number of consulting, examination, treatment, therapy room and A&E cubicle rooms.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide confirmation there has been no changes since the design stage assessment, or where changes have occurred, what they are in terms of design stage evidence.

  All PCR information should be available no later than completion.

**Tra 7 – Travel information point**

- Design in, supply and install a real-time public transport information system, where all patients, all staff and visitors/community users can access up-todate public transport information and plan their journey.

- The system must be in a publicly accessible area with adequate signage at its point of use and throughout appropriate areas of the development indicating its purpose and location/existence.

- Location of 'Travel Information Point'

- The information point does not necessarily have to be situated internally. If sited externally however, it must be covered, in an area that is readily accessible to building users and within close proximity of the main entrance or pedestrian routes to and from local public transport nodes, parking areas and the main building entrance.

- Real time passenger information system: An electronic system that provides up-to-date, i.e. real time, information on local public transport service(s). Primarily how close the service is running to time and when it is due at a node/interchange and, potentially, incidents that affect service operations, platform changes etc.

- Evidence required for Design Stage:

    - Provide design plan and/or a copy of the relevant specification clause(s) confirming:

        - Location and scope of the travel information point/facility

    All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

    - Provide confirmation there has been no changes since the design stage assessment, or where changes have occurred, what they are in terms of design stage evidence.

    All PCR information should be available no later than completion.

**Tra 8 – Deliveries and manoeuvring**

- Parking and turning areas are designed for simple manoeuvring according to the type of delivery vehicle likely to access the site, thus avoiding the need for repeated shunting.

- There is a separate parking area for waiting goods vehicles, away from the manoeuvring area and staff/visitor car parking.

- Delivery areas are not accessed through parking areas and do not cross or share pedestrian and cyclist routes and other outside amenity areas accessible to building users and general public.

- There is a dedicated space for the storage of refuse skips and pallets away from the delivery vehicle manoeuvring area and staff/visitor car parking.

- Evidence required for Design Stage:

- Provide proposed site plan clearly showing:

    - Manoeuvring area

    - Delivery vehicle waiting area

    - Designated area for skips/pallets

- Provide appropriate documentation or correspondence from the design team confirming:

    - Likely vehicle delivery type that will access the development.

    - Predicted frequency of deliveries

All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide confirmation there has been no changes since the design stage assessment, or where changes have occurred, what they are in terms of design stage evidence.

All PCR information should be available no later than completion.

**Wat 1 – Water Consumption**

- All WCs should have an effective flush volume of 4 litres or less, or 4.5 litres and fitted with a *delayed action inlet valve* and, where specified:
- Dual flush toilets have guidance or symbols instructing the user on the appropriate operation of the flushing device. This can be provided on the flush control buttons, cistern, or nearby for a group of cisterns.
- The flushing control is suitable for people with frail hands or activated by electronic sensors.
- All showers, where specified, should have a measured flow rate that does not exceed 9 litres per minute for a water pressure of 0.3MPa, assuming a delivered water temperature of 37ºC.
- All urinals should be either:

  - Fitted with individual presence detectors that operate the flushing control after each use. Or,
  - be ultra low flush or waterless urinals.

- All baths have a capacity of 100 litres to the overflow and each bath is fitted with a device that automatically stops the flow from the taps when the bath's maximum capacity is reached.
- Taps have a maximum flow rate less than 6 litres/min for a water pressure of 0.3MPa and are one of the following types:

  - Timed automatic shut-off taps e.g. push taps
  - Electronic sensor taps.

- This requirement does not apply to 'scrub' facilities in clinical areas, cleaners' taps, kitchen and external taps or other instances where such fittings would be inappropriate for medical/health-related reasons (such instances must be justified by the design team)
- Delayed action inlet valve: Devices that prevent water entering the WC cistern until it has completely emptied, enabling a precise volume of water to be discharged independent of water pressure.
- Effective flush volume: The volume of water needed to clear the toilet pan and transport any content far enough to avoid blocking the drain.

- Dual Flush Cisterns: Devices that have the facility to provide lower flush volume for liquids and higher flush volume for solids and paper.

- Calculating the effective flushing volume of dual flush toilets: For dual flush WCs the ratio *full flush:reduced flush* is taken to be 1:3 for non-domestic buildings. The effective flush volume can therefore be calculated as follows, using a 6/4 litre dual flush volume WC: ((6 Litre*1) + (4 Litre*3))/4 = 4.5 Litre effective flushing volume

- Evidence required for Design Stage:

  - Provide a copy of the relevant section of the M&E specification and/or manufacturer's details confirming technical specification for sanitary fittings (flow rate) and controls to be installed.

  - Provide design plan showing the location within the building of the sanitary facilities.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide photographs evidence confirming the type and amount of fittings and controls installed.

  - Provide the manufacturer's/installer's details for installed fittings/controls confirming:

    - Their technical specification

  The written confirmation of such should be available no later than completion.

**Wat 2 – Water Meter**

- Supply and install a water meter on the mains water supply to each building; this includes instances where water is supplied via a borehole or other private source.

- The water meter has a pulsed output to enable connection to a Building Management System (BMS) for the monitoring of water consumption.

- If there is a swimming pool on site within the scope of the assessment, the building housing it must be covered by a separate meter in accordance with the above requirements. The changing facilities (including showers, toilets etc) housed in this building should also be covered by this meter.

- Where water supply to the building is supplemented by a supply from a separate cold water tank, the supply from the tank should be separately metered.

- Exemplary Credit:

  - Provide and install sub meters to allow individual water-consuming plant or building areas to be monitored such as cooling towers, car washes, catering areas, etc. If the building does not have any major water consuming plant this exemplar credit is not available.

  - Each sub meter has a pulsed output to enable connection to a Building Management System (BMS) for the monitoring of water consumption.

- In addition to the above, for sites with multiple department's e.g. large health centres or acute hospitals, separate pulsed sub meters are fitted on the supply to the following areas where present:

    a. Staff and public areas
    b. Clinical areas and wards
    c. Letting areas: On the water supply to each tenant unit
    d. Laundries
    e. Main production kitchen
    f. Hydrotherapy pools
    g. Laboratories
    h. CSSD/HSDU, pathology, pharmacy, mortuary and any other major process water user.

- Evidence required for Design Stage:
    - Provide a copy of the specification clause confirming:
        - The specification and type of water meter(s).
        - Where relevant, connection of the meter to an existing BMS.
    - Provide design plan(s) showing:
        - Location of the water meter(s) in each assessed building/unit.

    All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:
    - Provide as built drawings confirming:
        - The location of the water meter(s).
    - Provide manufacturer's details confirming:
        - The specification of a pulsed output on the installed meter(s).

The written confirmation of such should be available no later than completion.

**Wat 3 – Major leak detection**

- Supply and install a leak detection system capable of detecting major leaks on the water supply. The system must cover all mains water supply between and within the building and the site boundary.
    - The leak detection system should be:

        a. Audible when activated

        b. Activated when the flow of water passes through the water meter/data logger at a flow rate above a pre-set minimum for a pre-set period of time

        c. Able to identify different flow and therefore leakage rates, e.g. continuous, high and/or low level, over set time periods

        d. Programmable to suit the owner/occupiers' water consumption requirements

e. Where applicable, designed to avoid false alarms caused by normal operation of large water-consuming plant such as chillers.

- The equipment installed must have the flexibility to distinguish between different flow rates to enable it to be programmed to suit the owner/occupier's usage patterns.

- Evidence required for Design Stage:

  - Provide a copy of the specification clause confirming the scope and performance requirements of leak detection system.

  - Provide manufacturer's details confirming the technical specification the specified systems.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide written confirmation & photographic evidence confirming:

    a) The installation and operation of the leak detection system.

    b) The pre-set variables of the system for triggering the alarm and the flexibility of the building occupier to vary these.

  The written confirmation of such should be available no later than completion.

**Wat 4 – Sanitary supply shut-off**

- Supply and install solenoid valves on the water supply to each toilet area in the building and the flow of water through that supply that are controlled by a link to either:

  - Infra-red movement detectors within each toilet facility, or,
  - Sensors or switches placed at or on entry doors to each facility.

  The requirements of above do not apply to toilet facilities in clinical areas.

- Solenoid valve: An electrically operated shut-off device that controls the flow of water in pipes.

- Evidence required for Design Stage:

  - Provide a copy of the specification clause confirming:

    - The specification of shut-off valves
    - The controls for the shut-off valves.

  - Provide a design plan showing:

    - The location of the toilet facilities.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide photographic evidence confirming the location and installation of proximity detection controls.

- Provide as built drawings showing the specification of shut-off valves

All PCR information should be available no later than completion.

**Wat 5 – Water recycling**

- Design and implement one of the following water recycling strategies:

  1. Where a rainwater collection tank has been installed and the tank is sized to collect at least 50% of EITHER:

  a. The total predicted rainwater run-off from the roof catchment area for the *defined period of collection*. OR

  b. The rainwater run-off required to meet the total predicted flushing demand for the *defined period of collection*.

  2. Waste water from wash hand basins and showers is collected from ≥80% of fittings and recycled to meet part (minimum of 10%) or the total of WC/urinal flushing demand within the building(s).

  3. A combination of waste water and rainwater collection that meets at least 50% of EITHER:

  a. The total predicted toilet and urinal flushing demand for the *defined period of collection* OR

  b. The total predicted toilet and urinal flushing demand for the *defined period of collection* and (where specified) irrigation of planting and landscaping.

- Run-off from paved areas: Run-off from paved areas can also be collected and included in the calculation. Where the run-off is collected from part roof, part paved areas; the total catchment area must be at least equivalent to the plan area of the roof.

- Toilet facilities in clinical areas can be excluded from the assessment of this issue where the use of recycled water for flushing is deemed by the client unfeasible on the grounds that it presents a risk to patient health.

- Total predicted flushing demand can be estimated by the design team on the basis of the following variables:

  a. Number of building users (staff and visitors)
  b. Effective flush volume of WCs/urinals
  c. Estimated number* of WC/urinal uses per person per day (multiplied by the defined period of collection)

  * For staff use, unless other data is available, assume 1.3 WC uses per person per day and 2 urinal uses per person per day (assume that only 50% of the building occupants will use urinals).

- Calculating compliance: The following formula can be used to calculate the volume of collectable rainwater for the assessed building's catchment area for the defined period of collection:

  Σ (ARF x C x Rco-ef x Fco-ef x Dcol)
  Where:
  ARF = Annual rainfall for the site location (mm)
  C = Rainwater catchment area (m2)

Rco-ef = Run-off co-efficient
Fco-ef = Filter co-efficient.
Dcol = Defined period of collection: 18 days/365 days = 0.05

Annual rainfall: The local EA, SEPA, EHS office or the Met Office should be able to supply rainfall data.

- Run-off co-efficient: A coefficient is used to adjust the tank size calculation to allow for the fact that not every drop of rain that falls within the catchment area will be collected by the tank. Drainage co-efficient is dependent on the type of roof specified for the building, flat roofs having a lower co-efficient. Below are some typical co-efficient factors:

| Roof type | Run-off co-efficient |
|---|---|
| Pitched roof tiles | 0.75 - 0.9 |
| Flat roof smooth tiles | 0.5 |
| Flat roof with gravel layer | 0.4 – 0.5 |

- Filter co-efficient: Not all the water that drains from the roof down the gutters will reach the holding tank; the filter co-efficient accounts for this. Most manufacturers/installers of systems will recommend a filter co-efficient of 90% i.e. 0.9.

- Drainage and filter co-efficiencies can be found in CIRIA guidance [2], though these should be in the design team's sizing calculations.

- Evidence required for Design Stage:

  - Provide a copy of the specification clause confirming:

    - Type of collection system specified.
    - WC, urinal, taps and shower specification (where appropriate).

  - Provide design team calculations for the *defined period of collection* demonstrating (where appropriate):

    - Rainwater yield for the catchment area (mm)
    - Predicted WC/urinal flushing demand
    - Estimated potential for waste water collection from taps/showers.
    - Size (litres) of the rainwater/greywater collection tank specified.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide photographic evidence confirming the installation of the collection system.

- Where changes have occurred since design stage specification, provide a revised copy of the technical specification and sizing calculations for the installed system.

- This should include a copy of the specification confirming:

  - Type of collection system specified.

  - WC, urinal, taps and shower specification (where appropriate).

- Calculations for the *defined period of collection* demonstrating (where appropriate):

- Rainwater yield for the catchment area (mm)
- Predicted WC/urinal flushing demand
- Estimated potential for waste water collection from taps/showers.
- Size (litres) of the rainwater/greywater collection tank specified.

- The written confirmation of such should be available no later than completion.

**Wat 6 – Irrigation systems**

- Where the irrigation method is specified for internal or external planting and/or landscaping it should comply with one of the following:

  a. Drip feed subsurface irrigation that incorporates soil moisture sensors. The irrigation control should be zoned to permit variable irrigation to different planting assemblages.

  b. Reclaimed water from a rainwater or greywater system.

  c. External landscaping and planting that relies solely on precipitation, during all seasons of the year.

  d. The only planting specified is restricted to species that thrive in hot and dry conditions.

  e. Where no dedicated, mains-supplied irrigation systems (including pop-up sprinklers and hoses) are specified and planting will rely solely on manual watering by building occupier or landlord.

- Where a sub surface drip feed irrigation system is installed for external areas, a rainstat must also be installed to prevent automatic irrigation of the planting and the landscape during periods of rainfall.

- Evidence required for Design Stage:

  - Provide an irrigation strategy for the site.

  - Provide proposed site plan, marked up to illustrate the scope of the irrigation specified and one of the following:

- A copy of the specification clause confirming:

  Type of irrigation system and controls.
  Or
  Manufacturer's information detailing:
  The technical details of the specified system

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide photographic evidence confirming:

    - The implementation of the proposed strategy.
    - If relevant, the installation of the specified system.

  All PCR information should be available no later than completion.

**Mat 1 – Materials specification (major building elements)**

- All major building/finishing elements should be specified to achieve an A+, A or B rating as defined by the *Green Guide to Specification.*

  - Major building/finishing elements are:

    - External Walls
    - Windows
    - Roof
    - Upper Floor Slabs
    - Internal Walls
    - Floor Finishes / Coverings

- Using the Green Guide to Specification: The Green Guide categorises ratings by building type and element. When using the Green Guide online, (www.thegreenguide.org.uk), the main page asks the user to select a building type. To obtain the appropriate ratings for the assessed building elements, select the corresponding building type for this BREEAM scheme.

- Whilst exact matches in specifications are not always found, it should be possible to identify a similar specification and use its rating

- Evidence required for Design Stage:

  - Provide specification confirming:

    - A detailed description of each applicable element and its constituent materials.

  - Provide design drawings or specification detailing:

    - Location and area (m2) of each applicable element.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide as built drawings / calculations detailing:

    - Location and area (m2) of each applicable element.

- Provide written of any changes to the design stage specification.

The as build drawings and any written confirmation should be available no later than completion.

**Mat 2 – Hard landscaping and boundary protection**

- All to provide at least 80% (by area) of the combined area of external hard landscaping and boundary protection specifications that achieves an A or A+ rating, as defined by the *Green Guide to Specification*.

- Using the Green Guide to Specification: The Green Guide categorises ratings by building type and element. When using the Green Guide online, (www.thegreenguide.org.uk), the main page asks the user to select a building type. To obtain the appropriate ratings for the assessed building elements, select the corresponding building type for this BREEAM scheme.

- Whilst exact matches in specifications are not always found, it should be possible to identify a similar specification and use its rating

- Any existing or specified natural boundary protection (such as hedging or other living barrier) should be awarded with an A+ rating for the purposes of this analysis.

- Access/approach roads and designated vehicle manoeuvring areas should be excluded from the calculations.

- Evidence required for Design Stage:

  - Provide specification confirming:

    - A detailed description of each applicable element and its constituent materials.

  - Provide design drawings or specification detailing:

    - Location and area (m2) of each applicable element.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide as built drawings / calculations detailing:

    - Location and area (m2) of each applicable element.

  - Provide written of any changes to the design stage specification.

The as build drawings and any written confirmation should be available no later than completion.

**Mat 5 – Responsible sourcing of materials**

- 80% of the following building elements should be responsibly sourced:

  a. Structural Frame
  b. Ground floor
  c. Upper floors (including separating floors)
  d. Roof
  e. External walls
  f. Internal walls
  g. Foundation/substructure
  h. Staircase

- Additionally 100% of any timber must be legally sourced and is not included on the CITES list.

- At least 80% of the following applicable materials comprising the building elements must be responsibly sourced:

  a. Brick (including clay tiles and other ceramics)

  b. Resin-based composites and materials, including GRP and polymeric render

  c. Concrete (including in-situ and pre-cast concrete, blocks, tiles, mortars, cementious renders etc.)

d. Glass

e. Plastics and rubbers (including EPDM, TPO, PVC and VET roofing membranes including polymeric renders)

f. Metals (steel, aluminium etc.)

g. Dressed or building stone including slate

h. Timber and wood panel (including MDF, chipboard and Cement Bonded Particleboard)

i. Plasterboard and plaster

j. Bituminous materials, such as roofing membranes and asphalt

k. Other mineral-based materials, including fibre cement and calcium silicate

l. Products with recycled content

- Insulation materials, fixings, adhesives and additives are excluded from these calculations.

- Materials reused in-situ can be excluded from the assessment. Reused materials specified for the development e.g. recycled aggregates are considered equivalent to materials covered by certification schemes that fall within tier 1 of table 1.

- CITES (Convention on International Trade in Endangered Species) Appendices I and II of the CITES list illustrate species of timber that are protected outright. Appendix III of the CITES list illustrates species that are protected in at least one country. If a timber species used in the development is on Appendix III it can be included as part of the assessment as long as the timber is not obtained from the country(ies) seeking to protect this species

- Exemplary level requirements:

    - Where, in addition to the above requirements, 95% of the applicable materials, comprised within the applicable building elements, have been responsibly sourced.

**Table 1: Tier Levels and Requirements**

| Tier level | Issue assessed | Points available per element | Evidence / measure assessed | Examples of compliant schemes |
|---|---|---|---|---|
| 1 | Legality & responsible sourcing | 3 | Certification scheme | FSC, CSA, SFI with CoC, PEFC, Reused Materials |
| 2 | Legality & responsible sourcing | 2 | Certification scheme | There are currently no schemes allocated to this tier. |
| 3 | Legality & responsible sourcing | 1.5 | Certification scheme/ EMS | Timber: MTCC, Verified,, SGS, TFT |
| | | | | Other materials: Certified EMS for the Key Process and *Supply Chain*. |
| | | | | Recycled Materials with certified EMS for the *Key Process* |
| 4 | Legality & responsible sourcing | 1 | Certification scheme/EMS | Certified EMS for key process stage. |

Note:
Where any timber is used, it must be legally sourced. Where evidence cannot be provided to demonstrate legal sourcing for any element, no points can be awarded for the Responsible Sourcing Issue.

Where new in situ concrete (not existing concrete) is used, certification of the manufacture of the cement as the primary process, extraction of the aggregate and limestone used to make the cement as well as supply chain processes to be provided.

* "Verified" is the name of a scheme produced by SmartWood.

**Table 2: EMS Requirements**

| Material | Key Process | Supply chain processes |
|---|---|---|
| Brick (including clay tiles and other ceramics) | Product Manufacture | Clay Extraction |
| Resin-based composites and materials (including GRP and polymeric render) | Composite product manufacture | Glass fibre production<br>Polymer production |
| In situ Concrete (including ready mix and cemetitious mortars and renders) | Ready mixed concrete plant | Cement production<br>Aggregate extraction and production |
| Precast concrete and other concrete products (including blocks, cladding, precast flooring, concrete or cementitious roof tiles) | Concrete product manufacture | Cement production<br>Aggregate extraction and production |
| Glass | Glass production | Sand extraction<br>Soda Ash production or extraction |
| Plastics and rubbers (including polymeric renders, EPDM, TPO, PVC and VET roofing membranes) | Plastic/rubber product manufacture | Main polymer production |
| Metals (steel, aluminium etc) | Metal Product manufacture - e.g. cladding production, steel section production | Metal production:<br>Steel: Electric arc furnace or Basic oxygen furnace process,<br>Aluminium, ingot production,<br>Copper: ingot or cathode production. |
| Dressed or building stone (including slate) | Stone product manufacture | Stone extraction |
| Plasterboard and plaster | Plasterboard or plaster manufacture | Gypsum extraction<br>Synthetic gypsum (from flue gas desulphurisation) by default (recycled content) |
| Virgin timber | Timber from certified sources | Timber from certified sources |
| Cement Bonded Particle Board | Due to the significant cement content, in addition to requiring timber certification, the key supply chain process must also be considered to obtain the relevant tier for timber certification. Production of Cement Bonded Particleboard | Cement production<br>Timber from certified sources |
| Wood panel products such as Oriented Strand Board, plywood, chipboard/particle board, etc.) | Wood panel products, including those with recycled content, can only use the Timber Certification route | |
| Bituminous materials, such as roofing membranes and asphalt | Product manufacture | Bitumen production<br>Aggregate extraction and production |
| Other mineral-based materials, including fibre cement and calcium silicate | Product manufacture | Cement production<br>lime production<br>other mineral extraction and production |
| Products with 100% recycled content | Product manufacture | Recycled input by default |
| Products with lower % of recycled content | Product manufacture | Supply chain process/processes for any virgin material in the relevant product type above.<br>Recycled input by default |
| Any other product | Key processes is likely to be product manufacture | 1 or 2 main inputs with significant production or extraction impacts should be identified |
| Excluded products: insulation materials, fixings, adhesives, additives | N/A | N/A |

- Timber and Environmental Management Schemes (EMS)
    - Where an Environmental management scheme is used to assess products made from recycled timber, 100% of the timber content must be recycled or sourced from one of the recognised timber certification schemes in Table 1. A timber product with 50% recycled timber and 50% legally sourced timber will not comply with the criteria.
- Chain of Custody
    - This is a process used to maintain and document the chronological history of the evidence/path for products from forests to consumers. Wood must be tracked from the certified forest to the finished product. All the steps, from transporting wood from the forest to a sawmill, until it reaches the customer, must maintain

adequate inventory control systems that allow for separation and identification of the certified product. Chain-of-custody certification ensures that a facility has procedures in place to track wood from certified forests and avoid confusing it with non-certified wood. Chain-of-custody is established and audited according to relevant forest certification systems rules.

- Evidence required for Design Stage:
    - Provide design plan and/or specification confirming:
    - The location of elements and materials specified
    - Details of the materials specified.
- For materials certified through the EMS route, provide a letter of intent from the design team confirming:
    - The relevant materials shall be sourced from suppliers who can provide an EMS certificate (or equivalent) for the process and/or extraction stages of their product.
- For certified timber, provide letter of intent from the design team confirming:
    - The timber shall be sourced from suppliers capable of providing certification to the level required for the particular tier claimed.
- Provide written confirmation confirming that:
    - All timber will come from a ‘legal source’ and one not on the CITES list*.
    - Or in the case of Appendix III of the CITES list, it has not been sourced from the country seeking to protect this species as listed in Appendix III.

    All design stage information should be available prior to work starting on site.
- Evidence required for Post Construction Stage:
    - Provide as built drawings or as built specifications confirming that the building has been constructed in accordance with the design stage drawings/specifications.
    - Provide copies of purchase orders or receipts or certificate/letter of conformity for all applicable materials, including those recycled or reused.
    - Provide delivery notes for all appropriate elements that are being assessed.
    - Provide EMS certificate (or equivalent) from the manufacturers at the process stage
    - OR
    - Signed letter from the manufacturers at the process stage confirming EMS (or equivalent) certification details.
    - Provide a copy of the certification document or Chain of Custody (CoC) certificate(s) and Delivery notes for all appropriate elements, showing the certifications type and CoC number.
- Where any non-certified timber is used, provide written confirmation from the supplier(s) confirming that:
    - All timber comes from a legal source.

- All timber species and sources used in the development are not listed on any of the CITES appendices for endangered or threatened species (Appendix I, II, or III*).

- Or in the case of Appendix III of the CITES list, it has not been sourced from the country seeking to protect this species as listed in Appendix III.

- For any materials changed from the design stage specification that have been certified through the EMS route any one of the following must be provided as appropriate:

  - Copy of the ISO 14001 certificate.
  - Copy of the EMAS certificate.
  - For *Small* companies, (see *Relevant Definitions*) confirmation that the company EMS is structured in compliance with BS 8555 2003 (or equivalent) and the EMS has completed phase audits one to four as outlined in BS 8555. This evidence can be found from company documentation demonstrating the process and typical outputs from phase four audits such as an EMS manual/paperwork and guidance to staff. Where independent certification exists to demonstrate these phases, it can be used as evidence.

  - Where there has been a change in the design stage specification provide the relevant volumes and/ or percentages of materials for each element that differs.

  The as built drawings and any written confirmation should be available no later than completion.

**Mat 6 – Insulation**

- All thermal insulation used in the building elements listed below should be specified from the *Green Guide to Specification* and should be rated A+, A or B.

- 80% of the thermal insulation used in the building elements listed below should also be responsibly sourced.

- Any new insulation specified for use within the following building elements must be included:

  - External walls
  - Ground floor
  - Roof
  - Building services

**Table 3: EMS requirements for insulation products**

| Material | Key Process | Supply chain processes |
|---|---|---|
| Foam Insulation | Insulation manufacture | Principal Polymer production, e.g. Polystyrene, MDI , Phenolic resin or equivalent |
| Stone wool, glass & cellular glass made using < 50% recycled input | Product manufacture | Any quarried or mined mineral over 20% of input |
| Wool | Product manufacture | Wool Scouring |
| Products using > 50% recycled content except those using timber | Product manufacture | Recycled content by default |
| Timber-based insulation materials including those using recycled timber | Product manufacture | Recycled timber by default, all other timber from one of the recognised timber certification schemes in Table 1. |
| Other renewable-based insulation materials using agricultural by-products (e.g. straw) | Product manufacture | By-product manufacture by default |
| Any other product | Product manufacture | 1 or 2 main inputs with significant production or extraction impacts should be identified |

- Evidence required for Design Stage:

    - Provide marked-up design plan/elevations and/or a copy of the specification confirming:
    - The location of insulating materials.
    - The area (m2) and thickness (m) or volume (m3) of insulation specified.

    - Provide manufacturer's technical details confirming:
    - Thickness and thermal conductivity of the insulating materials specified.

    All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

    - Provide as built drawings and, where relevant, written confirmation of any changes to the materials specification.

    The as build drawings and any written confirmation should be available no later than completion.

**Mat 7 - Designing for robustness**

- Identify and provide suitable durability and protection measures or design features have been specified to prevent damage to the vulnerable parts of these building areas from such traffic, (where vehicular, trolley and pedestrian movement occur). This must include, but not be limited to:

    a. Protection from the effects of high pedestrian traffic in main entrances, public areas and thoroughfares (corridors, lifts, stairs, doors etc).

    b. Protection against any internal vehicular/trolley movement within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas.

    c. Protection against, or prevention from, any potential vehicular collision where vehicular parking and manoeuvring occurs within 1m of the external building façade for all car parking areas and within 2m for all delivery areas.

- Suitable durability measures – Suitable durability and protection measures to vulnerable parts of the building can include:

    - Bollards/barriers/raised kerbs to delivery and vehicle drop-off areas
    - Robust external wall construction, up to 2m high
    - Corridor walls specified to Severe Duty (SD) as per BS 5234-2.
    - Protection rails to walls of corridors
    - Kick plates/impact protection (from trolleys etc) on doors
    - Hard-wearing and easily washable floor finishes in heavily used circulation areas (i.e. main entrance, corridors, public areas etc)
    - Corridor walls specified to Severe Duty (SD) as per BS 5234-2 and HTM 56 – Partitions (as applicable).

- Vehicle Impact Protection:

    - Any vehicle impact protection measures specified must be positioned at an adequate distance from the building to protect the fabric from impact from any vehicle with a measurable overhang of the body from the wheel track, in particular for any goods delivery areas.

- In vehicle movement areas only; where the specification of external robust wall construction is specified to comply with the credit, additional protection must be provided to ensure against potential damage to the robust façade from vehicle movement, i.e. specifying bollards or protection rails.

- Public / Common Areas:

  - Consideration should be given to materials specification in public/common areas (especially public waiting areas and toilet areas) to provide protection against potential malicious or physical abuse in as far as it is possible.

  - Evidence required for Design Stage:
  - Provide design drawings marked up to illustrate the vulnerable areas/parts of the building.

  - Provide design drawings and/or specification confirming the durability measures specified.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide photographic evidence confirming:
  - Vulnerable areas of the building
  - The durability measures in-situ.

  All PCR information should be available no later than completion.

**Wst 1 – Construction site waste manageme**nt

- Provide a copy of the SWMP summary datasheets or equivalent monitoring records/report confirming:

  - The total waste arising for the development.
  - Comparison of the total waste arising against the benchmark
  - Quantities of waste by groupings
  - Where required, the amount and proportion of waste arising that was reused, recycled and landfilled
  - Custody/application/destination of reused/recycled materials.

- Where non-hazardous construction waste generated by the building's construction phase (Excluding demolition and excavation waste) meets or exceeds the following resource efficiency benchmarks:

| BREEAM credits | Amount of waste generated per 100m² (gross internal floor area) | |
|---|---|---|
| | m³ | tonnes |
| One credit | 13.0 - 16.6 | 6.6 - 8.5 |
| Two credits | 9.2 – 12.9 | 4.7 - 6.5 |
| Three credits | <9.2 | <4.7 |

* Volume (m3) is actual volume of waste (not bulk volume)

- A Site Waste Management Plan (SWMP) shall be provided which contains:

a. The target benchmark for resource efficiency i.e. m3 of waste per 100m2 or tonnes of waste per 100m2
b. Procedures and commitments for minimising non-hazardous waste in line with the benchmark

c. Procedures for minimising hazardous wasted. Procedures for monitoring, measuring and reporting hazardous and non-hazardous site waste

d. Procedures for sorting, reusing and recycling construction waste into defined waste groups either on site or through a licensed external contractor

e. The name or job title of the individual responsible for implementing the above.

- New build, Refurbishment and Fit Out only projects:

  1. At least 75% by weight or 65% by volume of non-hazardous construction waste generated by the project has been diverted from landfill and either:
  a. Reused on site (in-situ or for new applications)
  b. Reused on other sites
  c. Salvaged/reclaimed for reuse
  d. Returned to the supplier via a 'take-back' scheme
  e. Recovered from site by an approved waste management contractor and recycled.
  2. For demolition projects, in addition to the above requirement for construction-related waste, 90% by weight or 80% by volume of non-hazardous demolition waste has been diverted from landfill.
  3. Waste materials will be sorted into separate key waste groups (according to the waste streams generated by the scope of the works) either onsite or offsite through a licensed contractor for recovery.

- Exemplary Credit:

  - Where at least 90% by weight (80% by volume) of non-hazardous construction waste and 95% of demolition waste by weight (85% by volume) (if applicable) generated by the build has been diverted from landfill and complies with the above information.

- Best Practice SWMP: Best practice (site waste management) is a combination of commitments to:

  a. design out waste
  b. reduce waste generated on site
  c. develop and implement procedures to sort and reuse/recycle construction waste on and off site (as applicable).
  d. follow guidance from:

  · DEFRA (Department of Environment, Food and Rural Affairs)
  · BRE (Building Research Establishment)
  · Envirowise
  · WRAP (Waste & Resources Action Programme)

**Table 1: Construction waste groups**

| European Waste Catalogue) | Key Group | Examples |
|---|---|---|
| 170102 | Bricks | Bricks |
| 170101 | Concrete | Pipes, kerb stones, paving slabs, concrete rubble, precast and in situ |
| 170604 | Insulation | Glass fibre, mineral wool, foamed plastic |
| 1501 | Packaging | Paint pots, pallets, cardboard, cable drums, wrapping bands, polythene sheets |
| 170201 | Timber | Softwood, hardwood, boards products such as plywood, chipboard, medium density fibreboard (MDF) |
| 1602 | Electrical and electronic equipment | Electrical & electronic TVs, fridges, air-conditioning units, lamps equipment |
| 200301 | Canteen/office | Office waste, canteen waste, vegetation |
| 1301 | Oils | Hydraulic oil, engine oil, lubricating oil |
| 1703 | Asphalt and tar | Bitumen, coal tars, asphalt |
| 170103 | Tiles and ceramics | Ceramic tiles, clay roof tiles, ceramic, sanitaryware |
| 1701 | Inert | Mixed rubble/excavation material, glass |
| 1704 | Metals | Radiators, cables, wires, bars, sheet |
| 170802 | Gypsum | Plasterboard, render, plaster, cement, fibre cement sheets, mortar |
| 170203 | Plastics | Pipes, cladding, frames, non-packaging sheet |
| 200307 | Furniture | Tables, chairs, desks, sofas |
| 1705 | Soils | Soils, clays, sand; gravel, natural stone |
| Most relevant EWC | Liquids | Non-hazardous paints, thinners, timber treatments |
| Most relevant EWC | Hazardous | Defined in the Hazardous Waste List (HWL) of the European Waste Catalogue (EWC) |
| Most relevant EWC | Floor coverings (soft) | Carpets, vinyl flooring |
| Most relevant EWC | Architectural Features | Roof tiles, reclaimed bricks, fireplaces |
| 170904 (Mixed) | Mixed/ other | Efforts should be made to categorise waste into the above categories wherever possible |

- Evidence required for Design Stage:

    - Provide a copy of the compliant Site Waste Management Plan containing the appropriate benchmarks, commitments and procedures.
    - Provide where relevant, a copy of the predemolition/ pre-refurbishment audit.

    All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

    - Provide a copy of the SWMP summary datasheets or equivalent monitoring records/report confirming:
    - The total waste arising for the development.
    - Comparison of the total waste arising against the benchmark
    - Quantities of waste by groupings
    - Where required, the amount and proportion of waste arising that was reused, recycled and landfilled
    - Custody/application/destination of reused/recycled materials.

    The written confirmation and documentation should be available no later than completion.

**Wst 2 – Recycled aggregates**

- The amount of recycled and secondary aggregate specified is over 25% (by weight or volume) of the total *high-grade* aggregate uses for the building. Such aggregates can be EITHER:

  a. Obtained on site OR
  b. Obtained from waste processing site(s) within a 30km radius of the site; the source will be principally from construction, demolition and excavation waste (CD&E) – this includes road plannings OR
  c. Secondary aggregates obtained from a non-construction post-consumer or post-industrial by-product source.

- Recognised non-construction post-consumer or post-industrial by-products include:

  - China clay waste
  - Slate overburden
  - Pulverised Fuel Ash (PFA)
  - Ground Granulated Blast Furnace Slag (GGBFS)
  - Air-cooled blast furnace slag
  - Steel slag
  - Furnace bottom ash (FBA)
  - Incinerator bottom ash
  - Foundry sands
  - Recycled glass
  - Recycled plastic
  - Tyres
  - Spent oil shale
  - Colliery spoil
  - Municipal Solid Waste Treatment Residues

- High Grade aggregate uses are considered to be:

  - Bound

    Structural frame;
    Floor slabs including ground floor slabs;
    Bitumen or hydraulically bound base, binder, and surface courses for paved areas and roads.

  - Unbound

    Asphalt-based or similar road surfaces
    Granular fill and capping
    Pipe bedding
    Sub bases/building foundations
    Gravel landscaping.

- Crushed masonry used as fill material for general landscaping is not considered to be *high grade.* This practice is now common place on construction sites due to landfill costs.

- Pre-consumer waste stream: Waste material generated during manufacturing processes. Excluded is reutilisation of materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it.

- Post-consumer waste stream: Waste material generated by households or by commercial, industrial and institutional facilities in their role as end-users of the product, which can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

- Recycled aggregates: are those derived from reprocessing materials previously used in construction, e.g. crushed concrete or masonry from construction and demolition waste material.

- Secondary aggregates: By-products of industrial processes that can be processed to produce secondary aggregates. Secondary Aggregates are sub-divided into manufactured and natural, depending on their source.

- Evidence required for Design Stage:

    - Provide a copy of the relevant specification or contract clause confirming:
    - Recycled and secondary aggregate use requirements for the project.

- Provide a letter from confirming:

    - The source of recycled/secondary aggregates
    - The amount and quality required can be obtained from this source.

    All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

    - Allow for and provide structural engineers calculations demonstrating the weight/volume of:
    - Total high grade aggregate used.
    - Total recycled and secondary aggregates used.

    - Provide delivery notes for all recycled and secondary aggregates confirming:
    - Source of recycled/secondary aggregate.

    - And a letter or email from the aggregate/ concrete supplier confirming that:
    - The aggregate supplied and used was from a recycled/secondary source
    - Source of recycled/secondary aggregate.

    The written confirmation and documentation should be available no later than completion.

**Wst 3 - Recyclable waste storage**

- Design and provide a dedicated storage space to cater for recyclable materials generated by the building during occupation, compliant with the following:

    a. Compliant with HTM 07-01: Safe management of healthcare waste

    b. Clearly labelled for recycling

    c. Located within a dedicated centralised waste management unit or alternatively within easy reach of the assessed building(s) (e.g. less than 20m away from an appropriate building entrance)

    d. In a location with good vehicular access to facilitate collections.

- The size of the space allocated must be adequate to store the likely volume of recyclable materials generated by the building's occupants/operation. Whilst a fixed area cannot always be given, the following must be complied with as a minimum:

    a. At least 2m2 per 1000m2 of net floor area for buildings <5000m2

b. A minimum of 10m2 for buildings ≥5000 m2

c. An additional 2m2 per 1000m2 of net floor area where catering is provided (up to an additional minimum of 10m2 ≥5000m2).

- The area for recyclable materials storage must be provided in addition to areas and facilities provided for dealing with general waste and other waste management facilities, e.g. compactors and balers.

- Where the facilities are situated internally, vehicular gate heights/widths and manoeuvring and loading space must be sized correctly to ensure ease of access for vehicles collecting recyclable materials.

- Consideration must also be given to any other types of vehicle requiring access to this area, e.g. Lorries for roll on/off containers.

- Evidence required for Design Stage:

    - Provide marked-up building/site plan and/or copy of the specification confirming:
    - The location of the dedicated recyclable storage area
    - Storage area for general waste
    - The area (m2) of the storage space(s)
    - Description of the labelling.

- Provide a letter from the design team confirming that Facilities have been designed in compliance with HTM 07-01

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

    - Provide photographic evidence confirming:
    - The location, size and capacity of the storage provision
    - Labelling of the dedicated facilities.

- Provide a letter from the design team confirming Facilities have been constructed in accordance with the HTM 07-01 compliant design.

  The information at PCR stage should be available no later than completion.

**Wst 4 - Compactor / Baler**

- Supply and install a static waste compactor or baler is installed and situated in a service area or dedicated waste management space. With at least one water outlet for each waste sorting and/or storing facility.

- Evidence required for Design Stage:

    - Provide marked-up design plan and/or a copy of the specification confirming:
    - Provision of waste compactor/baler
    - Location and size of space for waste compactor/baler
    - Water outlet

    - Provide manufacturer/supplier literature confirming
    - The type of compactor/baler specified.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

- Provide written / photographic evidence confirming:

    - The installation of the compactor/baler (or space for installation for speculative developments)
    - Installation of a water outlet
    - The location, size and capacity of the recyclable storage provision (as required for compliance with WST 3)

    The information at PCR stage should be available no later than completion.

**Wst 5 – Composting**

- Design, supply and install a vessel is installed on site for composting suitable food waste resulting from the building's daily operation and use.

- There is adequate space for storing segregated food waste and composted organic material and provide at least one water outlet for cleaning in and around the facility.

- OR

- Where there are space or access limitations on site:
- There is a dedicated segregated space for storing compostable food waste prior to collection and delivery to an alternative composting facility and at least one water outlet is provided for cleaning in and around the facility.

- No requirements are set on the type of vessel or storage capacity required as this will be determined by the end user and predicted volumes of organic compostable waste. The assessor should be satisfied that, within reason, the installation is adequate for the size of development, bearing in mind the likely quantity of organic waste that will be produced by the development.

- Evidence required for Design Stage:

    - Provide marked-up design plan and/or a copy of the specification confirming:
    - Specification of composting vessel
    - Location and size of space for vessel and storage of waste/compost
    - Provision of the water outlet.

    All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

    - Provide written / photographic evidence confirming:
    - The installation of the vessel
    - The provision of adequate storage space/facilities
    - Installation of a water outlet
    - If appropriate, provide a letter from the occupier or service provider confirming:
    - Location of the off-site facility where compostable material will be delivered.
    - The procedure and frequency for collecting the compostable material.

    The information at PCR stage should be available no later than completion.

**LE1 – Reuse of land**

- Where the proposed site has been previously developed and only where feasible, design the building(s) so that at least 75% of the proposed development's footprint is on an area

of the land which has previously been *developed* for use by industrial, commercial or domestic purposes in the last 50 years.

- Proposed Development: Is defined as the area of any building, hard landscaping, car park and access roads that fall within the boundary of the proposed site.

- Previously Developed Land: For the purposes of this credit, BREEAM uses the definition from Planning Policy Statement 3 which defines previously developed land as that which is or was occupied by a permanent structure, including the curtilage of the developed land and any associated fixed surface infrastructure.

- The definition includes defence buildings

- The definition excludes:

  a. Land that is or has been occupied by agricultural or forestry buildings.
  b. Land that has been developed for minerals extraction or waste disposal by landfill purposes where provision for restoration has been made through development control procedures.
  c. Land in built-up areas such as parks, recreation grounds and allotments which, although may feature paths, pavilions and other buildings, have not been previously developed.
  d. Land that was previously developed but where the remains of the permanent structure or fixed surface structure have blended into the landscape in the process of time (to the extent that it can reasonably be considered as part of the natural surroundings).

- Scottish Planning Policy Guidance (SPPG) 3: Housing. Available from the Scottish Government's website: http://www.scotland.gov.uk/Publications/2003/02/16499/18894

- Evidence required for Design Stage:

  - Provide existing site plan, report or site photographs confirming:
  - Previous land use.
  - Area (m2) of previous land use.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide as built drawings confirming:
  - The footprint or orientation of the developed area has not altered from that confirmed in the design stage evidence.
  - Where alteration has occurred the % must be re-calculated using 'as built' plans.

  The information at PCR stage should be available no later than completion.

**LE2 – Contaminated land**

- Where the proposed site has been defined as contaminated allow to provide adequate remedial steps have been taken to decontaminate the site prior to construction.

- The site is deemed to be *significantly contaminated* as confirmed by a contaminated land specialist's site investigation, risk assessment and appraisal identifying:

  a. the degree of contamination
  b. the contaminant sources/types

c. the options for remediating sources of pollution which present an unacceptable risk to the site

- Health and Safety-related decontamination: Contaminated land that has been decontaminated solely for health and safety reasons (rather than for the specific purpose of redevelopment) does not comply.
- Asbestos: Where the only decontamination required is for the removal of asbestos within an existing building fabric, this cannot be classified as contaminated land. However, where asbestos is found to be present in the ground this will be classed as contamination for the purposes of assessing this credit.

- Contaminant: Is defined as any solid, liquid or gaseous material in, or on the ground to be covered by the building, which is classed as a hazard and therefore presents an unacceptable risk to human health and the environment. The definition also includes land significantly infested by *non-native invasive plant species*

- Non-native invasive plant species: Are non-indigenous species that adversely affect the habitats they invade economically, environmentally or ecologically. For the purposes of BREEAM this currently includes Japanese Knotweed and Giant Hogweed only. Further information on the control and disposal and how this fits into the legislative framework relating to such species can be obtained from DEFRA.

- Pollution Linkages: A relevant pollutant linkage is one that has been identified during the risk assessment stage as representing unacceptable risks to human health or the environment.

- Evidence required for Design Stage:

    - Allow for and provide a copy of the specialist's land contamination report confirming:
    - The degree, type and sources of site contamination.
    - The options for remediating the site.

    - Provide existing site plan(s) showing:
    - Location of areas contaminated and to be remediated in relation to any proposed development.

    - Provide a letter from confirming:
    - The remediation strategy for the site.
    - Summary details of the implementation plan.

    All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

    - Allow for and provide a copy of the verification report confirming:
    - Description of remedial works undertaken.
    - Description of relevant *pollution linkages* addressed*.

    - This may not be applicable where the contaminant is a non-native invasive plant species.

    The report and documentation should be available no later than completion.

**LE3 – Ecological Value of site AND Protection of ecological features**

- If the site is defined as 'land of low ecological value' allow for and provide a an ecological assessment report, based on a site survey by a *suitably qualified ecologist* who should identified the land as being of 'low ecological value' within.

- If the site is not defined as 'land of low ecological value' all existing features of ecological value surrounding the *construction zone* and site boundary area are adequately protected from damage during clearance, site preparation and construction activities as listed below:
- Trees of over 100 mm trunk diameter, and/or of significant ecological value, are protected by barriers. Barriers must prohibit construction works in the area between itself and the tree trunk. Minimum distance between tree trunk and barriers must be either the distance of branch spread or half tree height, whichever is the greater.

- In all cases trees must be protected from direct impact and from severance or asphyxiation of the roots.

- Hedges and natural areas requiring protection must either have barriers erected and be protected, or, when remote from site works or storage areas, be protected with a prohibition of construction activity in their vicinity.

- Watercourses and wetland areas are to be protected by cut-off ditches and site drainage to prevent run-off to natural watercourses (as this may cause pollution, silting or erosion)

- In all cases, the contractor is required to construct ecological protection prior to any preliminary site construction or preparation works (e.g. clearing of the site or erection of temporary site facilities).

- The suitably qualified ecologist must base their findings on data collected from a site visit conducted at appropriate time(s) of the year, when different plant and animal species are evident. The content of the Ecology Report is to be representative of the existing site's ecology prior to the commencement of initial site preparation works (i.e. before RIBA stage K, Operations On Site).

- No features of ecological value have can be removed as part of site.

- For sites that have been cleared more than five years ago, the ecological value of the site would be its present ecological value, on the basis that in the intervening five years, ecological features would have started to re-establish themselves and therefore act as an indicator of the site's ecological value. For sites that have been cleared less than five years before assessment, a suitably qualified ecologist should make an estimation of the site's ecological value immediately prior to clearance on the basis of available desktop information (including aerial photography) and the landscape type/area surrounding the site.

- Suitably qualified ecologist (SQE**)**: An individual achieving all the following items can be considered to be "suitably qualified" for the purposes of a BREEAM assessment:

  1. Holds a degree or equivalent qualification (e.g. N/SVQ level 5) in ecology or a related subject.

  2. Is a practising ecologist, with a minimum of three years relevant experience (within the last five years). Such experience must clearly demonstrate a practical understanding of factors affecting ecology in relation to construction and the built environment; including, acting in an advisory capacity to provide recommendations for ecological protection, enhancement and mitigation measures. Examples of relevant experience are: ecological impact assessments; Phase 1 and 2 habitat surveys and habitat restoration.

  3. Is covered by a professional code of conduct and subject to peer review.

- Peer review: Is defined as the process employed by a professional body to demonstrate that potential or current full members maintain a standard of knowledge and experience required to ensure compliance with a code of conduct and professional ethics.

- Full members of the following organisations, who meet the above requirements, are deemed suitably qualified ecologists for the purposes of BREEAM:

  Association of Wildlife Trust Consultancies (AWTC)
  Chartered Institution of Water and Environmental Management (CIWEM)
  Institute of Ecology and Environmental Management (IEEM)
  Institute of Environmental Management and Assessment (IEMA)
  Landscape Institute (LI)

Evidence required for Design Stage:

- Provide a completed copy of checklist A4 signed and dated by the client, their representative or a design team member e.g. architect. Please see BREEAM Healthcare 2008 for checklist.
- And provide one of the following:
- A plan and/or site photographs of the existing site highlighting any ecological features, or,
- Allow for and provide a copy of the ecologist's report containing:
- Confirmation that the land within the construction zone is of low ecological value.
- A description of any ecological features within the site or on the site boundary.
- Date(s) of site survey(s).
- Provide a completed, signed copy of sections A and B of checklist A6 'Guidance for relating ecology reports to BREEAM' to confirm the ecologist's professional status. Please see BREEAM Healthcare 2008 for checklist. Or,
- Allow for and provide a copy of the ecologist's report containing the information in sections A and B from the above.

- Provide a copy of the relevant section of the contract specification confirming:

  - Requirement to protect all identified features of ecological value.
  - Scope of protection measures required.
  - Protection measures implemented prior to commencement of site activities.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Allow for and provide a suitably qualified ecologist's letter / report confirming:
  - The boundary of the site and the construction zone has not been altered.
  - Where applicable, all existing ecological features still remain.
  - Allow for compliance, including protection for features, with any recommendations from the design stage report.

  The report and documentation should be available no later than completion.

**LE4 – Mitigating ecological impact**

- Allow for a *suitably qualified ecologist* to be appointed to produce a report based on a site survey, they should confirm the following:

  a. Actual plot/habitat types that define the landscape of the assessed site in its existing pre-developed state and proposed state
  b. Area (m2) of each plot/habitat type
  c. Number of plant species found within each plot type

- The building(s) and proposed site should create minimal (equal to or greater than minus nine plant species) or no negative change to the site's existing ecological value.

- Completing Ecology Calculator 1: First, define the landscape type (based on the typology of the surrounding sites, table 1). This category is unlikely to change through the development, although it may in some cases, e.g. when a disused site is developed as part of a master plan for a large multiuse or multi-building development/regeneration project.

- Then, define and calculate the area (m2) of each vegetation-plot type (table 2) and building or hard landscaped area, both before and after development, for the site.

- Once the data is entered, the Ecology Calculator 1 will indicate the indicative change in ecological value. The result must be used to award the credits.

- Number of plant species: BREEAM measures ecological value using number of plant species the plant species figures for each land type are programmed into the Ecology Calculator tool 1. These figures are based on national figures from the Countryside Survey prepared for the Digest of Environmental Statistics (see table 3).

- Wildlife garden planting: In the 'change of ecological value' table (table 3), 'garden planting (typical)' and 'wildlife garden planting' will always record a score of zero, unless a suitably qualified ecologist has been appointed: whereby they will make the distinction between 'typical' and 'wildlife' garden planting species and record 'actual' species numbers.

- Derelict Sites: The ecological value of derelict sites is time dependent (table 3); a linear scale has been used to determine intermediate values between zero ecological value at 1 year from dereliction/demolition to a value at 30 years based on marginal upland figures. This presents a worst case figure which can be amended on the advice of a suitably qualified ecologist.

- Assessment of a single development on a larger site: Where the assessment is of a single building that forms part of a larger site development and the landscaping and ecological features form a common part of the whole site, for the purpose of assessing this credit the plot types and areas for the entire site must be used.

  Please see BREEAM Healthcare 2008 for further information.

**Table 1: General Landscape Types**

| | |
|---|---|
| **Pastoral** | Mainly grasslands. |
| **Arable** | Land dominated by cereals and other arable crops, as well as intensively managed grasslands. |
| **Marginal Upland** | Areas which are on the periphery of the uplands, and which are dominated by mixtures of low intensity agriculture, forestry and semi-natural vegetation. |
| **Upland** | Land generally above a height suitable for mechanised farming and frequently dominated by semi-natural vegetation. |
| **Building & Derelict Land** | Land currently or previously occupied by buildings. |
| **Urban Mosaic** | A complex mix of habitats located within cities, towns, or villages, which will include; buildings, hard standing, pockets of disused land and scrub, and areas of managed green spaces, such as gardens, allotments, and parkland. Parklands can be characterised as being accessible to the public and will usually be fairly intensively managed spaces, consisting of a matrix of grassland (grazed or mown) with scattered trees at various densities and areas of dense planting.<br>This landscape type is to be used only when no other landscape type in the table is more appropriate / predominates. |

**Table 2: Vegetation Plot Types**

| | |
|---|---|
| **Crops/weeds** | Mostly highly disturbed vegetation of arable fields and their boundaries; includes cereal and vegetable crops. |
| **Tall grassland/herb** | Typical vegetation of overgrown lowland field boundaries, ditches and roadside verges. |
| **Fertile grass** | The bulk of agriculturally improved grasslands, intensive pasture and silage crops; but also includes mown areas of improved grasslands for recreational and amenity purposes, as well as re-sown roadside verges. |
| **Infertile grass** | A diverse group of semi-improved and semi-natural grasslands; includes acidic to basic, wet to dry grasslands, and tall-herb vegetation mainly present in the lowlands; often found on stream sides and roadside verges. |
| **Lowland wooded** | Includes wooded vegetation of hedges and broadleaved woods in the lowlands. |
| **Upland wooded** | A varied group of acidic vegetation types usually associated with upland woods, including: semi-natural woodland; conifer plantations; bracken and wooded streamsides. |
| **Moorland grass/mosaic** | Typically grazed moorland vegetation, including extensive upland acidic and peaty grassland, and species-rich but very localised flushes. |
| **Heath/bog** | Mostly heather moorland, blanket bog and montane heath, but also lowland heath and raised bog. |
| **Wildlife garden planting** | Garden planting that uses native species and/or those that have a known attraction or benefit to local fauna, based on the advice of a suitably qualified ecologist. |

**Table 3: Number of plant species by plot for different landscape types**

| | Landscape Types | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Types of Plot** | **Arable** | **Pastural** | **Marginal Upland** | **Upland** | **Existing Building/Hard Landscaped Areas** | **Urban Mosaic** | **Derelict Land <1 Years** | **Derelict Land < 10 Years** | **Derelict Land < 20 Years** | **Derelict Land <= 30 Years** |
| Crop Weeds | 5.4 | 8.3 | - | - | - | - | - | - | - | - |
| Tall Grassland/Herb | 12.7 | 15.0 | - | - | - | 17.6 | 0 | 6.3 | 15.8 | 21.1 |
| Fertile Grassland | 11.6 | 12.7 | 15.3 | - | - | 11.6 | 0 | 4.6 | 11.5 | 15.3 |
| Infertile Grassland | 17.1 | 17.6 | 21.1 | - | - | 17.6 | 0 | 6.3 | 15.8 | 21.1 |
| Lowland Wooded | 12.9 | 12.5 | - | - | 0 | 13.8 | - | - | - | - |
| Upland Wooded | - | 12.7 | 13.8 | 20.4 | 0 | 13.8 | - | - | - | - |
| Moorland Grass/Mosaic | - | 2.0 | 20.4 | 21.0 | - | - | - | - | - | - |
| Heath/Bog | - | - | 14.3 | 20.0 | - | - | - | - | - | - |
| Hard Landscaping | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Buildings | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Garden Planting (typical) | - | - | - | - | 0 | 0 | 0 | 0 | 0 | 0 |
| Wildlife Garden Planting* | - | - | - | - | 0 | 0 | 0 | 0 | 0 | 0 |

- Insufficient data to produce national averages, as not all vegetation plot types are found in all landscaped types.
* Only where the rule concerning wildlife garden planting in table 2.0 has been met can actual species values be used.

- Calculating the change and increase in ecological value:
    - BREEAM calculates the change in ecological value by comparing the diversity (number and area) of plant species on the site pre and post construction. The ecological value of the site is expressed as an area-weighted average of plant species for the site's landscape type. This enables BREEAM to use this as an indicator of the proposed development's impact on the site's existing ecological value.

- A simple example of the calculation is outlined below:
    - Calculate the ecological value of a previously developed existing site:
    - A 2065m2 existing site consists of the following types of land:
    - 1865 m2 hard landscaping = 0 species
    - 200m2 urban mosaic - infertile grassland = 17.6 species (Table 3.0).
    - The ecological value of the existing site is calculated as follows, for each plot type;
    - · Number of species on plot type x plot type area as % of total area.
    - Therefore, for our example site:
    - Hard landscaping: {(0 species x (1865m2/2065m2)} = 0 species
    - urban mosaic-infertile grassland: {(17.6 species x (200m2/2065m2)} = 1.70 species
    - Ecological value of the existing site = 0 + 1.70 = 1.70 species

    - 2. Calculate the ecological value of the proposed site:
    - The 2065m2 post-construction site consists of the following types of land:
    - 1375m2 of building = 0 species.
    - 550m2 of hard landscaping = 0 species
    - 140 m2 has remained as urban mosaic-infertile grassland = 17.6 species
    - The ecological value of the proposed site is as follows:
    - Building: {(0 species x (1375m2/2065m2)} = 0 species
    - Hard landscaping: {(0 species x (550m2/2065m2)} = 0 species
    - Urban mosaic-infertile grassland: {(17.6 species x (140m2/2065m2)} = 1.19 species
    - Ecological value of the proposed site = 0 + 0 + 1.19 = 1.19 species
    - The ecological impact is the difference between the two ecological values:
    - Change in ecological value: 1.19 – 1.70 = - 0.51 species
    - Therefore, for this example 1 credit is achieved.

- Evidence required for Design Stage:
    - Provide the plot type(s) and areas (m2) that define the landscape of the assessed site, in its existing pre-developed state and proposed state
    - Provide Existing and proposed site plans and, if required, maps and aerial photographs confirming:
    - Landscape and vegetation plot types
    - Area (m2) of vegetation plot types
    - Provide a copy of the suitably qualified ecologist's report confirming prior to and after the development:
    - Landscape and vegetation plot types
    - Area (m2) of vegetation plot types
    - Provide a copy of the ecology report containing the information outlined in checklist A6.

    All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

- Allow for and provide a suitably qualified ecologist's building/site inspection confirming:
- Post construction vegetation plot types and areas are in accordance with design stage evidence.

The report and documentation should be available no later than completion.

**LE5 – Enhancing site ecology**

- Allow for and provide a report from a *suitably qualified ecologist* (SQE) on enhancing and protecting the ecology of the site:
    - The SQE provides an Ecology Report with appropriate *recommendations* for protection and enhancement of the site's ecology.
    - The report is based on a site visit/survey by the SQE prior to the commencement of initial site preparation works.
- The general *recommendations* of the Ecology Report for enhancement and protection of site ecology should be implemented.
- The *recommendations* of the Ecology Report for enhancement and protection of site ecology should be implemented, and the *suitably qualified ecologist* confirms that this will result in an increase in ecological value of the site up to (but not including) 6 species. (2 credits)
- The *recommendations* of the Ecology Report for enhancement and protection of site ecology have been implemented, and the suitably qualified ecologist confirms that this will result in an increase in ecological value of the site of 6 species or greater.
- The increase in plant species has been calculated using Ecology calculator 2, using actual species numbers. Please see BREEAM Healthcare 2008 for calculator. (3 credits)
- Timing of Ecologist Report: It is recommended that the suitably qualified ecologist is appointed to carry out site surveys of existing site ecology, on which their report is based, or to provide verification where the report is prepared by others, at the feasibility stage (RIBA Stage B or equivalent) in order to facilitate and maximise potential ecological enhancement.
- General recommendations: 'General' recommendations for enhancing and protecting the ecological value of the site are to include, and go beyond, compliance requirements for all current EU and UK legislation relating to protected species and habitats.
- These 'general' recommendations may include ecological recommendations as detailed in the definitions.
- Guidance for ecologists and assessors: Please refer to Checklist A6 – Relating ecology reports to BREEAM, section D for assistance in assessing and interpreting the requirements of this credit.
- Ecological recommendations are defined as measures adopted to enhance the ecology of the site, which may include:
    - The planting of native species or those with a known attraction or benefit to local wildlife

- The adoption of horticultural good practice (e.g. no, or low, use of residual pesticides)

- The installation of bird, bat and/or insect boxes at appropriate locations on the site

- Development of a full Biodiversity Management Plan including avoiding clearance/works at key times of the year (e.g. breeding seasons)

- The proper integration, design and maintenance of SUDs and Green Roofs, community orchards etc.

- Only native floral species or those with a known attraction or benefit to local wildlife can be considered for the purpose of enhancing the ecological value of the site.

- Native species: Only native floral/plant species and those with a known attraction or benefit to local fauna can be considered for the purpose of increasing the number of species on site, as well as general enhancement.

- Evidence required for Design Stage:

    - Provide a copy of the ecologist's report containing:

    - Details and scope of the site survey.
    - Information as outlined in checklist A6 – Relating ecology reports to BREEAM.
    - Or
    - Provide a copy of the ecologist's report containing a completed, signed copy of checklist A6.
    - Provide a proposed site plan highlighting implementation of the ecologist enhancement recommendations.

    - One of the following:
    - A copy of the relevant section of the specification requiring the main contractor to implement the SQE's recommendations for protection and enhancement
    - A letter from the client or design team member confirming:
    - · That the specification shall require the main contractor to implement the ecologist's recommendations.
    - Evidence as outlined above, confirming compliance with the first credit.
    - Provide a copy of the SQE's report containing the information outlined in checklist A6 – Relating ecology reports to BREEAM.
    - Or
    - Provide a copy of the SQE's report containing a completed, signed copy of checklist A6.

    All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

    - For large mixed-use/multi-building developments, where the whole site has not been completed and ecological enhancements have not been added, or where features are being added at a later date in an appropriate planting season:
    - Provide a copy of a letter confirming when the planting will be complete.
    - This must be within 18 months from completion of the development.

    The report and documentation should be available no later than completion.

**LE6 – Long term impact on biodiversity**

- Allow for and provide a suitably qualified ecologist's letter / report confirming:

    - That all relevant UK and EU legislation relating to protection and enhancement of ecology has been complied with during the design and construction process.
    - Allow for and provide a landscape and habitat management plan, appropriate to the site, covering at least the first five years after project completion. This is to be handed over to the building occupants and includes:

    - Management of any protected features on site
    - Management of any new, existing or enhanced habitats
    - A reference to the current or future site level or local Biodiversity Action Plan.

- Allow to implement 2 (1 credit) / 4 (2 credits) of the following requirements:

    1. The contractor nominates a 'Biodiversity Champion' with the authority to influence site activities and ensure that detrimental impacts on site biodiversity are minimised in line with the recommendations of a suitably qualified ecologist.

    2. The contractor trains the site workforce on how to protect site ecology during the project. Specific training should be carried out for the entire site workforce to ensure they are aware of how to avoid damaging site ecology. Training should be based on the findings and recommendations for protection of ecological features highlighted within a report prepared by a suitably qualified ecologist.

    3. The contractor records actions taken to protect biodiversity and monitor their effectiveness throughout key stages of construction. The requirement commits the contractor to make such records available where publicly requested.

    4. Where a new ecologically valuable habitat, appropriate to the local area, is created. This includes habitat that supports nationally, regionally or locally important biodiversity, and/or which is nationally, regionally or locally important itself; including any habitat listed in the UK Biodiversity Action Plan (UK BAP), Local Biodiversity Action Plan (LBAP), those protected within statutory sites (e.g. SSSIs), or those within non-statutory sites identified in local plans.

    5. Where flora and/or fauna habitats exist on site, the contractor programmes site works to minimise disturbance to wildlife. For example, site preparation, ground works, and landscaping have been, or will be, scheduled at an appropriate time of year to minimise disturbance to wildlife. Timing of works may have a significant impact on, for example, breeding birds, flowering plants, seed germination, amphibians etc. Actions such as phased clearance of vegetation may help to mitigate ecological impacts. This additional requirement will be achieved where a clear plan has been produced detailing how activities will be timed to avoid any impact on site biodiversity in line with the recommendations of a suitably qualified ecologist.

    - Biodiversity Champion: A Biodiversity Champion does not have to be an ecologist or ecological expert but must have sufficient authority and time on site to influence activities and ensure that they have minimal detrimental impact on biodiversity.

    - Local biodiversity expertise: Local biodiversity expertise should be sought at, or before, the design stage to help identify species of local biodiversity importance on site. It is likely that their recommendations will draw on the Local Biodiversity Action Plan (LBAP) where one exists.

    - The site and surrounding areas: The steps taken in the above requirements will depend on the nature of the site, e.g. urban sites, and the surrounding areas. It is likely that either all, or none, of the optional items will apply. Where the optional items and the mandatory item 3, the management plan, are deemed, in writing,

by the appointed suitably qualified ecologist not to be applicable, all credits can be awarded. Mandatory items 1 and 2 must be met in all instances. This is likely to be the case in the majority of assessments in central town/city areas which have a high proportion of surrounding and existing development and no existing external landscaped areas within the boundary of the assessed site.

- Evidence required for Design Stage: Provide The SQE report or letter confirming:
    - That they were appointed prior to commencement of activities on site.
    - All relevant UK and EU legislations will be complied with.
    - Provide a copy of ecology report containing the information outlined in checklist A6
    - Provide a copy of the site management plan.

    Requirement 1:

    - Provide a letter from the contractor confirming:
    - The appointment of the biodiversity champion and their job title.
    - Their on site role and responsibilities.

    Requirement 2:

    - Training schedule or letter of confirmation from the contractor committing to provide relevant training

    Requirement 3:

    - Provide a letter from the contractor confirming:
    - Monitoring and reporting requirements for the development.
    - The records will be publicly available if and when requested.

    Requirement 4:

    - Provide a copy of the proposed site plan highlighting the new ecologically valuable habitat.
    - Provide a SQE's report or letter confirming that the habitat supports the relevant biodiversity action plan(s)

    Requirement 5:

    - Provide the SQE's report or letter confirming:
    - Wildlife on site that needs to be accounted for in programming works.
    - Actions required with respect to programming site works to minimise disturbance.
    - Provide a copy of the contractor's main programme of works.

    All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:
    - Provide a copy of the site's landscape and habitat management plan.

    Requirement 1:

    - Provide a copy of the relevant sections of the site log book, highlighting:
    - Details of any action/events taken by the biodiversity champion.
    - If no actions required/taken, this should be confirmed in the log book.

    Requirement 2:

    - Provide a record of training undertaken by the site workforce confirming:
    - Who delivered & developed the training
    - The scope of the training delivered.

    Requirement 3:

    - A copy of the relevant sections of the site log book, highlighting:
    - Records of monitoring and actions taken to protect biodiversity.
    - Records and outcome of any requests to view such information.

    Requirement 4:

    - Allow for and provide SQE's site inspection report and photographic evidence confirming the existence of the proposed habitat

    Requirement 5:

    - Provide a letter from the SQE, or a copy of their report confirming:
    - Site works executed in a manner that minimised disturbance to wildlife in accordance with their recommendations.

    All PCR information and documentation should be available no later than completion.

**Pol1 – Refrigerant GWP - Building services**

- The building should be designed with no refrigerants, or where refrigerants are used within the building services they have a global warming potential (GWP) less than 5.
- The credit can be awarded where the total refrigerant charge used in the building services is less than 5kg.
- Where GWP data for the specified refrigerant is not available, the credit cannot be awarded on a default basis.
- Refrigerants specified in plant used for integral cold storage purposes should not be assessed under this credit.
- Global Warming Potential: GWP is defined as the potential for global warming that a chemical has relative to 1 unit of carbon dioxide, the primary greenhouse gas. In determining the GWP of the blowing agent, the Intergovernmental Panel on Climate

Change (IPCC) methodology using a 100-year Integrated Time Horizon (or ITH) should be applied.

- Ozone Depleting Potential: ODP is the ratio of the relative amount of degradation to the ozone layer caused by a particular substance relative to the calculated depletion for the reference gas CFC 11 (ODP = 1.0). The ODP of the refrigerants is not assessed under this credit and there is no link between GWP and ODP.

- Refrigerant: there are three main make-ups of refrigerants:

  - Hydrogenated Fluorocarbon Refrigerants (HFCs) are made up of hydrogen, fluorine, and carbon. Because they do not use a chlorine atom (which is used in most refrigerants) they are known to be one of the least damaging to our ozone.
  - Hydrogenated Chlorofluorocarbon Refrigerants (HCFCs) are made up of hydrogen, chlorine, fluorine, and carbon. These refrigerants contain minimal amounts of chlorine; they are not as detrimental to the environment as some other refrigerants.
  - Chlorofluorocarbon Refrigerants (CFCs) contain chlorine, fluorine and carbon. These refrigerants carry high amounts of chlorine so they are known for being the most hazardous to the ozone layer.

- Table of refrigerants and their Global Warming Potentials: table 1.0 includes available substances which are capable of acting as refrigerants. Many are not currently used as such and some have been phased out and withdrawn from the market.

**Table 1 Refrigerant GWP**

| Refrigerant type | GWP | Refrigerant type | GWP |
|---|---|---|---|
| R11 (CFC-11) * | 4000 | R32 (HCFC-32) * | 580 |
| R12 (CFC-12) * | 8500 | R407C (HFC-407) | 1600 |
| R113 (CFC-113) * | 5000 | R152a (HFC-152a) | 140 |
| R114 (CFC-114) * | 9300 | R404A (HFC blend) | 3800 |
| R115 (CFC-115)* | 9300 | R410A (HFC blend) | 1900 |
| R125 (HFC-125) | 3200 | R413A (HFC blend) | 1770 |
| Halon-1211 | N/A | R417A (HFC blend) | 1950 |
| Halon-1301 | 5600 | R500 (CFC/HFC) * | 6300 |
| Halon-2402 | N/A | R502 (HCFC/CFC) * | 5600 |
| Ammonia | 0 | R507 (HFC azeotrope) | 3800 |
| R22 (HCFC-22) * | 1700 | R290 (HC290 propane) | 3 |
| R123 (HCFC-123) * | 93 | R600 (HC600 butane) | 3 |
| R134a(HFC-134a) | 1300 | R600a (HC600a isobutane) | 3 |
| R124 (HCFC-124) * | 480 | R290/R170(HC290/HC170) | 3 |
| R141b (HCFC-141b) * | 630 | R1270 (HC1270 propene) | 3 |
| R142b (HCFC-142b) * | 2000 | R143a (HFC-143a) | 4400 |

N/A indicates that there is insufficient data available to give a GWP value.

- All CFC/HCFC refrigerants (marked *) have an ODP > 0 and as such are illegal for new installations. Existing equipment may continue to use them at present. The use of CFCs and HCFCs as refrigerants has been addressed under the Montreal protocols. Phase out programmes have been agreed resulting in these substances no longer being used as refrigerants in all new build and most existing situations. The industry's favoured replacements are currently HFCs which are often potent global warming contributors.

- Whilst it is currently still legal to have an existing system that uses refrigerants with an ozone depleting potential, it is now illegal to top up with CFCs (either new or recycled refrigerant). It will be illegal to top up with new HCFCs from 2010, and it will be illegal to top up with recycled/recovered HCFCs from 2015.

- Hydrocarbons and ammonia-based refrigerants have low or zero GWP and are therefore preferred long-term options. These are now widely available and are valid

alternatives to HFCs in all buildings, provided health and safety issues are fully addressed.

- Evidence required for Design Stage:

  - Provide a copy of the specification clause confirming either:
  - Absence of refrigerant in the development OR
  - Type(s) of refrigerant to be used.
  - Provide manufacturer's information confirming:
  - GWP of each refrigerant.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide a letter confirming:
  - The refrigerant type specified remained unchanged.
  - Or where the refrigerant(s) have been changed.
  - Provide a letter confirming:
  - The type of refrigerants(s) used.
  - Manufactures information confirming GWP of each refrigerant

  The report and documentation should be available no later than completion.

**Pol 2 – Preventing refrigerant leaks**

- If no refrigerants have specified in the development please provide written conformation of such including the relevant specifications.

- If refrigerants have specified in the development the following requirements and evidence required should be implemented.

- Systems using refrigerants are contained in a moderately air tight enclosure (or a mechanically ventilated plant room), and a refrigerant leak detection system is installed covering high-risk parts of the plant.

OR

- An automatic permanent refrigerant leak detection system is specified, which is NOT based on the principle of detecting or measuring the concentration of refrigerant in air.

- The automatic shutdown and pump down of refrigerant occurs on the detection of high concentrations of refrigerant in the plant room/enclosure. For the majority of cases only systems in mechanically ventilated/moderately air tight plant rooms (or enclosures) comply.

- Automatic pump-down to either a separate storage tank or into the heat exchanger is acceptable but only where automatic isolation valves are fitted to contain the refrigerant once fully pumped down.

- The alarm threshold that triggers automatic pump down is set to a maximum of 2000ppm (0.2%), but lower levels can be set. The credit cannot be awarded for manual systems.

- This credit is applied in instances where any type of refrigerant is present, i.e. even if the ozone depleting potential (ODP) of the refrigerant is zero and the global warming potential (GWP) is less than 5.

- The credit can be awarded by default where a solid refrigerant is used.

- High-risk parts of refrigeration plant typically include the pipe work and compressor. Evaporator or condenser coils can be omitted from the coverage of the system.

- Moderately airtight enclosure: this can be defined as an enclosure that does not produce a draught or significant fresh air ingress that would dilute any leaked refrigerant gas (dilution may prevent detection).

- Refrigerant Leak Detection: a permanently installed multi-point sensing system; this may be aspirated or have multiple sensor heads linked to a central alarm unit or BMS. Various sensor types are available including infra-red, semi-conductor or electro-chemical. Please see below for further guidance on the coverage of refrigerant leak detection systems.

- Refrigerant Recovery: The process of removing refrigerant from a system and storing it in an airtight container.

- Leak detection systems/devices

    - Handheld detectors (which include semi-conductor and corona discharge types) do not comply with BREEAM requirements.

    - Corona discharge detectors are not suitable where flammable refrigerants are used, or in potentially explosive atmospheres.

    - Indicator dyes: these consist of fluorescent or coloured dyes added to the refrigerant to show leakage sites. The use of the dye should be approved by the compressor manufacturer. Some compressor manufacturers do not approve the use of indicator dyes, in which case either an alternative type of equipment should be used, or an alternative type of leak detection specified.

    - Halide torch detectors: this type of detection is only appropriate for chlorine-based substances such as CFCs and HCFCs, and should not be used in areas where naked flames are prohibited. Compounds which do not contain chlorine, e.g. HFCs, cannot be detected by this method.When awarding this credit in instances where these detectors are in use, the assessor should confirm that the refrigerant is chlorine based.

    - Electronic leak detectors: these must be designed to detect a certain type of, or multiple types of, refrigerant, i.e. CFC, HFC, HCFC, etc.

    - Standing hold test: systems based on monitoring pressure drops within the pipe work are not necessarily compliant with the BREEAM requirements. There are natural fluctuations to the pressure of the refrigerant due to changes in volume and temperature of the system, and to the ambient temperature of the surroundings. Low pressure and high pressure switches, which are standard equipment on refrigerant plant, are therefore not sufficient to award the credit. Other methods exist, such as pressurising the system with a high pressure, dry nitrogen gas for a period of time and then identify whether or not the pressure drops during this time. However, this requires systems to be shut down for a period of time (usually overnight or longer).

    - Systems NOT based on the principle of detecting or measuring the concentration of refrigerant in air: Such systems (for example based on sensing the presence of refrigerant vapour in liquid-carrying pipes) are now commercially available.

- Refrigerant pump down

- The specification of automatic refrigerant pump down can further limit potential losses and damage to the environment and have subsequent economic benefits to the building owner. Under the United Kingdom 1990 Environmental Protection Act unwanted refrigerant and refrigerating system oil are classified as either controlled or hazardous waste. Not only is it an offence to discharge them to the environment, but there are procedures regarding transport, storage, transfer of ownership and ultimate disposal. Article 16 of EC regulation 2037/2000 specifies that used CFCs and HCFCs must be recovered for destruction or recycling/reclamation.

- Evidence required for Design Stage:

    - Provide a copy of the specification clause or letter from the M&E engineer confirming:
    - Type of leak detection system(s).
    - Scope of the system(s)
    - Where relevant, containment strategy for such equipment.
    - Provide a copy of the specification clause or letter from the M&E engineer confirming:
    - Type, scope and operation of automatic refrigerant recovery equipment
    - Details of the plant room enclosure where the refrigeration plant is installed
    - Alarm threshold for triggering automatic pump down.

    All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

    - Provide written and photographic evidence confirming:
    - Installation of leak detection system(s)
    - Installation of automatic refrigerant recovery equipment
    - Pre-set threshold level for automatic pump down.

    The report and documentation should be available no later than completion.

**Pol3 – Refrigerant GWP – Cold storage**

- All refrigerant types used in cold storage systems have a global warming potential (GWP) of less than 5.

- The requirement applies to refrigerants used in systems integral to the building, including where specified:

    a. Cold storage enclosures.
    b. Cold store services including: Chilled water pipework, refrigerant pipework and ductwork etc
    c. Fixed cold or chilled storage cabinets
    d. Fixed cold drink coolers.

- The scope of the credit excludes domestic-scale refrigeration equipment and small ‘plug-in’ chillers and therefore plant not integral to the building.

- For developments where the tenant or end use function is known and cold food storage is not required, then this credit does not need to be assessed.

- Evidence required for Design Stage:

    - A marked-up design plan highlighting the cold food storage areas/plant in the building.

- A copy of the specification clause confirming either:
- Type(s) of refrigerant to be used.

All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide a letter from the design team/developer confirming:
  - The refrigerant type specified remained unchanged. Or,
  - Where a change occurred, provide written confirmation from the design team confirming:
  - Type of refrigerant(s) used.
  - Provide manufacturer's information confirming:
  - GWP of each refrigerant.

  The written confirmation should be available no later than completion.

**Pol4 – NOx emissions from heating sources**

- The dry NOx emissions from delivered space heating energy should be ≤100 mg/kWh (at 0% excess O2). (One credit) / ≤70 mg/kWh (at 0% excess O2). (Two Credits)/ ≤40 mg/kWh (at 0% excess O2) and emissions from delivered water heating energy are 100 mg/kWh or less (at 0% excess O2). (Three Credits)

- The emissions should be estimated under normal operating conditions (not standby).
- Grid electricity: Where some of the building's space heating is fuelled by electricity from the National Grid, however small the incidence is on the overall consumption, the credits will not be achievable as power stations emit NOx at an average rate of approximately 1200 mg/kWh.

- Whilst Biomass systems are recognised as low carbon systems, they can produce a significant amount of NOX and so may not achieve this credit; however they can score highly in the Energy section of BREEAM. Biomass systems are also recognised as reducing the impact of fossil fuel depletion by employing a renewable combustion fuel source.

- Dry NOx Levels: the NOx emissions (mg/kWh) resulting from the combustion of a fuel at 0% excess oxygen levels.

- Evidence required for Design Stage:

  - Provide a copy of the specification clause confirming:
  - Type of heating system(s) installed.
  - Provide for each system specified, a letter, email or literature from the manufacturer(s) confirming:
  - Dry NOx emissions rate in mg/kWh.
  - If more than one system is providing heat, provide design team calculations confirming:
  - The average NOx emission rate.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide a letter confirming:
  - The heating system& water heating plant specified remained unchanged.

The written confirmation should be available no later than completion.

**Pol5 – Flood risk**

- Where the assessed development is situated in a flood zone that is defined as having a low annual probability of flooding, a site specific Flood Risk Assessment (FRA) confirms that there is a low risk of flooding from all sources must be commissioned.

- Where the assessed development is situated in a flood zone that is defined as having a medium or high annual probability of flooding, the following applies:

- A site specific Flood Risk Assessment (FRA) confirms to the satisfaction of the local authority and statutory body that the development is appropriately flood resilient and resistant from all sources of flooding

- The ground level of the building, and access to it and the site, are designed (or zoned) so they are at least 600mm above the design flood level of the flood zone in which the assessed development is located

- For both cases of flood zone risk attenuation measures are to be specified to ensure that the peak rate of run-off from the site to the watercourses (natural or municipal) is no greater for the developed site than it was for the pre-development site. This should comply with the Interim Code of Practice for Sustainable Drainage systems (SUDS) (CIRIA, 2004), or for at least a 1 year and 100 year return period event with a 6 hour duration.

- And the capacity of the attenuation measures must include an allowance for climate change; this should be made in accordance with current best practice

- If the development is in Zone 1, the FRA must demonstrate that there is low risk of flooding from the following sources:

    - Fluvial (rivers)
    - Tidal
    - Surface water: sheet run-off from adjacent land (urban or rural)
    - Groundwater: most common in low-lying areas underlain by permeable rock (aquifers)
    - Sewers: combined, foul or surface water sewers.

- The Environment Agency flood map and associated information is intended for guidance, and cannot provide details for individual properties. In addition the EA map only covers the likelihood of flooding from the rivers or sea and not all sources of flooding (listed above). EA flood maps cannot therefore be used as evidence to demonstrate compliance with the requirements of this credit.

- Pre-existing flood defences: In an area protected by existing flood defences (designed to withstand a certain magnitude of flooding) the appropriate number of credits can be awarded where the defences reduce the risk to ‘low’ or ‘medium’ and the following conditions are met:

    1. The development is not located in an area where new flood defences have to be, or have been, constructed to minimise the risk of flooding to the site and its locality purely for the purpose of the development and/or its wider master plan

    2. The development is located on a previously developed land (as defined by the criteria in BREEAM credit LE1 Re-use of land) and the appropriate statutory body confirm that, as a result of the existing defences, the risk of a flood event occurring is

reduced to low or medium (as appropriate to the credit levels set in BREEAM). If firm confirmation is not provided then the credit cannot be awarded.

3. The relevant agency confirms that, as a result of such defences, the risk of a flood event occurring is reduced to low or medium risk.

- A statutory body's local/regional office may be able to provide more information on existing defences in the area in which the assessed development is located.

- 600mm threshold: It is accepted that, for buildings located in a medium flood zone, areas of the car park and site access may be allowed to flood and therefore fall below the 600mm threshold. In such cases the credit is still achievable provided safe access to the site and the ground floor of the building can be maintained (i.e. they are 600mm above the design flood level) to ensure the building/site does not become an 'island' in the event of a flood.

- Where the development has been permitted and the ground levels of the topography/infrastructure immediately adjacent to the site fall below the 600mm threshold, the credit can still be awarded, provided there are no other practical solutions for access to the site above this level and the assessed building, and access to it, meets the credit requirements. As much of the external site area as possible (or as required by an appropriate statutory body) should be designed at or above the threshold

- Effectiveness of the water runoff attenuation measures: To ensure effective operation of the water run-off attenuation measures, the facilities must discharge half their volume within 24-48 hours (unless advised otherwise by a statutory body) of the storm event in readiness for any subsequent storm inflow.

- Calculating peak rate of run-off: References [14] and [15] contain guidance on calculating the peak flow rate and determining the design flooding frequency. The assessor is not required to perform any calculation as this should be provided by the design team to demonstrate that they have sized the attenuation facilities to store the relevant volume of storm water necessary to achieve the credit.

- Discharge to the sea or estuaries: If all run-off is discharged directly from the site to either the sea, the foreshore, estuaries covered by a shoreline management plan or designated wildlife/SSSI areas (as part of habitat management) then the credit can be awarded without the need to specify additional attenuation measures.

- More stringent requirements: Where the local authority (or other statutory body) requires a greater attenuation than the percentages above, and/or a more onerous design flooding frequency than that recommended in BS EN752-4, then the higher requirements must be met in order to achieve the credit.

- Recommendations from an appropriate statutory body: None of the credits can be awarded where the assessed development has proceeded against the recommendation of the statutory body on the basis that the flooding implications are too great.

- Appropriate Consultant: A consultant with qualifications and experience relevant to the calculation of surface water run-off and design SUDS and flood prevention measures. Where complex flooding calculations and prevention measures are required, this must be a specialist hydrological engineer.

- Flood risk assessment: a study to assess the risk of a site flooding, and to assess the impact that any changes or development on the site will have on *flood risk* on the site and elsewhere. A Flood Risk Assessment should be prepared according to good practice guidance as outlined in Development and Flood Risk: A practice guide companion to PPS 25, available from www.communities.gov.uk

- Hard surfaces: these include roofs, car parks, access roads, pavements, delivery/service yards and external hard landscaping. Footpaths less than 1.5m wide which have free drainage to soft landscaped areas on both sides may be excluded.

- **SUDS** - sustainable drainage systems or sustainable (urban) drainage systems: a sequence of management practices and control structures designed to drain surface water in a more sustainable fashion than some conventional techniques. SUDS devices include:

    - · Holding ponds
    - · Swales
    - · Reed beds
    - · Permeable paving - in areas where local geological and hydrological conditions allow this to function, e.g. block paved surface on permeable sub-base over gravel bed to store the water and allow it to seep into the soil. For less permeable soils, the gravel layer might be deeper and the water taken to a soakaway although this is not an option in some areas.
    - · Local or centralised soakaways either as full systems or as 'overflow' or 'holding' systems, in areas where local geological and hydrological conditions allow them to function.
    - · Run-off from roofs collected as a part of a rainwater harvesting system.
    - · Run-off from roofs directed to a local soakaway or other holding facility such as tanks, ponds, swales etc.
    - · Green roofs.

- Flood zones are defined in the relevant planning, policy and technical guidance documents for each country in the UK: PPS25 (England), TAN15 (Wales), SPP7 (Scotland), PPS15 (N. Ireland). Please refer to references [18] and [19] to find indicative flood maps in England, Wales and Scotland. However, PPS15 does not categorise flood risk zones and there are no similar publicly available flood maps covering Northern Ireland. Assessments in NI will therefore need to rely on site-specific flood risk assessments, or other relevant date/surveys, to determine the extent of flood risk for a specific development, and use the same definitions as those outlined for England (table below). The Northern Ireland Department of Environment or Rivers Agency may offer further advice or recommendations in this respect (references [20] and [21]).

- Whilst the definitions of flood zones and probabilities of flooding are generally the same throughout the UK, there are some differences. The definitions are outlined in the table below.

| Definition | England | Wales | Scotland |
|---|---|---|---|
| Low annual probability of flooding | **Zone 1**<br>Less than 1 in 1000 chance of river and sea flooding (<0.1%) | **Zone A**<br>Considered to be at little or no risk<br>**Zone B**<br>If site levels are greater than the flood levels used to define adjacent extreme flood outline. | **Little or no risk area**<br>As defined for England |
| Medium annual probability of flooding | **Zone 2**<br>Between 1 in 100 and 1 in 1000 chance of river | **Zone B**<br>If site levels are not greater than the flood | **Low to medium risk area**<br>Watercourse, tidal or |

| Definition | England | Wales | Scotland |
|---|---|---|---|
| | flooding (1% – 0.1%) and between a 1 in 200 and 1 in 1000 chance of sea flooding (0.5% – 0.1%). | levels used to define adjacent extreme flood outline.<br>**Zone C**<br>Equal to or greater* than 0.1% (river, tidal or coastal flooding).<br><br>* For the purposes of BREEAM assume upper probability of flooding no greater than that specified for England. | coastal flooding in the range 0.1% – 0.5% (1:1000 – 1:200). |
| High annual probability of flooding | **Zone 3a High Probability**<br>1 in 100 or greater chance of river flooding(>1%) and a 1 in 200 or greater chance of flooding from the sea (>0.5%).<br><br>**Zone 3b The Functional Floodplain**<br>Land where water has to flow or be stored in times of flood. | **Zone C1 & C2**<br>* For the purposes of BREEAM assume the same lower and upper probability of flooding as that specified for England. | **Medium to high risk areas**<br>Annual probability of watercourse, tidal or coastal flooding: greater than 0.5% (1:200) |

- Evidence required for Design Stage:

- Provide a copy of a flood map or flood risk assessment confirming:
- Flood zone or annual probability of flooding in the site location.

- Where appropriate, provide correspondence from the appropriate statutory body confirming:
- Reduced annual probability of flooding due to existing flood defences.

- Provide a copy of the Flood Risk Assessment

- Provide site plans/sections confirming:

  - The design flood level for the site
  - The design ground level(s) for all developed areas of the site.
  - Safe access and escape routes

- For SUDS Credit:

  - Provide site plans and a copy of the specification or consultants report confirming:
  - Type and storage volume (l) of the water run-off attenuation measures
  - Total area of hard surfaces (m2)
  - Peak flow rate (l/s) for the design storm event
  - Additional allowance for climate change designed in to the system.

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide formal written correspondence from the design team confirming:
  - The FRA has not changed or required updating in the intervening period.

- Provide 'As built' site plans/sections confirming:
- The design flood level for the site
- The design ground level(s) for all developed areas of the site.
- Safe access and escape routes

- For SUDS Credit:

  - Provide written and photographic evidence confirming:
  - Installation of water run-off attenuation measures
  - No changes to the evidence provided at the interim 'design' assessment stage.
  - Provide a letter from the design team or main contractor confirming:
  - No changes to the specification.
  - Where changes have occurred, provide copies of as-built designs and calculations must be provided.

  The as build drawings and any written confirmation should be available no later than completion.

**Pol6 – Minimising watercourse pollution**

- Allow for and install a Sustainable Drainage Systems (SUDs) or source control systems such as permeable surfaces or infiltration trenches where run-off drains are in areas with a relatively low risk source of watercourse pollution.

- Allow for and install oil/petrol separators (or equivalent system) in surface water drainage systems, where there is a high risk of contamination or spillage of substances such as petrol and oil

- Allow for and install water pollution prevention systems that has been designed and detailed in accordance with the recommendations of Pollution Prevention Guideline 3 and where applicable the SUDS manual.

- Provide a comprehensive and up-to-date drainage plan of the site will be made available for the building/site occupiers.

- Where the building has chemical/liquid gas storage areas the following must also be allowed for:

- Shut-off valves fitted to the site drainage system to prevent the escape of chemicals to natural watercourses (in the event of a spillage or bunding failure).

- All external storage and delivery areas designed and detailed in accordance with the recommendations of the UK Environment Agency's *Pollution Prevention Pays Guidance* and PPG25 *Hospitals and Healthcare establishments*

- Areas that are a source of pollution: For the purpose of this credit an area that presents a risk of watercourse pollution includes vehicle manoeuvring areas, car parks, waste disposal facilities, delivery and storage facilities or plant areas.

- Areas where oil separators are required: The following site areas (where present) require oil separators in surface water drainage systems:

  - Car parks larger than 800m2 or with 50 or more parking spaces
  - Smaller car parks discharging to a sensitive environment
  - Areas where goods vehicles are parked or manoeuvred
  - Vehicle maintenance areas
  - Roads
  - Industrial sites where oil is stored or used

- Refuelling facilities

- SUDS and oil interception: In some instances, where the risk of contamination is infrequent and potential spills will be small, oil interceptors may not be required if appropriately designed Sustainable Urban Drainage systems are specified.

- Roof plant: Roof top plant space must be considered where there is a risk from substances such as petrol or oil. Refrigerants are not assessed under this credit, as the only risk of pollution is to air and not the watercourse.

- Drainage plan: A comprehensive and up-to-date drainage plan of the site, which accurately identifies all drains, must be produced and handed over to the new occupier. If there is no in-house expertise to do this, a reputable drainage company should be used.

- Types of Oil Separator:

  Class 1 Separators: These are designed to achieve a concentration of less than 5mg/l oil under standard test conditions. They should be used when the separator is required to remove very small oil droplets, such as those arising from car park run-off.

  Class 2 Separators: These are designed to achieve a concentration of less than 100mg/l oil under standard test conditions. They are suitable for dealing with discharges where a lower quality requirement applies and/or for trapping large spillages.

  Both classes can be produced as ‘full retention’ or ‘by pass’ separators:

- Full retention separators treat the flow that can be delivered by the drainage system, which is normally equivalent to the flow generated by a rainfall intensity of 50mm/hr.

- Bypass separators fully treat all flows generated by rainfall rates of up to 5mm/hr. Flows above this rate are allowed to bypass the separator. These separators are used when it is an acceptable risk not to provide full treatment for high flows.

- Evidence required for Design Stage:

  - Provide marked-up proposed site plan highlighting Low and high risk areas of the site.

  - Provide a copy of the specification or design plan confirming Type of pollution control systems specified.

- Provide a letter from the design team confirming:

  - All water pollution prevention systems designed in accordance with PPG3 and the SUDS manual (where appropriate)
  - Outlining indicative examples of compliance with PPG3 and the SUDS manual
  - A copy of the drainage plan shall be produced and handed over to the building occupier.

- Provide a copy of the specification or site plan confirming Installation of shut-off valves and system type.

- A letter from the design team confirming:

  - Design of all external storage and delivery areas is in compliance with relevant Pollution Prevention Guidance
  - Outlining indicative examples of compliance with the PPG.

All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide a letter confirming:
  - Installation of systems in accordance with compliant design.
  - No changes to the evidence provided at the interim 'design' stage assessment.
  - Provide evidence confirming:
  - Existence of the drainage plan in the building's O&M manual/file.
  - Provide evidence confirming:
  - Installation of shut-off valves.
  - Provide a letter from the design team or main contractor confirming:
  - Installation of systems in accordance with compliant design.
  - No changes to the evidence provided at the interim 'design' stage assessment.

  The as build drawings and any written confirmation should be available no later than completion.

**Pol7 – Reduction of night time light pollution**

- The external lighting strategy should be designed in compliance with Table 1 (and its accompanying notes) of the ILE Guidance notes for the reduction of obtrusive light, 2005, (see additional information below - Buildings located in Scotland must also refer to the Compliance Notes below for additional requirements).

- All external lighting (except for safety and security lighting) should be able to be automatically switched off between 2300hrs and 0700hrs. This can be achieved by providing a timer for all external lighting set to the appropriate hours.

- If safety or security lighting is provided and will be used between 2300hrs and 0700hrs, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 1 of the ILE's Guidance notes, for example by using an automatic switch to reduce the lighting levels at 2300 or earlier.

- Buildings located in Scotland:

  - In addition to the requirements above, building's located in Scotland must comply with the light pollution requirements in the guidance note "*Controlling Light Pollution and Reducing Lighting Energy Consumption*"[5]. This can be demonstrated via completion of the checklists in Annexes B and C of this document by a relevant member of the design team.
  - All Illuminated advertisements, where specified, must be designed in compliance with ILE Technical Report 5 – *The Brightness of Illuminated Advertisements*.
  - Safety lights: Flush stud lights used for safety purposes in vehicle manoeuvring areas may be excluded from the assessment.
    Where essential lighting is provided between 2300 and 0700, i.e. for 24-hour operating buildings, the system is able to automatically switch to the lower levels of lighting recommended in the ILE Guidance notes for lighting during these hours (or provide these lower levels at all times).

- Evidence required for Design Stage:

  - Provide a marked-up copy of the site plan showing:
  - Areas of the building and site that will be externally lit
  - Any nearby properties.

- Provide a copy of the specification clause requiring, or external lighting design confirming:
- The external lighting design in compliance with Table 1 of the ILE Guidance notes
- Controls for all external lighting.
- Illuminated advertisements designed in compliance with ILE Technical Report 5 (if relevant).
- In the case of the external lighting design, the M&E engineer or lighting designer must provide indicative examples of where and how the strategy complies with the requirements.

All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide written or photographic evidence confirming:
  - Cut-off luminaires, if provided, have been angled to limit spill light to potentially obtrusive directions.
  - External lighting controls
  - Provide a letter confirming:
  - Installation of systems in accordance with compliant design.
  - No changes to the evidence provided at the interim 'design' stage assessment.

  The written confirmation should be available no later than completion.

**Pol8 – Noise attenuation**

- If there are, or will be, existing *noise-sensitive areas or buildings* within 800m radius of the assessed development the following requirements should be implemented.

- Allow for and provide a noise impact assessment in compliance with BS 4142:1997 that has been carried out and the following noise levels measured/determined:

a. Existing background noise levels at the nearest or most exposed noise-sensitive development to the proposed development; or at a location where background conditions can be argued to be similar.

b. The rating noise level resulting from the proposed noise-source. This can be based upon reference to similar installations or sites, or determined by calculation.

- The noise impact assessment must be carried out by a suitably qualified acoustic consultant holding a recognised acoustic qualification and membership of an appropriate professional body. The primary professional body for acoustics in the UK is the Institute of Acoustics

- The rating level of the noise source(s) from the site/building should be equivalent to or less than the background noise level

- Where the rating level of the noise source(s) from the site/building is greater than the background noise level, measures should be installed to attenuate the noise at its source to a level where it will comply with the above.

- Noise sensitive area: landscapes or buildings where the occupiers are likely to be sensitive to noise created by the new plant installed in the assessed building, including:

  - Residential areas
  - Hospitals, health centres, care homes, doctor's surgeries etc.
  - Schools, colleges and other teaching establishments.
  - Libraries
  - Places of worship

- Wildlife areas, historic landscapes, parks and gardens.
- Located in an area of Outstanding natural beauty or near a Site of Special Scientific Interest (SSSI).

- Evidence required for Design Stage:

  - Provide a site plan highlighting:
  - All existing and proposed noise sensitive buildings local to, and within, the site boundary
  - Proposed sources of noise from the new development
  - Distance (m) from these buildings to the assessed development.
  - Provide a copy of the acoustician's report and the acoustician's qualifications and professional status.
  - Provide the acoustician's report with recommendations for noise attenuation measures.
  - Provide a marked-up design plan highlighting the specification of the acoustician's attenuation measures

  All design stage information should be available prior to work starting on site.

- Evidence required for Post Construction Stage:

  - Provide written and photographic evidence confirming:
  - All noise-sensitive buildings local to, and within, the site boundary · Proposed noise sources within the development
  - Distances (m) from these buildings to the assessed development.
  - Allow for and provide a copy of the acoustician's report with measurements based on installed and operating plant.
  - Provide a formal letter from the acoustician confirming that all specified attenuation measures have been installed to the required standard.
  - Where relevant, allow for any remedial work/actions required to meet the performance standards of BS4142:1997.

  The report and documentation should be available no later than completion.

Appendix A
Checklists

| BREEAM Healthcare 2008 |
|---|
| Management |
| Checklist A1 – Considerate Constructors |

| Minimum BREEAM Standards | | | | | |
|---|---|---|---|---|---|
| Rating Level | P | G | VG | E | O |
| Min. credits to achieve rating | - | - | - | 1 | 2 |

For each of the eight sections (below) the *Considerate Constructors Scheme* awards a score on a scale of 0 to 5 (with half points). The score achieved or required must be entered into boxes 1-8 below i.e. EITHER 0; 0.5; 1; 1.5; 2.0; 2.5; 3.0; 3.5; 4.0; 4.5; OR 5.0.

- When a firm commitment is made to achieve certification under the Considerate Constructors Scheme without reference to particular scores, a score of 3 should be entered in each of the boxes 1-8 below. This gives a total score of 24 in box 9 below and subsequently one credit can be awarded.
- When a firm commitment is made to require the constructor to achieve certification AND a score greater than 3 is required in one or more sections, the scores required should be added in boxes 1 to 8 below and totalled accordingly.

| | | | |
|---|---|---|---|
| **Considerate Section** | Score achieved | | 1 |
| **Environmentally Aware Section** | Score achieved | | 2 |
| **Site Cleanliness Section** | Score achieved | | 3 |
| **Good Neighbour Section** | Score achieved | | 4 |
| **Respectful Section** | Score achieved | | 5 |
| **Safe Section** | Score achieved | | 6 |
| **Responsible Section** | Score achieved | | 7 |
| **Accountable Section** | Score achieved | | 8 |
| **TOTAL Considerate Constructors Score** | (sum of 1-8) | | **9** |

| | |
|---|---|
| Total CC score achieved is less than 24 | 0 credits |
| Total CC score is between 24 to 31.5 incl. | 1 credit |
| Total CC score is between 32 and 35.5 incl. | 2 credits |
| Total CC score is greater than ≥36 | 2 + Innovation credit |

**Assessor to award credits based on committed CCS Score and above table** 10

Signed: ..... Date: .....

Name [PRINT]: ..... Organisation: .....

| BREEAM Healthcare 2008 |
|---|
| Management |
| Checklist A3 – Construction Site Impacts |

| Minimum BREEAM Standards | | | | | |
|---|---|---|---|---|---|
| Rating Level | P | G | VG | E | O |
| Min. credits to achieve rating | - | - | - | - | - |

| a. Monitor, report and set targets for $CO_2$ production of energy use arising from site activities | | |
|---|---|---|
| **Compliance requirement** | **Tick** | **Evidence/Reference** |
| Monthly measurements of energy use will be/has been recorded and displayed on site. | | |
| Appropriate target levels* of energy consumption will be/were set and displayed (targets could be annual, monthly, or project targets). | | |
| As a minimum, monitoring will/did include checking the meters and displaying some form of graphical analysis in the site office to show consumption over the project duration and how actual consumption compares to the targets set. | | |
| The design/site management team will/did nominate an individual who will be responsible for the monitoring and collection of data. | | |
| Notes:<br>• Targets for energy consumption during the construction process should be set using DTI's Environmental KPI benchmarks. These documents do not specify targets but facilitate projects in setting appropriate targets (see references section of main credit for further details).<br>• BREEAM does not require targets to be met but is encouraging the process of setting, monitoring and reporting against targets. | | |
| **b. Monitor and report $CO_2$ or energy arising from commercial transport to and from the site** | | |
| **Compliance requirement** | **Tick** | **Evidence/Reference** |
| A site monitoring system will be/was in place to monitor and record deliveries*. This system will/did record:<br>• The number of deliveries<br>• The mode of transport<br>• The km/miles travelled for all deliveries | | |
| If the design team or contractor confirms that the project is aiming to achieve the "Construction Site Transport" 'measures for traffic movements and distances' (published April 2003, see references) then this aspect has been achieved automatically. The information obtained for this item can also be used to satisfy the DTI's Environmental KPI on transport. | | |

| BREEAM Healthcare 2008 |
|---|
| Management |
| Checklist A3 – Construction Site Impacts |

| Minimum BREEAM Standards | | | | | |
|---|---|---|---|---|---|
| Rating Level | P | G | VG | E | O |
| Min. credits to achieve rating | - | - | - | - | - |

| | | |
|---|---|---|
| The design/site management team will/did nominate an individual responsible for the monitoring and collection of data. | | |

Notes:

- Where the delivery is specifically for the site, a figure of total distance travelled should be used, i.e. a round trip (from the point of origin, to the site and back to the point of origin).
- Where the delivery to the site is part of a multiple delivery route, the recorded figure for distance travelled should be the distance travelled to the site (from the previous delivery), plus the distance to the next delivery or return.
- This information can then be used to estimate a total figure for kg of $CO_2$ for the project. BREEAM does not require this information to be converted to $CO_2$ but the information must be made available to the senior project and site management staff/suppliers to establish benchmarks and aid future decision-making towards improving site and transport efficiency. If the project team wishes to convert this information into $CO_2$ emissions there are tables provided at the end of this checklist which can be used to do this.

**c. Monitor, report and set targets for water consumption arising from site activities**

| Compliance requirement | Tick | Evidence/Reference |
|---|---|---|
| Monthly measurements of water consumption will be/were recorded and displayed on site. | | |
| Appropriate target* levels of water consumption will be/were set and displayed (targets could be annual, monthly or project targets). | | |
| As a minimum, monitoring will/did include checking the meters and displaying some form of graphical analysis in the site office to show consumption over the project duration and how actual consumption compares to targets set. | | |
| The design/site management team will/did nominate an individual responsible for the monitoring and collection of data. | | |

Notes:

- Targets for water consumption during the construction process should be set using DTI's Environmental KPI benchmarks. These documents do not specify targets but facilitate projects in setting appropriate targets (see References and Further Information for details).
- BREEAM does not require targets to be met but is encouraging the process of setting, monitoring and reporting targets.

| BREEAM Healthcare 2008 |
|---|
| Management |
| Checklist A3 – Construction Site Impacts |

| Minimum BREEAM Standards | | | | | |
|---|---|---|---|---|---|
| Rating Level | P | G | VG | E | O |
| Min. credits to achieve rating | - | - | - | - | - |

| d. Adopt best practice policies in respect of air (dust) pollution arising from site activities | | |
|---|---|---|
| **Compliance requirement** | **Tick** | **Evidence/Reference** |
| The site will/did adopt best practice procedures in relation to minimising air/dust pollution. This should include:<br>• 'dust sheets'<br>• regular proposals to damp down the site in dry weather<br>• covers to skips etc. | | |
| This information will be/was disseminated to site operatives. | | |
| Notes:<br>• Further information can be obtained from DTI/BRE publications 'Control of Dust from Construction and Demolition Activities' and Pollution Control Guide Parts 1-5 provide good practice guidelines on construction related pollution (see References and Further Information for details). | | |
| **e. Adopt best practice policies in respect of water (ground and surface) pollution occurring on the site** | | |
| **Compliance requirement** | **Tick** | **Evidence/Reference** |
| The site will/did adopt best practice procedures in relation to minimising, as outlined in the following documents.<br>PPG 1 - General guide to the prevention of pollution. Environment Agency<br>PPG 5 - Works in, near or liable to affect watercourses. Environment Agency<br>PPG 6 - Working at demolition and construction sites. Environment Agency | | |
| This information will be/was disseminated to site operatives. | | |

| BREEAM Healthcare 2008 |
|---|
| Management |
| Checklist A3 – Construction Site Impacts |

| Minimum BREEAM Standards | | | | | |
|---|---|---|---|---|---|
| Rating Level | P | G | VG | E | O |
| Min. credits to achieve rating | - | - | - | - | - |

| f. A main contractor with an environmental materials policy | | |
|---|---|---|
| **Compliance requirement** | **Tick** | **Evidence/Reference** |
| The main contractor operates an environmental materials policy, used for sourcing of construction materials to be utilised on site. The policy should cover/promote the following:<br>• Use of local materials (where possible)<br>• Use of responsibly sourced materials<br>• Re use of materials<br>• Use of materials with a high recycled content<br>• Waste minimisation and recycling<br>• Use of non-toxic materials & refrigerants with a high global warming potential<br>• Use of materials with a low embodied impact<br>• Use of durable materials | | |
| Post construction: indicative examples have been provided to demonstrate the policy in action. | | |
| **g. A main contractor that operates an Environmental Management System*** | | |
| **Compliance requirement** | **Tick** | **Evidence/Reference** |
| The main contractor operates an Environmental Management System covering their main operations. The EMS must be either:<br>• Third party certified, to ISO14001/EMAS or equivalent standard. OR<br>• The structure of the EMS is in compliance with British Standard 8555 2003 and has reached phase four of the implementation stage, 'implementation and operation of the environmental management system', and completed phase audits one to four, as defined in BS8555. | | |

* Please note: it is a requirement of BREEAM Healthcare that this measure is achieved as a condition of awarding any of the available credits for this BREEAM issue.

| BREEAM Healthcare 2008 |
|---|
| Management |
| Checklist A3 – Construction Site Impacts |

| Minimum BREEAM Standards | | | | | |
|---|---|---|---|---|---|
| Rating Level | P | G | VG | E | O |
| Min. credits to achieve rating | - | - | - | - | - |

| h. 80% of site timber is reclaimed, re-used or responsibly sourced | | |
|---|---|---|
| **Compliance requirement** | **Tick** | **Evidence/Reference** |
| 80% of timber used during construction, including formwork, site hoardings and other temporary site timber used for the purpose of facilitating construction, will be/was procured from sustainably managed sources, independently certified by one of the top two levels as set out in the Responsible Sourcing of Materials Issues (BREEAM credit Mat 5) in the Materials section of this document. | | |
| Additionally 100% of all site timber will be/was legally sourced. | | |
| Notes:<br>• Re-used timber from off site can be counted as equivalent but re-usable formwork only complies if it meets the above criteria.<br>• This credit can be awarded where all the timber used is reclaimed timber. | | |

| BREEAM Healthcare 2008 |
|---|
| Management |
| Checklist A3 – Construction Site Impacts |

| Minimum BREEAM Standards | | | | | |
|---|---|---|---|---|---|
| Rating Level | P | G | VG | E | O |
| Min. credits to achieve rating | - | - | - | - | - |

**Assessor Information**

**Monitoring Site Transport $CO_2$**

The following tables are taken from the DEFRA 'Guidelines for Company Reporting on Greenhouse Gas Emissions' and COPERT II emission factors, and can be used to convert the information gathered from monitoring deliveries into total kg $CO_2$.

**Table 1 : Standard road transport fuel conversion factors**

| Fuel used | Total units used | Units | x | kg $CO_2$ per unit | Total kg $CO_2$ |
|---|---|---|---|---|---|
| Petrol | | litres | x | 2.30 | |
| Diesel (inc. Low Sulphur) | | litres | x | 2.63 | |
| Compressed Natural Gas | | kg | x | 2.65 | |
| Liquid Petroleum Gas | | litres | x | 1.49 | |

*Source: National Atmospheric Emissions Inventory for 2003 developed by Netcen (2005). UK Greenhouse Gas Inventory for 2003 developed by Netcen (2005), Digest of UK Energy Statistics DTI 2004 and carbon factors for fuels from UKPIA (2004)*

**Table 2 : Standard road transport fuel conversion factors**

| Size of car and distance units | Total units travelled | Units | x | kg $CO_2$ per unit | Total kg $CO_2$ |
|---|---|---|---|---|---|
| Small petrol car max. 1.4 litre engine | | miles | x | 0.26 | |
| | | km | x | 0.16 | |
| Medium petrol car max. 1.4-2.1 litre engine | | miles | x | 0.30 | |
| | | km | x | 0.19 | |
| Large petrol car above 2.1 litres | | miles | x | 0.35 | |
| | | km | x | 0.22 | |
| Average petrol car | | miles | x | 0.29 | |
| | | km | x | 0.18 | |

*Source: NAEI (Netcen, 2005) based on data from DfT combined with factors from TRL as functions of average speed of vehicle derived from test data under real world testing cycles*

| BREEAM Healthcare 2008 |
|---|
| Management |
| Checklist A3 – Construction Site Impacts |

| Minimum BREEAM Standards | | | | | |
|---|---|---|---|---|---|
| Rating Level | P | G | VG | E | O |
| Min. credits to achieve rating | - | - | - | - | - |

**Table 3 : Standard Road Transport Fuel Conversion Factors**

| Size of car and distance units | Total units travelled | Units | x | kg $CO_2$ per unit | Total kg $CO_2$ |
|---|---|---|---|---|---|
| Small Diesel car 2.0 litres engine and under | | miles | x | 0.26 | |
| | | km | x | 0.16 | |
| Large Diesel car over 2.0 litres - 2.1 litre engine | | miles | x | 0.31 | |
| | | km | x | 0.19 | |
| Average Diesel car | | miles | x | 0.27 | |
| | | km | x | 0.17 | |

*Source: NAEI (Netcen, 2005) based on data from DfT combined with factors from TRL as functions of average speed of vehicle derived from test data under real world testing cycles.*

**Table 4: Freight road mileage conversion factors**

| Type of lorry | Total km travelled | x | Litre Fuel per km | x | Fuel Type | Fuel Conversion Factor | Total kg $CO_2$ |
|---|---|---|---|---|---|---|---|
| Articulated | | x | 0.35 | x | Petrol | 2.30 | |
| | | | | | Diesel | 2.63 | |
| | | | | | LPG | 1.49 | |
| Rigid | | x | 0.40 | x | Petrol | 2.30 | |
| | | | | | Diesel | 2.63 | |
| | | | | | LPG | 1.49 | |

*Source: Guidelines for Company Reporting on Greenhouse Gas Emissions, DEFRA. Continuing Survey of Road Goods Transport 2001.*

| BREEAM Healthcare 2008 |
|---|
| Materials |
| Checklist A5 – Responsible Sourcing |

| Minimum BREEAM Standards | | | | | |
|---|---|---|---|---|---|
| Rating Level | P | G | VG | E | O |
| Min. credits to achieve rating | - | - | - | - | - |

**Table 1 - Checklist of requirements for Tiers 1-4**

| Tier | Requirements | Examples of compliant schemes | Checklist of documentation required |
|---|---|---|---|
| 1 | Third party certification scheme with CoC and rigorous stakeholder consultation (at both standard setting and during implementation)<br><br>Scheme must have developed standards which meet the requirements outlined in Table 3 below. | FSC<br>CSA<br>SFI with CoC<br>PEFC<br>Reused materials | **Design**<br><br>One of the following indicating that the material will comply with the relevant certification scheme.<br>• Letter of intent from supplier<br>OR<br>• Purchase order from the supplier including CoC number (if the material has been ordered)<br>OR<br>• Chain of Custody (CoC) certificate (if timber has already been supplied)<br><br>**Post Construction**<br>• CoC certificate for all appropriate elements<br>AND<br>• Delivery notes for all appropriate elements |
| 2 | Third party certification scheme with CoC and stakeholder consultation.<br><br>Scheme must have developed standards which meet the requirements outlined in Table 3 below. | Currently no schemes in this tier | As above. |

| BREEAM Healthcare 2008 |
|---|
| Materials |
| Checklist A5 – Responsible Sourcing |

| Minimum BREEAM Standards | | | | | |
|---|---|---|---|---|---|
| Rating Level | P | G | VG | E | O |
| Min. credits to achieve rating | - | - | - | - | - |

| Tier | Requirements | Examples of compliant schemes | Checklist of documentation required |
|---|---|---|---|
| 3 | Certification Scheme for timber<br><br>Environmental Management System at **extraction & process stages** - see Table 2 below for description of stages. | ISO 14001<br>EMAS<br>Evidence of BS8555 (for SME's)<br>MTCC<br>Verified*<br>SGS<br>TFT | **Design**<br><br><u>Timber</u><br><br>One of the following indicating that the material will comply with the relevant certification scheme.<br>• Letter of intent from supplier<br>OR<br>• Purchase order from the supplier including CoC number (if the material has been ordered)<br>OR<br>• Chain of Custody (CoC) certificate (if timber has already been supplied)<br><br><u>Non timber materials</u><br><br>One of the following indicating that the material will comply with the relevant EMS standards (see credit for further information).<br><br>• EMS (or equivalent) certificate from the manufacturers at the process and extraction stages<br>OR<br>• Signed letter from the manufacturers at the process and extraction stages confirming EMS (or equivalent) certification details<br>OR<br>• Letter of intent from the developer to use a manufacturer at the process and extraction stages, who has an EMS (or equivalent), if supplier is not yet appointed. |

| BREEAM Healthcare 2008 |
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| Materials |
| Checklist A5 – Responsible Sourcing |

| Minimum BREEAM Standards | | | | | |
|---|---|---|---|---|---|
| Rating Level | P | G | VG | E | O |
| Min. credits to achieve rating | - | - | - | - | - |

| Tier | Requirements | Examples of compliant schemes | Checklist of documentation required |
|---|---|---|---|
| 3 | | | **Post Construction**<br>• Delivery notes for all appropriate elements<br><br>Timber<br>• CoC certificate for all appropriate elements<br><br>Non timber materials<br><br>One of the following indicating that the material will comply with the relevant EMS standards (see credit for further information).<br>• EMS certificate (or equivalent) from the manufacturers at the process and extraction stages<br>OR<br>• Signed letter from the manufacturers at the process and extraction stages confirming EMS (or equivalent) certification details<br><br>In addition:<br>• Delivery notes for all appropriate elements |
| 4 | Environmental Management System at **process stages** for other materials - see Table 2 below for description of stages. | EMAS<br>ISO 14001 | **Design**<br><br>One of the following indicating that the material will comply with the relevant EMS standards (see credit for further information).<br>• EMS (or equivalent) certificate from the manufacturers at the process stage<br>OR<br>• Signed letter from the manufacturers at the process stage confirming EMS (or equivalent) certification details<br>OR<br>• Letter of intent from the developer to use a manufacturer at the process stage, who has an EMS (or equivalent), if supplier is not yet appointed. |
| | | | **Post Construction**<br><br>One of the following indicating that the material will comply with the relevant EMS standards (see credit for further information).<br>• EMS certificate (or equivalent) from the manufacturers at the process stage<br>OR<br>• Signed letter from the manufacturers at the process stage confirming EMS (or equivalent) certification details. |

| BREEAM Healthcare 2008 |
|---|
| Materials |
| Checklist A5 – Responsible Sourcing |

| Minimum BREEAM Standards | | | | | |
|---|---|---|---|---|---|
| Rating Level | P | G | VG | E | O |
| Min. credits to achieve rating | - | - | - | - | - |

* 'Verified' is the name of a scheme

**Where ANY non certified timber is used (even if only a small quantity) the following must also be provided in ALL cases:**

- Written confirmation from the timber supplier(s) (or at the design stage of assessment, the developer where a supplier is not yet appointed) confirming that all timber species and sources used in the development are not listed on any of the CITES appendices for endangered and threatened species (see credit for further information).
- Written confirmation from the timber supplier(s) (or at the design stage of assessment the developer where a supplier is not yet appointed) confirming that all timber is to be legally sourced (see credit for further information).

| BREEAM Healthcare 2008 |
|---|
| Materials |
| Checklist A5 – Responsible Sourcing |

| Minimum BREEAM Standards | | | | | |
|---|---|---|---|---|---|
| Rating Level | P | G | VG | E | O |
| Min. credits to achieve rating | - | - | - | - | - |

**Table 2 - Diagrammatic explanation of how the required EMS relates to the process and extraction phases**

| Stage of production process | Extraction | Process | Manufacture |
|---|---|---|---|
| Materials | Stone<br>Aggregate (sand, limestone etc.)<br>Hematite<br>Bauxite<br>Clay<br>Raw materials - other | Bricks<br>Cement or alternative<br><br>Glass<br>Metals<br>Other materials (plastic etc)<br>Pre-cast concrete | Concrete / blocks<br><br><br><br>Composites |
| Points available | 1.5 points | 1 point | |

Note: As this credit is looking at responsible sourcing, currently the manufacture stage is not considered.

| BREEAM Healthcare 2008 |
|---|
| Materials |
| Checklist A5 – Responsible Sourcing |

| Minimum BREEAM Standards | | | | | |
|---|---|---|---|---|---|
| Rating Level | P | G | VG | E | O |
| Min. credits to achieve rating | - | - | - | - | - |

**NOTE TO ASSESSORS**

This list is included for information, you are not expected to evaluate whether a scheme complies with this criteria. All new schemes claiming to meet the criteria listed below will be evaluated by BRE, and will be included in the list of compliant schemes where appropriate.

**Table 3 - Features of a top tier (1) comparable certification scheme**

**Standard setting**

When setting standards for a materials certification scheme the following should be addressed in order to be considered comparable to Tier 1/2 of this credit.

- The scheme must include a third party chain of custody certification scheme covering all stages of the product throughout the supply chain
- The scheme must verify that all local and national legislative requirements are met.
- The process for policy and standards development is transparent, clear and accessible.
- The scheme is independent and standards are developed in a way which balances the interests of all stakeholders. This should be done through a rigorous consultation process which makes best use of the stakeholder knowledge, methodically and comprehensively considering all feedback and after such consideration, aims to implement all feasible stakeholder suggestions
- The scheme is inclusive, striving to involve all interested people and groups in the development of the scheme's policies and standards.
- Monitoring and assessment must be integral to the scheme and conducted appropriate to the scale and intensity of the industry/ materials assessed by the scheme. This requirement is likely to be fulfilled by the incorporation of an EMS such as ISO14001 or BS8555 for SME's.
- The scheme should contain principles by which the scheme should be governed. These should be specific to industry/materials but should also be composed of the fundamental issues related to the environment. These issues should focus on specific practices associated with sourcing virgin and other materials.
- The scheme should assess that initiatives are in place to ensure continuous performance and environmental improvement.
- The scheme should provide for small to medium sized business as well as larger

| BREEAM Healthcare 2008 |
|---|
| Materials |
| Checklist A5 – Responsible Sourcing |

| Minimum BREEAM Standards | | | | | |
|---|---|---|---|---|---|
| Rating Level | P | G | VG | E | O |
| Min. credits to achieve rating | - | - | - | - | - |

businesses. SME's grouping together to achieve group certification should be an option. This could, for example, take place on a regional or other relevant basis.

- The scheme should include a mechanism to revise the standard within a defined, suitable time frame to ensure that the current knowledge or upcoming robust scientific or other professional evidence can be incorporated (in good time) into the standard as an update. It should ensure that all updates are well adapted to the local/regional and/or global conditions.

- The scheme should also aim to consider social and economic aspects widening the scope to sustainability under the umbrella of a Corporate Social Responsibility (CSR). This is in line with the future aims of BREEAM and could be assessed within the credit in the future.

**NOTE**: The scheme may be generic for the materials industries or specific for individual materials sectors.

**Differences between Tier 1&2**

Tiers 1 and 2 follow the standard setting process outline above, however there are differences in the rigour of the two schemes which is why they fall into two different categories. These are outlined below:

1. The top tier category schemes comprehensively address a consultation process with local community. This is done at source via a management company, as the focus is on sustainable project management at source.

2. The top tier category must have no reservations/uncertainty/pending charge or indictment identified by any professional bodies in the relevant materials sectors.

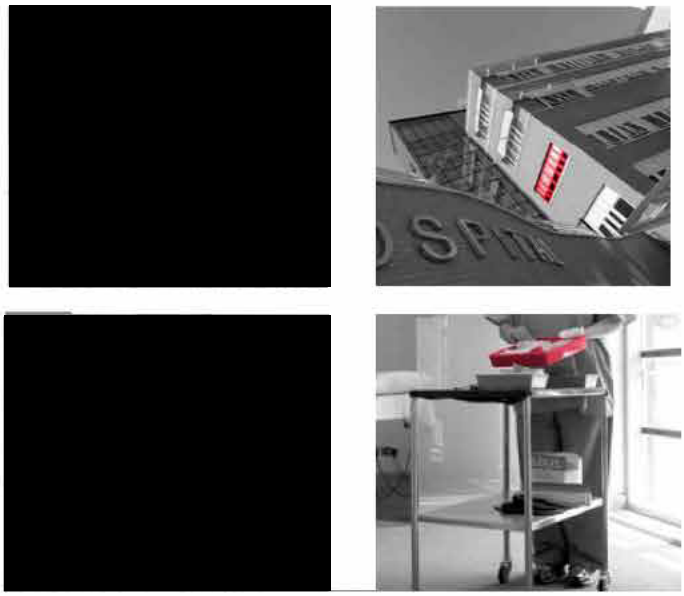
**NHS Greater Glasgow and Clyde**

**New South Glasgow Hospitals (NSGH) Project**

# INVITATION TO PARTICIPATE IN COMPETITIVE DIALOGUE

# VOLUME THREE

# BID DELIVERABLES AND EVALUATION



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**3.0 Bid Deliverables**

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**Appendix C Legal Evaluation**

**Appendix D Certificates**

## 1.0 Introduction

This Volume of the ITPB sets out the Bid Deliverable Requirements and the Bid Evaluation Process.

## 1.0 Selection Procedure and Evaluation Criteria

### 2.1 Introduction

The Tender Return Date is for submissions relating to this Project is 11 September 2009. In terms of the Public Contracts (Scotland) Regulations 2006 (as amended), which implement EU directives into UK law, the Board will award the contract on the basis of the most economically advantageous Bid.

The Board must be satisfied that the proposed solution offers value for money and meets the Board's affordability criteria and minimum requirements for the Project. This will be determined by reference to the bid submission requirements in the Appendix A of Volume 3 of this ITPD and the evaluation criteria set out in Section 2.3. Having undertaken a detailed pricing analysis of the exemplar design, the Board has produced a "should cost" figure for the Project of £590M. The Board believes that this is a robust target for the pricing of the Project and expects bids to be received which meet or better this price. This figure has provided the basis for the Board's budget allocation for design, construction and risk.

Separately, the Board has an affordability ceiling of £621M and reserves the right to reject any bid submission that exceeds this figure

### 2.2 Evaluation Team

A team composed of individuals with relevant knowledge and expertise will carry out the evaluation of technical and commercial submissions. The Evaluation Team will comprise relevant individuals from the Board, Technical, Legal and Financial Advisors, and representatives from the Board. A Team Leader shall be appointed to co-ordinate the review of the bid submissions under the following sections:-

- Design Group
- Site Logistics Group
- Commercial Group

### 2.3 Evaluation Methodology

The bid evaluation process is outlined as follows:-

- *Stage 1 - Compliance & Completeness Review*

Each bid submissions will be subject to an initial compliance and completeness review. This initial review will not involve a qualitative assessment of a Bidder’s proposals but will simply check whether or not the submission requirements of the ITPD have been satisfied. Any omissions will be notified to the Team Leader via a Compliance & Completeness Review Schedule and forwarded to the Project Director. All requests for missing information will be made to Bidders from the Project Director and requested information should be provided within 7 days of request.

The Financial Evaluation Team will undertake a high level review of the priced bids and any bid above the maximum affordability threshold may be discarded at this initial stage.

At this stage the Board reserves the right to either reject any non-compliant or substantially incomplete Bids or request further information from the Bidder to address any such non-compliance or shortcomings with the Bid.

- *Stage 2 – Bid Evaluation*

In order to determine the bid that represents the Most Economically Advantageous Tender, each bid will be subject to the following process:-

1. A detailed scoring evaluation will be undertaken in accordance with the Bid Evaluation Schedule included in Appendix B and the scoring matrix below to determine the Qualitative Score. Further detail on the Board's approach to the evaluation of the Bidders' responses on the draft Contract and ancillary matters is set out in Appendix [C].

| Scores | Value | Description |
|---|---|---|
| Excellent | 9 - 10 | Performs significantly well on all key factors and offers substantial additional benefits |
| Good | 7 - 8 | Performs well on all key factors and offers some additional benefits |
| Adequate | 5 - 6 | Passes thresholds on all key factors but offers few additional benefits |
| Poor | 3 - 4 | Fails to meet threshold on some key factors |
| Very Poor | 2 | Fails to meet threshold on majority of key factors |
| Unacceptable | 1 | Fails to meet threshold on all key factors |

2. Pricing evaluation will then be carried out, based on price / risk scenario modelling to assess the most likely final outturn price to the Board. This process aims to evaluate the true cost of the bids to the Board and reflect a comparable risk position between bids. The expected outturn price will be determined based on cost modelling of bid submissions with the assessed impact of Board retained risk. Modelling will consider scenarios to establish the expected outturn price by reference to the bidders price submissions, priced risk registers for contractor accepted risk and board retained risk, and the pain / gain ratios.

3. A Value for Money / Most Economically Advantageous Tender assessment will follow, the outcome of which will be determined by dividing the Qualitative Score by the expected outturn price (MEAT Score).

   The outcome of the calculation performed in accordance with Paragraph 3, above, will identify a provisional combined ranking of the tenders assessed. The MEAT Score for each bidder must achieve a minimum overall level [as determined with reference to the Board's indicative MEAT Score, which is calculated by dividing baseline requirements of Volume 3 Employer Requirements by the "should cost" figure in Section 2.1], i.e. 400.

   There will then be a final meeting of the evaluation team to agree that the provisional ranking is robust. The outcome of this meeting will form the basis of a recommendation to the Board as to which tender is the most economically advantageous. Subject to Board approval, the Contract will be awarded to the Bidder who submits this tender.

As part of the evaluation process the Board reserve the right to convene meetings with the Bidders in order to clarify any part of the bidders submission where the proposals are considered to be unclear.

The Board also reserve the right to request the bidders to attend an Interview / Presentation in order that the Bidder can fully explain his design proposals, management procedures, construction methodology, and any other matter considered relevant to the Board. The Interview / Presentation will not form part of the bid evaluation process

## 2.0 Bid Deliverables

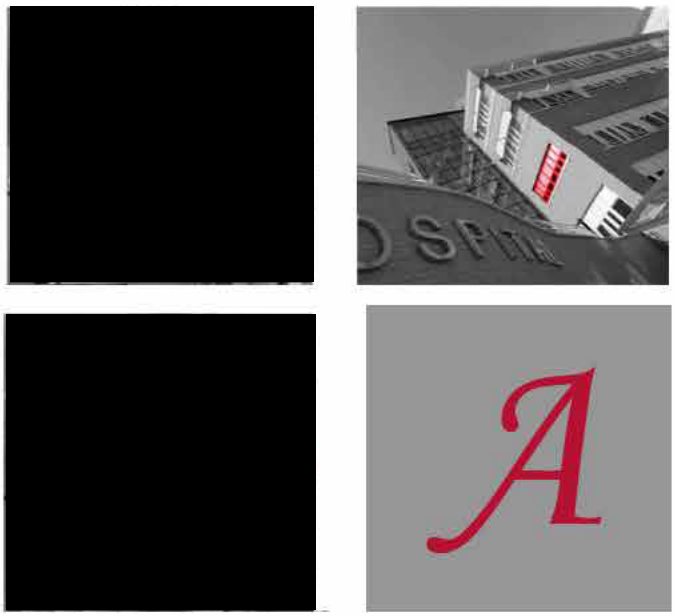
The bid deliverables to be submitted by bidders for are set out in Appendix A

## 3.0 Submission of Bids

The format of the bid submissions shall be as follows:-

- Separate volumes or sections for each of the Bid Deliverable categories identified in Appendix A
- Front Cover for each Volume noting
  - New South Glasgow Hospitals Project
  - Volume Nr & Bid Deliverables Sections
  - Bidder Name & Logo
- General text minimum font size 10pt
- A4 or A3 paper size
- Each page to have Header with – New South Glasgow Hospitals Project & Bidders Name (no Company logo)
- Each page to have Footer with – Volume Nr and Page Nr
- 2 or 4 hole punch Lever Arch Folders
- A1 Drawings folded and contained in plastic folders within appropriate volume

# Appendix A Bid Deliverables



**NEC3 CONDITIONS OF CONTRACT - CONTRACT DATA PART 2 – DATA POROVDED BY THE CONTRACTOR**

The Bidders tender submission require to be a full and comprehensive response to the Works Information (Employers requirements) clearly demonstrating compliance, and as a minimum requires the following information to be submitted.

| Section | Submission | Checklist |
|---|---|---|
| **1.0 Accommodation Schedule** | | |
| 1.1 | Net Area – room by room, including all ducts, pipe boxing and service zones | |
| 1.2 | Circulation area | |
| 1.3 | Communication & plant space area | |
| 1.4 | Total Gross Floor Area | |
| **2.0 Drawing Information** | | |
| 2.1 | 1:500 scale Masterplan proposals, indicating the following information:-<br>▪ Communication routes into and out of the site & buildings for<br>o Vehicles<br>• Public transport (Buses & fastlink)<br>• Private cars<br>• Taxis<br>• Ambulances<br>• Services Vehicles<br>• Cycles<br>o Pedestrians<br>• Patients<br>• Visitors<br>• Staff<br>▪ Planning restrictions affecting the development and modifications to highways, response to specific local authority planning requirements<br>▪ Orientation of buildings and relationship to other buildings and infrastructure on the site<br>▪ Hard & soft landscaping proposals<br>▪ Car Parking arrangements with distribution of spaces and use identified<br>▪ Areas of differing Carriageway Construction<br>▪ Road, footway and cycle way geometry<br>▪ Indicative Signalised layouts at external roads<br>▪ Main access points to buildings (existing & proposed)<br>▪ Major service routes<br>▪ Response to the surrounding and wider urban context<br>▪ Phasing plans / temporary works plans for the implementation of roads and drainage infrastructure | |
| 2.2 | 1:500 departmental relationship drawings for all levels indicating functional relationships & main circulation routes | |
| 2.3 | 1:200 departmental layouts (minimum 11nr) indicating the following information:-<br>▪ Room adjacencies<br>▪ Circulation layouts<br>▪ Corridor widths | |

| | | |
|---|---|---|
| | ▪ Door widths<br>▪ Communication routes / wayfinding<br>▪ Entrances<br>▪ Egresses | |
| 2.4 | 1:200 departmental drawing for Accident & Emergency Department,<br>▪ floor finishes<br>▪ ceiling finishes<br>▪ wall finishes<br>▪ door types & ironmongery<br>▪ wall protection<br>▪ Lighting proposals<br>▪ CCTV locations<br>▪ door entry locations | |
| 2.5 | 1:200 departmental drawing for Adult Theatres Department, fully annotated to indicate :-<br>▪ floor finishes<br>▪ ceiling finishes<br>▪ wall finishes<br>▪ door types & ironmongery<br>▪ wall protection<br>▪ Lighting proposals<br>▪ CCTV locations<br>▪ door entry locations | |
| 2.6 | 1:200 departmental drawing for Adult Ward, fully annotated to indicate<br>▪ floor finishes<br>▪ ceiling finishes<br>▪ wall finishes<br>▪ door types & ironmongery<br>▪ wall protection<br>▪ Lighting proposals<br>▪ CCTV locations<br>▪ door entry locations | |
| 2.7 | 1:200 departmental drawing for Childrens Ward, fully annotated to indicate<br>▪ floor finishes<br>▪ ceiling finishes<br>▪ wall finishes<br>▪ door types & ironmongery<br>▪ wall protection<br>▪ Lighting proposals<br>▪ CCTV locations<br>▪ door entry locations | |
| 2.8 | 1:200 departmental drawing for Childrens A&E Department fully annotated to indicate<br>▪ floor finishes<br>▪ ceiling finishes<br>▪ wall finishes<br>▪ door types & ironmongery<br>▪ wall protection<br>▪ Lighting proposals<br>▪ CCTV locations<br>▪ door entry locations | |

| | | |
|---|---|---|
| 2.9 | 1:50 room layout and wall elevations fully developed for the rooms included as part of the Employers Requirements indicating:-<br>▪ room size and useable floor space<br>▪ room shape and compliance with ergonomic data and minimum critical dimensions<br>▪ room elevations<br>▪ reflected ceiling plans<br>▪ access points / locations of doors and windows<br>▪ location of utilities, engineering and specialist services<br>▪ location of equipment | |
| 2.10 | 1:500 Fire Strategy drawings & Fire Strategy Report indicating the following information:-<br>▪ Strategic plans, highlighting evacuation strategies and staff implications in the event of fire<br>▪ Specialist Fire Engineer's Report providing a clear understanding or risk and protection measures<br>▪ Outline of princiles adopted underlying approach to fire safety indicating compliance with Employers Requirements, NHS Firecode and Technical Standards | |
| 2.11 | 1:200 Elevations – incorporating external signage proposals | |
| 2.12 | 1:200 Roof plan indicating the following<br>▪ Form<br>▪ Materials<br>▪ Helipad proposals | |
| 2.13 | 1:200 Exemplar sections indicating the following:-<br>▪ Floor to floor heights<br>▪ Floor to ceiling heights<br>▪ Architectural vision – space, height, form, composition, scale, character and use of materials<br>▪ Consideration of patient environment – natural light, views etc | |
| 2.14 | 3D images / perspective (internal & external) indicating the following:-<br>▪ Architectural vision – space, height, form, composition, scale, character and use of materials | |
| 2.15 | Hospital Main Entrance / atrium / public space proposals / visuals | |
| 2.16 | 1:500 site hard & soft landscaping proposals indicating:-<br>▪ Soft landscaping strategy<br>▪ Hard landscaping strategy<br>▪ Car Parking arrangements with distribution of spaces and use identified<br>▪ Areas of differing Carriageway Construction<br>▪ Road, footway and cycle way geometry<br>▪ Indicative Signalised layouts at external roads<br>▪ Retention / protection of existing trees<br>▪ Incorporation of art<br>▪ Special features<br>▪ Courtyards | |
| 2.17 | Typical Sections and details to appropriate scale showing:-<br>Carriageway Construction<br>Footway / Cycleway Construction | |

| | | |
|---|---|---|
| 2.18 | 1:1250 (or greater) plans showing :-<br>▪ Drainage provision in support of SUDS and Drainage Strategy | |
| 2.19 | 1:500 scale plans showing:-<br>▪ Layout of roads and buildings<br>▪ Layout of sewers, outfalls, underground storage, and SUDS features | |
| 2.20 | Finishes Schedule for 10 Nr Departments (other than those identified above for detailed 1:200 drawing submissions) and key circulation & communication routes, and main entrances | |
| 2.21 | Door & ironmongery Schedule for 10 Nr Departments (other than those identified above for detailed 1:200 drawing submissions) and key circulation & communication routes, and main entrances | |
| 2.22 | Outline design drawings demonstrating structural philosophy and should include as a minimum:<br>▪ Foundations: Typical layout and detail of proposed solution<br>▪ Basement: Outline construction detail; plan of slabs, sections of retaining walls<br>▪ Ground level slab: Typical layout and details<br>▪ Podium level floor: Typical layout and details, transfer structures<br>▪ Ward level floors: Typical plan layout indicating slab and supporting structure, (columns, beams), core layout (stability elements)<br>▪ Roof level: Typical layout indicating structure, including helipad (Acute Adults & Childrens) | |
| 2.23 | 1:200 Energy Centre Services Layout and Plant Room locations | |
| 2.24 | Schematic for Main Services incoming routes and distribution from Energy Centre to Main Hospital Building – tunnel cross sections | |
| 2.25 | MTHW Schematic | |
| 2.26 | LTHW Schematic | |
| 2.27 | Hot & Cold Water Services Schematic | |
| 2.28 | Filtered Water Schematic | |
| 2.29 | Renal Water Schematic | |
| 2.30 | Medical gases schematic | |
| 2.40 | Sprinklers schematic | |
| 2.41 | Fire alarm & damper controls schematic | |
| 2.42 | BMS schematic | |
| 2.43 | MV Power Schematic | |
| 2.44 | LV Schematic | |
| 2.45 | Air supply schematic, including additional sketches for Theatre supply | |
| 2.46 | Air extract schematic, including additional sketches for Theatre supply | |
| 2.47 | Air Treatment Schematic (cooling), including additional sketches for Theatre supply | |
| **3.0 Design Strategy** | | |
| 3.1 | Architectural design strategy | |
| 3.2 | Wayfinding strategy | |

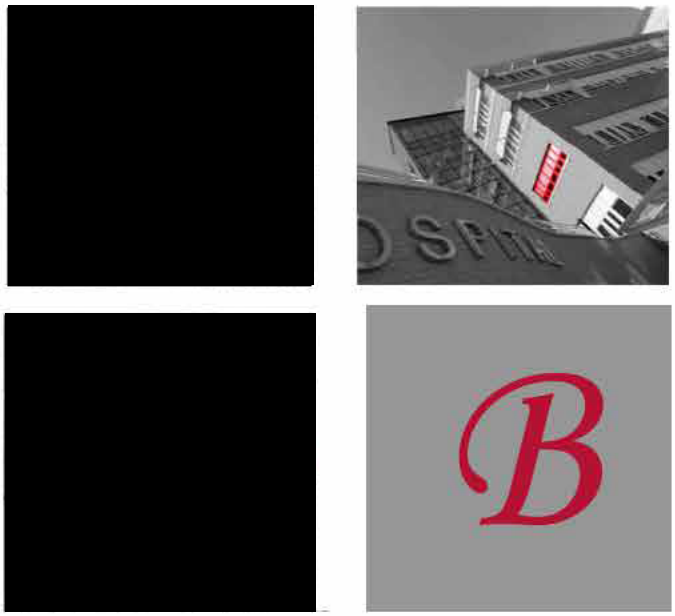
| | | |
|---|---|---|
| 3.3 | Arts Strategy | |
| 3.4 | Acoustic Report indicating the following information:-<br>▪ Specialist Acoustic Engineer's report providing a clear demonstration of compliance with HTM 08-01<br>▪ Outline principles adopted underlying bidder approach to acoustics with particular regard to issues around items such as rooftop helipad, atrium etc | |
| 3.5 | Structural Engineering design strategy | |
| 3.6 | Main incoming utilities design / connection strategy | |
| 3.7 | Water Services & Drainage design strategy | |
| 3.8 | Heating design strategy | |
| 3.9 | Ventilation & air treatment design strategy, including statements on odour control from adjacent sewage works | |
| 3.10 | Mains power distribution design strategy | |
| 3.11 | Sub-mains power distribution design strategy | |
| 3.12 | Lighting design strategy, including reference to energy and aesthetics to improve patient experience | |
| 3.13 | Lift Engineering design strategy | |
| 3.14 | Communication design strategy | |
| 3.15 | Protective systems design strategy | |
| 3.16 | Medical gases design strategy | |
| 3.17 | Pneumatic tube system design strategy | |
| 3.18 | Fire engineering design strategy | |
| 3.19 | Plant room design strategy | |
| 3.20 | Energy strategy including approach to renewables, sustainability | |
| 3.21 | BREEAM scoring schedule | |
| 3.22 | Helipad M&E services design strategy | |
| 3.23 | Maintenance & major plant and equipment replacement strategy | |
| 3.24 | Building Services Commissioning, Handover, Training strategy | |
| 3.25 | Drainage strategy including:-<br>▪ Methodology for Addressing the requirements of the Hydraulic Assessment and Flood Risk assessment as scoped out on the Drainage Impact Assessment and Strategy Report<br>▪ SUDS and Drainage Strategy statement which recognises the requirements as outlined in the Drainage Impact and Strategy Report | |
| 3.26 | Structural Design Strategy which should include:-<br>▪ Outline description demonstrating understanding of: topography, geology, soil conditions, contamination, ground water, history, services<br>▪ Demonstrate outline principles or design including, general description, stability, joints, floors, vertical structure, foundations, stairs and ramps, retaining walls, earthworks, slope stability, drainage, external works etc.<br>▪ Design Standards and Sources of Reference (Codes of Practice and Standards) | |
| **4.0 Specifications** | | |
| 4.1 | Substructure | |
| 4.2 | Frame | |
| 4.3 | Upper Floors | |

| | | |
|---|---|---|
| 4.4 | Roof Structure | |
| 4.5 | Roof coverings | |
| 4.6 | Roof drainage | |
| 4.7 | Roof lights | |
| 4.8 | Stair structure | |
| 4.9 | Stair finishes | |
| 4.10 | Stair balustrades & handrails | |
| 4.11 | External walls | |
| 4.12 | Windows | |
| 4.13 | External doors | |
| 4.14 | Internal walls and partitions | |
| 4.15 | Internal doors | |
| 4.16 | Wall finishes | |
| 4.17 | Floor finishes | |
| 4.18 | Ceiling finishes | |
| 4.19 | Fittings, fixtures & furniture | |
| 4.20 | Soft furnishings | |
| 4.21 | Works of Art | |
| 4.22 | Equipment | |
| 4.23 | Sanitary appliances | |
| 4.24 | Services equipment | |
| 4.25 | Disposal installations | |
| 4.26 | Mains Water installations | |
| 4.27 | Cold water services | |
| 4.28 | Hot water services | |
| 4.29 | Steam & condensate | |
| 4.30 | Heat source | |
| 4.31 | Space heating | |
| 4.32 | Space cooling | |
| 4.33 | Ventilating system | |
| 4.34 | Electric source & mains | |
| 4.35 | Electric power supplies | |
| 4.36 | Electric lighting & fittings | |
| 4.37 | Gas installations | |
| 4.38 | Lift installations | |
| 4.39 | Sprinkler installations | |
| 4.40 | Fire-fighting installations | |
| 4.41 | Lightning protection | |
| 4.42 | Communication installations | |
| 4.43 | Special installations– Renal Water, Filtered Water | |
| 4.44 | Special installations – Building management System | |
| 4.45 | Special installations– Pneumatic tube system | |
| 4.46 | Roads, car parks, pavements, cycle paths | |
| 4.47 | Soft landscaping | |
| 4.48 | Site enclosure | |
| 4.49 | External fittings & furniture | |
| 4.50 | Drainage | |
| 4.51 | Water Mains | |
| 4.52 | Fire Mains | |
| 4.53 | Heating Mains | |
| 4.54 | Gas mains | |
| 4.55 | Electric mains | |
| 4.56 | Site Lighting | |

| | | |
|---|---|---|
| 4.57 | Minor building works | |
| **5.0 Component / Product & Manufacturer Schedule** | | |
| 5.1 | Boilers | |
| 5.2 | Calorifiers | |
| 5.3 | Pumps | |
| 5.4 | Switchgear | |
| 5.5 | AHU's | |
| 5.6 | Fans | |
| 5.7 | Internal Doors | |
| 5.8 | Ironmongery | |
| 5.9 | External doors & screens | |
| 5.10 | Roof Coverings | |
| 5.11 | Cladding / Curtain Walling / Windows | |
| 5.12 | Vinyl Flooring | |
| 5.13 | Carpet | |
| 5.14 | Ceiling systems | |
| **6.0 Equipment Schedule** | | |
| 6.1 | Proposed Equipment Schedule | |
| **7.0 HTM / SHTM Compliance Statement** | | |
| 7.1 | Confirm compliance with required HTM's and state how compliance is being achieved | |
| **8.0 ADB Compliance Statement** | | |
| 8.1 | Confirm compliance with requirements of ADB sheets issued | |
| **9.0 Programme** | | |
| 9.1 | Master programme | |
| 9.2 | Stage 1 Laboratory sub-programme | |
| 9.3 | Stage 2 FBC Stage sub-programme | |
| 9.4 | Stage 3 Construction stage sub-programme | |
| **10.0 Project / Site Management** | | |
| 10.1 | Project Execution Plan comprising:- | |
| | ▪ Management structure | |
| | ▪ Management Staff – key personnel & structure | |
| | ▪ Design Staff - key personnel & structure | |
| | ▪ Temporary Accommodation & Welfare | |
| | ▪ Logistics | |
| | ▪ Traffic Management | |
| | ▪ Car Parking | |
| | ▪ Staff Movement | |
| | ▪ Site Security | |
| | ▪ Site Safety, including Construction Phase Health & Safety Plan | |
| | ▪ Site interfaces | |
| | ▪ Waste management | |
| | ▪ Community engagement | |
| **11.0 Contract Conditions** | | |
| 11.1 | A detailed and full mark-up of the Draft Contract; An electronic version, capable of being read in Microsoft Word 2000, of the Draft Contract;<br>Details of any of the proposed conditions contained in the | |

| | | |
|---|---|---|
| | Draft Contract that the Bidder is not prepared to accept and the reasoning behind the Bidder's position; | |
| 11.2 | Details of any of the proposed conditions contained in the Draft Contract that the Bidder is not prepared to accept and the reasoning behind the Bidder's position; | |
| 11.3 | A letter of support from the Bidders' insurers or other form of evidence demonstrating that the Board's expectations relative to insurance cover will be met. | |
| 11.4 | Performance Bond | |
| 11.5 | Performance Damages | |
| 11.6 | Collateral Warranties | |
| **12.0 Financial** | | |
| 12.1 | Statement on Commercial proposals, operation of Target Pricing, Open Book audit | |
| 12.2 | Target & Maximum Price Proposals<br>▪ Overall Project<br>▪ Stage 1 New Labs<br>▪ Stage 2 FBC Design<br>▪ Stage 3 Design & Construction New Hospitals | |
| 12.3 | Detailed Elemental Cost Plan, comprising elemental summary with supporting detail comprising work items, approximate quantities, rates etc<br>▪ Stage 1 New Labs<br>▪ Stage 2 FBC Design<br>▪ Stage 3 Design & Construction New Hospitals<br>▪ Stage 3A Hard & Soft Landscaping Completion | |
| 12.4 | Priced Activity Schedules & Supporting Monthly Cashflows<br>▪ Overall Project<br>▪ Stage 1 New Labs<br>▪ Stage 2 FBC Design<br>▪ Stage 3 Design & Construction New Hospitals<br>▪ Stage 3A Hard & Soft Landscaping Completion | |
| 12.5 | Payment proposals | |
| 12.6 | Priced Risk Register & Risk Allocation<br>▪ Stage 1 New Labs<br>▪ Stage 2 FBC Design<br>▪ Stage 3 Design & Construction New Hospitals<br>▪ Stage 3A Hard & Soft Landscaping Completion | |
| 12.7 | Incentivisation Proposals Pain / Gain<br>▪ Stage 1 New Labs<br>▪ Stage 2 FBC Design<br>▪ Stage 3 Design & Construction New Hospitals & Stage 3A Hard & Soft Landscaping Completion | |
| 12.8 | Whole Life Cycle Cost Estimate for 30 year period detailing, replacement costs & timescales, planned & preventative maintenance, energy usage including:-<br>▪ Overall Project Summary<br>▪ Stage 1 New Labs<br>▪ Stage 3 Construction New Hospitals<br>▪ Stage 3A Hard & Soft Landscaping Completion<br>Energy costs assumptions should be clearly stated | |

# Appendix B Qualitative Scoring Schedule



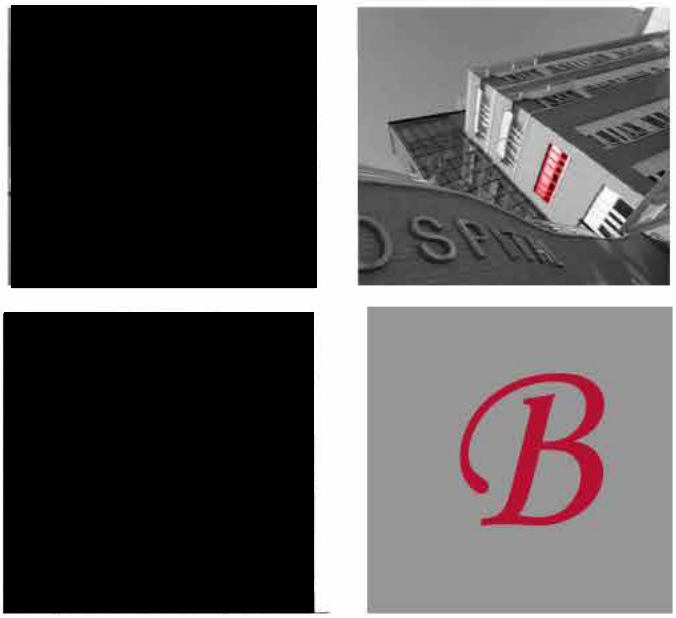
| ITPD Evaluation Criteria | Individual Weighting | Technical Weighting |
|---|---|---|
| **DESIGN** | **550** | **50** |
| | | |
| ***Space*** | **20** | |
| The design should achieve appropriate clinical space standards as required by the ITPD Schedule of | 10 | |
| | | |
| The circulation, communication & plant space should be adequate and optimised | 10 | |
| | | |
| ***Drawing information:-*** | **250** | |
| 1:500 scale Masterplan proposals | 30 | |
| 1:500 departmental relationship drawings for all levels indicating functional relationships & main | 50 | |
| 1:200 departmental layouts reflect the required space standards and functionality | 45 | |
| 1:200 departmental drawing for Adult Theatres Department, fully Annotated | 10 | |
| 1:200 departmental drawing for Adult Ward, fully annotated | 10 | |
| 1:200 departmental drawing for Childrens Ward, fully annotated | 10 | |
| 1:200 departmental drawing for Childrens A&E, fully annotated | 10 | |
| 1:50 room layout and wall elevations fully developed | 10 | |
| 1:200 Elevations – incorporating external signage proposals | 5 | |
| 1:200 Exemplar sections | 5 | |
| 3D images / perspective (internal & external) indicating the following:- | | |
| ▪ Architectural vision – space, height, form, composition, scale, character and use of materials | | |
| ▪ Hospital Main Entrance / atrium / public space proposals / visuals | 20 | |
| 1:500 site hard & soft landscaping proposals indicating:- | | |
| ▪ Soft landscaping strategy | | |
| ▪ Hard landscaping strategy | | |
| ▪ Car Parking arrangements with distribution of spaces and use identified | | |
| ▪ Areas of differing Carriageway Construction | | |
| ▪ Road, footway and cycle way geometry | | |
| ▪ Indicative Signalised layouts at external roads | | |
| ▪ Retention / protection of existing trees | | |
| ▪ Incorporation of art | | |
| ▪ Special features | | |
| ▪ Courtyards | 10 | |
| Finishes Schedule for X Departments and key circulation & communication routes, and main entrances | 10 | |
| Door & ironmongery Schedule for X Departments key circulation & communication routes, and main | 10 | |
| Roof level: Typical layout indicating structure, including helipad (Acute Adults & Childrens) | 5 | |
| Architectural design strategy statement in support of drawing information | 5 | |
| Wayfinding strategy | 5 | |
| | | |

| ITPD Evaluation Criteria | Individual Weighting | Technical Weighting |
|---|---|---|
| ***Design Strategy*** | **155** | |
| Acoustic Strategy & Report | 5 | |
| Arts Strategy | 5 | |
| Fire engineering design strategy including drawings | 5 | |
| Structural Engineering design strategy including outline design drawings demonstrating structural | 5 | |
| Drainage design strategy including 1:1250 (or greater) plans showing drainage provision in support of | | |
| ▪ Layout of roads and buildings | | |
| Layout of sewers, outfalls, underground storage, and SUDS features | 5 | |
| Main incoming utilities design / connection strategy including Schematic for Main Services distribution | 5 | |
| Water Services Strategy including Hot & Cold Water Services Schematic, Filtered Water Schematic and | 5 | |
| Heating design strategy including MTHW Schematic & LTHW Schematic | 10 | |
| Ventilation & air treatment design strategy including Schematic drawings | 10 | |
| Mains and Sub-mains power distribution design strategy including MV Power Schematic and LV Power | 10 | |
| Lighting design strategy | 10 | |
| Lift Engineering design strategy | 10 | |
| Communication design strategy | 5 | |
| Protective systems design strategy including Sprinklers schematic and Fire alarm & damper controls | 5 | |
| Medical gases design strategy including schematic drawings | 5 | |
| Pneumatic tube system design strategy including schematic drawings | 5 | |
| Plant room design strategy | 5 | |
| Control systems including BMS schematic | 5 | |
| Helipad M&E services design strategy | 5 | |
| Maintenance & major plant replacement strategy | 35 | |
| | | |
| ***Sustainability*** | **75** | |
| Sustainable design statement | 25 | |
| BREEAM scoring schedule | 25 | |
| Energy strategy including approach to renewables, sustainability | 25 | |
| | | |
| ***AEDET Review*** | **50** | |
| Overall AEDET review score | 50 | |
| **Design Score** | **550** | **50** |

| ITPD Evaluation Criteria | Individual Weighting | Technical Weighting |
|---|---|---|
| **DELIVERABILITY AND APPROACH** | **275** | **30** |
| **Project management:** | **90** | |
| Structure & approach | 20 | |
| Site Management Team; | 5 | |
| Design Team; | 5 | |
| Community Engagement | 60 | |
| **Construction Approach:** | **20** | |
| There should be minimal impact on service delivery; | 10 | |
| The construction exploits any innovation benefits from standardisation and prefabrication; | 10 | |
| **Site Management:** | **80** | |
| Temporary Accommodation proposals | 15 | |
| Logistics proposals | 10 | |
| Traffic management | 10 | |
| Car Parking | 10 | |
| Staff Movement | 5 | |
| Site Security & Safety | 10 | |
| Site interfaces | 10 | |
| Waste Management | 10 | |
| **Programme:** | **40** | |
| Master programme | 5 | |
| Stage 1 Laboratory programme | 10 | |
| Stage 2 FBC sub programme | 10 | |
| Stage 3 Construction programme | 10 | |
| Stage 3A Hard & landscaping completion programme | 5 | |
| | | |
| **Commissioning & Handover** | **45** | |
| | | |
| ▪ Commissioning plans, including Building Services testing & commissioning | 15 | |
| ▪ Handover process | 15 | |
| ▪ Extended defects requirement | 15 | |
| | | |
| **Logistics Score** | **275** | **30** |

| ITPD Evaluation Criteria | Individual Weighting | Commercial Weighting |
|---|---|---|
| **COMMERCIAL** | **175** | **20** |
| | | |
| **Contract:** | **25** | |
| Compliance with Contract Conditions | 5 | |
| Insurances | 5 | |
| Performance Bond | 10 | |
| Collateral Warranties | 5 | |
| | | |
| **Pricing** | **150** | |
| Statement on Commercial proposals, operation of Target Pricing, Open Book audit | 5 | |
| Target / Maximum Price assessment | 20 | |
| Priced Risk Register & Risk Allocation | 55 | |
| Stage 1 Laboratory Design & Construction detailed elemental cost & resource plans | 5 | |
| Stage 1 Laboratory Design & Construction Priced Activity Schedules, Cashflow & Payment Proposals | 5 | |
| Stage 2 FBC Stage Priced Activity Schedules including supporting detailed costed resource plan, | 10 | |
| Stage 3 Adult / Childrens / Site Works Design & Construction detailed elemental cost & resource plans | 5 | |
| Stage 3 Adult / Childrens / Site Works Design & Construction Priced Activity Schedules, Cashflow & | 5 | |
| Project Whole Life Cycle Cost Plan | 40 | |
| | | |
| **Total Commercial Score** | **175** | **20** |

# Appendix C Legal Evaluation



**Purpose of Legal Evaluation**

The legal evaluation has two primary functions:

- to give comfort as to deliverability - demonstrated by the robustness of the legal submission and mark-up of the draft Contract and a constructive approach to resolving complex issues; and
- to better inform the financial or technical evaluations.

**Legal Evaluation Criteria**

(i) The legal evaluation will focus on the detailed mark-up of the draft Contract including the schedules, Appendices, Contract Data Part 1 and Contract Data part two (together, the "Contract Documents") submitted by the Bidders.

(ii) Bidder's responses to the Contract Documents will be evaluated in accordance with the following criteria (of equal importance):-

- the extent to which the Bidder has accepted the conditions set out in the Contract Documents and the extent to which the Bidder has provided detailed comments on the Contract Documents and a constructive approach to issues which it does not accept;
- the extent to which the Bidder demonstrates that it understands and accepts the risks inherent in the Project and the extent to which the Bidder's qualifications (if any) to risk allocation position set out in the Contract Documents are acceptable to the Board; and
- the sufficiency of Bidder's insurance proposals.

**How the Legal Evaluation will be conducted**

Firstly, the legal evaluation team will evaluate the individual responses against the legal evaluation criteria.

Thereafter, the legal evaluation team will produce a detailed commentary on the mark-up of the Contract Documents which will allow the legal evaluation team to:

- inform the technical and financial evaluation teams of any amendment to the Contract Documents which will have an impact on the price/risk profile or service being offered;
- identify any deficiencies in the legal submission which they consider should be brought to the attention of the Bidder prior to completion of the evaluation to give the Bidder an opportunity to clarify and ensure that tenders are compliant from a legal submission point of view(recognising the constraints on the degree of clarifications that might be requested under the Competitive Dialogue process);
- clearly identify any commercial issues which in the view of the legal evaluation team should be clarified with tenderers prior to appointment of Preferred Bidder. Clarification will be required when the Bidder 's position is not clear; and
- score the legal submissions taking all of the above into account, in accordance with the evaluation scoring matrix set out elsewhere in this ITPD.

**Legal Evaluation Report**

The legal evaluation team will complete a comprehensive legal report for each of the tenders evaluated.

Each legal report will contain the following:

- a summary of the legal submission including confirmation that the legal submissions were compliant;
- a summary of the quality of the responses in the legal submission against the legal evaluation criteria set out in this ITPD;
- a detailed commercial commentary on the mark-up of the Contract Documents which will identify:
    - the points considered relevant to the financial evaluation (which will have already been passed to the financial evaluation team);
    - the points relevant to the technical evaluation (which will have been passed to the technical evaluation team);
    - a list of key commercial issues which, in the legal evaluation team's view, should be addressed/developed prior Contract Award (as appropriate).

In addition, at an early stage in the process, the legal evaluation team will have identified any deficiencies in the legal submission which they consider should be brought to the attention of the tenderer prior to completion of the evaluation to give the Bidder an opportunity to clarify and ensure that tenders are compliant from a legal submission point of view.

The legal evaluation team will also rank the Bids according to the quality of their responses against the legal evaluation criteria.

**Bidder mark-up to the Contract Documents**

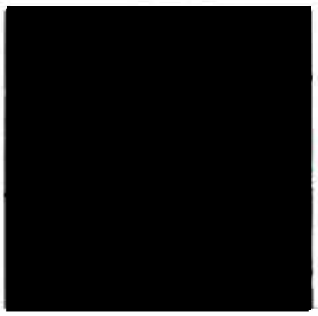
Legal submissions will be assessed on how thorough and constructive the Bidder's responses are. The key concern here is to satisfy ourselves that if a particular Bid is selected on the basis of the overall evaluation, that selection is made on a full understanding of their position on **all** commercial issues and on the basis of us being confident that they have thought through the implications of all commercial aspects of their Bid.

Where contract conditions are not acceptable to Bidders, weight will be given to responses which represent constructive alternatives rather than simple rejections.

**Conclusion**

The key issue in the tender evaluation to meet the “most economically advantageous” test remains identifying the compliant affordable Bid which offers the Board the best balance between price and quality. Much of the legal evaluation therefore focuses on assisting that process by identifying issues which are relevant to the overall evaluation but which are expressed by the Bidder through the legal submission documents.

# Appendix D Certificates



**Part 1 – Confidentiality Agreement**

Name of bidder:

We undertake that we shall keep confidential and will not use for our own purposes or reveal to any person, firm or company the information contained in or sent with the ITPD issued by the Board in relation to the Project or which is made available in connection with any further enquiries in relation to that Project (the "Information Provided") unless we obtain in each case the prior written consent of the Board. Such consent shall not be required where the Information Provided is:

(i) disclosed on a "need to know" basis to such of our directors, officers, employees or advisers who are directly involved with the preparation of bids on our behalf provided that we shall inform each person to whom the Information Provided is made aware of the confidential nature of the Information Provided and the obligations under this Confidentiality Agreement and has given an undertaking at the time of receipt of the Information Provided to keep such information confidential;

(ii) in the public domain or shall come into the public domain otherwise than by breach of this undertaking or any other undertaking;

(iii) made available to us by a third party who is entitled to divulge such information and who is not under any obligation of confidentiality in respect of such disclosure; or

(iv) required to be disclosed by any applicable law provided that the party disclosing the information shall notify the Board of the information to be disclosed (and of the circumstances in which the disclosure is alleged to be required) as early as reasonably possible before such disclosure must be made and shall take all reasonable action to avoid and limit such disclosure.

We undertake at the request of the Board that we shall immediately return to the Board all Information Provided and all and any copies or any part thereof including any information derived or produced partly or wholly from the Information Provided which is in a tangible form. If any such information is not in a tangible form, the bidder shall destroy or permanently erase that information and all and any copies or part thereof including any information derived or produced partly or wholly from the Information Provided.

Without prejudice to any other rights or remedies which the Board may have, the bidder acknowledges and agrees that (a) damages would not be an adequate remedy for any breach by the bidder of the provisions of this undertaking and (b) the Board shall be entitled to the remedies of interdict and other relief for any threatened or actual breach of this undertaking.

Signed for and on behalf of [**bidder**] by [**name of signatory and nature of authority to sign**] and [**name of signatory and nature of authority to sign**] on the day of 2009.

……...

……...

NOTE: (i) Where the bidder is a company, to be signed by two directors or by a director and the secretary of the company, such persons being duly authorised for that purpose.
(ii) Where the bidder is a consortium yet to be established as a company, to be signed by persons duly authorised by each of the prospective members of the consortium.

**Part 2 – Certificate of Non-Canvassing**

Name of bidder:

We hereby undertake that we have not (nor will we in the future):

1. Committed any offence under the Prevention of Corruption Acts 1889 to 1916; or

2. Contacted any other officer of the Board about any aspect of the Project, except as authorised by the ITPD, including (but without limitation) for the purposes of discussing the possible transfer to the employment of the Bidder of such officer for the purpose of the Project or for soliciting information in connection with the Project; or

3. Offered any inducement, fee or reward to any member or officer of the Board or any person acting as an advisor for the Board or in connection with the project; or

4. Canvassed any of the persons referred to in paragraph 3 above in connection with the Project.

In this Certificate the word "person" includes any persons and any body or association, corporate or unincorporate and "agreement" or "arrangement" include any such transactions, whether formal or informal, legally binding or not.

Signed for and on behalf of [bidder] by [name of signatory and nature of authority to sign] and [name of signatory and nature of authority to sign] on the day of 2009.

……...

……...

NOTE: (i) Where the bidder is a company, to be signed by two directors or by a director and the secretary of the company, such persons being duly authorised for that purpose.
(ii) Where the bidder is a consortium yet to be established as a company, to be signed by persons duly authorised by each of the prospective members of the consortium**.**

**Part 3 – Certificate of Non-Collusion**

Name of bidder:

We certify that we will submit a bona fide bid and that we have not adjusted and will not adjust our bid in agreement or by arrangement with any other person.

We also certify that we have not done and we undertake not to do at any time during the competition any of the following acts:

1. Entered into any agreement with any other person with the aim of preventing bids being made or as to the fixing or adjusting of the amount of any bid or the conditions on which any bid is made;

2. Caused or induced any person to enter into such an agreement as is mentioned in paragraph 1., above, or to inform us of the amount or the approximate amount of any rival bid for the Project; or

3. Informed any other person, other than the person calling for this bid, of the amount or the approximate amount of our bid, except where the disclosure, in confidence, of the amount of the bid was necessary to obtain quotations necessary for the preparation of the bid, for insurance, for performance bonds and/or contract guarantee bonds or for professional advice required or the preparation of the bid; or

4. Offered or agreed to pay or give any sum of money, inducement or valuable consideration directly or indirectly to any person for doing or having done or causing or having cause to be done in relation to any other bid or proposed bid for the works any act or omission; or

5. Canvassed any other persons referred to in paragraph 1., above, in connection with the project.

We also undertake not to procure the doing of any of the acts mentioned in paragraphs 1 to 5 above before the hour and date specified for the return of the bid nor (in the event of the bid being accepted) shall we do so while the resulting contract continues in force between us (or our successors in title) and the Board.

In this Certificate, the word “person” includes any persons and any body or association, corporate or unincorporate, and “agreement” or “arrangement” include any such transactions, whether formal or informal, legally binding or not.

Signed for and on behalf of [**bidder**] by [**name of signatory and nature of authority to sign**] and [**name of signatory and nature of authority to sign**] on the day of 2009.

……

... ……..

NOTE: (i) Where the bidder is a company, to be signed by two directors or by a director and the secretary of the company, such persons being duly authorised for that purpose.
(ii) Where the bidder is a consortium yet to be established as a company, to be signed by persons duly authorised by each of the prospective members of the consortium.

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## 1.0 INTRODUCTION

| NSGH SPECIFICATION REFERENCE SECTION | BROOKFIELD BREAK DOWN TO MATCH BUILDING SHAPE |
|---|---|
| **SUBMISSION REFERENCE:** | **CONTENTS SECTION AS LISTED ON FOLLOWING PAGE** |
| **4.0 Specifications** | |
| 4.5 Roof Coverings | 2.10 ; 2.11 ; 2.12 ; 2.14 ; 2.15 ; 2.16 |
| 4.6 Roof Drainage | 2.13 |
| 4.7 Roof Lights | 2.16 |
| 4.9 Stair Finishes | 3.3 ; 3.4 ; 3.14 |
| 4.10 Stair Balustrades and Handrails | 3.3; 3.4 |
| 4.11 External Walls | 2.1; 2.2; 2,3 ; 2.4 ; 2.5 ; 2.6; 2.7 ; 2.9 |
| 4.12 Windows | 2.8 ; 2.9 |
| 4.13 External Doors | 2.8; 2.9 |
| 4.14 Internal Walls and Partitions | 3.1 |
| 4.15 Internal Doors | 3.5 |
| 4.16 Wall Finishes | 3.14 |
| 4.17 Floor Finishes | 3.14 |
| 4.18 Ceiling Finishes | 3.2; 3.14 |
| 4.19 Fixtures, Fittings and Furniture | 3.9 ; 3.10 |
| 4.20 Soft Furnishings | 3.11 |
| 4.21 Works of Art | 3.16 |
| 4.22 Equipment | 3.9 3.12 |
| 4.23 Sanitary Appliances (in relation to Group 1 appliances identified in the Equipment List) | 3.13 |

**SUBMISSION RESPONSE:**
The architectural specifications have been grouped into one document to ensure ease of cross-referencing; the Sections covered by this document are listed above.

This specification is written as an outline performance specification applicable for the Invitation to Participate in Competitive Dialogue (ITPD) Stage. It covers the design intent of architectural items and materials. These items will be subject to fabrication and installation requirements and in some cases will require testing to ensure performance requirements are met. The Specification has been divided into 2 main Sections; 2.0 External Outline Specification, and 3.0 Internal Outline Specification.



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2.1(ii) Soffit Cladding

**2.2 PODIUM**
**Cladding Types**
2.2(i) Structurally Bonded Glazing System
2.2(ii) Stick Curtain Walling Capped System
2.2(iii) Column Cladding
2.2(iv) Compressed Fibre Cement Rainscreen Cladding
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2.2(vii) External Insulated Render

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Performance Requirements

**2.8 BLOCKWORK AND MASONRY**
Performance Requirements
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Performance Requirements

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**3.8. Protection**
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**3.10. Reception Desks / Staff Bases**
**3.11 Soft Furnishings**
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**3.13 Sanitary Appliances**
**3.14. Internal Finishes**
**3.15. Wayfinding / Signage**
**3.16 Works of Art**

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## 2.0 EXTERNAL OUTLINE SPECIFICATION

| SECTION | MATERIAL/DESCRIPTION |
|---|---|
| 2.1 | There are several different types of Cladding which are proposed on the New South Glasgow Hospitals Project; below is a brief description of the location of where they are used, and outline specification of each type. The Cladding Type descriptions have been separated for clarity into the Tower, Podium, Children's Hospital, Plant Rooms and Energy Centre. |
| 2.1(i) | **TOWER:**<br>**Cladding Types**<br><br>**Unitised Cladding Capless Structurally Bonded Glazed Spandrel System**<br>A fully glazed sleek envelope with a capless frame detail to the mullions and transoms of the Ward Tower. Each corner of the tower 'wing' is curved to continue the wrap-around effect of the façade and to express the flexibility of the ward form and internal clinical functionality.<br><br>The 'vision' panels consist of double glazed units, with laminated/toughened high performance glass to all facades. These are fixed glazed full height panels to the inpatient bedrooms, with an adjacent side parallel opening panel, held-open on a 100mm restrictor.<br><br>The frames will be hung from the face of the floor slabs utilising Halfen insets/mild steel galvanised brackets. Each frame size is approximately 1500mm wide x 4000mm high and will be polyester powder coated. |
| 2.1(ii) | Vertical coloured caps at intervals provide the DNA stranding pattern to the tower, with a continuous pressed profiled metal shadow detail applied to every second floor to express the horizontal layers. |
| 2.2 | **Soffit Cladding**<br>Insulated pressed metal soffits to the underside of podium and tower generally. |
| 2.2(i) | **PODIUM:**<br>**Cladding Types**<br><br>**Structurally bonded glazing system**<br>Fully glazed frameless curtain walling will form the main entrance draught lobby.<br><br>Clear silicone joints to the glass panels and stainless-steel spider fittings fixed to a stainless steel support structure behind.<br><br>Manifestation will be provided as required. |
| 2.2(ii) | **Stick curtain walling capped system**<br>The Main Entrance double height façade will be a stick curtain walling system consisting of alternating standard sized panels to emulate DNA strand patterning.<br><br>Department entrances, feature corners/areas and the interstitial floor horizontal light slots to the west and east façades will consist of standard sized curtain walling modules. |
| 2.2(iii) | **Column Cladding**<br>Insulated polyester powder coated pre-formed cladding to podium curtain walling detail. |
| 2.2(iv) | **Compressed fibre cement rainscreen cladding on structural framing system**<br>Podium cladding generally to the first and second floor levels with full-height vertical glazed window panel slots. The two levels will be separated visually by a pressed profiled metal shadow detail to emphasise the different podium layers. 3 standard sized panels will be alternated to emulate DNA strand patterning. Refer to separate section for structural framing. |
| 2.2(v) | **High pressure laminate rainscreen cladding on structural framing system**<br>Feature coloured cladding panels typically to the main entrance element. Refer to separate section for structural framing. |
| 2.2(vi) | **External facing blockwork on structural framing system**<br>Podium cladding generally to all ground floor areas. This will provide a solid, durable, low maintenance base in addition to a visual link with the cladding proposals on the Laboratory/FM Building. Stack-bonded, including feature vertical bands to department entrances. Refer to separate section for blockwork/ masonry. Refer to separate section for structural framing. |



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**2.2(vii)**

**External insulated render on structural framing system**
Podium cladding generally to all internal courtyards, to the OPD Block and various feature elements. Refer to separate section for Render. Refer to separate section for structural framing.

**2.3**

**LINK BRIDGES TO MATERNITY & NEUROLOGY:**
**Cladding Types**

**Compressed fibre cement rainscreen cladding**
Generally vertical compressed cement rainscreen cladding, on a structural framing system. Intermittent slot windows will be provided to the ramped elements of the bridges, with full height vertical-fritted glazing panels to the landing areas and bridge entrances.

Aluminium flashings will be chased into the existing buildings to provide a weather-tight detail. These will be slip-jointed to the bridge cladding to allow for the structural movement differentials.

**2.4**

**CHILDREN'S HOSPITAL:**
**Cladding Types**

The Children's Hospital has been designed to ensure that it provides the integrated clinical model where required, but maintains its own building typology and architectural language/form to distinguish it from the main Adult Hospital.

**2.4(i)**

**Main Entrance Block**
The Main Entrance is framed with a feature arch which forms a multi-level wrap-around element. This consists of pre-patinated copper rainscreen cladding on a structural framing system, which also provides a material reference to the Laboratory Building located on the opposite side of the Entrance Plaza. Various sized port-holes provide views inside and outside towards the Entrance Plaza and Central Park beyond.

A combination of stick curtain walling and feature coloured high pressure laminate rainscreen cladding on structural framing system provide the background external wall to the main entrance element, with structurally bonded frameless glazing forming the entrance lobby surrounds. Refer to separate section for structural framing.

The ground and first floor West Elevation consists of a stick curtain walling and will have alternating standard sized panels to emulate DNA strand patterning. This glazed element will provide a visual interaction with the Children's Park, in addition to clear views from the main entrance into the building and through the atrium.

**2.4(ii)**

**Ground Floor**
External facing block stack-bonded on a structural framing system, with punched windows where required. This will provide a solid, durable, low maintenance base and a visual link with the cladding proposals on the Laboratory/FM Building. The window types will be more irregularly positioned and sized than the Adult's (NSGH) building to provide a visually more playful interaction for the Children.

**2.4(iii)**

**First, Second and Third Floors**
Generally insulated through-colour render on a structural framing system with horizontal slot window bands and coloured aluminium infill panels.

**2.4(iv)**

**Fourth Floor**
Stick curtain walling with composite insulated aluminium cladding infill panels. Aluminium micro-rib panels with 'top hat' vertical joints generally to plant room areas with aluminium louvres as required.

**2.4(v)**

**Feature Stair Tower**
This element will be generally insulated through-colour render on a structural framing system with full height vertical-fritted glazing panels to the landing areas.

**2.5**

**PLANT ROOMS & ENERGY CENTRE:**
**Cladding Types**

**Metal wall cladding system incorporating louvres**
Aluminium micro-rib panels with 'top hat' vertical joints generally to plant room walls. Continuous horizontal louvre band to tower and children's roof plant areas, louvres to podium plant as required.

The third floor level 'interstitial' plant level will consist of aluminium and louvre panels with feature horizontal fins to the main entrance 'wing'. The cladding panel sizes are to match the setting-out module sizes of stick curtain walling system.

**2.6**

**PERFORMANCE REQUIREMENTS FOR CLADDING/ CURTAIN WALLING TYPES:**



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The cladding system, once installed, must achieve a noise reduction from outside to inside and prevent flanking transmission at the slab edge and mullions in line with the Acoustic Report.

The system will be designed to transmit all loads safely back to the primary structure in accordance with BS 6399-Part 2.

The cladding will perform to the requirements of Section 6 of the Building (Scotland) Regulations 2004, with an average U-value of 1.1 W/m²K.
(Note: the values for thermal transmittance are subject to the overall energy modelling of the complete building to achieve the project brief stipulation of an 'excellent' BREEAM rating).

Weather-tightness to meet the requirements in BS 6375-1. Condensation will not form on the inside face of the atrium glazing or within double-glazed units using environmental design conditions in the range -7ºC to +30ºC with relative humidity of 60%.

The external and internal faces of the cladding will be classified as a Class O surface for spread of flame when tested in accordance with BS 476 Parts 6 & 7. All gaps between the cladding and the slab edge shall be filled with a non-combustible material to achieve the appropriate fire separation (permeability, integrity & insulation).

Glazing to ground floor areas of levels of cladding system and curtain walling to be designed to safety requirement in the BS 6262.

Windows in curtain walling will have 100mm restrictors in Clinical areas as required in the SHTMs. Refer to window section.

**2.7** **EXTERNAL INSULATED RENDER:**

External insulated render is utilised generally as a cladding material to the internal façades of the podium courtyards and the upper levels of the Children's Hospital.

Textures and colours to be in accordance with the external elevations.

Accessories to be provided include pre-painted aluminium stop beads, corner trims and base rails including at all junctions with differing materials and stop beads/shadow gaps between areas of different coloured renders

**PERFORMANCE REQUIREMENTS :**
Polymer modified/polymeric thin coat render system incorporating a synthetic finish to meet the requirements of BS EN 13914-1:2005.

Design wind loads shall be calculated in accordance with BS 6399-2:1997
A minimum U-value of 0.35 W/m²K shall be achieved. (Note: the values for thermal transmittance are subject to the overall energy modelling of the complete building to achieve the project brief stipulation of an 'excellent' BREEAM rating).

**2.8** **EXTERNAL BLOCKWORK AND MASONRY:**

Generally to the ground floor podium, including feature vertical bands to department entrances.

Blockwork masonry facing units are to comply with BS EN 771-4:2003 'Specification for masonry units – Part 4: Autoclaved aerated concrete masonry units'

**PERFORMANCE REQUIREMENTS:**
All blockwork masonry units are to be classified as non-combustible and Class O Spread of Flame.

Average compressive strength is to comply with BS EN 772-1:2000 depending on the particular application

Masonry mortar types are to comply with BS EN 998-2:2003

Lintels are to comply with BS EN 845-2:2003

Wall accessories are to comply with BS EN 845-1:2003

Moisture content is to be measured in accord with BS EN 12664:2001

Bond is to be stack-bond. Vertical joints in face work are to be filled and to be of even widths, plumbed at every fifth cross joint. Blocks to be laid on full beds.



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A range of different thicknesses and strengths will be required. Restraint connections to primary & secondary structural steelwork will be provided as required.

**2.8(i)** **Facing Brick Plinth**

Engineering blue brick plinth generally to full perimeter of ground floor.

**2.9** **WINDOWS AND DOORS:**

**2.9(i)** **Window Types**
Powder coated aluminium framed hung or parallel opening windows. Openings to be restricted; with 100mm restricting devices.

Any fire rated windows to be steel framed fixed lights.

Manifestations will be applied to all full height glazing to meet Building (Scotland) Regulations.

**PERFORMANCE REQUIREMENTS:**
Safety glazing used to glazing to low level areas in accordance with BS 6262.

**2.9(ii)** **Door Types**
Main entrance doors will be fully glazed with powder coated aluminium frames to match with adjacent cladding system.

Automatic sliding doors will be provided to the Adult Main Entrance, the Adult Emergency Centre Entrances (Ambulance and Walking Wounded), the Children's Main Entrance and Children's Emergency Centre Entrances (Ambulance and Walking Wounded) and the Acute Assessment Entrance.

All service and fire escape doors will be manufactured from solid core material.

Doors to incorporate privacy film where required to sensitive rooms.

**PERFORMANCE REQUIREMENTS:**
Safety glazing used to glazing to low level areas in accordance with BS 6262.

Manifestations will be applied to all full height glazed doors to meet Building (Scotland) Regulations.

**2.10** **STRUCTURAL FRAMING SYSTEM:**

Structural steel framing ('Metsec' or equivalent) for the external walls generally to the podium areas and the Children's Hospital.

Cold rolled components to be manufactured from pre-hot dipped galvanised steel to BS EN 10326:2004.

All studs, joists, tracks and accessories shall be of a type, size & gauge and shall be set out to satisfy structural calculations.

**PERFORMANCE REQUIREMENTS:**
Structural capabilities of all sections are to be calculated in accordance with BS 5950.
Provide adequate support for all podium elevation treatments (stick curtain walling, compressed fibre cement rain screen cladding, high pressure laminate rainscreen cladding, insulated render, facing masonry etc) and suitable framing to all window and louvre openings and service terminations etc

Interfaces with the primary structural steel frame, ground bearing & composite floor slabs (including structural movement joints) and with elements of external glazing.

All loading capabilities are to be calculated in accordance with BS 6399.

All secondary supports for all elements to be fixed externally to the cladding and for all internal fixtures and fittings fixed to the internal linings.

The complete external wall system shall provide minimum U-values for thermal transmittance of 0.35 W/m²K. (Note: the values for thermal transmittance are subject to the overall energy modelling of the complete building to achieve the project brief stipulation of an 'excellent' BREEAM rating).

The complete external wall system shall meet the requirements of the Fire Strategy and shall be classified as a Class O surface when tested in accordance with BS 476 Parts 6 & 7 1997



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**2.11** **SINGLE PLY MEMBRANE ROOF:**

Single layer polymeric sheet roof covering system generally to plantrooms, the Energy Centre and selected podium areas to be supported generally by cold-rolled steel purlins on a structural metal deck substrate.

**PERFORMANCE REQUIREMENTS:**
The proposed roofing membrane is to be lacquered reinforced PVC or equivalent, colour light grey, minimum thickness 1.2mm (the gauge of the sheet will suit the specific structural loading requirements and spans). The membrane will be mechanically adhered with thermally broken fasteners. Sheets are to be overlapped a minimum of 120mm to cover fasteners and pressure plates, and will be heat welded using either hand welding or an automatic welding machine.

Insulation varies dependent on location to either plantroom or hospital accommodation. Plantroom roof insulation to achieve 0.6 W/M2K and hospital accommodation roof 0.25W/M2K. Insulation will have no ozone depletion potential and be non-combustible.
(Note: the values for thermal transmittance are subject to the overall energy modelling of the complete building to achieve the project brief stipulation of an 'excellent' BREEAM rating).

Gutters to allow walking-in, min. 600mm wide, to facilitate the maintenance and cleaning of the roofs from the cat ladder access points.

All services penetrations through the roofing system will include trimming sections to the purlin support system to frame up the openings where required, and welded penetration soakers will be provided as appropriate.

All vapour control barriers to prevent interstitial condensation and will be sealed with butyl rubber tape and securely sealed around all penetrations.

The pitch of the roofs varies according to the location and architectural design intent; the minimum falls will be appropriate to the roofing membrane.

An integral non penetrative guided type fall arrest system will be provided using a fixed length lanyard of 3m allowing access to all areas of the roof.

Wind, snow & other loadings to be transferred safely back to the main structure in accordance with BS 6399

**2.12** **LIQUID APPLIED MEMBRANE ROOF:**

Generally applied to all flat roofs.
Examples of locations; towers and podium flat roofs.

**PERFORMANCE REQUIREMENTS:**
Liquid applied roofing membrane system to be laid directly onto the structural deck without the use of screeds.

Ensure weather tightness at all junctions with cladding, atrium, and penetrations etc including thermal insulation preventing cold bridging.

Includes sealing and weathering around all services penetrations ensuring continuity of insulation.

Pitch pockets/upstands to be provided for as required for the weathering of all elements to be fixed to the roofs.

Precast concrete paving slabs to be provided for as required to personnel/plant access & fire-escape routes.

Round washed shingle to be provided as ballast in areas without paving.

Roof incl. ballast to be designed to accommodate wind, snow or other uplift or combination of gust loads and transfer them safely.

Movement joint detail to incorporate concrete up-stand and flashing.

Thermal insulation to be provided in build up. Insulation varies dependent on location to either plantroom or hospital accommodation. Plantroom roof insulation to achieve 0.6 W/M2K and hospital accommodation roof 0.25W/M2K. Insulation will have no ozone depletion potential and be non-combustible.
(Note: the values for thermal transmittance are subject to the overall energy modelling of the complete building to achieve the project brief stipulation of an 'excellent' BREEAM rating).

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**2.13** **SEDUM ROOF:**

Sedum roof to selected podium roof areas.

(refer to the Landscape Architect's Specification for further details)

**2.14** **RAINWATER GOODS:**

(refer to the M&E Specification for further details)

**2.15** **ENTRANCE CANOPIES:**

**NSGH (Adult) Hospital Main Entrance**
The aluminium soffit to the underside of the second floor tower 'Entrance Wing' and the 'lid' to Main Entrance double height façade will provide the building with its canopy.

Lower height glazed canopies are provided for the bus drop-off zone to the Main Entrance. These will incorporate caps in single direction and structural silicone jointed glazing. Painted steel columns and polyester powder-coated aluminium framing will be utilised to support the glazed elements. Coloured feature lighting will be provided to the underside of the canopies.

**NCH (Children's) Hospital Main Entrance**
A high-level glazed entrance canopy suspended from the feature arch forms the Children's Hospital Main Entrance, and incorporates aluminium flashings into the external wall.

Lower height glazed canopies are provided for the bus drop-off zone to the Main Entrance. These will incorporate caps in single direction and structural silicone jointed glazing. Painted steel columns and polyester powder-coated aluminium framing will be utilised to support the glazed elements. Coloured feature lighting will be provided to the underside of the canopies.

**NSGH (Adult) Emergency Department Entrance**
The aluminium soffit to the underside of the first floor combined forms the canopy to both the Ambulance and Walking Wounded Entrances. This will incorporate feature downlights.

**NCH (Children's) Emergency Department Entrance**
The aluminium soffit to the underside of the first floor combined with a structural single fritted glazed cantilevered canopy form the canopies to both the Ambulance and Walking Wounded Entrances. This will incorporate aluminium flashings into the external wall and feature downlights.

**PERFORMANCE REQUIREMENTS:**
External entrance canopies are to meet the recommendations of CIRIA publication 'Guidance on glazing at height' document ref. C632 and CWCT Technical Update no. 10 'Use of glass overhead'.

**2.16** **ETFE ATRIA ROOFS:**

**NSGH (Adult) Hospital Atrium**
The atrium ETFE roof will sit above the twelfth floor level plant, allowing the tower bridge and its support pods to float below.

The roof covering will consist of triple-layer ETFE air-filled pillows fixed to aluminium extrusions. The ETFE is to include fritting of a pattern to be agreed at the next stage.

Pillows made up of ETFE layers as follows:

I) Top layer: standard printed
II) Middle layer: clear
III) Bottom layer: clear

The vertical faces will be used to provide natural ventilation, and will consist of a lower fixed ETFE panel (up to a minimum height of 1100mm to prevent risk of falling), and a higher opening ETFE vent panel. The vents are to also be able to be opened automatically by remote activation to provide ventilation in hot weather. When the vents are opened they should not let rain into the atria,

The atrium structure will be circular painted steel trusses.

**Solar performance**
The ETFE is to provide an equivalent performance to High Performance Glass; 66/33 (i.e. 66% light transmission and 33% total solar heat transmission) to prevent overheating of the atria and to comply with the values for thermal transmittance required to meet the overall energy modelling of the complete building, and to achieve the project brief stipulation of an 'excellent'



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BREEAM rating.

**NCH (Children's) Hospital Atrium**
The atrium ETFE roof will sit at the fourth floor level below the plant roof, and will undulate to form a wave.

The roof covering will consist of triple-layer ETFE air-filled pillows fixed to aluminium extrusions. The ETFE is to include fritting of a pattern to be agreed at the next stage.

Pillows made up of ETFE layers as follows:

I) Top layer: standard printed
II) Middle layer: clear
III) Bottom layer: clear

The vertical faces will be used to provide natural ventilation, and will consist of a lower fixed ETFE panel (up to a minimum height of 1100mm to prevent risk of falling), and a higher opening ETFE vent panel. The vents are to also be able to be opened automatically by remote activation to provide ventilation in hot weather. When the vents are opened they should not let rain into the atria,

The atrium structure will be circular painted steel trusses.

**Solar performance**
The ETFE is to provide an equivalent performance to High Performance Glass; 66/33 (i.e. 66% light transmission and 33% total solar heat transmission) to prevent overheating of the atria and to comply with the values for thermal transmittance required to meet the overall energy modelling of the complete building, and to achieve the project brief stipulation of an 'excellent' BREEAM rating.

**2.17** **ROOFLIGHTS:**

To the Children's Chapel Roof, Children's Hospital Lightwells and the Adults' Hospital Main Entrance roof above the restaurant.

These will consist of powder coated aluminium framed double glazed units.

**PERFORMANCE REQUIREMENTS:**
The glazed rooflights are to meet the recommendations of CIRIA publication 'Guidance on glazing at height' document ref. C632 and CWCT Technical Update no. 10 'Use of glass overhead'.

**2.18.** **EXTERNAL METALWORK:**

**2.18(i)** **Feature Roof Terrace Areas**
Stainless steel handrails (2xheights) and supports with galvanised steel perforated powder coated infill panels to the Children's areas.

Stainless steel handrails and supports with stainless steel infill cables generally to the Adult areas.

**2.18(ii)** **Service Access Metal Work**
Galvanised and zinc-coated free-standing Key-Clamp System steel guard rails generally to plant access areas to the Energy centre.



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## 3.0 INTERNAL OUTLINE SPECIFICATION

| SECTION | TYPE OF MATERIAL |
|---|---|
| **3.1. Partitions and Dry Lining** | To internal face of external walls, stairs and to internal partitions generally.<br><br>Dry lining to podium internal face to be fixed to structural framing of external wall system.<br><br>Dry lining to internal face of tower unitised cladding to be fixed to stud framing.<br><br>The various dry lining types will incorporate the following design criteria;<br><br>• Acoustic performance<br><br>• Minimum periods of fire resistance<br><br>• Requiring security protection (where required in SHTMs/Volume 2/1: Employer's Requirements [Hospitals])<br><br>• Requiring radiation protection<br><br>• Requiring moisture resistance to areas of high humidity<br><br>Radiation Protection and the requirements for lead-lining and Radiofrequency shielding will be provided to meet the Board's Radiation Protection Adviser's requirements.<br><br>The studwork is to accommodate and support all of the fixtures and fitting specified in the ADB Room Data Sheets and shown on the 1:50 layouts. |
| **3.2. Ceilings** | The various types will incorporate the following design criteria;<br><br>• Acoustic performance<br><br>• Minimum periods of fire resistance<br><br>• Requiring security protection, (where required in HTM's/Volume 2/1: Employer's Requirements [Hospitals])<br><br>• Requiring radiation protection,<br><br>• Requiring moisture resistance to areas of high humidity<br><br>Radiation Protection and the requirements for lead-lining and Radiofrequency shielding will be provided to meet the Board's Radiation Protection Adviser's requirements.<br><br>The framework is to accommodate and support all of the ceiling mounted fixtures specified in the ADB Room Data Sheets and shown on the 1:50 layouts.<br><br>Ceilings heights generally to be 2700mm. In addition, certain rooms will be 3000mm as required in 7.3.3. of the Employer's Requirements, and to comply with Volume 2.1 Appendix E: ADB Room Data Sheets<br><br>**<u>GENRALLY:</u>**<br>The Ceiling Type Strategy has been developed in response to Volume 2/1: Employer's Requirements (Hospitals) - Section 7.3 Ceilings, Volume 2.1 Appendix E: ADB Room Data Sheets and to ensure compliance with SHTM 60 Ceilings. These are performance related ceiling types and include options for Art Opportunities. A List of the proposed Ceiling Types is listed below;<br><br>**A: Plasterboard Ceiling**<br>Smooth, imperforate and jointless membrane with concealed grid system, normal humidity and Class 1 surface spread of flame (**SHTM 60 CATEGORY 1**)<br><br>**B: 600x600mm Moisture-resistant Ceiling Tiles**<br>Imperforate and jointed membrane with concealed grid system, normal humidity and Class 1 surface spread of flame (**SHTM 60 Category 2**)<br><br>**C: 600x600mm Mineral Fibre Tiles**<br>Imperforate and jointed membrane with concealed grid system, normal humidity and Class 1 surface spread of flame (**SHTM 60 Category 3 & 5**) |



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**D: 600x600mm Mineral Fibre Tiles**
Imperforate and jointed membrane with exposed grid system, normal humidity and Class 0 surface spread of flame (**SHTM 60 Category 4**)
**E: 600x600mm Mineral Fibre Tiles**
Jointed membrane with exposed grid system, normal humidity and Class 1 surface spread of flame (**SHTM 60 Category 4 & 6**)

**F: 600x1200mm Suspended Mineral Tile Plank System with perimeter plasterboard margin detail**
Imperforate and jointed membrane with exposed grid system, normal humidity and Class 0 surface spread of flame (**SHTM 60 Category 4**)

**G: 300x1200mm Suspended Mineral Tile Plank System with perimeter plasterboard margin detail**
Imperforate and jointed membrane with exposed grid system, normal humidity and Class 0 surface spread of flame (**SHTM 60 Category 4**)

**H: Suspended Fabric Stretch Ceiling System with Backlights (Art Opportunity)**
Class 0 surface spread of flame.

**FEATURES:**
Ceiling features will be incorporated with the following criteria;

**A: Plasterboard Bulkhead – Reception Desks and Staff bases**
A plasterboard bulkhead is to sit above all department reception desks and staff bases.

The bulkhead is to match the shape of the desk beneath.

The bulkheads are to be co-ordinated with the overall lighting strategy.

**B: Plasterboard Bulkhead – Selected feature Waiting Areas**
The bulkheads are to be co-ordinated with the overall lighting strategy.

The bulkhead is to match the shape and dimensions of the waiting area zone below.

**C: Plasterboard Bulkhead – Lift Lobbies A, B, F.**
A plasterboard bulkhead is to sit above lifts in main public lift lobbies. Overall width/ diameter of the bulkhead to span the full width of lift core structure to create interest and demarcate the lift area.

The bulkheads are to be co-ordinated with the overall lighting strategy.

**D: Plasterboard Margin to Hospital Streets and Department Corridors**
The general mineral tile plank system to hospital streets and department corridors will include side feature infill plasterboard panels of varying dimensions to fit between plank and wall.

**E: Plasterboard Ceiling – Department Entrances**
A smooth plasterboard ceiling is proposed for certain entrances into departments. The ceilings may also include feature soffits and are to be co-ordinated with the overall lighting strategy.

### 3.3. Internal Fire Escape Stairs

Treads to be formed from precast concrete to accept vinyl sheet flooring finish.

Guarding (balustrade infill panels) to be ppc perforated mild steel sheet.

Handrails and uprights to be painted mild steel; handrails and to comply with the requirements of Building (Scotland) Regulations and BS 8300 with regard to size, shape, texture and colour.

Children's Hospital to have additional lower handrail at 600mm.

All fire escape stairs have been designed to suit mattress evacuation with clear shaft sizes extending up to the plantroom floor levels. Physical separation of the stair flights will be provided at ground floor level where the stairs serve the basement FM tunnel.

Risers and going of each step to be consistent within flights; rises are not to be open.



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**3.4. Atrium Feature And General Balustrades**

**NSGH (Adult) Hospital Atrium**
To the First floor Restaurant. Timber plywood fins between 1375 – 2450mm height with glass infill panels with stainless steel patch fittings and stainless steel handrails to comply with the requirements of Building (Scotland) Regulations and BS 8300 with regard to size, shape, texture and colour.

To the Upper Level Balconies and Bridge Links. Extruded aluminium twin uprights with double offset panel holders to support toughened glass infill panels. Natural hardwood or stainless steel handrail to comply with the requirements of Building (Scotland) Regulations and BS 8300 with regard to size, shape, texture and colour.

**NCH (Children's) Hospital Atrium**
To the Upper Level Balconies and Bridge Links. Extruded aluminium twin uprights with double offset panel holders to support toughened glass infill panels. Natural hardwood or stainless steel top handrail and lower handrail at 600mm.to comply with the requirements of Building (Scotland) Regulations and BS 8300 with regard to size, shape, texture and colour.

Glazing generally is to comply with BS 6262: part 4:1994 'code of practice for glazing for buildings. Safety related to human impact' and Building (Scotland) Regulations.

**3.5. Doors And Shutters**

**GENERAL DESIGN**

The proposed Doorset sizes comply with the Table of Doors in Section 7.5.1 of the Employer's Requirements. The Door Grades have been specified as solid-core construction and to meet SHTM 58 Internal Doorsets. These are generally Heavy Duty Doorset Grades, with Medium Duty specified to administration areas and associated WC's. Severe Duty Doorset Grades will be required to Hospital Streets generally, and specific stores if required.

The effective clear width of door leaves generally to meet the requirements of BS 8300:2001 'design of buildings and their approaches to meet the needs of disabled people – code of practice (amd 15617)' and Building (Scotland) Regulations.

The design of internal door-sets is generally to meet the requirements of Building (Scotland) Regulations, BS 8300:2001 'design of buildings and their approaches to meet the needs of disabled people – code of practice (amd 15617)' and the applicable sections of the disability discrimination act 1995.

**Minimum periods of fire resistance**
The internal doorsets have been designed to meet the required fire-protection performance. The Fire Ratings of the Doors have been specified to meet SHTM 81 (version 3) Fire precautions in new hospitals, HTM 05-01 to 03 Firecode – Fire safety in the NHS, and to co-ordinate with the Fire Strategy Drawings and Fire Strategy Report in Volume [2], Section [2.10].

**Radiation Protection**
Radiation Protection and the requirements for lead-lining and Radiofrequency shielding to doors will be provided to meet the Board's Radiation Protection Adviser's requirements.

**Acoustic performance**
The Acoustic Ratings of the Doors have been specified to meet SHTM 2045 (Parts1 to 4) Acoustics and HTM 08-01, and to co-ordinate with the Acoustic Report in Volume [3], Section [3.40].

**Glazing performance**
Vision panels incorporating glazing and hardwood beads are to meet the specified period of fire resistance from BS 476: part 22: 1987. Safety glazing is to comply with BS 6262: part 4 and Building (Scotland) Regulations.

The Vision Panel Type Strategy has been developed in response to Volume 2/1: Employer's Requirements (Hospitals) - Section 7.5 Doors, Volume 2.1 Appendix E: ADB Room Data Sheets. The size of vision panels has been allocated according to the functional requirements of each room type. Large full height vision panels are provided to all Inpatient Bedrooms to ensure maximum visibility is maintained. Half height vision panels are provided where the function of the room requires an element of privacy/security. Standard full height vision panels are provided generally to all staff administration offices, meeting rooms, staff rest/beverage rooms, all rooms associated with being places of work, generally to the public areas (such as the atria) and to all corridors to



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ensure DDA compliance.

The vision panels to the Children's Hospital doors have been designed with their own identity in response to Volume 2/1: Employer's Requirements (Hospitals) - Section 7.5.5 bb.

The design of vision-panels is to satisfy the varying requirements for observation, safety and privacy. The Privacy Requirements for the door glazing has been developed in response to Volume 2/1: Employer's Requirements (Hospitals) - Section 7.5 Doors, Volume 2.1 Appendix E: ADB Room Data Sheets. Where a door is noted in the Schedule as being **'obscurable'**, within 'patient sensitive' areas, this equates to a vistamatic type vision panel with interstitial blinds. Other rooms not noted may additionally require privacy; it is assumed that this can be provided by other means such as a curtain, blinds (external) or obscurable film.

**Protection**
The Door Protection has been specified to ensure compliance with SHTM 59 Protection. The final Protection Strategy may be adjusted following consultation with the Board/FM provider to ensure that a strategic approach is undertaken, utilising the 'minimum' quantity of protective devices to ensure the Hospitals do not appear over-protected and institutional, and thus improving the quality of the interior environment.

**Finishes**
All doors, except plantroom and some FM rooms will be laminated or veneered with solid hardwood lippings.

All plant room doors and some FM doors will be pre-finished door-sets for painting.

All finishes to natural timber to suit the particular environment and ease of maintenance/infection control.

**SHUTTERS**
Where required these will be powder coated aluminium or steel if fire-rated.

## 3.6. Ironmongery

**GENERAL DESIGN**

Internal door-sets including all architectural ironmongery will be designed to meet the required fire-protection performance standards.

The design of all architectural ironmongery to internal door-sets is generally to meet the requirements of Building (Scotland) Regulations, BS 8300:2001 'design of buildings and their approaches to meet the needs of disabled people – code of practice (amd 15617)' and the applicable sections of the Disability Discrimination Act 1995.

Door closers to be incorporated to internal door-sets shall be carefully selected to meet the requirements of Building (Scotland) Regulations.

With the exception of doors to patient bedrooms and doors which are kept locked shut, fire-doors are to be fitted with self-closing devices. Closers to fire-doors shall meet the requirements of BS EN 1154 category of use 4 to close a door from up to 180 degrees. In accordance with the association of building hardware manufacturers code of practice 'hardware for timber fire and escape doors'.

Electromagnetic hold-open devices will be required on a number of swing doors on main circulation routes and department entrances.

Lever assemblies generally shall be non-sprung and manufactured to meet the requirements of BS EN 1906.

Bolts generally shall be of a high-quality, lever action, flush-type manufactured to suit the requirements of BS EN 12051.

Suitable door stops of concealed fixing types will be provided with robust holders matching other ironmongery on the door and rubber inserts which are easily replaceable using simple tools.

**FINISHES**

Finishes to stainless steel components shall be no. 4 satin for BS EN 1670 class 4 corrosion resistance.

**CUBICLES AND VANITY UNITS**
Fittings and ironmongery to be aluminium with polyester powder finish of colour contrasting with door surface.



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**3.7. Glazed screens**

**TYPES**

Aluminium polyester powder coated or varnished timber frames. Where fire resistance is required the frame will be required to be steel or timber.

**PERFORMANCE**

Glazing within compartment walls should have the same period of fire resistance to meet the SHTM and Building (Scotland) Regulations.

Glazing generally is to comply with BS 6262: part 4:1994 'code of practice for glazing for buildings. Safety related to human impact' and Building (Scotland) Regulations.

Safety glazing generally is to comply with BS 6206:1981 'specification for impact performance requirements for flat safety glass and safety plastics for use in buildings' (reprinted, incorporating amendment no's 1, 2, 3, 4 and 5)'

The design of manifestations to be applied to internal glazed screens will meet the requirements of the Building (Scotland) Regulations

**3.8. Protection**

**GENERAL DESIGN**

The Wall Protection has been specified to ensure compliance with SHTM 59 Protection. The final Protection Strategy may be adjusted following consultation with the Board/FM provider to ensure that a strategic approach is undertaken, utilising the 'minimum' quantity of protective devices to ensure the Hospitals do not appear over-protected and institutional, and thus improving the quality of the interior environment.

**PROTECTIVE DEVICES**

**Handrails**
Mid-height rails, 100mm to 200mm deep, usually mounted about 1000mm above floor level. Fixed with a gap between rail and wall: they may also serve as a crash rail.

**Crash Rails**
Mid-or low-height rails, 200mm to 250mm deep, usually mounted from 200mm to 1000mm above floor level, singly or in banks of two or three; they may be fixed directly to walls or with a gap between rail and wall face.

**Buffer Rails**
Mid-or low-height rails, 75mm to 100mm deep, usually mounted from 200mm to 1000mm above floor level, singly or in two or three: they may also be fixed vertically to protect the opening edges of doors and as bed locators.

**Corner Guards**
50mm to 100mm in each dimension, usually fixed from top of skirting to about 1000mm but sometimes up to 2100mm above the floor level.

Trolleys with four wheels can be kept away from walls by low level crash rail, or kerbs/skirting.

All materials shall be those which are not prone to splinter or produce sharp edges or snags.

**Bed Locators**
Located as the 1:50 layouts.

**Other Areas**
In other special areas, such as operating theatres, hygiene considerations may take precedence over the above Design Philosophy. Rails may be omitted in favour of overall durable, washable finishes.

**DOORS**
**Kick Plates**
In general public circulation areas for pedestrian traffic kick plates will be provided to corridor side of the door. In highly pedestrian trafficked areas kick plates will be provided to both sides of door.

**Buffer Rails/Part And Full Height Protection**
Additional protection will be provided where required to comply with SHTM 69.

**3.9. Fixtures and fittings**

**TYPES**
Fixed pieces of joinery furniture are covered by the following groups;

**Reception desks**
Refer to separate section below

**Fixed cupboards benching and worktops generally**



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Laminate on MDF carcass. Laminate lipped shelving on adjustable steel brackets. Post formed laminate worktops.

**Shelving**
Melamine faced lipped chipboard shelving on adjustable steel brackets generally with stops as required.

**Blinds**
Roller blinds to be provided where patient privacy is required and solar glare control to offices.

**Raked seating to lecture theatre/Medicinema**
This will be a specialist framing system incorporating handrails.

**A: Fixed cupboards, benching and worktops generally**

**Fixed storage components (SHTM 63)**
Fixed storage components consist of either base units located under worktops or upper storage units attached to the wall. Carcasses are to be MDF with melamine faced finish. Sloping tops are required to the top of the wall units for infection control issues.

All storage components shall comply in general with the requirements of BS 4875. Storage components fall into the categories listed below.

For dimensions: height, length and depth of worktop, refer to the loaded equipment drawings and Room Data Sheets (see section Volume 2/Section 2.9).

**General worktops and workbenches (SHTM 63)**
Worktops/workbenches under this section refer to generic worktops only and do not include counters to reception desk / staff bases or specialist workbenches such as carpenters, engineers, dental, welding and casting workbenches.

Worktops are to be plastic laminate faced to all with a common profile that is compatible between abutting components of differing materials. Lippings and edge details to match the colour and material of the overall finish.

Worktops are to be solid end capped.

**Laminate faced worktops:**
To be constructed from highly durable, 0.9mm post forming grade laminate and bonded onto either MDF or moisture resistant particle board core. Where worktops are made up of more than one piece a precise factory made joint will be made. They will be factory finished and have laminated faced ends. The front edges are to be rolled.

**Stainless steel faced worktops:**
Stainless steel worktops are either dished and may include a 50mm upstand or integrated splash back panel where specified. Where worktops include sink bowls, drainers, hoppers and taps reference will be made to SHTM 64 – 'Sanitary Assemblies' for size and location of sink bowls, details of taps, traps etc. Stainless steel worktops, with or without sinks or hoppers will be fitted with an earthing terminal.

**Leg supports to worktops:**
Leg supports will be in accordance with the nominal heights outlined in SHTM 63 'fitted storage system, 920mm or 720/740mm to the underside of the worktop, with the facility for vertical adjustment and for the incorporation of a floor anchoring device. Refer to Equipment plans / elevations /Room Data Sheets for dimensions.

**Generic worktop supports are outlined below:**
Single leg support: powder coated leg, 30mm diameter with plastic insert at the bottom. Leg attached by steel plate to underside of worktop.

Cantilevered leg: powder coated leg, 25mm box section fixed to wall and worktop, resting on floor with adjustable foot. Plastic insert to the bottom of the foot.

Carcass units fixed back to partitions / walls may be used to support worktops and side cheeks. Knock out panels will be incorporated to accommodate service runs.

**B : Shelving**

For exact dimensions: height, length and depth of shelving and coordination with other equipment, windows and doors.

Shelving to include slatted horizontal adjustable, plastic coated, sloping, plinth mounted.

**Laminate faced shelving:**
Laminate faced MDF shelves attached to wall with brackets.

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**Stainless steel shelving:**
Attached to walls on brackets.

**C : Tracks for cubicle curtains (SHTM 66)**

For exact dimensions: height, length and depth of tracks and coordination with other equipment, windows, screens and doors.

Cubicle curtain tracks will be provided in wards, treatment examination rooms and single bedrooms generally. According to SHTM 66 each cubicle curtain track system should comprise:

Gliders or runners will be designed to enable attachment of curtains by hooks or buttons and a device which will facilitate the loading or unloading of curtains from the track.

The system must not contain material capable of supporting the growth of bacteria, fungi etc.

The track height of suspended installations will normally be 2100mm (subject to coordination with equipment drawings / Room Data Sheets).

The suspended track must be restrained to prevent horizontal movement.

**D : Pharmacy Aseptic Suite**

To be agreed following release of the Board's brief at the next stage.

**E : Fixed feature seating**

Fixed seating is to be located in the main entrance atrium and the children's atrium and both the emergency department waiting areas. The seats are to be made of polypropylene and wood. Circular combined seating units fixed to a circular floor mounted beam of varying diameters. Seats in combined units to be different colours. They will have integrated arm rests and tables.

**3.10. Reception Desks / Staff Bases**

For 3D visual images refer to the Wayfinding Strategy in Volume 3; Section 3.2.

**CONSTRUCTION**

Desk type 1 to be constructed as a steel box section for greater impact resistance, desk type 2 and 3 to have a soft wood construction. All desks to have steel L shaped leg supports powder coated to selected RAL colour. Desk legs must be set back and allow for a free run of space beneath desk for storage units.

Desks where indicated are to have a lowered work surface extending 1500mm along and 750mm high to allow for disabled access from both sides of the desk. The lowered surface will also include a knee recess of at least 500mm deep.

Where desks are situated behind partitions and are accessible via a hatch or window (for example the cash office) disabled access will be accommodated.

**Desk Type 1A – Reception Desk; Main Adult Atrium:**

The desk is to have wood veneer to the facade with back lit polyester/resin art panel inserted around the curved front. Images and natural textures are to be encapsulated into the resin such as grass and leaves.

Jointless homogenous acrylic polymer (Corian) in a neutral colour to worktops and drawer/cupboard fronts with rounded edges. Routed port holes for cable management to be inserted into desk top.

Integral trunking to underside of desk.

Pigeon hole storage to be integrated into the desk, all ironmongery to be stainless steel, contrasting with surround. Lockable computer storage to be supplied with suited key.

Glass writing shelf to be raised on stainless steel fin supports 1100mm from floor.

1500mm wide wheelchair access will be provided with 500mm deep knee recess in line with requirements of BS 8300.

Stainless steel laminate recessed kick plate.

**Desk Type 1B– Reception Desk; Children's Atrium:**

The overall desk structure is to be an irregular ellipse



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shape with varying heights, widths and thicknesses. The desk will have smooth worktops, lockable storage, electrical services and lighting and patient accessible writing shelves and DDA recesses integrated within it. The desk will be clad in a smooth, seamless high gloss finish such as corian, fibreglass or resin. The shape will be irregular and will need to be of a specialist design specific to the project. The worktops are to be made of the same material as the cladding.

Certain parts of the cladding will be translucent and able to filter light from within. The desk will therefore require an internal light source such as cold cathode or LED lighting.

Certain sections of the desk will have interactive play panels inserted for children to play with. These will include lights and moving parts.

There may be the need for kick space heaters to be installed under the desk to supply extra heat for the staff. This is subject to an assessment of heating level s nearer the time.

**Desk Type 2 – Reception Desk, Department Reception:**

Wood veneer to facade of desk and storage/drawer fronts, ironmongery to be stainless steel contrasting with surround. Coloured laminate panel/strip to desk façade.

Integral trunking to underside of desk.

Worktops to be inlaid with vinyl set in 20mm from desk edge, 25mm thick bullnosed or champhered hard wood to front edge of desk top. Routed port holes for cable management to be inserted into desk top.

350mm wide glass writing shelf to be on stainless steel fin supports.

**3.11. Soft Furnishings**

1500mm wide wheelchair access with knee recess, stainless steel laminate to recessed kick plate.

**Desk Type 3 – Staff Base, General Department:**

Wood veneer to facade of desk and storage/drawer fronts, ironmongery to be stainless steel, contrasting with surround.

Coloured laminate panel/strip to desk façade.

Integral trunking to underside of desk.

Worktops to be inlaid with vinyl set in 20mm from desk edge, 25mm thick bullnosed or chamfered hard wood to front edge of desk top. Routed port holes for cable management to be inserted into desk top.

350mm wide writing shelf to be made of joint less homogenous acrylic polymer (Corian) and supported on stainless steel fin supports.

1500mm wide wheelchair access with knee recess to be installed where indicated.

Stainless steel and laminate to recessed kick plate.

Soft furnishing used within the scheme will be selected and a suitable strategy fully developed in conjunction with the Hospital board. All soft furnishings used will comply with the requirements of SHTM87 and the performance requirements in turn comply with BS5852 in line with the Fire Safety Regulations 1988. All curtain fabric used should comply will comply with BS 5867 in addition to the standard fire compliances for soft furnishing.

**3.12. Equipment**

All Hospital Equipment is categorised using the NHS standards for Group 1 – contractor supplied; Group 2 – Hospital Board free issue/supplied fixed by Contractor and Group 3 – loose items. The full equipment lists items have been specified and priced as the Equipment Schedule issued by the Board; refer to Volume 6.0/Section 6.1. However the exemplar Generic rooms have been loaded according with the brief requirements. These are listed and shown in Volume 2 Section 2.9.

**3.13. Sanitary Appliances**

**General:**
Sanitary installations comply with the requirements of current legislation including relevant parts of Building (Scotland) Regulations, provisions of the disability discrimination act and other instruments whether referred to in this specification or not.



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Where sanitary fittings abut worktops/walls/panels it is essential that they are neatly finished and sealed with a suitable sealant in an approved colour (usually white/clear). In general sanitary ware is to be provided in vitreous china finish. Where applicable it may be required or acceptable to look at either stainless steel, fireclay or cast resin materials for sanitary ware.

**Sanitary Appliances:**
All selected sanitary appliances are to be from approved manufacturers and these should be able to provide the necessary documentation to provide evidence of ceramic industry certification limited and relevant agreement certification where applicable.

**Cubicles and Vanity units:**
Generally it is preferable for all cubicles and vanity units to be selected from a compatible manufactured range of products which allow for manageable maintenance and replacement strategies over the life of the building.

**Integrated Plumbing System:**
Generally it is preferable for the integrated plumbing system to be selected from a manufactured range of products which allow for manageable maintenance and replacement strategies over the life of the building.

Where sanitary appliances are required to have an IPS system, it is required that the IPS unit be provided with the necessary taps, traps and fixings to allow for the anticipated use of the selected sanitary item. The IPS systems are to comply with the requirements SHTM64 and SHTM68 Appendix B for cleaning criteria to accessible panels.

The system is to be metal framed pre-plumbed system with high pressure laminate faced MDF or WBP plywood fixed and removable access panels, heavy duty rated, suitable for hospital use involving humid condition and frequent exposure to cold and hot water. Vertical panel edges to be post formed. Panels should be capable of withstanding frequent cleaning, general knocks and abrasion in use. They should be capable of being easily cleaned to aesthetic and clinical standards.

**Performance Standards and Tests**:
Appendix A to SHTM 64 contains the requirement that duct and panel assemblies should comply generally with the requirements of BS 8131 1989. British standard code of practice for accommodation of building services in ducts and BS 1186 1990 parts 1 and 2. Timber for and workmanship in joinery.

Appendix B contains summary of test procedures for panels.

**3.14. Finishes**

The Finishes proposals have been developed in response to Volume 2/1: Employer's Requirements (Hospitals) - Section 7.9 Finishes, Volume 2.1 Appendix E: ADB Room Data Sheets and to ensure compliance with the appropriate SHTMs. These are performance related finishes types and include options for Art Opportunities. The colours will be developed during the next stage of the project as part of the integrated Interior Design, Wayfinding and Arts Strategy.

**FLOORS FINISHES:**
The Floor Finishes Strategy has been developed in response to Volume 2/1: Employer's Requirements (Hospitals) - Section 7.9 Finishes, Volume 2.1 Appendix E: ADB Room Data Sheets and to ensure compliance with SHTM 61 Flooring. These are performance related finishes types. Colours will be developed during the next stage of the project as part of the integrated Interior Design, Wayfinding and Arts Strategy. A List of the proposed Floor Finishes Types is listed below;

**A**: Terrazzo/ceramic tiled flooring with matching skirting tile (100mm high) – four standard colours .
**B**: Homogenous vinyl sheet flooring with coved hot seam welded skirting (100mm) and joints. Flooring to achieve a BREEAM Class 'A' certification.
**C:** Heavy-Duty slip resistant vinyl sheet flooring with coved hot seam welded skirting (100mm) and joints. Flooring to achieve a BREEAM Class 'A' certification.
**D** Heavy duty extra slip resistant vinyl sheet flooring.
**E:** Extra slip resistant sheet flooring for bare foot wet areas with coved hot seam welded skirting (100mm) and joints. Flooring to achieve a BREEAM Class 'A' certification.
**F:** Decorative wood effect vinyl sheet flooring with hot seam welded joints and coved hot seam welded skirting (100mm) and joints. Flooring to achieve a BREEAM Class 'A' certification.
**G:** Static dissipative vinyl sheet flooring with coved hot seam welded skirting (100mm) and joints. Flooring to achieve a BREEAM Class 'A' certification.
**H:** Soft cushioned vinyl sheet flooring for children's play areas with coved hot seam welded skirting and joints.



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**J:** Heavy contract tufted carpet tiles, 100% synthetic yarn, anti static with hard wood timber skirting.
**K:** Solid hardwood timber flooring with lacquer finish and hardwood timber skirting
**L:** Specialist timber sprung flooring with batten support system for activity and impact spaces (gymnasiums), with hardwood timber skirting
**M:** Heavy (Severe Duty) traffic entrance matting – Main Entrances
**N:** Heavy (Heavy Duty) traffic entrance matting – General Entrances
**P:** Acrylic emulsion floor sealer
**Q**: Heavy duty epoxy floor

All safety flooring to be in accordance with the relevant slip resistance standards of the British Pendulum / TRRL Pendulum tests (a subject of BS 7976) or DIN 51097:1992 and DIN 51130:1992.

Stair nosings to be suitable for heavy resilient flooring and made of mill finished aluminium. Channels to have slip resistant vinyl inserts available to provide contrast to the surrounding tread / riser material as outlined in Approved Document Part M and BS 8300. Fixings to be concealed.

Tread alert panels 2.5mm thick will be positioned at the top and bottom approach to certain stairs. The panels are made of rubber and have a 6mm raised rib at 50mm centres across the full width of the tile. The raised ribs create a tactile surface that allows the visually impaired to recognise when they are approaching stairs as outlined in BS 8300 : 2001 and Guidance on the use of Tactile Paving Surfaces published by DETR (1998).

Certain flooring finishes will be required to achieve a BREEAM Class A certification as outlined in the list below.

**Floor Paterrns**

1 **Terrazzo/ceramic Tiles Floor type A –** inset patterns within the entrance atriums. Separation joint trims between colours to be provided in a range of polished materials including stainless steel and brass.
2 **Vinyl Sheet Floor type B -** Inset pattern approximately 2400mm - All 4 Bed Wards.
3 **Vinyl Sheet Floor type B –** Tramline strips approximately 500mm wide, inset along both sides of hospital streets and certain corridors. Strips to continue up the wall as a coved skirting.
4 **Vinyl Sheet Floor type B –** Simple inset floor pattern consisting of up to 3 colours in department corridors of paediatric and cancer departments and some single bed rooms.
5 **Vinyl Sheet Floor type B –** Colour inserts approximately 2000mm at departmental entrances.

**Epoxy Floor**
The finish will be heavy duty (‘HD’) to withstand continuous wheeled trolleys in accord with BS8204 part 6.

The epoxy finish will be laid flat and gullies will be provided to self contained areas and at a frequency to prevent leakages from plant tracking across pedestrian routes on the floor. The gullies will have a grating level with finished floor.

Synthetic resin to form the binder.

Epoxy floor finish to underground facilities management tunnel to be class 0 spread of flame.

Epoxy floor finish to all areas to be fire resistant and give off no toxic fumes in a fire situation.

**WALL FINISHES:**
The Wall Finishes Strategy has been developed in response to Volume 2/1: Employer’s Requirements (Hospitals) - Section 7.9 Finishes, Volume 2.1 Appendix E: ADB Room Data Sheets and to ensure compliance with SHTM 56 Internal Partitions. These are performance related finishes types and include options for Art Opportunities. The colours will be developed during the next stage of the project as part of the integrated Interior Design, Wayfinding and Arts Strategy. A List of the proposed Wall Finishes Types is listed below;

**A:** Water based quick drying diamond eggshell emulsion paint with anti-bacterial properties.
**B:** Water based acrylic diamond eggshell emulsion paint
**C:** Polymeric spray coating with anti-bacterial properties.
**D:** Elastomeric spray hygiene coating with anti-bacterial properties.
**E:** Watertight & impervious coloured wall cladding for wet areas.
**F:** Wood Panel Wall Cladding System



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**G:** Artwork opportunity, e.g. digitally printed fabric backed wallcovering.
**J:** Textured and patterned render finish to concrete walls (including dust sealant if required) within atrium spaces
**K:** Dustproof white sealant to lift shaft walls
**L:** Water based acrylic diamond gloss emulsion paint for atrium bridge feature pods and various other locations within atrium spaces
**M:** Feature coloured emulsion walls for department entrance, reception, ceiling bulkheads and waiting areas (as part of the Interior and Wayfinding Strategy)

**3.15. Wayfinding / Signage**

The Wayfinding Strategy has been developed in Volume 3/ Section 3.2.

The design proposal is underpinned by the need for effective wayfinding to facilitate the diverse functions of the new facilities. The design process will tested at each stage to ensure that design decisions support operational demands. Wayfinding refers to the movements around the hospital which will be made by staff, patients, visitors and for servicing and equipment. The goal of the design process is to deliver a high quality healthcare environment which is as user-friendly as possible for people to use, whether for the first time or all the time. This means that journeys to particular parts of the hospital should be as easy to understand as possible and that regular journeys should involve the shortest practical distances for travel. The wayfinding strategy addresses orientation and movement at a variety of scales and ensures that movements can be based upon logical but ultimately intuitive decisions. Clear wayfinding has underpinned the design process in order to make the design as clear and robust as possible.

**External signage**
This is integral to the Masterplanning and will be subject to approvals in discussion with the planning authorities.

**Internal Signage**
This includes both the directional signage and the room names/numbers to individual areas as well as the general

**Health & Safety signs**
Illuminated fire signage and photo luminescent fire signs. To be discussed with M&E Engineering desing requirements. Fire signage is to be compliant with BS5499 and BS5378. In addition to this there needs to be an optional provision for the specialist Healthcare dedicated fire signage which is only covered in HTM 52.

General directional signage from main entrance. Combination of ceiling hung and wall mounted. Colour coded to assist in way finding. There are optional compliance requirements with the NHS standards on these. However, this will require significant end user input and discussion to finalise a scheme in keeping with the design proposals.

Aluminium disk signs to bathrooms, WC's etc to be included in the Ironmongery packages to suit particular doors.

**3.16 Works of Art**

The Art Strategy has been developed in Volume 3/ Section 3.3. This is a crucial part of the scheme which needs both community stakeholders, end users and key Hospital Board Support. There are opportunities to include Artwork within key locations which can form part of the building fabric. These we have picked up below;

**A - Tensile Structures**

Material description:

1 - For use in atria as a feature integrated with the transparent roof as a hanging mobile structure. Also the structure will aid solar shading and acoustic attenuation in large spaces with a lot of hard surface materials.

2 – For areas of flat roof such as the retail units in the dining area in the main NSGH atrium or places that are looked down upon from above. The feature must provide an interesting addition to flat areas and link in to structures and design scheme of surrounding space – including the proposed children's theme. The structures must be easily accessed for cleaning to prevent build up of dirt and dust.

3 – Stand alone structures/sculptures positioned externally outside department entrances. These structures must act as interesting features highlighting the entrances to the visitor from far away and will be part of the wayfinding strategy. The children's entrance in particular may need to link in with a particular theme.

4- Stand alone structures/sculptures positioned externally



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in some courtyards and around the surrounding landscape. Structures will add vitality to the spaces from within the courtyard and provide some solar shade. They will also create interest when looked down upon from above all year round.

**B – High performance polyester resin panel**

This high performance resin panel has a high level of impact and chemical resistance suitable for heavy trafficked healthcare environments and is available with images and objects encapsulated into the material. The encapsulated materials provide a range of designs, surfaces and colours and allows for varying degrees of opacity.

The resin is also available with a UV inhibitor that makes it suitable for exterior applications. The panels can be fixed to walls with a standoff and spider point support system provided by the same manufacturer as the panels. The support system is engineered so that the panels are top hung with intermediate point supports along the sides and the bottom preventing the panel from moving / deflecting.

**C – Stained / etched glass panels**

These can be used in areas where public do not frequent – (e.g. Board offices and controlled visitor meeting suites). Generally as part of the art strategy glass panels will be avoided in highly trafficked patient areas.

**D – Printed Vinyl Wall Images**

These can add to large internal spaces and provide both a durable wall finish and attractive art feature incorporated in selected locations as part of the interior design scheme and art themes.



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# Specification for the Roof Drainage Installations

## General

The rainwater drainage system will comply with the relevant clauses of the NHS Model Engineering Specifications Parts C01, D08, Scottish Building Regulations, BSEN 12056:3, and the descriptions and requirements set out below.

Due to the large size of the hospital and the number of different roof areas it is considered that a gravity rainwater system would be the most appropriate solution for all the roofs areas.

However, the storm rainfall intensity for the Glasgow area is relatively lower than most other areas in the UK and therefore the number of rainwater outlets required is lower than would be for buildings in the south of the UK.

## Green Roof Drainage

Green roof drainage will be sized as conventional gravity roof drainage system.

## Perimeter Rainwater Pipes

With the lower roof areas of the podium building it may be acceptable to have architectural downpipes with hopper heads at the external perimeter thus reducing the number of internal rainwater downpipes and associated below slab drainage. The same proposal applies to courtyards.

## Rainfall Intensity

The design rainfall intensity is based upon BS EN 12056:3, Category 3 and is taken as 0.046 l/s/m2 for a building life span of 70 years and a storm return period of 315 years. This gives an 80% probability of the storm intensity not being exceeded during the life of the building.

## Rainwater Outlets

All roof rainwater outlets, except perimeter outlets, will be of the vertical spigot, anti vortex type to give an enhanced performance.

## Internal Rainwater Pipes

All internal rainwater pipes will be stainless steel to AISI 304 and will be installed in a manner to withstand 3bar internal pressure within the pipework system for the rainwater pipes serving the Tower Block and 2bar for all other areas.

The stainless steel pipe will be socket and spigot push fit pipe and fittings manufactured to EN 1124 Parts 1 & 2 and will be installed in accordance with the manufacturer's recommendations in order to achieve the pressure ratings required.

The connection between the stainless steel internal rainwater pipes, of 110, 160 and 200mm OD, respectively to the below slab drainage will be by means of a pressure rated coupling to ensure continuity of the pressure rating of the system.

Where it is possible rainwater pipes from outlets will be connected together to reduce the number of connections to the below ground drainage. Rainwater pipes will be positioned where a straight route through the building is possible so minimising offsets.

## Insulation

Insulation against surface condensation will be provided on all internal rainwater pipes throughout the installation. Insulation will be pre-formed mineral wool, foil faced matt with taped joints and a vapour seal.

## Access

Access points (full bore) for cleaning will be provided on all rainwater pipes. They typically will be at 1200 mm above finished floor level on each floor as appropriate but especially at ground floor level, and will be aligned with the architectural access provision.

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## Submission Reference:

Section 4.22 Specification Proposals – Group 1 Equipment

## Submission Response:

Group 1 equipment has been specified and priced as the Equipment Schedule issued by the NHSGG&C Health Board: refer to Volume 6.0 Section 6.1.

The following list of component references and manufacturers, although not exhaustive, are indicative of the standards in the proposal.

| 1. Storage Units and Non-Specialist Fixtures and Fittings: | |
|---|---|
| | Standard laminate selection is from the Formica Washroom range or equal. |
| | Healthcare Storage Units comprise a white melamine faced MDF carcass and high pressure faced laminate faced fibreboard frontal.<br>All plinths are supplied as moisture resistant fibreboard faced with black plastic laminate. |
| | A plinth mounted storage system is proposed throughout. Although not strictly HTM63 compliant this is now generally the preferred system due to increased storage benefits. The box plinths are manufactured from moisture resistant MDF faced in melamine and over laid with a continuous plinth in the same material. |
| | Rear upstands to worktops within HTM63 and HTM71 specifications are supplied only where specifically detailed within the ADB description. |
| | 16mm thick Trespa Athlon or equal (UK stock colours) Worktops are proposed specifically to Laboratory areas or where heat/acid resistance is required. |
| | Shelving is melamine faced MDF. |
| | A standard range of grab rails available in stock RAL colours is proposed. The grab rails are 35mm diameter stainless steel construction, polyester powder coated. As standard, the grab rails are provided with matching steel cover plates and the drop grab rails with a counter balanced mechanism. |
| | Mirrors are a standard range, with the exception of ADB Code MIR023 which will be 3.0mm polycarbonate mirror. |
| | Cubicle tracking Silent Gliss 6100 or equal. |
| | Steel racking is Mistral or equal |

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| 2. Specialist Equipment: | |
|---|---|
| CHA040 | Kavo Primus 1058 TM/S, or equal |
| CHA072 | Pelton & Crane Series 3000, or equal |
| DIA011 | Gambro AK200 Ultra, or equal |
| HOI006 | Arjo Maxi Sky 600, or equal |
| POO002 | Barr & Wray, or equal – 20m3 capacity pool with plant and balance tank. |
| REF070 | Labcold RLDF18041 Pharmacy Refrigerator 505 Litres, or equal. |
| REF080 | Labcold RSBT1056MD Compact Blood Bank Refrigerator, Shelf Model or equal. |
| WOR693 | Atmos Medical Limited C21 and AC workstation or equal |
| XRA010, 11, 12, 13, 15 & 18 | Based on installation only of Analogue equipment. |
| IMG026 | Philips Omnidiagnost, or equal |

| 3. Sanitaryware and Fittings: | |
|---|---|
| Generally, all Sanitaryware and associated fittings will be installed strictly in accordance with the supplier's recommendations. Colour to be selected from their standard range. | |
| BAS015 | Pland Gibraltar wall mounted Stainless Steel Rectangular Bowl Wash Basin or equal. |
| BAS101, 105, 106, 107, 109 | Armitage Shanks, HTM64 Portman Washbasin or equal, Vitreous China, White. |
| BAT001, 007, 008 | Armitage Shanks Nisa HTM64 Steel Bath or equal, Heavy Gauge Porcelain enamelled supersteel, slip resistant, 166 litre capacity, White. |
| BAT015 | Arjo, Primo, 50mm Waste Trap, Thermostatic valve, Fibreglass reinforced polyester. |
| DSU005 | Bali HTM64 Slop Hopper or equal, Stainless Steel. |
| DSU006, 007 | Pland Healthcare HTM64 combined Slop Hopper Sink & Drainer or equal |
| SIN013 | Pland Heathcare, Samoa HTM64 Janitorial Unit or equal, Stainless Steel. |
| SHO018 | Armitage Shanks Trevi Compact, lever operation, Thermostic Mixing Valve, Chromium plated. |
| SNS515, 516 | Pland Healthcare, Penang HTM64 Plaster Sink or equal, single bowl and drainer, Stainless Steel. |
| SNS753, 757, 756 | Ibiza Inset Single Stainless Steel Sinktop Sink & Drainer or equal. |
| TAP289 | Armitage Shanks, Contour 21 Basin Mixer, sequential. |



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| TAP343, 345, 359 | Armitage Shanks Markwik or equal, 15cm lever taps, Chromium plated. |
| TAP892 | Armitage Shanks, HTM64 Markwik Mixer, Thermostatic, Proximity Sensor Detection, Sterilisation System. |
| TRO603 | Pland Healthcare, Trinidad, HTM64 Scrub-Up Trough or equal, Stainless Steel, supplied with sound deadening pads. |
| WAS100, 101, 102, 103 | Armitage Shanks, HTM64, Strainer Waste or equal. |
| WAS110 | Armitage Shanks, HTM64 Contour Washbasin or equal, Vitreous China, White. |
| WCH001 | Armitage Shanks, Contour 21 HTM64 rimless WC or equal, Vitreous China, White. |
| WCH005 | Armitage Shanks, Contour 21 HTM64 rimless WC or equal, Vitreous China, White. |

| **4. General Electrical Outlets Switches & Fittings:** | |
|---|---|
| Our proposal is based upon fittings being provided by MK Electrical Limited and selected from their Logic Plus Range or equal. Colour of fittings to be selected from standard range. | |
| OUT002 | Logic Plus or equal white, flex outlet front plate, un-fused 20 amp. BS 5733 Dimensions 86mm x 86mm |
| OUT004/ OUT046 | Logic Plus or equal white connection units, un-switched, with flex outlet in base and thick front plate. All units are fitted with a 13 amp fuse-link. BS 1363 part 4. Dimensions 86mm x 86mm |
| OUT005 | Logic plus or equal white switch socket outlet 13 amp 1 gang to BS 1363 Part 2. Dimensions 86mm x 86mm |
| OUT010 | 2 gang Socket outlet for isolated power supplies. |
| OUT009/ OUT012 | Logic plus or equal white switch socket outlet 13 amp a gang to BS 1363 Part 2. Dimensions 86mm x 146mm |
| OUT011 | Logic plus or equal white switch socket outlet 13 amp 2 gang with neons, to BS 1363 Part 2. Dimensions 86mm x 146mm |
| OUT025 | Logic plus or equal white shaver supply unit 115 / 230v to BS 3535. Dimensions 146mm x 86mm |
| OUT030 | Masterseal or similar, ingress protected 1 gang un-switched 13 amp socket outlet |
| OUT032 | Masterseal or similar, ingress protected 2 gang switched 13 amp socket outlet. Dimensions 175mm x 115mm x 80mm |
| OUT049 | Logic Plus or equal white connection units, switched, dp with front flex outlet. All units are fitted with a 13 amp fuse-link. Dimensions 86mm x 86mm |
| OUT050 / OUT056 | Logic Plus or equal white connection units, un-switched, with flex outlet in base and thick front plate and tamperproof screws. All units are fitted with a 13 amp fuse-link. BS 1363 part 4. Dimensions 86mm x 86mm |
| OUT052 | Logic Plus or equal white connection units, un-switched, dp flush. All units are fitted with a 13 amp fuse-link. BS 1363 part 4. Dimensions 86mm x 86mm |
| OUT059 | Logic Plus or equal white connection units, switched, dp with neon flex outlet in base and thick front plate. All units are fitted with a 13 amp fuse-link. BS 1363 part 4. Dimensions 86mm x 86mm |



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| | |
|---|---|
| OUT121 / OUT215 / OUT217 | White, ABS plastic ganged faceplate and ports |
| SWC001 / SWC002 | Logic plus or equal white plate switches, 1 gang 10 amp. Dimensions 86mm x 86mm |
| SWC014 | White ceiling switch without mounting block, 16 amp dp one way, switch cord 1.5m length |
| SWC031 | Logic plus or equal, 1 gang dimmer plate switch 10 amp, fixed position. Dimensions 86mm x 86mm |
| SWC034 | Logic plus or equal, 1 gang push switch 10 amp, fixed position. Dimensions 86mm x 86mm |

| **5. Lighting:** | |
|---|---|
| Our proposal is based upon fittings being provided by Whitecroft Limited or equal unless otherwise noted. | |
| LIG050, 053 | Operating / Examination Lights, marLux H5/H5 Plus Range or equal, 15-28cm Light Field, Colour Temperature 4.300 K, Luminous Efficiency 285 lm/W, Light Head Diameter 65cm, semi-cardanic suspension. |



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Section 4.23 – see Section 4.22.3 (Sanitaryware and Fittings)



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Volume 4.24 Services Equipment (Kitchen Equipment Etc)

As design development progresses the kitchen equipment will be designed, specified, procured and installed by a leading specialist provider with relevant experience in the installation of quality healthcare primary facilities.

We have had initial discussions with CDS Wilman Ltd, a division of Wilman Universal Industries Ltd with whom we have an existing and successful working relationship for the provision of healthcare kitchen and catering facilities.

We anticipate that this input will lead to an appointment whereby CDS will become fully engaged in the philosophy of the contractual framework to coordinate the design, with that of the primary services, architecture and facilities management requirements.

The design will accommodate all necessary legislation and recommended best practices, to ensure that the facilities operate safely, efficiently and profitably throughout their service life.

The specialist turnkey provider will demonstrate an ability to access advice, expertise and supply from leading manufacturers, as well as having recourse to efficient and innovative bespoke fabrications to best meet the NHSGG&C Health Board's operative needs.

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# Specification for the Disposal Installations Above Ground Sanitary Pipework

## General

The sanitation pipework system will comply with the relevant clauses of the NHS Model Engineering Specifications Parts C01, C81, D08, Scottish Building Regulations, BSEN 12056:2, and the descriptions and requirements set out below.

The above ground foul drainage will be collected from sanitary fittings, equipment and outlets, by a system of vertical and horizontal pipework distributed within the building, to connect to the below ground drainage system. It will be a gravity discharge part-ventilated soil and waste system, i.e. main soil stacks and anti-siphon ventilation stacks.

Pipework will generally be concealed within modular sanitary panels and ceiling voids. Rodding access for pipework will be provided at the floor being served and not within the ceiling void.

Soil and waste connections on the ground floor will connect directly into the below ground drainage via stub stacks with vent pipes to upper floors where required. The upper floors will have a system of soil and waste stacks and vent pipework.

## Tower Block

At high level third floor where the tower meets the podium building there will be a large number of soil and waste stacks from the upper tower floors. To minimise the amount of pipework passing through the podium building these soil and waste stacks will combine within the plant rooms and drop at points where they can run through the lower podium levels with minimal offsets. Stack positions will be towards the outer edge of the building to reduce the amount of below slab drainage required under the hospital.

Planning of the layout will be such that to avoid pipework at high level above operating theatres and other sensitive areas.

## Pipework

Sanitary stacks will be in cast iron with PVCu for low level branch pipework. Branch pipework subject to high temperature discharges will be in stainless steel. Ventilation pipework will be in PVCu. Ground floor stub-stacks will be in PVCu.

## Chemical and or Radioactive Discharges

There will be separate drainage stacks for any chemical and radioactive drainage so that they will be kept separate from general domestic soil and waste water drainage in the above ground drainage system and will discharge into the below ground drainage. Chemical and radioactive discharges will not be retained in any form of storage, unless advised specifically by the Board.

Waste pipework for chemical and radioactive drainage will be in polypropylene.

## Access

Access points (full bore) for cleaning will be provided on all sanitation stacks. They typically will be at 1200 mm above finished floor level on each floor as appropriate but especially at ground floor level, and will be aligned with the architectural access provision.

Access on ground floor stub stacks will be by means of top-mounted, full bore, cleaning eyes.

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# Specification for Mains Water Installation

The incoming water main service systems will comply with the relevant clauses of the NHS Model Engineering Specification Parts C01, C07, C82, D08, addendums to Part C, SHTM 2027, 2040, BS 6700, Scottish Water Byelaws 2004, and descriptions and requirements set out below.

## Mains Water Installation

### Incoming supplies

Two 150mm water mains from the two external site water mains will enter the basement of the Acute/Children's Hospital and run at high level in the basement corridor to enter the basement cold water storage tank room. Each of the 150mm supplies will connect to the duplicate break tanks serving the filtration plant to ensure that in the event of a mains failure both break tanks will continue to be supplied by the other incoming water main.

### Water Meters

The two incoming water mains will be separately metered with meters being linked to the BMS system.

### Isolation Valves

Both incoming water mains will be fitted with isolation valves and non-return valves at the point of entry into the basement of the building.

### Incoming Fire Main:

A separate 100mm fire main will enter the Acute/Children's Hospital at basement level and run within the basement corridor to serve the Sprinkler and Wet Riser tanks in their tank room. This supply will be unmetered.

### Fire Cladding

The incoming fire main will be fire clad where is passes through any non sprinklered areas on its route to the fire tank room.

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# Specification for Cold Water Services

## General

The cold water services systems will comply with the relevant clauses of the NHS Model Engineering Specification Parts C01, C02 C07, C82, D08, addendums to Part C, SHTN 02, SHTM 2027, 2040, HTM 04-01, BS 6700 and descriptions and requirements set out below.

Note that all these domestic supplies can only connect to outlets and equipment that are suitable for potable quality water supplies, i.e. Type B air gap protection.

Any equipment requiring Type AB air gap protection will be provided with its own integral protection as part of unit or system to prevent any contamination of the potable supply in accordance with the Water Authority requirements.

All pipework will be BS316 stainless steel.

## Cold Water Service Installation

It is generally recognised that the quantity of water storage given in Appendix 1-Table 4 of SHTM 2027 is now excessive. This is a result of the use of low capacity WC cisterns, more provision of showers than baths, water restrictors on basins, etc. Therefore, a reduced capacity of storage is proposed to cover a 12 hour period, and equates to approximately 350 litres per bed.

At each main plant area a pressure-regulating valve will be provided to maintain similar water pressure in the various parts of the building providing convenience of use and minimizing water consumption.

All specific Department Areas will be provided with isolation provision, with draining down facilities for maintenance and shutdown.

In public toilet areas electronically timed isolation valves will shut off the water supply when the area is not in use to conserve water in the event of a leak occurring.

All main distribution and dropper connections will be provided with isolating valves, with local isolation valves installed to isolate and shut down individual Ward/Department areas.

All distribution systems will be capable of being chemically cleaned, disinfected and designed in compliance with SHTM 2027, 2040, HTM 04-01, SHTN 02 and BS 6700.

It should be noted that domestic supplies can only connect to outlets and equipment that are suitable for wholesome quality water supplies, in accordance with the Water Regulations.

## Cold Water Storage Tanks & Break Tanks

Bulk wholesome quality water storage tanks and break tanks will be located within the basement of the hospital building. The tanks will store 100% of the total main hospital water storage.

The tanks will be insulated and complete with raised ball valve housings, middle partitions, self-draining bases, flushing drain, overflows and all necessary connections to comply with Water Authority requirements.

Separate connections will be made from the break tank header to the filtration plants.

Separate connections will be made from the cold water storage tank header to the booster sets.

The whole of the domestic water services installation will be boosted in pressure to ensure adequate flow at outlets points, such as showers, etc.

## Water Filtration Plant

All incoming water for wholesome storage will pass through a filtration system with a 0.2 micron capacity. The filtration plant will be in duplicate and served by duplicate break tanks of one hour capacity. Each filtration plant will be capable of supplying full peak water demand to the bulk cold water storage tanks.

## Cold Water System

From the bulk storage tanks, the wholesome boosted cold-water service will be routed via the main distribution routes to plant level and vertical risers to feed the various departments.

## Wholesome Water Booster Sets

4 No. packaged wholesome grade water booster set will be provided within the tank room.

The booster sets will be arranged so that a duplicate set will serve the Podium and Children's Hospital and a duplicate set will serve the Tower Block.

Each booster set will comprise:

- Dedicated control panel
- Multiple variable speed duty pumps to maintain a constant discharge pressure including a stand-by pump
- Accumulator vessel



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## Meter Facilities

Water sub-meters will be incorporated with direct reading and a BMS interface onto all major plant areas and their associated HWS storage vessels to allow water consumption to be monitored, and in the case of hot water, energy to be calculated. All sub meters will be linked to the BMS.

## Special Filtration Requirements

Where water supplies to equipment require special filtration, this will be supplied as part of the equipment by the particular supplier.

## Watering Points

Watering points incorporating back-flow protection will be provided in each courtyard, on roof areas, in FM facilities and in each plantroom for wash down use.

Watering points suitable for Category 5 type installation will be provided in refuse storage areas for wash-down purposes.  (Not clinical waste areas)



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# Specification for Hot Water Services

## General

The hot water service systems will comply with the relevant clauses of the NHS Model Engineering Specification Parts C01, C02 C07, C82, D08, addendums to Part C, SHTM 2027, 2040, BS 6700 and descriptions and requirements set out below.

Note that all these domestic supplies can only connect to outlets and equipment that are suitable for potable quality water supplies, i.e. Type B air gap protection.

Any equipment requiring Type AB air gap protection will be provided with its own integral protection as part of unit or system to prevent any contamination of the potable supply in accordance with the Water Authority requirements.

All pipework will be BS316 stainless steel.

## Hot Water Service Installation

The hot water distribution system will be designed for 60ºC flow and 55ºC return circulating temperature.

A number of hot water systems will be provided, generally related to the location of the MTHW/LTHW heating stations.

Domestic Hot Water (DHWS) will be generated and stored utilising high efficiency semi-storage calorifiers comprising plate heat exchangers and buffer vessels. The hot water generator and distribution system will be fed from the boosted water system, and thus be pressurised. Units will be generally sized to provide one unit for standby purposes, for example 2 @ 100% or 3 @ 50% of the total demand.

The calorifiers will be directly heated from the main primary MTHW heating circuit from the Energy Centre. The storage temperature will be controlled through the BMS by 2-port control valves on the primary heating system, along with 2-port direct acting control valves to provide protection override in the case of high hot water flow temperatures.

The storage system will be capable of achieving higher storage temperatures for carrying out a pasteurising process to minimise contamination from Legionella bacterium within the storage vessel. Each storage vessel will be isolated from the distribution system while the process is carried out.

The DHWS distribution system will be configured with a pumped return to maintain temperatures within the system in accordance with HTM 2027, associated HGN “safe” hot water and surface temperatures and HTM 2040. The pumped return system will minimise “dead legs” and reduce water consumption by providing the correct temperature of water at the outlet with minimum delay.

The system will have isolating valves generally as the cold water system. In addition, the return water pipework will be provided with valves that isolate and automatically regulate the flow rate, in order to maintain satisfactory temperatures throughout the system.

The hot and cold water system pressures will be equalised at each service outlet for successful blending of hot and cold water through anti-scalding devices prior to use.

The anti scalding devices will be used throughout the hospital where service outlets provide water for personal hygiene washing. Designated outlets will use unmixed hot water at system temperatures where utensils or garment washing is required.

Subject to compliance with the SHTMs or with Board approval, hot water service outlets which may be subject to misuse or for clinical convenience may use proximity switching, timed flows and flow regulation for water conservation purposes as described for cold water services.

At each main plant area a pressure-regulating valve will be provided to maintain similar water pressure in the various parts of the building providing convenience of use and minimizing water consumption.

## Special Filtration Requirements

Where water supplies to equipment require special filtration, this will be supplied as part of the equipment by the particular supplier.

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# Specification for Steam & Condense Installation

## General

There are no process loads within the Adult or Children's Hospitals, for example CSSD, requiring large quantities of steam.

Furthermore, there is no current requirement for humidification to Operating Theatres, again a large consumer of live steam.

There are, however, some areas that will still require such as Pharmacy Aseptic Suite. To avoid significant distribution losses it is proposed to utilise local electric packaged humidifier units in these instances.

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# Specification for Space Heating

## General

The space heating systems will comply with the relevant clauses of the NHS Model Engineering Specification Parts C01, C02, C07, C82, addendums to Part C and descriptions and requirements set out below.

## Secondary Heating Circuits

From the plate heat exchangers installed within the plantroom areas, as described under Heat Source, the secondary heating circuits systems will emanate to serve specific zones of the hospital.

Each of the main secondary heating systems will be self-contained to provide security of supplies between the various zones.

Each secondary heating system will include the following elements:

i. Heating pressurisation plant with twin pump make-up plant expansion vessel to maintain the pressure in the secondary heating system.

ii. Run and stand-by secondary constant temperature circulation pumps.

iii. Run and stand-by secondary variable temperature pumps.

iv. A deaeration unit on the main flow pipework.

v. The system will be capable of being treated with corrosion inhibiting chemicals via a manual-dosing unit.

The secondary constant temperature pumps will circulate all the secondary water through the plate heat exchangers with temperature control on the primary side of the heat exchangers.

The main secondary flow temperature will operate with a nominal design condition of 80ºC flow and 65ºC return.

The secondary constant temperature system will supply:

i. The secondary variable temperature system

ii. The various air handling unit heater batteries located throughout the associated plantroom areas and remote heater batteries as appropriate.

It is proposed to provide 2-port control valves on all the air handling unit heater batteries. This will allow the use of variable speed control on the secondary constant temperature pumps and conserve energy and reduce carbon emissions. Pump speeds will be varied by inverter motor control units which will be controlled by the BMS to maintain the pressure differential between flow and return pipework within set limits with sensors located in the main sub-distribution pipework. The system will not permit the secondary constant temperature pumps to operate at less than 40% of their design maximum.

The secondary variable temperature heating circuit will serve all the occupied areas heat emitters such as - radiant heating panels, chilled beams, low level low surface temperature heaters, and low level radiators.

The variable temperature flow water temperature will be varied by a control valve, to modulate the water temperature, in respect to the outside dry bulb temperature, with correctional adjustment via the local area sensors.

The local heat emitter valves will generally be controlled by direct acting thermostatic radiator valves and, therefore, the secondary variable temperature pumps will be variable speed type with control via motor inverter unit, under the command of the BMS. BMS sensors and direct acting pressure differential units will be installed in the secondary variable temperature pipework system, generally as the constant temperature system. The system will not permit the secondary variable temperature pumps to operate at less than 40% of their design maximum.

A series of strategically positioned room sensors will be installed to provide feed back to the BMS on conditions and also to allow adjustment on set point settings and minimum air temperature control.

The systems will be divided into sections to allow individual wards and areas to be isolated from the main system for maintenance or shutdown.

Where departments are not operated on a 24 hour basis, the local heating circuits will incorporate motorised valves controlled by the BMS on a timed basis, with optimised control to suit the particular occupation times.

All main and subsequent department branches will be provided with balancing/ measurement and isolation valves along with drain cocks, air vents etc. to ensure proper control and regulation of water flow rates under design load condition with flushing, draining and re-filling facilities.

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## Heat Emitters

Heat emitters will generally be ceiling located providing inherent safety in respect of patient care. Where heat emitters are within touch of patients or the public, the emitters will be of the low surface temperatures type with a mean surface temperature below 43∞C.

Thus, the majority of heating will be by either ceiling perimeter radiant panels or incorporated in the active chilled beam units.

In areas where large areas of vertical glazing are envisaged, then heated hand barriers or continuous low-level convectors will be considered to offset down-draught.

These solutions will limit surface temperature to prevent scalding to patients and the general public.

The individual room heating emitters (radiant heating panels, radiators etc.) will be provided with local direct acting control valves, to restrict the water flow on rise of air temperature and provide local control facility. These will be occupant adjustable.

Where emitters are located in areas provided with unitary cooling or air conditioning, controls will be integrated to minimise energy consumption while maintaining local control.

The main entrance atria in the Hospital's Main Entrance will be provided with underfloor hot water heating systems.

Air curtains will be provided above entrance doors to alleviate drafts.



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# Specification for Space Cooling

## General

The space cooling ( refrigeration plant and chilled water distribution systems) will comply with the relevant clauses of the NHS Model Engineering Specification Parts C01, C02, C10, C82, addendums to Part C and descriptions and requirements set out below.

## Central Refrigeration Plant

Chilled water will be used as the main cooling medium for the ventilation and air conditioning systems.

The total cooling load for the Adult and Children's hospitals has been assessed at 7000kW. For resilience purposes the cooling plant will be arranged as two systems, designated A and B, with each part sharing the load equally, i.e 3500kW. The two systems will be housing in the main energy centre to the North of the main hospital building to concentrate the maintenance of heavy plant away from the main hospital building, but separated by a four hour firewall.

To provide the 3500kW load, each cooling plant will comprise a total of eight chillers divided between the A and B circuits. The plant will comprise seven packaged air cooled multiple screw compressor water chillers located on the roof of the Energy Centre, each sized at 1000kW, and 1000kW absorption or adsorption type chiller fed via the CHP units, with associated adiabatic dry air cooler will be provided adjacent to the air cooled chillers. The absorption cooler will be linked to the A circuit only.

The packaged air cooled chillers will be of the high efficiency type provided an ESEER approaching 4.8 compared with a typical packaged chiller ESEER of 4.0. The compressors will utilise Chlorine free refrigerants with zero Ozone Depletion Potential values and offering refrigerant coefficient of performance values of 95% or better, such as R134a.

Each chiller will be provided with acoustic attenuation packages to meet not only the day/night boundary sound level limitation, but also the intrusive noise level limits into the hospital.

The provision of a total of eight 1000kW chiller units will provide an N+1 arrangement for the plant for resilience purposes.

Chilled water pumping and pressurisation equipment will be located in the plantroom adjacent to the chiller plant. From the plantroom, chilled water pipework systems will run to serve air-handling equipment in the various plantroom areas, and terminal cooling equipment in selected spaces.

The chilled water system will be 100% water with trace heating protection where the pipework is exposed on the roof.

## Primary Cooling Circuits

Primary chilled water circuits will emanate from the Energy Centre.

The primary circuit will operate at nominal design flow and return temperatures of 6ºC and 14ºC respectively.

The Primary chilled water system will include the following elements:

i. Duplicate chilled water pressurisation plant with twin pump make-up pumps and expansion vessels to maintain the pressure in the primary chilled water system.

ii. Multiple circulation pumps.

iii. A combined dirt separator/deaeration unit on the main flow pipework.

iv. The system will be capable of being treated with corrosion inhibiting chemicals via a manual-dosing unit.

Individual pumps for each chiller will ensure a stable design flow rate through each chiller and then form a common primary pipe loop.

Primary heating circuits will emanate from the Energy Centre arranged as A and B circuits feed from their respective cooling plant.

The flow and return pipework will be routed from the energy centre using pre-insulated buried pipework and enter the basement corridor system of the main hospital. At this point the A and B circuits will join a header which, for resilience purposes, will allow either A or B circuits to feed the hospital. From the header chilled water radial feeds will run via the basement corridors and risers to the hospital's plant areas to serve plate heat exchanger stations.

It is proposed to provide 2-port control valves on all of the major load centres to allow the use of variable volume control of the primary chilled water circuit. The circulating pumps will be controlled by the BMS in sequence as needed to match the varying load demand. This will maintain the pressure differential between flow and return pipework within set limits with sensors located within the main sub-distribution pipework. The system will not permit the primary circuit pumps to operate at less than 40% of their design maximum.

## Plate Heat Exchangers

The purpose of the plate heat exchanger installation is to positively separate the primary and secondary circuits and create smaller strategic load centres in a manner which improve system integrity and operational requirements.

Each plate heat exchanger will be selected to provide a percentage of the total design duty as indicated on the drawings. Sizing will be on the basis of primary side flow and return temperatures of 6ºC and 14ºC respectively and secondary side temperatures of nominally 8ºC and 13ºC flow and return.

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## Secondary Cooling Circuits

From the plate heat exchangers installed within the plantroom areas, the secondary chilled water circuits systems will emanate.

Each of the main secondary chilled water systems will be self-contained to provide security of supplies between the various areas.

Each secondary chilled water system will include the following elements:

i. Chilled water pressurisation plant with twin pump make-up plant expansion vessel to maintain the pressure in the secondary chilled water system.

ii. Run and stand-by secondary circulation pumps serving air handling plant cooling coils and fan coil units.

iii. Run and stand-by secondary circulation pumps serving chilled beams.

iv. A deaeration unit on the main flow pipework.

v. The system will be capable of being treated with corrosion inhibiting chemicals via a manual-dosing unit.

The secondary pumps will circulate all the secondary water through the plate heat exchangers with temperature control on the primary side of the heat exchangers.

The main secondary flow temperature will operate with a nominal design condition of 8ºC flow and 13ºC return.

It is proposed to provide 2-port control valves on all the air handling unit cooling coils. This will allow the use of variable speed control on the secondary circulation pumps, achieved by inverter motor control units located within the plantroom area. These will be controlled by the BMS to maintain the pressure differential between flow and return pipework within set limits with sensors located in the main sub-distribution pipework. The system will not permit the secondary circulation pumps to operate at less than 40% of their design maximum.

The secondary chilled beam circuit will serve all the occupied areas with local cooling devices such as chilled beams, etc. This circuit will supply water at a higher temperature than the primary loop, achieved via an injection form of mixing of the main secondary chilled water circuit. The circuit will operate at nominal design flow and return temperatures of 14ºC and 17ºC respectively to avoid condensing. The temperature of the water will be controlled to remain above the dewpoint of air within the spaces served.

The systems will be divided into sections to allow individual areas to be isolated from the main system for maintenance or shutdown.

All main and subsequent department branches will be provided with balancing/ measurement and isolation valves along with drain cocks, air vents etc. to ensure proper control and regulation of water flow rates under design load condition with flushing, draining and re-filling facilities.

## Chilled Beams/Ceilings

Local cooling, where required, will be provided via ceiling mounted enclosed chilled beams or chilled ceilings. The beams/ceilings will be complete with dedicated controls enabling temperatures to be varied within each treated space. The equipment will, where applicable, include heating or will integrate with other forms of local heat emitters. The integration will take the form of control sequencing to avoid simultaneous heating and cooling to minimise energy input. The controls will comprise local room mounted temperature sensor/controller operating 2-port electrically operated valves in response to user inputs to raise or lower the room temperatures.

## Fan Coil Units

Where heat gains in spaces exceed of the ability of chilled beam units to provide adequate cooling fan coil units will be utilised.

The units will be complete with dedicated controls enabling temperatures to be varied within each treated space. The units will, where applicable, include heating. The controls will comprise local room mounted temperature sensor/controller operating 2-port electrically operated valves in response to user inputs to raise or lower the room temperatures.

## Computer Rooms

Close control air conditioning units will be located in main computer rooms to provide conditioning air to the spaces.

Units will be arranged on an N + 1 basis to provide 100% standby in the event of a single unit failure.



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# Specification for Ventillating Systems

## General

The mechanical ventilation and air conditioning systems will comply with the relevant clauses of the NHS Model Engineering Specification Parts C04, C82, addendums to Part C, HVAC DW144, 154, TR19, SHTM 03-1, HTM 05-1, BS 5726 (updated), and descriptions and requirements set out below.

## Ventilation and Air Conditioning Installations

### General

Wherever possible, natural ventilation via openable windows will be provided in perimeter rooms.

The Hospital will be mechanically ventilated throughout all internal rooms with no access to natural ventilation, perimeter areas where mechanical ventilation is required for clinical and operational and environmental control reasons and deep plan perimeter areas where necessary to assist the natural ventilation.

The various departments will be served by a number of ventilation air handling systems. The number and extent of these systems proposed are required to meet a number of criteria, namely:

1. To provide energy efficient operation with areas of the hospital operating on a similar time and/or clinical nature being served from the same system.
2. To maintain a sensible level of availability, such that in the event of plant breakdown or maintenance, only limited areas of ventilation are lost.
3. Air handling plants will have their availability reinforced by the provision of duplicate motors or fans, which will automatically changeover to maintain the ventilation requirements.

In general, each air handling system will be served by packaged air-handling units containing all components necessary (e.g. fans, coils, filters, etc.) to provide the correct environmental control of those spaces/rooms served.

Active chilled beams and fan coil units will also be provided for comfort cooling in areas where there is a need for separation or where high heat gains make these a more appropriate choice of systems.

### All Air Systems

These will be low velocity systems with air being distributed throughout the building in galvanised sheet steel ductwork via ceiling void and riser duct spaces terminating in ceiling or wall diffusers as appropriate.

Extract air from the area concerned will be drawn through a similar ductwork system to extract fans in the roof plantrooms for discharge to atmosphere, or returned to the air handling plant for recirculation.

Recirculation will be provided only in areas where there is no danger of cross infection, e.g non clinical areas.

On full fresh air systems, heat recovery devices will be considered, to exchange heat between incoming fresh air and exhausted extract air wherever significant energy savings can be achieved.

Fire separation in ventilation systems will be provided in accordance with SHTM81 and will be achieved using electrically operated smoke/fire dampers incorporated in all ductwork passing through fire compartment and sub-compartment walls and floor slabs. Ductwork passing through designated fire hazard rooms will be provided with fusible link fire dampers.

Acoustic attenuators will be incorporated in ventilation systems to prevent excessive noise transmission to occupied areas of the building or the external environment.

Cross talk attenuators will be used where necessary to achieve privacy, and will have a performance equal to the building element that they pass through.

Supply air handling plants will be of a packaged construction with a double skin casing, complete with thermal/acoustic insulation material between the two skins. Units will house filters, coils, fans and motorised inlet dampers, etc. Heat recovery devices and humidifiers will also be incorporated where required. External fan motors will be provided to all units.

All units will incorporate activated carbon filters to control odours entering the ventilating systems from the adjacent Scottish Water sewage works.

Vibration isolation will be provided in the form of spring anti-vibration mountings located under fan and motor bases with flexible connections from the fan discharge and the adjoining ductwork.

Heating coils will be served with low temperature hot water piped from the constant temperature heating distribution circuits. Cooling coils will be served with chilled water piped from the associated chilled water distribution system.



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Generally, temperature control will be by means of room or duct-mounted sensors which will operate, via the automatic control system software the control valves on the hot water and chilled water to the heating and cooling coils respectively.

Areas will be controlled in zones or as individual rooms as necessary to achieve the conditions required by the ADB Sheets.

Supply plants will incorporate panel type coarse pre-filters followed by high efficiency bag filters. Absolute HEPA (high efficiency particulate air) terminal filters will be provided only for 'ultra clean' areas such as UCV Theatres and Pharmacy Aseptic Suite. Consideration will be given to installing HEPA filters on plants serving vulnerable patients to afford additional protection against air-borne contamination, e.g. Aspergillus.

Full humidity control, including humidification and dehumidification, will be provided only in critical air-conditioned clinical areas such as the Pharmacy Aseptic Suite or wherever close control of humidity is required for the successful operation of sensitive equipment, e.g. computers, as advised by the ADB Sheets. Space will be included within Operating Theatre air handling units for the provision of humidification in the future. Since the anticipated requirement for humidification is limited this will be provided by electric duct mounted steam injection humidifiers.

Air pressure regimes for theatre suites will be designed in accordance with the guidance provided in SHTM 03-1 employing wall mounted pressure control valves.

Air volumes will be established by consideration of heat gains or losses and also the air change rate necessary for comfort and safety as appropriate for the activity carried out in each area. Relative air pressures between rooms will be maintained to suit the activity concerned, by design of the supply and extract air volumes, and use of pressure relief equipment where necessary to prevent cross infection or transfer of unpleasant odours between areas, as required by the ADB sheets.

### Extract Air Heating Energy Recovery

Thermal wheel heat exchangers will be incorporated within extract air plants handling uncontaminated air. These plants will also include main dirty air extract plants. The heat exchangers will transfer heat energy within the extract air to a pumped circulation water heat recovery system. Heat exchangers within the fresh air plants will utilise the recovered heat to pre-heat incoming fresh air.

Where the use of thermal wheel heat recovery units is found to be impractical run-around coil systems will be employed and comprise pumps, distribution pipework, control and isolating valves, expansion vessels and automatic controls.

The heat recovery systems will be configured to operate at all times when useful energy can be recovered and used by the various air plants.

### Local Cooling Units

Local cooling, where required, will be provided wherever possible via ceiling mounted enclosed chilled beams arranged for sensible cooling. The devices will be complete with dedicated controls enabling temperatures to be varied within each treated space. The equipment will, where applicable, include heating or will integrate with other forms of local heat emitters. The integration will take the form of control sequencing to avoid simultaneous heating and cooling to minimise energy input. The controls will comprise local room mounted temperature sensor/controller operating 2-port electrically operated valves in response to user inputs to raise or lower the room temperatures.

In circumstances where sensible cooling units cannot meet the heat gains, then fan coil units may be considered.

## Description of Systems

The following descriptions cover typical ventilation systems within the Hospital:-

### Wards

The ventilation systems serving ward areas will provide treated air to internal spaces, clinical spaces and make-up air for sanitary accommodation.

Make up air for en suite WC accommodation will be introduced directly into the associated bedroom and via active chilled beam units to maintain the required space temperatures.

The supply air will be heated during the cold weather periods to a temperature close to room conditions. In warm weather periods, the air will be cooled to reduce internal temperatures with the supply air temperature adjusted to suit outside conditions.

Air will be extracted from spaces by either the clean or dirty extract systems as appropriate. Heat recovery will be provided between the supply and extract systems.

### Isolation Rooms

Each isolation room will be provided with its own ventilation system in line with SHBN 04.

Each system ventilation plant will filter, heat and cool the air and supply it to the room lobby at the required temperature, as dictated by a sensor in the bedroom.

Air will be transferred to the room via a pressure control valve and then extracted from the suite via the en suite WC, and ducted by fire-clad ductwork to a dedicated extract fan in the plantroom.

Each extract fan unit will comprise an isolation damper and a centrifugal cased extract fan, with the motor located out of the air stream, and the exhaust duct will discharge 3.0 m above roof level.

Due to the small size of the plants, heat recovery is not considered viable and will therefore not be provided.



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### Outpatient Type Departments
The ventilation systems serving outpatient areas will provide heated air to internal spaces, clinical spaces and make-up air for sanitary accommodation.

The supply air will be heated during cold weather periods to a temperature close to room conditions.

In warm weather periods, the air will be cooled to reduce internal temperatures with the supply air temperature adjusted to suit outside conditions.

Air will be extracted by either the clean or dirty extract systems as appropriate.

Heat recovery will be provided between the supply and extract systems.

### Operating Theatres
Each operating theatre will be provided with a dedicated ventilation system.

Each system ventilation plant will filter, heat and cool the air and supply it to the suite of rooms, and arranged to allow individual temperature set point adjustment and indicated on the associated surgeon's theatre panel.

The pressure regimes between the spaces in each theatre suite will be maintained by a combination of supply and extract rates to each space, and pressure stabilisers located in the walls.

Heat recovery will be provided between the supply and extract systems.  Out of hours setback will be provided by reducing the air volumes and temperature set points.

In theatres with a requirement for Ultra Clean Ventilation (UCV), a specialist will be employed to undertake the provision of the UCV canopy in accordance with SHTM 03-1.

Ancillary areas associated with the Operating Theatre department will be served from a dedicated plant.

### Critical Care Departments
Critical care departments such as ITU/HDU will be provided with dedicated ventilation systems.

The supply air ventilation plant will heat, cool and humidify the air as required by the control system to provide the correct condition in the various rooms/zones.

Final temperature control to the spaces will be achieved by terminal reheaters controlled from user adjustable sensors within each space. Heater batteries will be located wherever possible in plant areas, but where heaters can only be provided in the ceiling void of the occupied space they will be located away from patient occupied spaces, i.e bed spaces.

The supply air may be filtered to a high level of cleanliness by plant mounted HEPA filters to protect the most vulnerable patients from any potential airborne contaminant from the external environment.

Heat recovery will be provided between the supply and extract systems.

### Comfort Cooled Areas
Departments where space temperature control is required, such as the Emergency Centre, Diagnostic Imaging, etc. will be provided with treated air to clinical spaces and spaces with high equipment gains.

The department will be arranged in a number of zones to suit the control requirements, varying heat gains and use of the spaces.

Particular areas that have high-density heat gains will be provided with terminal cooling to achieve the required space conditions.

The supply air ventilation plant will heat or cool the air as required by the control system to provide the correct condition in the various rooms/zones.

Heat recovery will be provided between the supply and extract systems.

### Dirty Extract Systems
Potentially contaminated air extract systems will be discharged at, or above, roof level at high or low velocity as appropriate.  Such systems will include the following:

### Toilet Extract Systems
A separate dirty extract will be provided to extract air from toilets, bathrooms, cleaners' rooms and dirty utility areas.

Air will be extracted via grilles in the individual rooms and ducted by galvanised sheet steel ductwork similar to that provided for the general supply and extract systems to extract fans in the plantrooms.

Where toilets or bathrooms are in isolated positions, not convenient to central ducted systems, small units operated by light switch control will be considered.

### Kitchen Ventilation Systems
Ventilation to the central catering areas will be provided to deal with the requirements on the cooking equipment to reduce odours and limit temperatures within the space.

Extraction canopies will be positioned over ranges of equipment as appropriate. Some canopies may require in-built fire suppression systems to achieve the recommendations of the Fire Consultant.

Contaminated air extract systems will be discharged at, or above, the tower roof level at high velocity as appropriate.

Ventilation make-up air will be provided to balance the extracted air.

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### Safety Cabinet Extract Systems

The Pharmacy will be served by separate extract systems serving the general areas whilst extracts from safety cabinets will be handled by individual contaminated extract systems.

The design of the general extract system will be co-ordinated with the associated supply system and contaminated extracts to maintain suitable pressure levels and ensure the Clean Room requirements of the Aseptic Suite are maintained.

### Fire and Smoke Dampers

The ductwork system will be provided with fire dampers in locations corresponding to the appropriate fire separation barriers. Actuation of the dampers will be in accordance with SHTM81 Firecode, and the Fire Consultants Report, subject to the separation performance of the barrier.

Where actuation of the damper is via the fire alarm system the damper will be motorised to facilitate re-opening after testing of the fire alarm system. Dampers utilising fusible link operation only will be provided with local mechanical indicator on the side of the fire damper. Dampers with motorised operation will be monitored via a separate electronic remote monitoring system.

Fire rated ductwork will be utilised where the use of fire dampers is inappropriate.

### Data Hub Rooms

Data hub rooms will be provided with cooling by means of fan coil units.

Rooms will be provided with ventilation air to achieve a positive pressure room.

### Computer Rooms

Computer rooms will each be provided with floor standing ‘downflow’ close control cooling units, served from the chilled water system.

Units will be arranged on an N+1 basis to provide resilience in the event of failure or planned maintenance.

Rooms will be provided with ventilation air to achieve a positive pressure.

# Electrical Source & Mains

## General

The incoming electrical supply to the site and 11,000V distribution around the site is described in specification 4.55 “Electrical Mains”.

Low voltage distribution is described within specification 4.35 “Electrical Power Supplies”.

This specification describes the substations within the Adult Acute and Children’s Hospitals.

The electrical source and mains will comply with the relevant clauses of the NHS Model Engineering Specification part C41, SHTM06-01, HTM06-01, SHTM2007, SHTM2011, SHTM2014, SHTM2015, SHTM2020, SHTM2023, MEIGaN, IET Wiring Regulations 17th Edition.

## Substations

Six substations will be provided to the Adult Acute and Children’s Hospitals, as indicated on the accompanying schematic drawings. The substations will be located within the plantrooms on the 2nd, 3rd and 4th floors.

Cast resin transformers will be provided. Each substation will receive two transformers as indicated on the drawings.

The dual transformers will form part of the dual-unified supply strategy and will be termed A side and B side. The transformers will be enclosed in separate fire rated rooms. The hospital will be served by two 11,000V rings.

Transformers will be connected in the following sequence:

| Ring 1 | Ring 2 |
|---|---|
| Substation 1A | Substation 4A |
| Substation 2A | Substation 5A |
| Substation 3A | Substation 6A |

| Open Point | Open Point |
|---|---|
| Substation 3B | Substation 6B |
| Substation 2B | Substation 5B |
| Substation 1B | Substation 4B |

The A and B sides of the 11,000V rings will be routed by diverse routes so that on the loss of one limb, and by automatic switching, power will not be lost.

Transformers will be in accordance with BS 6463, BS EN 60726 Transformers will be in accordance with BS 6436, BS EN 60726, BS 7821, BS 7844, BS EN 60076, BS 171, BS 7806, CENELEC Harmonisation Documents HD 464 S1 : 1988 + / A3 : 1992 for dry-type power transformers, HD 538-1 S1 : 1992 for three-phase dry-type distribution transformers 50Hz, from 100 to 2500 kVA with highest voltage for equipment not exceeding 24 kV and IEC 905 : 1987 - Loading guide for dry-type power transformers.

The transformers will normally be loaded to up to a maximum of 50% load. Upon failure of one transformer within a sub-station the remaining unit will be able to be loaded to 100% (includes future 25% capacity). The cast resin transformers will be able to supply full specified load without forced cooling.

## Ring Main Units

Each Ring Main Unit will have the features/specification as follows:-

i. Vacuum breakers
ii. Normal rated voltage minimum 11 kV
iii. Normal rated current ring switches 630 A
iv. Circuit breaker for transformer feeder
v. Earthing facilities for circuit breaker and ring switches
vi. Each leg is to be motorised and controlled automatically via a Power Management System which is described within specification 4.55 “Electrical mains”.

High voltage switchgear will be compliant with BS EN 62771-200, BS EN 60694, IEC 60466, BS EN 62271-102, BS EN 62271-100, BS EN 60265-1.



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# Electrical Power Supplies

## General

The incoming electrical supply to the site and 11,000V distribution around the site is described in specification 4.55 “Electrical Mains”.

The substations within the Adult Acute and Children’s Hospitals are described in specification 4.34 “Electrical Source and Mains”.

This specification describes the low voltage distribution within the Adult Acute and Children’s Hospital.

The electrical power supplies will comply with the relevant clauses of the NHS Model Engineering Specification part C41, SHTM06-01, SHTM2007, SHTM2011, SHTM2014, SHTM2015, SHTM2020, SHTM2023, MEIGaN, IET Wiring Regulations 17th Edition.

## Description of LV Distribution

As described in specification 4.34, the Adult Acute and Children’s Hospitals will be served by six substations, each comprising two transformers, one fed from the A side of the 11,000V ring the other fed from the B side.

Each transformer will serve a 400/230V LV switchboard which in turn will serve sub switchboards within the electrical zone served by that substation.

The main LV switchboards and the sub switchboards will be provided with bus switches so that on loss of the A side supply the switch will close and the switchboard will be entirely supplied from the B side, and vice versa.

Submains cables from the main LV switchboards will be contained in electrical riser cupboards, A side cables will be segregated from B side cables within the risers.

Departments requiring specialist or heavy loads (Imaging Departments, Catering etc.) will be provided with their own LV panel fed directly from the respective main LV panel.

The sub switchboards will feed local distribution boards, a minimum of two per department, one from the A side sub switchboard and one from the B side. Distribution boards will serve lighting and power.

Fixed items of equipment will not be provided with dual supplies, in risk category 3, 4 and 5 areas such supplies will be derived from sub switch panels which themselves have a dual supply.

The Ward Tower will be served as follows:

Each Ward Tower will be provided with two risers each accommodating local distribution boards fed from a rising bus bar. Two bus bars will be provided per tower, one fed from the A side and one from the B side.

## Switchboards

All main LV switchboards will be constructed to Form 4 Type 6. Sub switch panels serving clinical risk category 3, 4 and 5 areas will be to Form 4 Type 6.

Sub switch panels serving non clinical risk category 1 and 2 areas will be to Form 4 Type 2.

## Submains Cables

Submains cables will generally be copper conductors, XLPE/SWA/LSF. Fire rated cables will be provided as appropriate to life safety systems. Submains cables will be laid on cable ladders and trays where run horizontally. Vertical runs of cables in risers will be cleated to wall mounted channel.

## Bus Bars

Bus bar trunking will comply with BS EN 60439-2 and will be fully type tested.

Fire barrier units will be provided within bus bar trunking as appropriate.

Low Voltage Air Break Switches will comply with the following:-

- BS.EN 60947, having an uninterrupted rated duty, a utilisation category AC 23
- Air break switches will have the following number of poles:
- Single phase- Double pole. (DP)
- Three phase- Four pole. (4P)
- Each switch will be provided with facilities for padlocking in the “OFF” position
- To prevent accidental contact with live parts, switches of the withdrawable chassis isolating type, will have either fully shrouded fixed contacts or insulated cover plates
- Switches in individual enclosures will have an earth terminal, meet the degree of protection specified for the switchboard and have the operating mechanisms interlinked with the access door

Distribution Boards will be:-

- Wall mounted
- Fabricated from sheet steel
- Provided with fully opening doors fitted with cylindrical lock
- Type B, surface mounted
- Fitted with an isolator

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Miniature Circuit Breakers will comply with the following:-

MCBs will be of the ratings specified for enclosure continuous operation, and will be manufactured in accordance with the current British Standard BS.EN 60898

Moulded Case Circuit Breakers will be:-

- Manufactured in accordance with the current British Standard BS-EN 60947.
- Residual Current Devices will comply with the following:-
- BS 4293 and the requirements of the IEE Wiring Regulations
- When incorporating overcurrent and short circuit trips and used as circuit breakers the combined RCD/ MCB will comply with BS EN 60898

## Isolated Power Supplies for Areas of Medical Use

Isolated Power Supply Units will be provided for areas of medical use. These will provide Type IT power supplies to meet the requirements of HTM 2007, BS.7671 Guidance Note 7 Section 10 and MEIGaN.

The medical locations covered by isolated power supplies are as indicated on the accompanying LV schematics.

Each isolated safety power supply unit will incorporate:-

- A safety isolating transformer to DIN VDE 0551:Part 1
- A local alarm and test module
- Remote alarm and test stations
- Transformer insulation temperature monitor
- A load monitor
- A 32 A MCB distribution board
- Output 230 V, 50 Hz, single phase, earth free

The units will comply with EN 60439-1:Part 1, DIN VDE 0107:1994-10, DIN VDE 0660Part 500 and IEC439-1:Part 1. The insulation monitor will comply with DIN VDE 0413:T2/01.73 or ASTMF 1209-89.

For the Operating Theatres, the remote alarm/indicator units will be provided in the Theatre. This facility is only required for IPS units serving Theatres. The alarm/indicator units in the Theatres will be built into the Surgeon's Panel. The operational status of the mains supply to each Isolator Power Supply will be relayed to the Building Management System.

IT sockets in the pendants in the Operating Theatres will be controlled from the Operating Theatre Panel.

The isolated power supplies will be contained within metal floor standing cabinets having an ingress protection rating of at least IP42. They will have lockable front covers and will incorporate suitable ventilation facilities for the designed duty. They will be provided as single, dual or triple units as indicated on the schematic drawings. Within each dual or triple unit, each module will be totally electrically independent of the others and will be electrically and physically segregated.

## Uninterruptible Power Supplies and Standby Batteries

Batteries or UPS will be provided to support:-

- Engineering hub cabinets, 2KVA, 10 minute autonomy
- FM office engineering hub, to suit load, 1 hour autonomy
- BMS front end, to suit load, 1 hour autonomy
- BMS outstations, to suit load, 1 hour autonomy
- Generator/HV network control and monitoring system
- Central UPS for Server Rooms, 15 minutes autonomy
- Central UPS for IPS units, to suit load, 15 minutes autonomy, except for theatres 60 minutes
- ICT nodes, 15 minutes, rack mounted
- Emergency lighting luminaires will incorporate self contained battery packs
- Battery back up will be integral to security, access control, fire alarms and nurse call (central data logger)

Central UPS will be configured as follows:-

For a given load, each UPS assembly will comprise 2 No. UPS, each capable of supporting the full load.

Each UPS will have a battery of 50% of the required autonomy so that when both UPS are healthy the full load can be maintained for 100% of the required autonomy. If one UPS is not operational the other UPS will support the full load for 50% of the required autonomy.

UPS will comply with BS EN 62040-3.

The generated harmonic distortion at the point of incoming supply will be in accordance with G5/4-1.

Central UPS batteries will have a ten year design life.

Maximum interruption times to the primary supply will be as scheduled in Appendix 1 of SHTM06-01.



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Only fixed medical lighting and escape lighting will be supported by standby batteries. This will include operating theatre lamps and fixed examination lamps in clinical risk category 3, 4 and 5 areas. General lighting will not be battery supported. Power to general lighting will be restored within the times required by Appendix 1 of SHTM06-01.

## Risk Categories

The electrical services will be designed in accordance with SHTM06-01 so that the electrical infrastructure will adequately protect the end user from power failures.

Acceptable risk options will be assessed in accordance with section 4 of SHTM06-01.

To clarify conflicting statements in the ITPD, bedrooms will be classed as Clinical Risk Category 4, and will fall into Group 1 as defined by IEE Guidance Note 7, Chapter 10.

## Final Circuits

Final circuits within departments will generally be interleaved such that each room has a minimum of one lighting and one small power circuit from both the A side and B side.

Final circuits will generally be LSF insulated copper conductors run in concealed steel conduit and trunking.

Modular wiring systems will be used in non clinical areas.

## Earthing and Bonding

The whole of the electrical installation within the Hospital and all equipment connected thereto will be effectively earthed in accordance with BS 7671.

A high conductivity copper earth bar will be mounted in each main switchroom.

The main earthing conductor and main equipotential bonding conductors will terminate at this bar through removable test links.

A main earthing conductor of nominally half the csa of the phase conductor, and a network of earth electrodes to achieve a resistance to earth of less then one ohm will be provided.

Individual XLPE green/yellow single core main equipotential bonding conductors will be provided at all required locations, in accordance with the IEE Wiring Regulations.

The ceiling grid in each room will be cross bonded to the earthing network. In large rooms the ceiling will be bonded in multiple locations, once per structural grid bay.

## Neutral to Earth Point

The neutral to earth point will be derived at the substation. A removable test link (by tool) will be provided between the neutral and earth bars within the LV switch panel to allow for this connection to be made at the LV switch panel, such that the “Ref” protection is incorporated.

## Circuit Protective Conductors

A separate circuit protective conductor will be installed together with the phase and neutral wiring for all circuits including sub mains cabling.

All installations covered by this contract including switchboards, distribution boards, trunking, tray, ladder, basket tray, conduits, circuit protective conductors, cable armour will effectively form a continuous bonded earthing system.

The earth terminal of all socket outlets will be solidly earthed to the system.

## Main Equipotential Bonding Conductors

A main equipotential bonding conductor will be installed from the main earthing terminal to the main pipework at boilers and chillers and to the main ductwork at air handling units. Local earth bars may be installed in the plantrooms to reduce the cost of this installation. Plantroom earth bars will be connected to the main earthing terminal by means of main equipotential bonding conductors.

Main Equipotential Bonding Conductors will be half the cross sectional area of the main earthing conductor, except that they will be a maximum of 25 mm2 in area.

## Conduits and Conduit Fixings

Metal conduits crossing expansion joints will be fitted with proprietary couplings with an earthing clip at each side of the coupling, connected by a 4 mm2 copper wire.

## Switch and Riser Cupboards

In each riser cupboard at each floor, there will be an earth bar linked to the main earth terminal of the respective main low voltage panel. This will be used to connect all supplementary and equipotential earthing conductors for the area of the building served by that riser.

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## Server and Hub Rooms

A functional and general earth connection will be provided in each server and hub room, terminated at a wall mounted busbar arrangement.

## Imaging Equipment Earthing

Earthing in diagnostic imaging and radiotherapy rooms / suites will be compliant with the MEIGaN document published by MHRA.

A reference earth bar ERB will be installed in each diagnostic imaging and radiotherapy room / suite. The ERB will comply with MEIGaN guidance.

Each ERB will be bonded back to the earth bar in the local electrical riser by means of a protective conductor of equal cross section as the phase conductor of the mains supply to the room. The SWA of the supply cable will not be used as an earth path and will be terminated at the supply end only. The ERB will be close to the mains supply isolator in an accessible position. The ERB will be installed in an enclosure with a cover that requires a tool to open it and will be marked ‘Earth reference Bar’.

The cross section of the ERB will be equal to that of the mains supply phase conductor to the room.

Each bonding conductor will be separately terminated at the ERB by means of crimped connections.

All conductive accessible equipment will be bonded to the ERB.

All non powered conductive equipment will also be bonded to the ERB.

The earth impedance between any socket outlet earth and the ERB will not exceed 0.1 ohms.

## High Integrity Earthing

All power circuits and accessories will be provided with high integrity earthing in accordance with Section 607 of BS 7671.

## Earthing of final Circuits from Isolated Power Supplies

The outgoing circuits from Isolated Power Supplies will be earth-free type IT supplies. A safety-isolating transformer will provide isolation from the incoming supply. The socket outlets in these areas will be of the standard 13 A BS 1363 type. The earth terminals of these will be connected via equipotential bonding conductors to an earth bar in the isolated power supply unit.

This will be earthed via the CPC of the Isolated Power Supply incoming sub-main cable, and will act as an equipotential earth only, as far as the final circuits are concerned. These final circuit equipotential bonding conductors will be sized as indicated on the distribution board schedules. Refer to Figure 10.1B, Chapter 10, Guidance Note GN7 of BS 7671 for typical arrangement of Isolated Power Supply earthing.

The earthing and bonding in the operating theatres will comply with Drawing D of the Annex to MEIGaN – Healthcare Interpretation of IEE Guidance Note 7 (Chapter 10). The required earth reference bars will be located adjacent each Isolated Power Supply unit.

# Electric Lighting and Fittings

## Description

General lighting will be provided throughout the Hospital.

All lighting will be 100% supported by the emergency generator system.

## Design Criteria and Standards

The lighting system will comply with CIBSE Code for Lighting, CIBSE Lighting Guide 2 ‘Hospitals and Health Care Buildings’, CIBSE Lighting Guide 3 ‘The visual environment for display screen use’, CIBSE Lighting Guide 7 ‘Lighting for offices’, HTM2007, BS4533, BSEN 12464-1: 2002, BSEN 60598-2-25, SHTM06-01, SHTM2011.

Maintained illuminance will take into account “normal” cleaning of luminaires and surfaces and depreciation of lamp output. “Normal” being defined for lighting design purposes as:

a. Lamp life

b. Annual luminaire cleaning

c. Bi-annual room surfaces clean

d. Spot lamp replacement

The initial illuminance will therefore be higher than the maintained illuminance. The maintained illuminance will be the average illuminance over the reference surface at the time maintenance has to be carried out by replacing lamps and/or cleaning the equipment and room surfaces. The reference surface will be the working plane at desktop, bench top, floor, bed, couch or other position, as stated in CIBSE Lighting Guide LG2.

## Luminaries

### Preliminary Luminaire Schedule

The luminaires will be of the following type, refer also to the luminaire schedule, 5.18

| Area | Type of luminaire | Lamp type |
|---|---|---|
| Staff bases, receptions | Circular downlighter, LG3 / LG7 compliant. | Compact fluorescent, LED, HID |
| Bathrooms, shower rooms and changing rooms | Circular downlighter with sealed IP44 visor | Compact fluorescent |
| Bed rooms | Wall mounted at bed head | T5 lamps |
| Corridors, wait areas | Recessed modular fitting with prismatic diffuser or wall mounted prismatic | T5 lamps |
| Offices, admin areas, interview rooms, meeting rooms, seminar rooms | Recessed modular direct/indirect luminaire. LG3 / LG7 compliant | T5 lamps |
| Treatment room, dirty utility, clean utility, examination room, pantry and kitchens | Recessed modular fitting with prismatic diffuser. Sealed IP44 | T5 lamps |
| Stairwells | Circular surface luminaires | Compact fluorescent |
| Plant areas and stores | Enclosed with high impact protection | T5 lamps |
| Atrium and entrance | Decorative | Various including LED |
| Theatres | Recessed modular fitting with prismatic diffuser. Sealed IP54 | T5 lamps |

Luminaires will be supplied complete with lamps and diffusers or louvres.



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## Diffusers
All prismatic diffusers will be of the TP(a) type.

## Installation Requirements
Flush mounted modular luminaires, which are to be installed in exposed grid suspended ceilings, will generally be supported by the ceiling grid.

Luminaires to be installed recessed in suspended non-modular plasterboard or similar ceilings will generally be supported by the ceiling, with suitable fixings.

Surface mounted luminaires mounted on suspended ceilings will be supported from the ceiling grid using methods appropriate for the type of ceiling and the particular luminaire.

Luminaires which are smaller than the ceiling grid module will be mounted on the ceiling tiles using a suitable non-combustible backing board.

## Lamps
Lamps will be as specified in the Preliminary Luminaire Schedule.

Linear fluorescent lamps will generally be high frequency T5 type.

In general, all fluorescent lamps will have a colour temperature of 4000 K.

Generally, all lamps will have a colour rendering index Ra ≥ 80.

Lamps in specific areas, as defined by BSEN 12464-1 and CIBSE Code for Lighting will be provided in the lamps with a colour rendering index Ra ≥ 90.

## Control Gear
### General
All fluorescent luminaires will be fitted with high frequency control gear.

## Dimming
Fluorescent luminaires, which are to be dimmed, will have control gear suitable for dimming.

## Special Luminaries and Areas
### IP Rated Luminaires
In certain areas such as operating theatres, showers and any luminaires exposed to external conditions, IP rated luminaires will be provided.

Rooms with plasterboard ceilings for infection control purposes will have luminaires of a minimum IP44 rating.

## Illuminated Warning Signs
Illuminated warning signs will be provided where required by the Room Data Sheets.

Theatre Operating Table Luminaires

Theatre operating table luminaires will be provided.

The mountings will be supported off the structural soffit, which is reinforced concrete.

Operating Theatre General Lighting

The lighting within operating theatres will be controlled via two-way light switches located at the door and within the surgeon's panel.

## Ward Luminaires
Ward bed areas will be provided with a horizontal bed head trunking system, which will provide varying levels of lighting to allow patient examination, general lighting and reading lighting.

Night lighting will be provided in wards.

Recessed fluorescent downlight. To be a large luminous source in ceiling and to have a degree of prismatic diffuser to minimise glare to patient and other users. A large light source luminaire will generate a wider photometric field helping create a more evenly lit space.

## Plantroom lighting
Linear fluorescent luminaires with impact resistant covers will be provided in all plantroom areas.

Final mounting height and layout will suit final plantroom layouts.

Where plant luminaires might be exposed to external conditions, IP rated fittings will be used.

## Corridor lighting
BSEN 12464-1:2002 implies that corridors should be lit to 200 lux during the day and 50 lux at night.  This is taken to mean that night lighting will be provided to corridors in bedded areas only.

Luminaires to be a recessed or semi-recessed linear fluorescent lay-in luminaire with a shallow projection beyond line of ceiling this will throw light across the ceiling surface increase the perceived brightness of the corridor. Luminaire to be fully sealed with internal reflector and external prismatic diffuser.

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## Accessory Plate Finishes

Accessory plates will have the following finishes:

- Occupied spaces, flush white plastic
- Unoccupied spaces, metal clad – surface mounted.

All plate types will be from a single proprietary manufacturer.

## Lighting Controls

A mixture of automatic ‘absence’ and ‘presence’ detection will be provided.

Presence detection: detector switches lighting on and off.

Extent of provision: intermittently occupied areas such as WCs, en suites, corridors, ward kitchens, stores, plant rooms, services risers, hospital streets, bathrooms etc.

Absence detection: lights manually switched on, detector extinguishes lighting in unoccupied room.

Extent of provision: offices, consulting rooms etc.

In addition, in rooms benefiting from daylight, luminaires near windows will be dimmable, regulated by the amount of daylight available.

Dimmable lighting has not been included where specifically required by the ADB sheets.

Automatic control of lighting in rooms which have plenty of natural light will be regulated by means of a photocell within the space to ensure the required LUX is achieved by the combination of ambient and artificial light.

## Treatment Rooms

It is not proposed to precisely follow the guidance given in ITPD Volume 2 Clause 8.3.3.1.11. Treatment rooms will be provided with luminaires, half of which will be fed from the ‘A side’ and half from the ‘B side’ of the distribution network.

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# Specification for Gas Installations

## General

The gas supply and distribution systems will comply with the relevant clauses of the NHS Model Engineering Specification Part C01, C82, addendums to Part C, BS6644, IGE Guidance, Clean Air Act, and descriptions and requirements set out below.

## Gas Installations

Medium pressure gas services will be distributed around the site, as described in Section 4.54 and introduced into the main hospital building at low pressure (21mBar) via pressure governing sets.

From the governing sets natural gas  will be distributed around the hospital to serve catering areas, orthodontic laboratories, and ADL kitchens, etc.

Individual supply branches will be complete with a manual isolating valve, gas solenoid valve and non-return valve as required.

Catering areas will have their gas supply interlocked with the mechanical ventilation system.

All gas pipework will be routed through ventilated service routes to prevent the build up of gas in the event of any leak.

Where appliances are not provided with integral flame failure devices, pressure proving provision will be provided.

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## Contents

1. Lift / Escalator Specification.
2. Lift Car & Landing Finishes.
3. Escalator Specification.

## 1. Lift Specification Main Hospital Building

| | |
|---|---|
| NO. OF LIFTS | Designated: Lifts L1 – L6 |
| TYPE OF LIFT | Electric Passenger (2 Fire Fighting Lifts). |
| RATED LOAD | 1600Kg – 21 Person |
| RATED SPEED | 1.6 m/s |
| TRAVEL | 40m Approx |
| NO. OF STOPS | 12 stops /12 openings – Entrances at front . |
| INTERNAL CAR DIMENSIONS | 2600 mm Wide x 1700 mm Deep x 2300 mm High |
| SHAFT SIZE | 2600 mm Wide x 2100 mm Deep. |
| HEADROOM | 4100 mm from FFL of highest level served, with a structural slab over well with lifting eyes, or an additional 300mm using a lifting beam arrangement. |
| PIT DEPTH | 1700 mm below FFL of lowest level served. |
| MACHINE ROOM POSITION | Machine in shaft headroom, no separate room required. |
| POWER SUPPLY | 400 V, 3 Phase + E + N, 50 Hz, to be terminated by others at the top floor, adjacent to the landing entrance. |
| DRIVE | Frequency Converter Drive.<br>Floor levelling accuracy of +/- 5 mm |
| LIFT MOVEMENTS | 180 Starts Per Hour |
| CONTROL SYSTEM | Hall Call Destination Microprocessor type controller located in lieu of nib wall at top floor served.<br>Algoritham: Collective with calls collected in logical order of direction of travel. 2 x 3 – car group control. |
| CONTROL FEATURES | Automatic return to main stop.<br>Hand-winding indicator in control panel with panel.<br>Trip counter.<br>Phase Failure/Phase Reversal.<br>Overload Device complete with indicator lamp / buzzer.<br>Load bypass facility.<br>Pre opening of doors<br>Fire alarm volt free contacts. |



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| | |
|---|---|
| CAR & LANDING DOORS | VF Power operated centre opening, single skin doors.<br>Clear Opening 1100 mm wide x 2100 mm<br>Pressure sensing device & door surveillance light curtain. |
| LANDING DOOR SURROUND | Recessed normal box architraves, at all levels, incorporating lift control panel at top floor.<br>Landing sills of aluminium with steel supports. |
| LANDING DISPLAY & OPERATING PANELS | Landing operating panels mounted in door frames.<br>Single pushbutton at terminal floors, up & down buttons at intermediate floors, with LED call accepted indicators.<br>Landing indicator panel mounted in door frame with car position indicator, at all floors. |
| CAR DISPLAY & OPERATING PANEL | Full set of short stroke mechanical buttons with LED call accepted indicator.<br>Alarm and Door Open buttons.<br>LCD car position indicator located above car panel.<br>Overload indicator lamp and buzzer.<br>Autodial / Intercom.<br>Fire control indicator lamp. |
| ALARM SYSTEM | Alarm horn fitted on car.<br>Alarm button operates autodial / intercom system. |
| SAFETY GEAR | Governor operated progressive safety gear to car. |
| BUFFERS | Energy accumulating under car and counterweight complete with pit stools and integral guide base fixing. |
| SHAFT CONSTRUCTION | Shaft walls to be masonry or concrete, to be built by others, capable of supporting bolt fixings for guide brackets and the loads imposed by the installation.<br>Front wall to be masonry or concrete with minimum thickness of 140mm for validation of fire certificate. Construction to be capable of supporting bolts for entrance support brackets.<br>Wall pockets and rebates to be included as required.<br>Bolts to be supplied, drilled & fitted by Lift Contractor. |
| OWNER DOCUMENTATION | 1 copy of an A4 Bound Manual. |
| APPROVED DRAWINGS | Consisting of 1 Paper copy. |
| MAINTENANCE PERIOD | 12 Months Post Installation Maintenance commencing on completion of our installation, with monthly visits.. |
| WITNESSED TESTS | One series of successful site witnessed tests to BS 5666 pt 10 |
| Staff Instruction | Instruction of the Employer’s Engineer in emergency procedures only. |



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| Additional FEATURES INCORPORATED: | Rubber mat for controller.<br>Notices:<br>Machine door, Hand-wind Methods & Electric shock treatment<br>Voice Synthesiser announcing floor levels only. (Complying with M2 Building Regulations).<br>Pit Ladder supplied & fitted.<br>Shaft lighting and socket outlet as required under BS:EN 81-1<br>Landing Entrance Protection.<br>Lifting Beams or Eyes<br>Shaft Division Screens and Steels<br>Car Protection – 1 Car – for beneficial use.<br>Step down transformer from 240v to 110v<br>110 v task lighting and working leads from transformer provided by others. |
| Fire fighting | firefighting lift:to be designed to meet the lift specifications required for a firefighting lift to bs en: 81-72.<br>Note that the building should be designed around bs5588 in such areas as water grid/drain in front of the entrances,sloping,seperated fire lobbies,together with alternative power supply |

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## 1. Lift Specification Main Hospital Building

| | |
|---|---|
| NO. OF LIFTS | Designated: Lifts L7-12 |
| TYPE OF LIFT | Electric Bed Passenger Lifts (2 x Fire Fighting Lifts). |
| RATED LOAD | 2500Kg – 33 Person |
| RATED SPEED | 1.6 m/s |
| TRAVEL | 40m Approx |
| NO. OF STOPS | 12 stops /12 openings – Entrances at front . |
| INTERNAL CAR DIMENSIONS | 1800 mm Wide x 2700 mm Deep x 2300 mm High |
| SHAFT SIZE | 3300 mm Wide x 3150 mm Deep. |
| HEADROOM | 4100 mm from FFL of highest level served, with a structural slab over well with lifting eyes, or an additional 300mm using a lifting beam arrangement. |
| PIT DEPTH | 1700 mm below FFL of lowest level served. |
| MACHINE ROOM POSITION | Machine in shaft headroom, no separate room required. |
| POWER SUPPLY | 400 V, 3 Phase + E + N, 50 Hz, to be terminated by others at the top floor, adjacent to the landing entrance. |
| DRIVE | Frequency Converter Drive.<br>Floor levelling accuracy of +/- 5 mm |
| LIFT MOVEMENTS | 180 Starts Per Hour |
| CONTROL SYSTEM | Hall Call Destination ID Microprocessor type controller located in lieu of nib wall at top floor served.<br>Algoritham: Collective with calls collected in logical order of direction of travel. 2 x 3 – car group control. |
| CONTROL FEATURES | Automatic return to main stop.<br>Hand-winding indicator in control panel with panel.<br>Trip counter.<br>Phase Failure/Phase Reversal.<br>Overload Device complete with indicator lamp / buzzer.<br>Load bypass facility.<br>Pre opening of doors<br>Fire alarm volt free contacts. |
| CAR & LANDING DOORS | VF Power operated centre opening, single skin doors.<br>Clear Opening 1300 mm wide x 2100 mm<br>Pressure sensing device & door surveillance light curtain. |



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| LANDING DOOR SURROUND | Recessed normal box architraves, at all levels, incorporating lift control panel at top floor.<br>Landing sills of aluminium with steel supports. |
| LANDING DISPLAY & OPERATING PANELS | Landing operating panels mounted in door frames.<br>Single pushbutton at terminal floors, up & down buttons at intermediate floors, with LED call accepted indicators.<br>Landing indicator panel mounted in door frame with car position indicator, at all floors. |
| CAR DISPLAY & OPERATING PANEL | Full set of short stroke mechanical buttons with LED call accepted indicator.<br>Alarm and Door Open buttons.<br>LCD car position indicator located above car panel.<br>Overload indicator lamp and buzzer.<br>Autodial / Intercom.<br>Fire control indicator lamp. |
| ALARM SYSTEM | Alarm horn fitted on car.<br>Alarm button operates autodial / intercom system. |
| SAFETY GEAR | Governor operated progressive safety gear to car. |
| BUFFERS | Energy accumulating under car and counterweight complete with pit stools and integral guide base fixing. |
| SHAFT CONSTRUCTION | Shaft walls to be masonry or concrete, to be built by others, capable of supporting bolt fixings for guide brackets and the loads imposed by the installation.<br>Front wall to be masonry or concrete with minimum thickness of 140mm for validation of fire certificate. Construction to be capable of supporting bolts for entrance support brackets.<br>Wall pockets and rebates to be included as required.<br>Bolts to be supplied, drilled & fitted by Lift Contractor. |
| OWNER DOCUMENTATION | 1 copy of an A4 Bound Manual. |
| APPROVED DRAWINGS | Consisting of 1 Paper copy. |
| MAINTENANCE PERIOD | 12 Months Post Installation Maintenance commencing on completion of our installation, with monthly visits.. |
| WITNESSED TESTS | One series of successful site witnessed tests to BS 5666 pt 10 |
| Staff Instruction | Instruction of the Employer’s Engineer in emergency procedures only. |

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| Additional FEATURES INCORPORATED: | Rubber mat for controller.<br>Notices:<br>Machine door, Hand-wind Methods & Electric shock treatment<br>Voice Synthesiser announcing floor levels only. (Complying with M2 Building Regulations).<br>Pit Ladder supplied & fitted.<br>Shaft lighting and socket outlet as required under BS:EN 81-1<br>Landing Entrance Protection.<br>Lifting Beams or Eyes<br>Shaft Division Screens and Steels<br>Car Protection – 1 Car – for beneficial use.<br>Step down transformer from 240v to 110v<br>110 v task lighting and working leads from transformer provided by others. |
| Fire fighting | firefighting lift:to be designed to meet the lift specifications required for a firefighting lift to bs en: 81-72.<br>Note that the building should be designed around bs5588 in such areas as water grid/drain in front of the entrances,sloping,seperated fire lobbies,together with alternative power supply |

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## 1. Lift Specification Main Hospital Building

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|---|---|
| NO. OF LIFTS | Designated: Lifts L13-16 |
| TYPE OF LIFT | Electric FM Lifts. |
| RATED LOAD | 2000Kg – 26 Person |
| RATED SPEED | 1.0 m/s |
| TRAVEL | 44m Approx |
| NO. OF STOPS | 13 stops /13 openings – Entrances at front . |
| INTERNAL CAR DIMENSIONS | 1500 mm Wide x 2700 mm Deep x 2300 mm High |
| SHAFT SIZE | 2500 mm Wide x 3150 mm Deep. |
| HEADROOM | 4100 mm from FFL of highest level served, with a structural slab over well with lifting eyes, or an additional 300mm using a lifting beam arrangement. |
| PIT DEPTH | 1700 mm below FFL of lowest level served. |
| MACHINE ROOM POSITION | Machine in shaft headroom, no separate room required. |
| POWER SUPPLY | 400 V, 3 Phase + E + N, 50 Hz, to be terminated by others at the top floor, adjacent to the landing entrance. |
| DRIVE | Frequency Converter Drive.<br>Floor levelling accuracy of +/- 5 mm |
| LIFT MOVEMENTS | 180 Starts Per Hour |
| CONTROL SYSTEM | Microprocessor type controller located in lieu of nib wall at top floor served.<br>Algoritham: Collective with calls collected in logical order of direction of travel. simplex control. |
| CONTROL FEATURES | Automatic return to main stop.<br>Hand-winding indicator in control panel with panel.<br>Trip counter.<br>Phase Failure/Phase Reversal.<br>Overload Device complete with indicator lamp / buzzer.<br>Load bypass facility.<br>Pre opening of doors<br>Fire alarm volt free contacts.<br>Interface to Automated Vehicle System |
| CAR & LANDING DOORS | VF Power operated centre opening, single skin doors.<br>Clear Opening 1300 mm wide x 2100 mm<br>Pressure sensing device & door surveillance light curtain. |



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| LANDING DOOR SURROUND | Recessed normal box architraves, at all levels, incorporating lift control panel at top floor.<br>Landing sills of aluminium with steel supports. |
| LANDING DISPLAY & OPERATING PANELS | Landing operating panels mounted in door frames.<br>Single pushbutton at terminal floors, up & down buttons at intermediate floors, with LED call accepted indicators.<br>Landing indicator panel mounted in door frame with car position indicator, at all floors. |
| CAR DISPLAY & OPERATING PANEL | Full set of short stroke mechanical buttons with LED call accepted indicator.<br>Alarm and Door Open buttons.<br>LCD car position indicator located above car panel.<br>Overload indicator lamp and buzzer.<br>Autodial / Intercom.<br>Fire control indicator lamp. |
| ALARM SYSTEM | Alarm horn fitted on car.<br>Alarm button operates autodial / intercom system. |
| SAFETY GEAR | Governor operated progressive safety gear to car. |
| BUFFERS | Energy accumulating under car and counterweight complete with pit stools and integral guide base fixing. |
| SHAFT CONSTRUCTION | Shaft walls to be masonry or concrete, to be built by others, capable of supporting bolt fixings for guide brackets and the loads imposed by the installation.<br>Front wall to be masonry or concrete with minimum thickness of 140mm for validation of fire certificate. Construction to be capable of supporting bolts for entrance support brackets.<br>Wall pockets and rebates to be included as required.<br>Bolts to be supplied, drilled & fitted by Lift Contractor. |
| OWNER DOCUMENTATION | 1 copy of an A4 Bound Manual. |
| APPROVED DRAWINGS | Consisting of 1 Paper copy. |
| MAINTENANCE PERIOD | 12 Months Post Installation Maintenance commencing on completion of our installation, with monthly visits.. |
| WITNESSED TESTS | One series of successful site witnessed tests to BS 5666 pt 10 |
| Staff Instruction | Instruction of the Employer’s Engineer in emergency procedures only. |



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| Additional FEATURES INCORPORATED: | Rubber mat for controller.<br>Notices:<br>Machine door, Hand-wind Methods & Electric shock treatment<br>Voice Synthesiser announcing floor levels only. (Complying with M2 Building Regulations).<br>Pit Ladder supplied & fitted.<br>Shaft lighting and socket outlet as required under BS:EN 81-1<br>Landing Entrance Protection.<br>Lifting Beams or Eyes<br>Shaft Division Screens and Steels<br>Car Protection – 1 Car – for beneficial use.<br>Step down transformer from 240v to 110v<br>110 v task lighting and working leads from transformer provided by others. |

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## 1. Lift Specification Main Hospital Building

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|---|---|
| NO. OF LIFTS | Designated: Lifts L17 HELIPAD LIFT |
| TYPE OF LIFT | Electric Bed Passenger Lift. |
| RATED LOAD | 2500Kg – 33 Person |
| RATED SPEED | 1.6 m/s |
| TRAVEL | 40m Approx |
| NO. OF STOPS | 13 stops /13 openings – Entrances at front . |
| INTERNAL CAR DIMENSIONS | 1800 mm Wide x 2700 mm Deep x 2300 mm High |
| SHAFT SIZE | 3300 mm Wide x 3150 mm Deep. |
| HEADROOM | 4100 mm from FFL of highest level served, with a structural slab over well with lifting eyes, or an additional 300mm using a lifting beam arrangement. |
| PIT DEPTH | 1700 mm below FFL of lowest level served. |
| MACHINE ROOM POSITION | Machine in shaft headroom, no separate room required. |
| POWER SUPPLY | 400 V, 3 Phase + E + N, 50 Hz, to be terminated by others at the top floor, adjacent to the landing entrance. |
| DRIVE | Frequency Converter Drive.<br>Floor levelling accuracy of +/- 5 mm |
| LIFT MOVEMENTS | 180 Starts Per Hour |
| CONTROL SYSTEM | Microprocessor type controller located in lieu of nib wall at top floor served.<br>Algoritham: Collective with calls collected in logical order of direction of travel. simplex control. |
| CONTROL FEATURES | Automatic return to main stop.<br>Hand-winding indicator in control panel with panel.<br>Trip counter.<br>Phase Failure/Phase Reversal.<br>Overload Device complete with indicator lamp / buzzer.<br>Load bypass facility.<br>Pre opening of doors<br>Fire alarm volt free contacts. |
| CAR & LANDING DOORS | VF Power operated centre opening, single skin doors.<br>Clear Opening 1300 mm wide x 2100 mm<br>Pressure sensing device & door surveillance light curtain. |



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| LANDING DOOR SURROUND | Recessed normal box architraves, at all levels, incorporating lift control panel at top floor.<br>Landing sills of aluminium with steel supports. |
| LANDING DISPLAY & OPERATING PANELS | Landing operating panels mounted in door frames.<br>Single pushbutton at terminal floors, up & down buttons at intermediate floors, with LED call accepted indicators.<br>Landing indicator panel mounted in door frame with car position indicator, at all floors. |
| CAR DISPLAY & OPERATING PANEL | Full set of short stroke mechanical buttons with LED call accepted indicator.<br>Alarm and Door Open buttons.<br>LCD car position indicator located above car panel.<br>Overload indicator lamp and buzzer.<br>Autodial / Intercom.<br>Fire control indicator lamp. |
| ALARM SYSTEM | Alarm horn fitted on car.<br>Alarm button operates autodial / intercom system. |
| SAFETY GEAR | Governor operated progressive safety gear to car. |
| BUFFERS | Energy accumulating under car and counterweight complete with pit stools and integral guide base fixing. |
| SHAFT CONSTRUCTION | Shaft walls to be masonry or concrete, to be built by others, capable of supporting bolt fixings for guide brackets and the loads imposed by the installation.<br>Front wall to be masonry or concrete with minimum thickness of 140mm for validation of fire certificate. Construction to be capable of supporting bolts for entrance support brackets.<br>Wall pockets and rebates to be included as required.<br>Bolts to be supplied, drilled & fitted by Lift Contractor. |
| OWNER DOCUMENTATION | 1 copy of an A4 Bound Manual. |
| APPROVED DRAWINGS | Consisting of 1 Paper copy. |
| MAINTENANCE PERIOD | 12 Months Post Installation Maintenance commencing on completion of our installation, with monthly visits.. |
| WITNESSED TESTS | One series of successful site witnessed tests to BS 5666 pt 10 |
| Staff Instruction | Instruction of the Employer’s Engineer in emergency procedures only. |

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| Additional FEATURES INCORPORATED: | Rubber mat for controller.<br>Notices:<br>Machine door, Hand-wind Methods & Electric shock treatment<br>Voice Synthesiser announcing floor levels only. (Complying with M2 Building Regulations).<br>Pit Ladder supplied & fitted.<br>Shaft lighting and socket outlet as required under BS:EN 81-1<br>Landing Entrance Protection.<br>Lifting Beams or Eyes<br>Shaft Division Screens and Steels<br>Car Protection – 1 Car – for beneficial use.<br>Step down transformer from 240v to 110v<br>110 v task lighting and working leads from transformer provided by others. |

Brookfield

## 1. Lift Specification Main Hospital Building

| | |
|---|---|
| NO. OF LIFTS | Designated: Lifts L18-21 Emergency Department Bed Lifts |
| TYPE OF LIFT | Electric Bed Passenger Lifts . |
| RATED LOAD | 2500Kg – 33 Person |
| RATED SPEED | 1.6 m/s |
| TRAVEL | 12m Approx |
| NO. OF STOPS | 4 stops /4 openings – Entrances at front . |
| INTERNAL CAR DIMENSIONS | 1800 mm Wide x 2700 mm Deep x 2300 mm High |
| SHAFT SIZE | 3300 mm Wide x 3150 mm Deep. |
| HEADROOM | 4100 mm from FFL of highest level served, with a structural slab over well with lifting eyes, or an additional 300mm using a lifting beam arrangement. |
| PIT DEPTH | 1700 mm below FFL of lowest level served. |
| MACHINE ROOM POSITION | Machine in shaft headroom, no separate room required. |
| POWER SUPPLY | 400 V, 3 Phase + E + N, 50 Hz, to be terminated by others at the top floor, adjacent to the landing entrance. |
| DRIVE | Frequency Converter Drive.<br>Floor levelling accuracy of +/- 5 mm |
| LIFT MOVEMENTS | 180 Starts Per Hour |
| CONTROL SYSTEM | Microprocessor type controller located in lieu of nib wall at top floor served.<br>Algorithm: Collective with calls collected in logical order of direction of travel. simplex control. |
| CONTROL FEATURES | Automatic return to main stop.<br>Hand-winding indicator in control panel with panel.<br>Trip counter.<br>Phase Failure/Phase Reversal.<br>Overload Device complete with indicator lamp / buzzer.<br>Load bypass facility.<br>Pre opening of doors<br>Fire alarm volt free contacts. |
| CAR & LANDING DOORS | VF Power operated centre opening, single skin doors.<br>Clear Opening 1300 mm wide x 2100 mm<br>Pressure sensing device & door surveillance light curtain. |

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|---|---|
| LANDING DOOR SURROUND | Recessed normal box architraves, at all levels, incorporating lift control panel at top floor.<br>Landing sills of aluminium with steel supports. |
| LANDING DISPLAY & OPERATING PANELS | Landing operating panels mounted in door frames.<br>Single pushbutton at terminal floors, up & down buttons at intermediate floors, with LED call accepted indicators.<br>Landing indicator panel mounted in door frame with car position indicator, at all floors. |
| CAR DISPLAY & OPERATING PANEL | Full set of short stroke mechanical buttons with LED call accepted indicator.<br>Alarm and Door Open buttons.<br>LCD car position indicator located above car panel.<br>Overload indicator lamp and buzzer.<br>Autodial / Intercom.<br>Fire control indicator lamp. |
| ALARM SYSTEM | Alarm horn fitted on car.<br>Alarm button operates autodial / intercom system. |
| SAFETY GEAR | Governor operated progressive safety gear to car. |
| BUFFERS | Energy accumulating under car and counterweight complete with pit stools and integral guide base fixing. |
| SHAFT CONSTRUCTION | Shaft walls to be masonry or concrete, to be built by others, capable of supporting bolt fixings for guide brackets and the loads imposed by the installation.<br>Front wall to be masonry or concrete with minimum thickness of 140mm for validation of fire certificate. Construction to be capable of supporting bolts for entrance support brackets.<br>Wall pockets and rebates to be included as required.<br>Bolts to be supplied, drilled & fitted by Lift Contractor. |
| OWNER DOCUMENTATION | 1 copy of an A4 Bound Manual. |
| APPROVED DRAWINGS | Consisting of 1 Paper copy. |
| MAINTENANCE PERIOD | 12 Months Post Installation Maintenance commencing on completion of our installation, with monthly visits.. |
| WITNESSED TESTS | One series of successful site witnessed tests to BS 5666 pt 10 |
| Staff Instruction | Instruction of the Employer’s Engineer in emergency procedures only. |



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| Additional FEATURES INCORPORATED: | Rubber mat for controller.<br>Notices:<br>Machine door, Hand-wind Methods & Electric shock treatment<br>Voice Synthesiser announcing floor levels only. (Complying with M2 Building Regulations).<br>Pit Ladder supplied & fitted.<br>Shaft lighting and socket outlet as required under BS:EN 81-1<br>Landing Entrance Protection.<br>Lifting Beams or Eyes<br>Shaft Division Screens and Steels<br>Car Protection – 1 Car – for beneficial use.<br>Step down transformer from 240v to 110v<br>110 v task lighting and working leads from transformer provided by others. |

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## 1. Lift Specification Main Hospital Building

| | |
|---|---|
| NO. OF LIFTS | Designated: Lifts L22-25 Podium General Purpose Lifts |
| TYPE OF LIFT | Electric Passenger. |
| RATED LOAD | 1600Kg – 21 Person |
| RATED SPEED | 1.0 m/s |
| TRAVEL | 12m Approx |
| NO. OF STOPS | 4 stops /4 openings – Entrances at front . |
| INTERNAL CAR DIMENSIONS | 2600 mm Wide x 1700 mm Deep x 2300 mm High |
| SHAFT SIZE | 2600 mm Wide x 2100 mm Deep. |
| HEADROOM | 4100 mm from FFL of highest level served, with a structural slab over well with lifting eyes, or an additional 300mm using a lifting beam arrangement. |
| PIT DEPTH | 1700 mm below FFL of lowest level served. |
| MACHINE ROOM POSITION | Machine in shaft headroom, no separate room required. |
| POWER SUPPLY | 400 V, 3 Phase + E + N, 50 Hz, to be terminated by others at the top floor, adjacent to the landing entrance. |
| DRIVE | Frequency Converter Drive.<br>Floor levelling accuracy of +/- 5 mm |
| LIFT MOVEMENTS | 180 Starts Per Hour |
| CONTROL SYSTEM | Microprocessor type controller located in lieu of nib wall at top floor served.<br>Algoritham: Collective with calls collected in logical order of direction of travel. simplex control. |
| CONTROL FEATURES | Automatic return to main stop.<br>Hand-winding indicator in control panel with panel.<br>Trip counter.<br>Phase Failure/Phase Reversal.<br>Overload Device complete with indicator lamp / buzzer.<br>Load bypass facility.<br>Pre opening of doors<br>Fire alarm volt free contacts. |
| CAR & LANDING DOORS | VF Power operated centre opening, single skin doors.<br>Clear Opening 1100 mm wide x 2100 mm<br>Pressure sensing device & door surveillance light curtain. |



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| LANDING DOOR SURROUND | Recessed normal box architraves, at all levels, incorporating lift control panel at top floor.<br>Landing sills of aluminium with steel supports. |
| LANDING DISPLAY & OPERATING PANELS | Landing operating panels mounted in door frames.<br>Single pushbutton at terminal floors, up & down buttons at intermediate floors, with LED call accepted indicators.<br>Landing indicator panel mounted in door frame with car position indicator, at all floors. |
| CAR DISPLAY & OPERATING PANEL | Full set of short stroke mechanical buttons with LED call accepted indicator.<br>Alarm and Door Open buttons.<br>LCD car position indicator located above car panel.<br>Overload indicator lamp and buzzer.<br>Autodial / Intercom.<br>Fire control indicator lamp. |
| ALARM SYSTEM | Alarm horn fitted on car.<br>Alarm button operates autodial / intercom system. |
| SAFETY GEAR | Governor operated progressive safety gear to car. |
| BUFFERS | Energy accumulating under car and counterweight complete with pit stools and integral guide base fixing. |
| SHAFT CONSTRUCTION | Shaft walls to be masonry or concrete, to be built by others, capable of supporting bolt fixings for guide brackets and the loads imposed by the installation.<br>Front wall to be masonry or concrete with minimum thickness of 140mm for validation of fire certificate. Construction to be capable of supporting bolts for entrance support brackets.<br>Wall pockets and rebates to be included as required.<br>Bolts to be supplied, drilled & fitted by Lift Contractor. |
| OWNER DOCUMENTATION | 1 copy of an A4 Bound Manual. |
| APPROVED DRAWINGS | Consisting of 1 Paper copy. |
| MAINTENANCE PERIOD | 12 Months Post Installation Maintenance commencing on completion of our installation, with monthly visits.. |
| WITNESSED TESTS | One series of successful site witnessed tests to BS 5666 pt 10 |
| Staff Instruction | Instruction of the Employer’s Engineer in emergency procedures only. |

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| Additional FEATURES INCORPORATED: | Rubber mat for controller.<br>Notices:<br>Machine door, Hand-wind Methods & Electric shock treatment<br>Voice Synthesiser announcing floor levels only. (Complying with M2 Building Regulations).<br>Pit Ladder supplied & fitted.<br>Shaft lighting and socket outlet as required under BS:EN 81-1<br>Landing Entrance Protection.<br>Lifting Beams or Eyes<br>Shaft Division Screens and Steels<br>Car Protection – 1 Car – for beneficial use.<br>Step down transformer from 240v to 110v<br>110 v task lighting and working leads from transformer provided by others. |

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## 1. Escalator Technical Specification Main Hospital Building

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|---|---|
| TYPE | Three General Purpose Indoor Application Escalators |
| VERTICAL RISE | Approx 6.0. metres |
| STEP SPEED | 0.5 m/s |
| STEP WIDTH | 1000 mm |
| HORIZONTAL STEP RUN | Type M: Three flat steps at top and bottom |
| ANGLE OF INCLINE | 30 ° |
| TRANSPORT CAPACITY | 9000 Passengers per Hour |
| ARRANGEMENT | Parallel Arrangement |
| DELIVERY SECTIONS | single piece units with balustrades dismantled in factory for assembly on site.<br>Requires 2.8 m clear access route |
| ELECTRICAL INLET | In top section |
| POWER SUPPLY | 400v 3 phase 50 Hz + Neutral |
| MAINTENANCE PANEL | In machine compartment with 4 digit LED display. |
| SAFETY FEATURES | Handrail entry brushes with safety contacts<br>Step chain contacts<br>Comb plate contacts<br>Thermal overload and PTC resistor in motor<br>Anti-reversal device<br>Speed monitor<br>Mechanical blocking device<br>Handrail monitor<br>Drive unit cover<br>Step presence monitor<br>Phase protection<br>Skirt brushes – single row, black<br>Guard plates<br>Counter track<br>Motor rated at IP 55 |
| OPERATING PANELS | Switch panels at both ends, incorporated into polycarbonate handrail entry profile, with:<br>Up / Down / Off key switch<br>Red, emergency stop button |

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| BALUSTRADE: | Slim Profile with stainless steel finish:<br>10 mm clear glass panels – Optical Joints<br>1000 mm high over the horizontal |
| SKIRTING: | 2 mm Stainless Steel Linished 240 Grain with anti friction coating. |
| DECKING | Stainless Steel Linished 240 Grain. |
| COVER PLATES | Compartment covers in ribbed aluminium. |
| TRUSS CLADDING: | Stainless Steel Linished 240 Grain. with Optical joints on exposed sides.<br>This is in addition to a primed, full length and width oil collection tray. |
| STEPS: | Painted grey - with linished tread. |
| HANDRAIL: | Black vulcanized rubber. |
| LIGHTING | Green Fluorescent under step gap lighting. |
| ADDITIONAL FEATURES | Star Delta starting<br>Star Delta switching for ECO mode in light traffic<br>Step sound deadening<br>Isolation pads at both ends<br>Working hour meter<br>4 voltage free contacts<br>Down draft lubrication, complete with oil drain channels.<br>Hand held inspection lamp<br>Fire alarm shutdown – signal and wiring by others. |
| SAFETY BARRIERS | Glass anti-climbing barriers at bottom end of escalator, outside and between balustrades as needed.<br>Wedging or deflection barriers as needed.<br>One set of yellow maintenance barriers for both ends. |
| MAINTENANCE PERIOD | 12 months from completion of our works. |
| MAINTENANCE MANUAL | 1 Master copy of our standard, bound A4 manual |
| Staff Instruction | To Employer’s engineer in emergency procedures only |
| WARNING NOTICES | Self adhesive pictographic warning notices fitted to one inner decking at top and bottom of each escalator<br>Definitions : From BS EN 115 : 1995, Clause 15.1.2.1<br>Colour: Blue on a white background with red stripes |
| Notices state pictorially: | a) Small children must be held firmly<br>b) Dogs must be carried<br>c1) Stand facing direction of travel, feet away from sides.<br>c2) Hold the handrail |

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## 2.1 General Escalator Information

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| TRUSS | The truss is of welded lattice construction. A sheet steel soffit constitutes an oil-tight lower enclosure of the body. The complete truss and any sheet steel cladding is protected with a coating of rust inhibiting paint. To prevent transmission of body noise to the building structure the entire escalator is borne by the supporting angles at the two extreme truss ends on special rubber pad plates. At the thresholds the horizontal truss sections are covered by ribbed cover tread plates. Truss primer is Grey as standard.<br>The step track assemblies, including main shaft and tension carriage, separately built as self-contained units are independent of possible inaccuracies in the welded truss work. This makes for smooth step performance.<br>Unless otherwise stated, sprinkler pipework is not included in our standard truss. |
| DRIVE UNIT | The drive unit is positioned in the upper escalator head where it is easily accessible for maintenance work.<br>The unit consists of a bed frame, gear, motor and brake and can be readily removed and replaced as a unit. Transmission from the gear shaft to the escalator main shaft is by means of a quiet running duplex roller chain. |
| MOTOR | 6 pole unit rated at IP 55. |
| BRAKE | The service band brake which operates on the gear shaft is designed to ensure that proportional braking moments are attained i.e. the brake moment in the up direction is 1/3 of that in the down direction. This provides maximum braking commensurate with passenger safety, that is, without the risk of excessive braking in the up direction, with its inherent accident hazard. |
| STEP CHAINS | The chains, which have been specially designed for escalator application, have integral step rollers located inside the chain links, run on ball bearings and have tyres of plastic material. |
| CHAIN TENSION DEVICE | The chain tension device and chain tension monitor are located in the lower reversing station and maintains the two step chains under the correct tension. Easy access facilitates easy servicing and adjustment. |
| STEPS | Steps are of die cast aluminium alloy construction and the treads are grooved parallel to the direction of travel. The risers of escalator steps are cleated and meshed with the grooves of adjacent steps.<br>It should be noted that natural aluminium has a natural variation in appearance but is easy to clean and does not scratch or damage in the same way as paint.<br>Steps can easily be removed for maintenance and replacement.<br>Escalator steps are provided with renewable nylon lateral guides, which ensure that the step / skirting clearance can be maintained at a minimum distance. |
| COMB PLATES | The anti-slip comb plates are provided with individual comb segments, which are easily replaceable, and have teeth that mesh with the groove of the step treads. The whole comb plate is moveable and should any foreign object be carried into the combs by the steps the comb plate will be displaced, activating safety contacts and switching off the unit immediately. |

**Brookfield**

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| HANDRAILS | The handrails are of special composition, having a high quality pre-stretched multiply carcass. The handrails are guided throughout their travel length and are partly held in guide rollers.<br>The handrails enter the newel foot-plates through self centering, closely fitting steel plates which, by virtue of the small gap, afford utmost safety against the entry of foreign objects. Handrail lead-in safety brushes / flaps are also provided.<br>The patented handrail drive does not require handrail tensioning. |
| CONTROL | The complete control is contained in enclosed drip-proof steel cabinets in the upper and lower machinery compartments.<br>To facilitate access these cabinets can be withdrawn from the machinery compartments.<br>Maintenance control boards are provided in the two truss heads. These controls allow push button controls to operate while the ordinary controls are inoperable<br>The key switches, by means of which the escalator is turned on in either upward or downward direction, and the stop buttons, are located at both entrances on the inner cover of the balustrade base |



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Brookfield

## 1. Lift Specification Childrens Hospital

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|---|---|
| NO. OF LIFTS | Designated: Lifts L1 – L4 Visitor Lifts |
| TYPE OF LIFT | Electric Passenger. |
| RATED LOAD | 1600Kg – 21 Person |
| RATED SPEED | 1.6 m/s |
| TRAVEL | 40m Approx |
| NO. OF STOPS | 4 stops /4 openings – Entrances at front . |
| INTERNAL CAR DIMENSIONS | 2600 mm Wide x 1700 mm Deep x 2300 mm High |
| SHAFT SIZE | 2600 mm Wide x 2100 mm Deep. |
| HEADROOM | 4100 mm from FFL of highest level served, with a structural slab over well with lifting eyes, or an additional 300mm using a lifting beam arrangement. |
| PIT DEPTH | 1700 mm below FFL of lowest level served. |
| MACHINE ROOM POSITION | Machine in shaft headroom, no separate room required. |
| POWER SUPPLY | 400 V, 3 Phase + E + N, 50 Hz, to be terminated by others at the top floor, adjacent to the landing entrance. |
| DRIVE | Frequency Converter Drive.<br>Floor levelling accuracy of +/- 5 mm |
| LIFT MOVEMENTS | 180 Starts Per Hour |
| CONTROL SYSTEM | Microprocessor type controller located in lieu of nib wall at top floor served.<br>Algoritham: Collective with calls collected in logical order of direction of travel. 1 x 4 –car group control. |
| CONTROL FEATURES | Automatic return to main stop.<br>Hand-winding indicator in control panel with panel.<br>Trip counter.<br>Phase Failure/Phase Reversal.<br>Overload Device complete with indicator lamp / buzzer.<br>Load bypass facility.<br>Pre opening of doors<br>Fire alarm volt free contacts. |
| CAR & LANDING DOORS | VF Power operated centre opening, single skin doors.<br>Clear Opening 1100 mm wide x 2100 mm<br>Pressure sensing device & door surveillance light curtain. |



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# Brookfield

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| LANDING DOOR SURROUND | Recessed normal box architraves, at all levels, incorporating lift control panel at top floor.<br>Landing sills of aluminium with steel supports. |
| LANDING DISPLAY & OPERATING PANELS | Landing operating panels mounted in door frames.<br>Single pushbutton at terminal floors, up & down buttons at intermediate floors, with LED call accepted indicators.<br>Landing indicator panel mounted in door frame with car position indicator, at all floors. |
| CAR DISPLAY & OPERATING PANEL | Full set of short stroke mechanical buttons with LED call accepted indicator.<br>Alarm and Door Open buttons.<br>LCD car position indicator located above car panel.<br>Overload indicator lamp and buzzer.<br>Autodial / Intercom.<br>Fire control indicator lamp. |
| ALARM SYSTEM | Alarm horn fitted on car.<br>Alarm button operates autodial / intercom system. |
| SAFETY GEAR | Governor operated progressive safety gear to car. |
| BUFFERS | Energy accumulating under car and counterweight complete with pit stools and integral guide base fixing. |
| SHAFT CONSTRUCTION | Shaft walls to be masonry or concrete, to be built by others, capable of supporting bolt fixings for guide brackets and the loads imposed by the installation.<br>Front wall to be masonry or concrete with minimum thickness of 140mm for validation of fire certificate. Construction to be capable of supporting bolts for entrance support brackets.<br>Wall pockets and rebates to be included as required.<br>Bolts to be supplied, drilled & fitted by Lift Contractor. |
| OWNER DOCUMENTATION | 1 copy of an A4 Bound Manual. |
| APPROVED DRAWINGS | Consisting of 1 Paper copy. |
| MAINTENANCE PERIOD | 12 Months Post Installation Maintenance commencing on completion of our installation, with monthly visits.. |
| WITNESSED TESTS | One series of successful site witnessed tests to BS 5666 pt 10 |
| Staff Instruction | Instruction of the Employer’s Engineer in emergency procedures only. |



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| Additional FEATURES INCORPORATED: | Rubber mat for controller.<br>Notices:<br>Machine door, Hand-wind Methods & Electric shock treatment<br>Voice Synthesiser announcing floor levels only. (Complying with M2 Building Regulations).<br>Pit Ladder supplied & fitted.<br>Shaft lighting and socket outlet as required under BS:EN 81-1<br>Landing Entrance Protection.<br>Lifting Beams or Eyes<br>Shaft Division Screens and Steels<br>Car Protection – 1 Car – for beneficial use.<br>Step down transformer from 240v to 110v<br>110 v task lighting and working leads from transformer provided by others. |
| Fire fighting | firefighting lift:to be designed to meet the lift specifications required for a firefighting lift to bs en: 81-72.<br>Note that the building should be designed around bs5588 in such areas as water grid/drain in front of the entrances,sloping,seperated fire lobbies,together with alternative power supply |

# Brookfield

## 1. Lift Specification Childrens Hospital

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|---|---|
| NO. OF LIFTS | Designated: Lifts 5-8 Bed Passenger Lifts |
| TYPE OF LIFT | Electric Bed Passenger Lifts . |
| RATED LOAD | 2500Kg – 33 Person |
| RATED SPEED | 1.6 m/s |
| TRAVEL | 12m Approx |
| NO. OF STOPS | 4 stops /4 openings – Entrances at front . |
| INTERNAL CAR DIMENSIONS | 1800 mm Wide x 2700 mm Deep x 2300 mm High |
| SHAFT SIZE | 3300 mm Wide x 3150 mm Deep. |
| HEADROOM | 4100 mm from FFL of highest level served, with a structural slab over well with lifting eyes, or an additional 300mm using a lifting beam arrangement. |
| PIT DEPTH | 1700 mm below FFL of lowest level served. |
| MACHINE ROOM POSITION | Machine in shaft headroom, no separate room required. |
| POWER SUPPLY | 400 V, 3 Phase + E + N, 50 Hz, to be terminated by others at the top floor, adjacent to the landing entrance. |
| DRIVE | Frequency Converter Drive.<br>Floor levelling accuracy of +/- 5 mm |
| LIFT MOVEMENTS | 180 Starts Per Hour |
| CONTROL SYSTEM | Microprocessor type controller located in lieu of nib wall at top floor served.<br>Algoritham: Collective with calls collected in logical order of direction of travel. 2 x 3 – car group control. |
| CONTROL FEATURES | Automatic return to main stop.<br>Hand-winding indicator in control panel with panel.<br>Trip counter.<br>Phase Failure/Phase Reversal.<br>Overload Device complete with indicator lamp / buzzer.<br>Load bypass facility.<br>Pre opening of doors<br>Fire alarm volt free contacts. |
| CAR & LANDING DOORS | VF Power operated centre opening, single skin doors.<br>Clear Opening 1300 mm wide x 2100 mm<br>Pressure sensing device & door surveillance light curtain. |
| LANDING DOOR SURROUND | Recessed normal box architraves, at all levels, incorporating lift control panel at top floor.<br>Landing sills of aluminium with steel supports. |



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| LANDING DISPLAY & OPERATING PANELS | Landing operating panels mounted in door frames.<br>Single pushbutton at terminal floors, up & down buttons at intermediate floors, with LED call accepted indicators.<br>Landing indicator panel mounted in door frame with car position indicator, at all floors. |
| CAR DISPLAY & OPERATING PANEL | Full set of short stroke mechanical buttons with LED call accepted indicator.<br>Alarm and Door Open buttons.<br>LCD car position indicator located above car panel.<br>Overload indicator lamp and buzzer.<br>Autodial / Intercom.<br>Fire control indicator lamp. |
| ALARM SYSTEM | Alarm horn fitted on car.<br>Alarm button operates autodial / intercom system. |
| SAFETY GEAR | Governor operated progressive safety gear to car. |
| BUFFERS | Energy accumulating under car and counterweight complete with pit stools and integral guide base fixing. |
| SHAFT CONSTRUCTION | Shaft walls to be masonry or concrete, to be built by others, capable of supporting bolt fixings for guide brackets and the loads imposed by the installation.<br>Front wall to be masonry or concrete with minimum thickness of 140mm for validation of fire certificate. Construction to be capable of supporting bolts for entrance support brackets.<br>Wall pockets and rebates to be included as required.<br>Bolts to be supplied, drilled & fitted by Lift Contractor. |
| OWNER DOCUMENTATION | 1 copy of an A4 Bound Manual. |
| APPROVED DRAWINGS | Consisting of 1 Paper copy. |
| MAINTENANCE PERIOD | 12 Months Post Installation Maintenance commencing on completion of our installation, with monthly visits.. |
| WITNESSED TESTS | One series of successful site witnessed tests to BS 5666 pt 10 |
| Staff Instruction | Instruction of the Employer’s Engineer in emergency procedures only. |

**Brookfield**

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| Additional FEATURES INCORPORATED: | Rubber mat for controller.<br>Notices:<br>Machine door, Hand-wind Methods & Electric shock treatment<br>Voice Synthesiser announcing floor levels only. (Complying with M2 Building Regulations).<br>Pit Ladder supplied & fitted.<br>Shaft lighting and socket outlet as required under BS:EN 81-1<br>Landing Entrance Protection.<br>Lifting Beams or Eyes<br>Shaft Division Screens and Steels<br>Car Protection – 1 Car – for beneficial use.<br>Step down transformer from 240v to 110v<br>110 v task lighting and working leads from transformer provided by others. |

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## 1. Lift Specification Childrens Hospital

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|---|---|
| NO. OF LIFTS | Designated: Lifts L9-11 |
| TYPE OF LIFT | Electric FM Lifts. |
| RATED LOAD | 2000Kg – 26 Person |
| RATED SPEED | 1.0 m/s |
| TRAVEL | 16 m Approx |
| NO. OF STOPS | 5 stops /5 openings – Entrances at front . |
| INTERNAL CAR DIMENSIONS | 1500 mm Wide x 2700 mm Deep x 2300 mm High |
| SHAFT SIZE | 2500 mm Wide x 3150 mm Deep. |
| HEADROOM | 4100 mm from FFL of highest level served, with a structural slab over well with lifting eyes, or an additional 300mm using a lifting beam arrangement. |
| PIT DEPTH | 1700 mm below FFL of lowest level served. |
| MACHINE ROOM POSITION | Machine in shaft headroom, no separate room required. |
| POWER SUPPLY | 400 V, 3 Phase + E + N, 50 Hz, to be terminated by others at the top floor, adjacent to the landing entrance. |
| DRIVE | Frequency Converter Drive.<br>Floor levelling accuracy of +/- 5 mm |
| LIFT MOVEMENTS | 180 Starts Per Hour |
| CONTROL SYSTEM | Microprocessor type controller located in lieu of nib wall at top floor served.<br>Algoritham: Collective with calls collected in logical order of direction of travel. simplex control. |
| CONTROL FEATURES | Automatic return to main stop.<br>Hand-winding indicator in control panel with panel.<br>Trip counter.<br>Phase Failure/Phase Reversal.<br>Overload Device complete with indicator lamp / buzzer.<br>Load bypass facility.<br>Pre opening of doors<br>Fire alarm volt free contacts.<br>Interface with Automated Vehicle System |
| CAR & LANDING DOORS | VF Power operated centre opening, single skin doors.<br>Clear Opening 1300 mm wide x 2100 mm<br>Pressure sensing device & door surveillance light curtain. |



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| LANDING DOOR SURROUND | Recessed normal box architraves, at all levels, incorporating lift control panel at top floor.<br>Landing sills of aluminium with steel supports. |
| LANDING DISPLAY & OPERATING PANELS | Landing operating panels mounted in door frames.<br>Single pushbutton at terminal floors, up & down buttons at intermediate floors, with LED call accepted indicators.<br>Landing indicator panel mounted in door frame with car position indicator, at all floors. |
| CAR DISPLAY & OPERATING PANEL | Full set of short stroke mechanical buttons with LED call accepted indicator.<br>Alarm and Door Open buttons.<br>LCD car position indicator located above car panel.<br>Overload indicator lamp and buzzer.<br>Autodial / Intercom.<br>Fire control indicator lamp. |
| ALARM SYSTEM | Alarm horn fitted on car.<br>Alarm button operates autodial / intercom system. |
| SAFETY GEAR | Governor operated progressive safety gear to car. |
| BUFFERS | Energy accumulating under car and counterweight complete with pit stools and integral guide base fixing. |
| SHAFT CONSTRUCTION | Shaft walls to be masonry or concrete, to be built by others, capable of supporting bolt fixings for guide brackets and the loads imposed by the installation.<br>Front wall to be masonry or concrete with minimum thickness of 140mm for validation of fire certificate. Construction to be capable of supporting bolts for entrance support brackets.<br>Wall pockets and rebates to be included as required.<br>Bolts to be supplied, drilled & fitted by Lift Contractor. |
| OWNER DOCUMENTATION | 1 copy of an A4 Bound Manual. |
| APPROVED DRAWINGS | Consisting of 1 Paper copy. |
| MAINTENANCE PERIOD | 12 Months Post Installation Maintenance commencing on completion of our installation, with monthly visits.. |
| WITNESSED TESTS | One series of successful site witnessed tests to BS 5666 pt 10 |
| Staff Instruction | Instruction of the Employer’s Engineer in emergency procedures only. |



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| Additional FEATURES INCORPORATED: | Rubber mat for controller.<br>Notices:<br>Machine door, Hand-wind Methods & Electric shock treatment<br>Voice Synthesiser announcing floor levels only. (Complying with M2 Building Regulations).<br>Pit Ladder supplied & fitted.<br>Shaft lighting and socket outlet as required under BS:EN 81-1<br>Landing Entrance Protection.<br>Lifting Beams or Eyes<br>Shaft Division Screens and Steels<br>Car Protection – 1 Car – for beneficial use.<br>Step down transformer from 240v to 110v<br>110 v task lighting and working leads from transformer provided by others. |

# Brookfield

## 1. Lift Specification Laboratory Building

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|---|---|
| NO. OF LIFTS | Designated: Lifts L1-3 |
| TYPE OF LIFT | Electric Passenger Lifts. |
| RATED LOAD | 1000Kg – 26 Person |
| RATED SPEED | 1.0 m/s |
| TRAVEL | 15 m Approx |
| NO. OF STOPS | 5 stops /5 openings – Entrances at front . |
| INTERNAL CAR DIMENSIONS | 1600 mm Wide x 1400 mm Deep x 2300 mm High |
| SHAFT SIZE | 2200 mm Wide x 1800 mm Deep. |
| HEADROOM | 4100 mm from FFL of highest level served, with a structural slab over well with lifting eyes, or an additional 300mm using a lifting beam arrangement. |
| PIT DEPTH | 1500 mm below FFL of lowest level served. |
| MACHINE ROOM POSITION | Machine in shaft headroom, no separate room required. |
| POWER SUPPLY | 400 V, 3 Phase + E + N, 50 Hz, to be terminated by others at the top floor, adjacent to the landing entrance. |
| DRIVE | Frequency Converter Drive.<br>Floor levelling accuracy of +/- 5 mm |
| LIFT MOVEMENTS | 180 Starts Per Hour |
| CONTROL SYSTEM | Microprocessor type controller located in lieu of nib wall at top floor served.<br>Algoritham: Collective with calls collected in logical order of direction of travel. three car group control. |
| CONTROL FEATURES | Automatic return to main stop.<br>Hand-winding indicator in control panel with panel.<br>Trip counter.<br>Phase Failure/Phase Reversal.<br>Overload Device complete with indicator lamp / buzzer.<br>Load bypass facility.<br>Pre opening of doors<br>Fire alarm volt free contacts. |
| CAR & LANDING DOORS | VF Power operated centre opening, single skin doors.<br>Clear Opening 900 mm wide x 2100 mm<br>Pressure sensing device & door surveillance light curtain. |



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| LANDING DOOR SURROUND | Recessed normal box architraves, at all levels, incorporating lift control panel at top floor.<br>Landing sills of aluminium with steel supports. |
| LANDING DISPLAY & OPERATING PANELS | Landing operating panels mounted in door frames.<br>Single pushbutton at terminal floors, up & down buttons at intermediate floors, with LED call accepted indicators.<br>Landing indicator panel mounted in door frame with car position indicator, at all floors. |
| CAR DISPLAY & OPERATING PANEL | Full set of short stroke mechanical buttons with LED call accepted indicator.<br>Alarm and Door Open buttons.<br>LCD car position indicator located above car panel.<br>Overload indicator lamp and buzzer.<br>Autodial / Intercom.<br>Fire control indicator lamp. |
| ALARM SYSTEM | Alarm horn fitted on car.<br>Alarm button operates autodial / intercom system. |
| SAFETY GEAR | Governor operated progressive safety gear to car. |
| BUFFERS | Energy accumulating under car and counterweight complete with pit stools and integral guide base fixing. |
| SHAFT CONSTRUCTION | Shaft walls to be masonry or concrete, to be built by others, capable of supporting bolt fixings for guide brackets and the loads imposed by the installation.<br>Front wall to be masonry or concrete with minimum thickness of 140mm for validation of fire certificate. Construction to be capable of supporting bolts for entrance support brackets.<br>Wall pockets and rebates to be included as required.<br>Bolts to be supplied, drilled & fitted by Lift Contractor. |
| OWNER DOCUMENTATION | 1 copy of an A4 Bound Manual. |
| APPROVED DRAWINGS | Consisting of 1 Paper copy. |
| MAINTENANCE PERIOD | 12 Months Post Installation Maintenance commencing on completion of our installation, with monthly visits.. |
| WITNESSED TESTS | One series of successful site witnessed tests to BS 5666 pt 10 |
| Staff Instruction | Instruction of the Employer’s Engineer in emergency procedures only. |

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| Additional FEATURES INCORPORATED: | Rubber mat for controller.<br>Notices:<br>Machine door, Hand-wind Methods & Electric shock treatment<br>Voice Synthesiser announcing floor levels only. (Complying with M2 Building Regulations).<br>Pit Ladder supplied & fitted.<br>Shaft lighting and socket outlet as required under BS:EN 81-1<br>Landing Entrance Protection.<br>Lifting Beams or Eyes<br>Shaft Division Screens and Steels<br>Car Protection – 1 Car – for beneficial use.<br>Step down transformer from 240v to 110v<br>110 v task lighting and working leads from transformer provided by others. |



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## 1. Lift Specification Laboratory Building

| | |
|---|---|
| NO. OF LIFTS | Designated: Lifts L4-7 |
| TYPE OF LIFT | Electric Passenger Fire Fighting Lifts. |
| RATED LOAD | 1000Kg – 26 Person |
| RATED SPEED | 1.0 m/s |
| TRAVEL | 15 m Approx |
| NO. OF STOPS | 4,5,6 stops /4,5,6 openings – Entrances at front . |
| INTERNAL CAR DIMENSIONS | 1600 mm Wide x 1400 mm Deep x 2300 mm High |
| SHAFT SIZE | 2200 mm Wide x 1800 mm Deep. |
| HEADROOM | 4100 mm from FFL of highest level served, with a structural slab over well with lifting eyes, or an additional 300mm using a lifting beam arrangement. |
| PIT DEPTH | 1500 mm below FFL of lowest level served. |
| MACHINE ROOM POSITION | Machine in shaft headroom, no separate room required. |
| POWER SUPPLY | 400 V, 3 Phase + E + N, 50 Hz, to be terminated by others at the top floor, adjacent to the landing entrance. |
| DRIVE | Frequency Converter Drive.<br>Floor levelling accuracy of +/- 5 mm |
| LIFT MOVEMENTS | 180 Starts Per Hour |
| CONTROL SYSTEM | Microprocessor type controller located in lieu of nib wall at top floor served.<br>Algoritham: Collective with calls collected in logical order of direction of travel. simplex control. |
| CONTROL FEATURES | Automatic return to main stop.<br>Hand-winding indicator in control panel with panel.<br>Trip counter.<br>Phase Failure/Phase Reversal.<br>Overload Device complete with indicator lamp / buzzer.<br>Load bypass facility.<br>Pre opening of doors<br>Fire alarm volt free contacts. |
| CAR & LANDING DOORS | VF Power operated centre opening, single skin doors.<br>Clear Opening 900 mm wide x 2100 mm<br>Pressure sensing device & door surveillance light curtain. |



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| LANDING DOOR SURROUND | Recessed normal box architraves, at all levels, incorporating lift control panel at top floor.<br>Landing sills of aluminium with steel supports. |
| LANDING DISPLAY & OPERATING PANELS | Landing operating panels mounted in door frames.<br>Single pushbutton at terminal floors, up & down buttons at intermediate floors, with LED call accepted indicators.<br>Landing indicator panel mounted in door frame with car position indicator, at all floors. |
| CAR DISPLAY & OPERATING PANEL | Full set of short stroke mechanical buttons with LED call accepted indicator.<br>Alarm and Door Open buttons.<br>LCD car position indicator located above car panel.<br>Overload indicator lamp and buzzer.<br>Autodial / Intercom.<br>Fire control indicator lamp. |
| ALARM SYSTEM | Alarm horn fitted on car.<br>Alarm button operates autodial / intercom system. |
| SAFETY GEAR | Governor operated progressive safety gear to car. |
| BUFFERS | Energy accumulating under car and counterweight complete with pit stools and integral guide base fixing. |
| SHAFT CONSTRUCTION | Shaft walls to be masonry or concrete, to be built by others, capable of supporting bolt fixings for guide brackets and the loads imposed by the installation.<br>Front wall to be masonry or concrete with minimum thickness of 140mm for validation of fire certificate. Construction to be capable of supporting bolts for entrance support brackets.<br>Wall pockets and rebates to be included as required.<br>Bolts to be supplied, drilled & fitted by Lift Contractor. |
| OWNER DOCUMENTATION | 1 copy of an A4 Bound Manual. |
| APPROVED DRAWINGS | Consisting of 1 Paper copy. |
| MAINTENANCE PERIOD | 12 Months Post Installation Maintenance commencing on completion of our installation, with monthly visits.. |
| WITNESSED TESTS | One series of successful site witnessed tests to BS 5666 pt 10 |
| Staff Instruction | Instruction of the Employer’s Engineer in emergency procedures only. |



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| Additional FEATURES INCORPORATED: | Rubber mat for controller.<br>Notices:<br>Machine door, Hand-wind Methods & Electric shock treatment<br>Voice Synthesiser announcing floor levels only. (Complying with M2 Building Regulations).<br>Pit Ladder supplied & fitted.<br>Shaft lighting and socket outlet as required under BS:EN 81-1<br>Landing Entrance Protection.<br>Lifting Beams or Eyes<br>Car Protection – 1 Car – for beneficial use.<br>Step down transformer from 240v to 110v<br>110 v task lighting and working leads from transformer provided by others. |
| Fire fighting | firefighting lift:to be designed to meet the lift specifications required for a firefighting lift to bs en: 81-72.<br>Note that the building should be designed around bs5588 in such areas as water grid/drain in front of the entrances,sloping,seperated fire lobbies,together with alternative power supply |

# Brookfield

## 1. Lift Specification Laboratory Building

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|---|---|
| NO. OF LIFTS | Designated: Lifts 8 -9 Mortuary Lifts |
| TYPE OF LIFT | Electric Lifts . |
| RATED LOAD | 2500Kg – 33 Person |
| RATED SPEED | 1.0 m/s |
| TRAVEL | 4m Approx |
| NO. OF STOPS | 2 stops /2 openings – Entrances at front and rear lift 9 . |
| INTERNAL CAR DIMENSIONS | 1800 mm Wide x 2700 mm Deep x 2300 mm High |
| SHAFT SIZE | 3300 mm Wide x 3150 mm Deep. |
| HEADROOM | 4100 mm from FFL of highest level served, with a structural slab over well with lifting eyes, or an additional 300mm using a lifting beam arrangement. |
| PIT DEPTH | 1700 mm below FFL of lowest level served. |
| MACHINE ROOM POSITION | Machine in shaft headroom, no separate room required. |
| POWER SUPPLY | 400 V, 3 Phase + E + N, 50 Hz, to be terminated by others at the top floor, adjacent to the landing entrance. |
| DRIVE | Frequency Converter Drive.<br>Floor levelling accuracy of +/- 5 mm |
| LIFT MOVEMENTS | 180 Starts Per Hour |
| CONTROL SYSTEM | Microprocessor type controller located in lieu of nib wall at top floor served.<br>Algoritham: Collective with calls collected in logical order of direction of travel. simplex control. |
| CONTROL FEATURES | Automatic return to main stop.<br>Hand-winding indicator in control panel with panel.<br>Trip counter.<br>Phase Failure/Phase Reversal.<br>Overload Device complete with indicator lamp / buzzer.<br>Load bypass facility.<br>Pre opening of doors<br>Fire alarm volt free contacts. |
| CAR & LANDING DOORS | VF Power operated centre opening, single skin doors.<br>Clear Opening 1300 mm wide x 2100 mm<br>Pressure sensing device & door surveillance light curtain. |



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| LANDING DOOR SURROUND | Recessed normal box architraves, at all levels, incorporating lift control panel at top floor.<br>Landing sills of aluminium with steel supports. |
| LANDING DISPLAY & OPERATING PANELS | Landing operating panels mounted in door frames.<br>Single pushbutton at terminal floors, up & down buttons at intermediate floors, with LED call accepted indicators.<br>Landing indicator panel mounted in door frame with car position indicator, at all floors. |
| CAR DISPLAY & OPERATING PANEL | Full set of short stroke mechanical buttons with LED call accepted indicator.<br>Alarm and Door Open buttons.<br>LCD car position indicator located above car panel.<br>Overload indicator lamp and buzzer.<br>Autodial / Intercom.<br>Fire control indicator lamp. |
| ALARM SYSTEM | Alarm horn fitted on car.<br>Alarm button operates autodial / intercom system. |
| SAFETY GEAR | Governor operated progressive safety gear to car. |
| BUFFERS | Energy accumulating under car and counterweight complete with pit stools and integral guide base fixing. |
| SHAFT CONSTRUCTION | Shaft walls to be masonry or concrete, to be built by others, capable of supporting bolt fixings for guide brackets and the loads imposed by the installation.<br>Front wall to be masonry or concrete with minimum thickness of 140mm for validation of fire certificate. Construction to be capable of supporting bolts for entrance support brackets.<br>Wall pockets and rebates to be included as required.<br>Bolts to be supplied, drilled & fitted by Lift Contractor. |
| OWNER DOCUMENTATION | 1 copy of an A4 Bound Manual. |
| APPROVED DRAWINGS | Consisting of 1 Paper copy. |
| MAINTENANCE PERIOD | 12 Months Post Installation Maintenance commencing on completion of our installation, with monthly visits.. |
| WITNESSED TESTS | One series of successful site witnessed tests to BS 5666 pt 10 |
| Staff Instruction | Instruction of the Employer’s Engineer in emergency procedures only. |

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| Additional FEATURES INCORPORATED: | Rubber mat for controller.<br>Notices:<br>Machine door, Hand-wind Methods & Electric shock treatment<br>Voice Synthesiser announcing floor levels only. (Complying with M2 Building Regulations).<br>Pit Ladder supplied & fitted.<br>Shaft lighting and socket outlet as required under BS:EN 81-1<br>Landing Entrance Protection.<br>Lifting Beams or Eyes<br>Shaft Division Screens and Steels<br>Car Protection – 1 Car – for beneficial use.<br>Step down transformer from 240v to 110v<br>110 v task lighting and working leads from transformer provided by others. |



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## 1. Lift Specification Laboratory Building

| | |
|---|---|
| NO. OF LIFTS | Designated: Lifts 10-12 GoodsLifts |
| TYPE OF LIFT | Electric Goods Lifts . |
| RATED LOAD | 2500Kg – 33 Person |
| RATED SPEED | 1.0 m/s |
| TRAVEL | 16/20m Approx |
| NO. OF STOPS | 5,6 stops /5,6 openings – Entrances at front . |
| INTERNAL CAR DIMENSIONS | 1800 mm Wide x 2700 mm Deep x 2300 mm High |
| SHAFT SIZE | 3300 mm Wide x 3150 mm Deep. |
| HEADROOM | 4100 mm from FFL of highest level served, with a structural slab over well with lifting eyes, or an additional 300mm using a lifting beam arrangement. |
| PIT DEPTH | 1700 mm below FFL of lowest level served. |
| MACHINE ROOM POSITION | Machine in shaft headroom, no separate room required. |
| POWER SUPPLY | 400 V, 3 Phase + E + N, 50 Hz, to be terminated by others at the top floor, adjacent to the landing entrance. |
| DRIVE | Frequency Converter Drive.<br>Floor levelling accuracy of +/- 5 mm |
| LIFT MOVEMENTS | 180 Starts Per Hour |
| CONTROL SYSTEM | Microprocessor type controller located in lieu of nib wall at top floor served.<br>Algoritham: Collective with calls collected in logical order of direction of travel. 2 x 3 – car group control. |
| CONTROL FEATURES | Automatic return to main stop.<br>Hand-winding indicator in control panel with panel.<br>Trip counter.<br>Phase Failure/Phase Reversal.<br>Overload Device complete with indicator lamp / buzzer.<br>Load bypass facility.<br>Pre opening of doors<br>Fire alarm volt free contacts. |
| CAR & LANDING DOORS | VF Power operated centre opening, single skin doors.<br>Clear Opening 1300 mm wide x 2100 mm<br>Pressure sensing device & door surveillance light curtain. |



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|---|---|
| LANDING DOOR SURROUND | Recessed normal box architraves, at all levels, incorporating lift control panel at top floor.<br>Landing sills of aluminium with steel supports. |
| LANDING DISPLAY & OPERATING PANELS | Landing operating panels mounted in door frames.<br>Single pushbutton at terminal floors, up & down buttons at intermediate floors, with LED call accepted indicators.<br>Landing indicator panel mounted in door frame with car position indicator, at all floors. |
| CAR DISPLAY & OPERATING PANEL | Full set of short stroke mechanical buttons with LED call accepted indicator.<br>Alarm and Door Open buttons.<br>LCD car position indicator located above car panel.<br>Overload indicator lamp and buzzer.<br>Autodial / Intercom.<br>Fire control indicator lamp. |
| ALARM SYSTEM | Alarm horn fitted on car.<br>Alarm button operates autodial / intercom system. |
| SAFETY GEAR | Governor operated progressive safety gear to car. |
| BUFFERS | Energy accumulating under car and counterweight complete with pit stools and integral guide base fixing. |
| SHAFT CONSTRUCTION | Shaft walls to be masonry or concrete, to be built by others, capable of supporting bolt fixings for guide brackets and the loads imposed by the installation.<br>Front wall to be masonry or concrete with minimum thickness of 140mm for validation of fire certificate. Construction to be capable of supporting bolts for entrance support brackets.<br>Wall pockets and rebates to be included as required.<br>Bolts to be supplied, drilled & fitted by Lift Contractor. |
| OWNER DOCUMENTATION | 1 copy of an A4 Bound Manual. |
| APPROVED DRAWINGS | Consisting of 1 Paper copy. |
| MAINTENANCE PERIOD | 12 Months Post Installation Maintenance commencing on completion of our installation, with monthly visits.. |
| WITNESSED TESTS | One series of successful site witnessed tests to BS 5666 pt 10 |
| Staff Instruction | Instruction of the Employer’s Engineer in emergency procedures only. |



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| Additional FEATURES INCORPORATED: | Rubber mat for controller.<br>Notices:<br>Machine door, Hand-wind Methods & Electric shock treatment<br>Voice Synthesiser announcing floor levels only. (Complying with M2 Building Regulations).<br>Pit Ladder supplied & fitted.<br>Shaft lighting and socket outlet as required under BS:EN 81-1<br>Landing Entrance Protection.<br>Lifting Beams or Eyes<br>Shaft Division Screens and Steels<br>Car Protection – 1 Car – for beneficial use.<br>Step down transformer from 240v to 110v<br>110 v task lighting and working leads from transformer provided by others. |

# Brookfield

## 1. Lift Specification Laboratory Building

| | |
|---|---|
| NO. OF LIFTS | Designated: Lifts 13-16 FM Lifts |
| TYPE OF LIFT | Electric FM Lifts . |
| RATED LOAD | 2500Kg – 33 Person |
| RATED SPEED | 1.0 m/s |
| TRAVEL | 12m Approx |
| NO. OF STOPS | 4 stops /4 openings – Entrances at front . |
| INTERNAL CAR DIMENSIONS | 1800 mm Wide x 2700 mm Deep x 2300 mm High |
| SHAFT SIZE | 3300 mm Wide x 3150 mm Deep. |
| HEADROOM | 4100 mm from FFL of highest level served, with a structural slab over well with lifting eyes, or an additional 300mm using a lifting beam arrangement. |
| PIT DEPTH | 1700 mm below FFL of lowest level served. |
| MACHINE ROOM POSITION | Machine in shaft headroom, no separate room required. |
| POWER SUPPLY | 400 V, 3 Phase + E + N, 50 Hz, to be terminated by others at the top floor, adjacent to the landing entrance. |
| DRIVE | Frequency Converter Drive.<br>Floor levelling accuracy of +/- 5 mm |
| LIFT MOVEMENTS | 180 Starts Per Hour |
| CONTROL SYSTEM | Microprocessor type controller located in lieu of nib wall at top floor served.<br>Algoritham: Collective with calls collected in logical order of direction of travel. simplex control. |
| CONTROL FEATURES | Automatic return to main stop.<br>Hand-winding indicator in control panel with panel.<br>Trip counter.<br>Phase Failure/Phase Reversal.<br>Overload Device complete with indicator lamp / buzzer.<br>Load bypass facility.<br>Pre opening of doors<br>Fire alarm volt free contacts.<br>Integration to Automated Vehicle System |



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|---|---|
| CAR & LANDING DOORS | VF Power operated centre opening, single skin doors.<br>Clear Opening 1300 mm wide x 2100 mm<br>Pressure sensing device & door surveillance light curtain. |
| LANDING DOOR SURROUND | Recessed normal box architraves, at all levels, incorporating lift control panel at top floor.<br>Landing sills of aluminium with steel supports. |
| LANDING DISPLAY & OPERATING PANELS | Landing operating panels mounted in door frames.<br>Single pushbutton at terminal floors, up & down buttons at intermediate floors, with LED call accepted indicators.<br>Landing indicator panel mounted in door frame with car position indicator, at all floors. |
| CAR DISPLAY & OPERATING PANEL | Full set of short stroke mechanical buttons with LED call accepted indicator.<br>Alarm and Door Open buttons.<br>LCD car position indicator located above car panel.<br>Overload indicator lamp and buzzer.<br>Autodial / Intercom.<br>Fire control indicator lamp. |
| ALARM SYSTEM | Alarm horn fitted on car.<br>Alarm button operates autodial / intercom system. |
| SAFETY GEAR | Governor operated progressive safety gear to car. |
| BUFFERS | Energy accumulating under car and counterweight complete with pit stools and integral guide base fixing. |
| SHAFT CONSTRUCTION | Shaft walls to be masonry or concrete, to be built by others, capable of supporting bolt fixings for guide brackets and the loads imposed by the installation.<br>Front wall to be masonry or concrete with minimum thickness of 140mm for validation of fire certificate. Construction to be capable of supporting bolts for entrance support brackets.<br>Wall pockets and rebates to be included as required.<br>Bolts to be supplied, drilled & fitted by Lift Contractor. |
| OWNER DOCUMENTATION | 1 copy of an A4 Bound Manual. |
| APPROVED DRAWINGS | Consisting of 1 Paper copy. |
| MAINTENANCE PERIOD | 12 Months Post Installation Maintenance commencing on completion of our installation, with monthly visits.. |
| WITNESSED TESTS | One series of successful site witnessed tests to BS 5666 pt 10 |
| Staff Instruction | Instruction of the Employer’s Engineer in emergency procedures only. |

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|---|---|
| Additional FEATURES INCORPORATED: | Rubber mat for controller.<br>Notices:<br>Machine door, Hand-wind Methods & Electric shock treatment<br>Voice Synthesiser announcing floor levels only. (Complying with M2 Building Regulations).<br>Pit Ladder supplied & fitted.<br>Shaft lighting and socket outlet as required under BS:EN 81-1<br>Landing Entrance Protection.<br>Lifting Beams or Eyes<br>Shaft Division Screens and Steels<br>Car Protection – 1 Car – for beneficial use.<br>Step down transformer from 240v to 110v<br>110 v task lighting and working leads from transformer provided by others. |

Brookfield

## 1. Lift Specification Energy Centre

| | |
|---|---|
| NO. OF LIFTS | Designated: Lifts 1 Bed Passenger Lifts |
| TYPE OF LIFT | Electric Bed Passenger Lifts . |
| RATED LOAD | 2500Kg – 33 Person |
| RATED SPEED | 1.0 m/s |
| TRAVEL | 16 m Approx |
| NO. OF STOPS | 5 stops /5 openings – Entrances at front . |
| INTERNAL CAR DIMENSIONS | 1800 mm Wide x 2700 mm Deep x 2300 mm High |
| SHAFT SIZE | 3300 mm Wide x 3150 mm Deep. |
| HEADROOM | 4100 mm from FFL of highest level served, with a structural slab over well with lifting eyes, or an additional 300mm using a lifting beam arrangement. |
| PIT DEPTH | 1700 mm below FFL of lowest level served. |
| MACHINE ROOM POSITION | Machine in shaft headroom, no separate room required. |
| POWER SUPPLY | 400 V, 3 Phase + E + N, 50 Hz, to be terminated by others at the top floor, adjacent to the landing entrance. |
| DRIVE | Frequency Converter Drive.<br>Floor levelling accuracy of +/- 5 mm |
| LIFT MOVEMENTS | 180 Starts Per Hour |
| CONTROL SYSTEM | Microprocessor type controller located in lieu of nib wall at top floor served.<br>Algoritham: Collective with calls collected in logical order of direction of travel. simplex control. |
| CONTROL FEATURES | Automatic return to main stop.<br>Hand-winding indicator in control panel with panel.<br>Trip counter.<br>Phase Failure/Phase Reversal.<br>Overload Device complete with indicator lamp / buzzer.<br>Load bypass facility.<br>Pre opening of doors<br>Fire alarm volt free contacts. |
| CAR & LANDING DOORS | VF Power operated centre opening, single skin doors.<br>Clear Opening 1300 mm wide x 2100 mm<br>Pressure sensing device & door surveillance light curtain. |

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| | |
|---|---|
| LANDING DOOR SURROUND | Recessed normal box architraves, at all levels, incorporating lift control panel at top floor.<br>Landing sills of aluminium with steel supports. |
| LANDING DISPLAY & OPERATING PANELS | Landing operating panels mounted in door frames.<br>Single pushbutton at terminal floors, up & down buttons at intermediate floors, with LED call accepted indicators.<br>Landing indicator panel mounted in door frame with car position indicator, at all floors. |
| CAR DISPLAY & OPERATING PANEL | Full set of short stroke mechanical buttons with LED call accepted indicator.<br>Alarm and Door Open buttons.<br>LCD car position indicator located above car panel.<br>Overload indicator lamp and buzzer.<br>Autodial / Intercom.<br>Fire control indicator lamp. |
| ALARM SYSTEM | Alarm horn fitted on car.<br>Alarm button operates autodial / intercom system. |
| SAFETY GEAR | Governor operated progressive safety gear to car. |
| BUFFERS | Energy accumulating under car and counterweight complete with pit stools and integral guide base fixing. |
| SHAFT CONSTRUCTION | Shaft walls to be masonry or concrete, to be built by others, capable of supporting bolt fixings for guide brackets and the loads imposed by the installation.<br>Front wall to be masonry or concrete with minimum thickness of 140mm for validation of fire certificate. Construction to be capable of supporting bolts for entrance support brackets.<br>Wall pockets and rebates to be included as required.<br>Bolts to be supplied, drilled & fitted by Lift Contractor. |
| OWNER DOCUMENTATION | 1 copy of an A4 Bound Manual. |
| APPROVED DRAWINGS | Consisting of 1 Paper copy. |
| MAINTENANCE PERIOD | 12 Months Post Installation Maintenance commencing on completion of our installation, with monthly visits.. |
| WITNESSED TESTS | One series of successful site witnessed tests to BS 5666 pt 10 |
| Staff Instruction | Instruction of the Employer’s Engineer in emergency procedures only. |



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| Additional FEATURES INCORPORATED: | Rubber mat for controller.<br>Notices:<br>Machine door, Hand-wind Methods & Electric shock treatment<br>Voice Synthesiser announcing floor levels only. (Complying with M2 Building Regulations).<br>Pit Ladder supplied & fitted.<br>Shaft lighting and socket outlet as required under BS:EN 81-1<br>Landing Entrance Protection.<br>Lifting Beams or Eyes<br>Car Protection – 1 Car – for beneficial use.<br>Step down transformer from 240v to 110v<br>110 v task lighting and working leads from transformer provided by others. |

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## 2. Generic Architectural Finishes

All finishes from the manufacturers standard  range:

| | |
|---|---|
| LANDING ENTRANCES: | |
| LANDING DOORS & FRAME | Hairline stainless steel finish. |
| LANDING STATIONS & INDICATORS | Hairline stainless steel finish.<br>Buttons finished in brushed stainless steel with engraved symbols. |
| CAR ENCLOSURE: | |
| CAR DOORS | Hairline stainless steel finish.<br>Door sills in aluminium. |
| FRONT WALL | Hairline stainless steel finish. |
| CAR SIDE & REAR WALLS | Hairline stainless steel.<br>Stainless steel skirting. |
| MIRROR | Rear wall on Passenger Lifts only |
| CEILING | Hairline Stainless Steel. |
| LIGHTING | Indirect. |
| HANDRAIL/BUMPER RAILS | Round, stainless steel handrail to side or rear wall. |
| FLOORING | Recess for flooring by others. |
| CAR CONTROL STATION | Full height Brushed stainless steel finish panel.<br>Incorporating tactile type stainless steel buttons, with engraved symbols.<br>Intercom speak and receive unit.<br>Lift car interiors to comply with EN81-70 |



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# Sprinkler Installations

## Introduction

The automatic sprinkler Installation for the hospital will be design and installed in accordance with BS EN 12845, LPC standards, NHS Scotland Firecode and, due to the height of the building, comply with the high system requirements layout in BS EN 12845:2004 Annex E. The system will protect the building from serious fire damage.

The water supply will comprise of two multistage electric pump sets rated 2700 l/m drawing water from split capacity 160ms tank.

The design of the system would be based on the current BS EN 12845 / L.P.C. standards using the following classification:

| Classification | Area | Density | Area of Operation |
|---|---|---|---|
| Ordinary Hazard Group III | All Areas | 5mm/min | 216m² |

Sprinkler protection will be installed at ceiling level throughout the protected areas from Level -1 to Level 12 in the adult hospital; Level -1 to Level 4 in the children hospital, with the pipe work concealed in the ceiling void. Cold rooms will be fitted with dry pendent heads.

This system will be controlled by five wet alarm valve for the all buildings with zone valves on each floor. Each en suite of the ward rooms will not be protected due to the size and the nature of the room. All staircases will be fitted with a cut-off sprinkler head at each access door to a sprinkler protected

All sprinkler heads will be the fast response type and tested and approved to L.P.C. Standards. The operating temperature of the sprinkler heads at roof level will generally be 68°C.  In areas of high ambient temperatures, sprinkler heads with a higher temperature will be used.

A spares cabinet complete with 25 No. assorted spare sprinkler heads and sprinkler spanner will be mounted on the wall beside the Alarm Valve. A location plate with the words “Sprinkler Stop Valve Inside” would be located on the outside wall of the alarm valve area.

## Wet pipe installation control valves

The Sprinkler System will be controlled by five wet pipe control valves tested and approved to L.P.C. standards each comprising a 150mm alarm valve with flanged connections, a 150mm butterfly valve, two 100mm diameter dial pressure gauges and cocks, an alarm trim, a drain valve and butterfly valve and flow switch.

## Alarms

All the monitored sprinkler equipment such as pumps valves and flow switches will be wired to an addressable panel. A flow alarm switch will be provided on the alarm valve riser to give remote alarm indication.

A water motor alarm gong will be supplied with the alarm valve. All the stop valves will be completed with a tamper switch.

Each zone valve and flow switch will be connected to an I/O box wired to the addressable panel and fire detection system.

## Pipwork and fittings

The sprinkler pipework will be hydraulically sized in accordance with L.P.C. Standards.

The pipework for the sprinkler installations will be black coated steel medium weight to B.S. 1387 or BS EN 10255.

Valves will be black steel or galvanised heavyweight, depending on the requirements of the local water authority.

The fittings would be malleable iron, cast iron or welded.

From 65 mm diameter and above grooved coupling will be used.

The necessary pipe support brackets for hanging the pipework are included and will comply with the BS EN 12485 requirements for spacing and size of the components.

## Pumphouse equipment

Two L.P.C. approved multistage electric driven pumpsets rated 2700 l/min and one jockey pump to the maintain system pressure.

All pipework, valves, fittings, pressure switches and controls required to operate the pumps.

## Sprinkler water storage tank

Each of the two sections of the GRP tank will be complete with fixed roof suction, drain and overflow connection, ball float valve, immersion heater and valved insulated infill riser, contents gauge and ladders.

## Insulation

All sprinkler pipework exposed to the frost will be insulated or trace heated to prevent freezing.



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## Zone valve arrangements

The installation will be subdivided into zones in accordance with Annex D and Annex F of the BS EN12485. Each zone valve arrangement will comply with the Life Safety requirements and each zone will not exceeded 2400 m2. The drain on each branch will be connected to a 50mm drain collector.

Each zone valve arrangement will comprise a zone valve, a flow switch and a test and drain valve complete with a strap and padlock.

## Drain valve

All drain valves will be fitted at each lowest point of the sprinkler pipe work. These valves will be equipped with a padlock and a Leather straps.

# Fire-Fighting Installations

## Fire Detection and Alarm System

The fire detection and alarm system will be installed by an approved installer to BRE Certification (incorporating LPCB) and adheres to BS5839-1 2002. Fire detection and Alarm systems for buildings -

- Part 1: Code of practice for design, installation, commissioning and maintenance.

## Design Standard

The system will be designed as Category L1 as defined by BS5839-1 and the requirements and guidance contained in SHTM82.

## Control and Monitoring Equipment

The system comprises multiple Fire panels located throughout the new build hospital buildings, networked together by way of a copper network infrastructure. The system can be expanded to accommodate up to 200 control and indicating panels. LCD Repeat Indicators are distributed throughout the hospital to provide local Fire, Fault and Disablement indication as required.

The system will be analogue in operation, with each sensor device providing signal levels relative to the current operating environment. These analogue samples will be transmitted to the control panel in a digital format to reduce possible corruption.

## Control & Indicating Panel - Standards: EN54 parts 2 & 4

The Fire alarm control panel will be multi-tasking in operation with each loop utilising microcomputer technology to communicate with the main panel controller processor. The control panel will be modular in type to allow for future additions up to a maximum of 6 detection loops. The control panel shall be provided with a full QWERTY keyboard and integral printer.

All internal cards are fully monitored for fault conditions and any relevant information will be displayed on the LCD display.

The display is a 40 character by 8-line backlit liquid crystal display with white characters on a blue background. Upon any key press, the screen will be backlit.

The Control and Indicating Equipment provides the following visual indications for each of the following conditions:

- Power on
- Sounder fault
- Common fire
- Common fault
- System fault
- Disablement

The panel will accept the 230V AC supply @ 50Hz, and has an integral battery and charger. The battery provided will be capable of maintaining a standby period of 24 hours (minimum) with a further 30 minutes, under full alarm and control load conditions.

The control and indicator panel and power supply are housed within the same enclosure with a glazed lockable door and is located adjacent to the entrance door to the building. Within the accommodation blocks, the batteries will be remotely located within the store adjacent to the lift.

## LCD Repeat Panel

Each repeat panel displays any Fire, Fault and Disablement information on a 2 X 40 character LCD. The repeat panels are connected to the control panel via an RS485 Communications Port

## Administration P.C.

A desktop P.C. complete with Pentium processor, 128Mb Ram, 40Gb hard drive, 17” SVGA monitor, Windows XP and fully loaded with software will be installed locally to provide full administration facilities for the Fire system.

## Detection Devices and Sounders

All field devices to be connected to the control panel shall be wired directly via 2 core loop circuits. Loop cable types to be selected in accordance with manufacturer’s recommendations to ensure optimum performance. All detection & alarm devices shall incorporate an internal short circuit isolation device as standard to maintain maximum system integrity in the event of a cable or equipment fault.

All analogue sensors and bases will be provided by the manufacturer of the control equipment.

## Optical Sensor - Standards: BS/EN 54 Part 7

Optical sensing is carried out by means of an Infra-red LED transmitting a pulse of light across an obtuse angled chamber. Each device possesses a minimum of 6 possible selecting sensing states of operation.

## Heat Sensor - Standards: BS/EN 54 Part 5 & 8

This will be a dedicated heat only sensor, which may be configured to provide 6 different states of operation, to provide fixed temperature, rate of rise or high temperature sensing.



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## Optical Sensor/ Sounder – Standards: BS/EN 54 Part 3 & 7

Optical sensing is carried out by means of an Infra-red LED transmitting a pulse of light across an obtuse angled chamber. Each device possesses a minimum of 6 possible selecting sensing states of operation. A piezo disk within the device outputs the sound via a horn which is constructed within the chamber moulding

## Heat Sensor / Sounder - Standards: BS/EN 54 Part 3, 5 & 8

This will be a dedicated heat only sensor, which may be configured to provide 6 different states of operation, to provide fixed temperature, rate of rise or high temperature sensing. A piezo disk within the device outputs the sound via a horn which is constructed within the chamber moulding

## Sounder – Standards BS EN54 Part 3

The sounder is designed to produce a sound output of 103dB (A) + 2dB (A) at 1m.

## Manual Call Points

Manual Call Points are available for either semi-flush or surface fixing. Resettable units are utilised, allowing for system resetting without the use of tools. All inscriptions text and marks are screened onto the glass. The device can be tested functionally with a special test key (supplied as standard) without the need to remove the front cover.

## 4 Channel Interface Unit

The interface unit is capable of accepting 4 input signals, 4 output signals or any combination of either. Dependent upon the specific application, input signals may be interpreted by the system as any of the following:

- Fire signal input
- Fault signal input
- Supervisory signal input

All outputs on the interface can be individually programmed for set events.

1 Channel Interface Unit

The interface unit is capable of accepting 1 input signal or 1 output signal.

Dependent upon the specific application, input signals may be interpreted by the system as any of the following:

- Fire signal input
- Fault signal input
- Supervisory signal input

The output on the interface can be programmed for set events.

## Aspirating Detection System - LPCB approved

The aspirating system operates by continually drawing air into the pipe network via a high efficiency aspirator. The air is then filtered prior to being passed through a calibrated detection chamber. If smoke is present in sufficient quantities an alarm is generated.

## Extinguishant Control System – Standards: EN52-2, 4 & BS5839 Pt 1 2002

A single area 2 zone control panel with double knock confirmation facility will be installed to each protected area. This panel when a confirmed alarm is identified will initiate the release of the extinguishing agent to suppress the fire potential.

## General Installation

The system shall be installed using industry standard “Enhanced” fire cable.

## Fire Damper / Smoke Damper Controls

The Fire / smoke dampers are to wired and controlled by a purpose made fully addressable damper control system supplied and designed by the smoke damper supplier. See schematic arrangement overleaf.

The concept proposal for NSGH is to have 6 main area panels, all tied back to a master control interface.

The area panels will be located as follows:

- Four panels in the Adult Areas
- One panel in the Children’s Area
- One panel in the Energy Centre

The damper control system shall operate via a true bi-direction communication data loop signal from the main panels to the local damper decoder. Allowing the system to monitor and control all dampers on the system even when a loop break may occur.

The control system and equipment shall be in accordance with the relevant sections of EN 54-2/4 BS 5588 (BS 9999), BS 5839 and EMC regulations (EN 80204) Due consideration shall be given to the emerging European Draft Standards (BS EN12101) for smoke damper control systems and the system shall comply with the expected requirements. The system shall be augmented where necessary should the relevant standards change or new standards come into force prior to installation.



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## System Configuration

The system shall comprise of six panels (one in each area) monitoring and controlling of all the dampers connected to the system will be available at all the panels on the system.

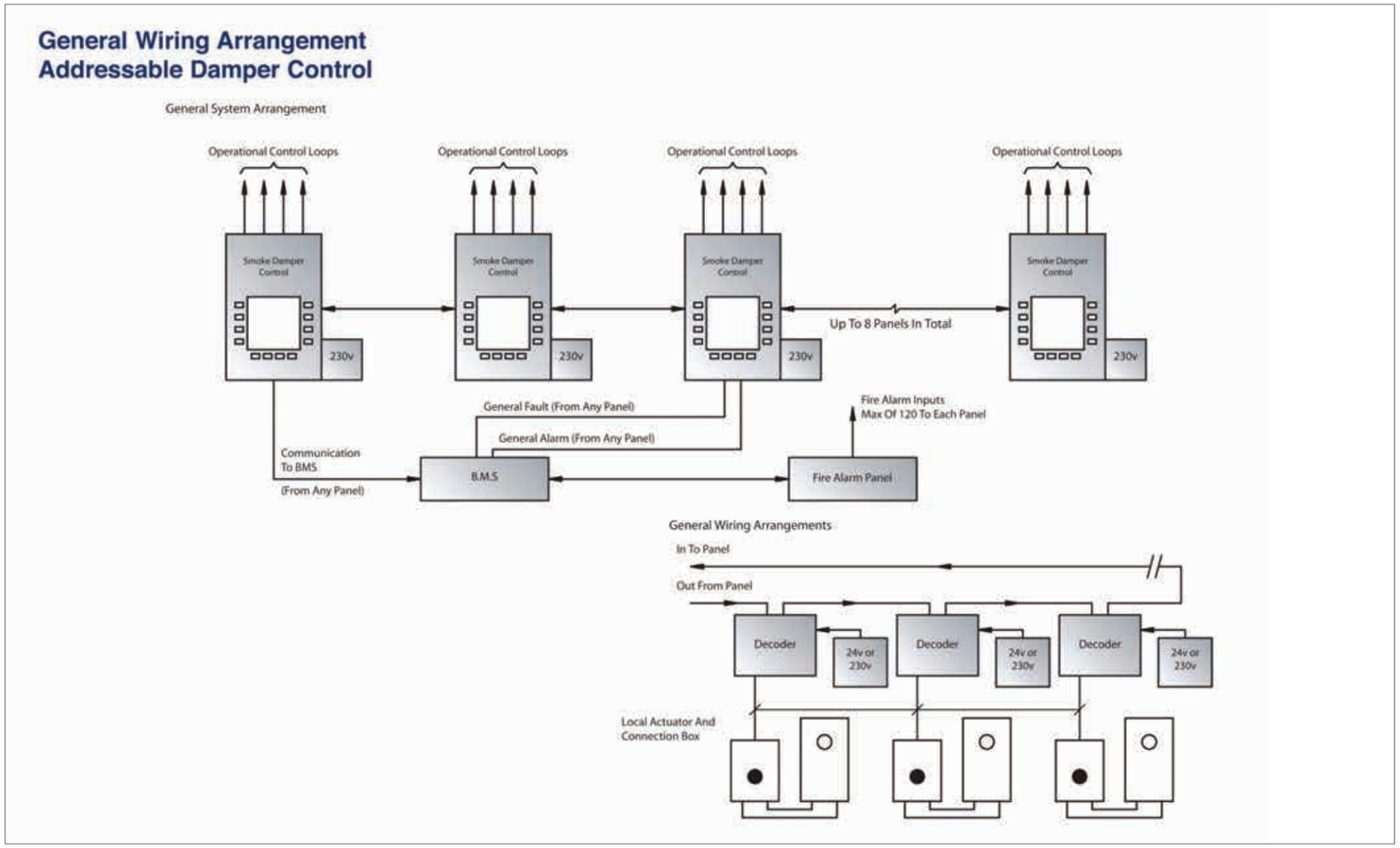
Fire alarm inputs and BMS monitoring shall be available from any of the panels connected to the system.

BMS monitoring will be by one or all of the following means:

- Full damper monitoring  via a communication link
- Hard wired general fault
- Hard wired general alarm

A number of hard wired Fire alarm connections will be required. The numbers of fire zones are yet to be determined but the damper control system must be flexible to provide all zones necessary.

The damper control system shall be programmed to operate in accordance with the cause and effect strategy for the building.



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## Damper Control Panels

The damper system control panels shall be constructed from mild steel with polyester power coated finish. Colour to be determined before manufacture.

The damper system control panels shall have integral LCD display on the panel facia. The panels shall display the system operating status and report faults on a continuous monitoring basis. The condition of the communication network shall also be monitored with the location of any break in the control loop displayed and the loss of communication with any damper local decoder identified.

If in the event of a loss of communication for more than 60 seconds , the local damper decoder will default to its pre programmed safe status. The loss of communication shall be displayed at each of the main panels including where the break is relative to the decoder.

Damper limit switches shall be constantly monitored. Should a damper switch not be made, a fault shall be raised at the panels, were the associated damper or dampers shall be identified and identifying which switch –open or closed is not made.

The damper control system shall provide data logging for the last 500 events that have occurred with the facility to down load the data onto a PC.

Each main panel shall have the facility to manually operate the dampers either collectively or individually and have an additional built-in general firemen's override facility to carry out the following instructions

- open all dampers
- close all dampers
- close all supply and open all extract

## Control and Input / output Modules

The damper control system shall include a programmable Integrated Microprocessor per panel to manage the required inputs / outputs on the system. The number of input / outputs will be determined on how many external overrides (both automatic and manual) are required to suit the requirements of the cause and effect strategy.

## Damper Decoders

Damper decoders shall include a test switch to facilitate local damper testing and visual indication of the following

- damper open
- damper closed
- power on
- communication

The decoders provided shall be of the 'plug & play' type, and be factory fitted with pre wired power cable for local 230v connection, 2x compression glands for the communication loop cables and a 7 pin socket for quick fault free 'plug & play' connection to its associated damper.

## Replacement of Decoders (Plug & Play)

In the unlikely event of a faulty decoder on the system; the system will report the exact faulty decoder together with its loop position. Replacement of a faulty decoder will be by means of an easy to use 'plug and play' system.

The faulty decoder PCB shall be easily be replaced by unplugging it and a replacement fitted in its place. Once replaced the system shall have the automatic capability to detect the replacement PCB / Decoder and auto reset to a fault free state without the need for a manufacturers service visit.

## Communication Wiring

Each panel will have 4 control loops which the dampers can be controlled on. Each loop will be wired in 2c 1.5mm2 FP 200 gold or equal & approved. Cable to be capable of operating RS 485 control signal.

## Gaseous Extinguishing System

### Control panel

A 2 zone control panel will be located adjacent to the main entrance/exit to the protected space. The panel will be of rigid construction and will be capable of being either surface mounted or semi recessed as indicated, which a semi-recessed collar shall be provided of identical colour to provide a neat appearance.

The panel fascias will be equipped with light emitting diodes to indicate fire, fault and operational status together with push action switches to control functions. The operation of the switches shall be accessed via a key operated security key switch. The following components will be provided on the control panel facia:



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- Silence alarm switch
- Test evacuate alarm switch
- Alarm silenced lamp
- Isolate remote signal – switch and lamp
- System general fault – lamp and buzzer
- Power on lamp
- Lamp test switch
- Extinguishant system automatic mode – lamp
- Extinguishant system manual mode – lamp
- Manual/Automatic mode – push switch
- Isolate extingushant
- Hold extinguishant released – switch and lamp
- Manual release unit

A sealed lead acid battery will be provided within the control panel to provide 24 hours of panel operation and a _ hour under alarm conditions

## Smoke detectors

Ionisation and optical type smoke detectors will be connected together within each space to provide two zones of protection. Both zones will additionally connect to detectors in both ceiling and floor voids where applicable.

## Remote status indication panels

Remote status indication panels will be provided.

Remote panels will display lamps indicating system manual, automatic or discharged conditions.

## Manual release units

Manual release units castings will be coloured yellow.

## Sounders

First stage alarm bells will be coloured red. Second stage alarm will be a combined electronic sounder/strobe unit.

## Remote lamp unit

Remote lamp units will be provided to give indication of an activated smoke detector within a ceiling or floor void.

## Air conditioning shut down relay

An air conditional shut down relay will be provided to shut down air conditioning on receipt of a first stage fire signal.

## Power distribution unit shut down relay

A PDU shut down relay will be provided to shut down the PDU on receipt of a second stage fire signal.

## House link relay

A house link relay will be provided to interface between extinguishing system and the house fire alarm system.

## Electrical installation

All wiring associated with the system will be FP200, cable sheath shall be red.

## Pipework installation

All fittings will be of the same size as the line in which they are installed.

The laying out of fittings at branch connections or other fixed points of the system will be such as to allow provision for movement without causing undue stress on the pipework. Pipework will be arranged to reduce the strain due to expansion on all equipment.

All pipework shall be cleaned all completed pipework fittings, support steelwork and brackets.

## Warning signs

Entrance warning signs will be provided and displayed at each entrance to the protected area.

Manual release warning signs will be provided next to each extinguishant release unit.



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## Cylinders

Cylinders will be floor mounted and securely fastened back into a purpose made racking and braced installation.

Each cylinder will be provided with a certificate provided by the company who charge the vessel with gas mixture.

Each cylinder will be fitted with a dial faced type pressure gauge.

Each of the cylinders will be interconnected with a galvanised steel manifold.

## Wet Riser Installation

### General

A wet risers system will be supplied in the adult and children hospital with a landing valve at each floor and each staircase. The water supply for the system will comprise of one booster electric pump sets each rated 1500 l/m @ 13.5 bar drawing water from two 68 m_ split capacity reservoir.

### Location

4 No. Wet Risers will be installed in the Adult Hospital and 2 No. children Hospital.

### Equipment

A landing valve completed with a pressure reducing valve will be provided at each floor level where personnel can connect and fill hose lines in relative safety before entering the fire compartment.

Each landing valve will be sited in the stairway enclosure and will be protected and installed within a box accordance with BS 5041-2.

The landing valves will be installed with its lowest point 750 mm above floor level.

An automatic air vent will be fitted at the top of each riser, and one drain valve c/w padlock and strap at the bottom.

### Booster pumps for wet riser

Two electric pumps will be installed to feed the wet fire main, one of which will act as standby, and be arranged so that when acting as duty pump it will operate automatically, i.e. on a flow of water or a fall in pressure on the installation. The secondary pump will be so arranged that it will operate automatically on a failure for any reason of the duty pump.

The control panel will be fitted with an automatic changeover a completely independent secondary supply in the event of failure of the primary supply.

A booster pump completed with Jockey pump, pressure vessel, suction and discharge collector will be a packaged unit.

All pumps will be capable of being started and stopped manually.

An audible and visual alarm should be provided at an agreed position to indicate that the equipment and the pumping plant have operated.

Each pump will be capable of providing a flow of water of at least 1500 L/min @ 13.5 bar in the fire main.

A pressure reducing valve will be installed on the discharge collector of the pump to protect the pipework against pressure.

A test facility, including permanently installed devices for measuring pressure and flow, will be provided at the pump delivery branch downstream of each outlet check valve to permit a running pressure test of each pump at full load condition.

A Foam extinguishing System will be connected to the wet riser to protect the Helipad. The helipad fire protection equipment will be designed and sized to meet the NFPA 418 and CAA guidance. A Foam monitor and inductor will be connected to a Foam reservoir.

## Fire Suppression System in Kitchen

Localised kitchen extract fire suppression systems will be installed within the kitchen extract canopies.

## Fire Extinguishers

All extinguishers will be provided complete with all mounting or floor standing brackets, signage, lockable piston and test certificates.

The different type of extinguishers provided will be:

- L Foam Extinguisher
- 6 Kg  ABC Multipurpose Dry Powder Extinguisher
- 5Kg CO2 Gas Fire Extinguisher
- 6L AFFF Foam Fog Spray Fire Extinguisher
- 6L Wet Chemical Fire Extinguisher
- 6L Foam Extinguishers
- 6L Foam Extinguishers
- 50Kg Wheeled Multipurpose Dry Powder Extinguisher



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# Lightning Protection

## General

The lightning protection installation will comply with the relevant clauses of the NHS Model Engineering Specification Part C53 and BS EN 62305.

## Lightning Protection

The metallic roof fabric will be used as much as practically possible to limit the amount of roof termination network.

Where necessary, supplementary conductor tape will be installed to ensure a continuous roof termination network.

The perimeter structural columns will be utilised as down conductors.

Earth electrodes will be provided within a purpose made inspection pit with lid.

An earth termination will be connected to each down connector.

Earth terminations will be capable of isolation for testing purposes at the test joints.

## Surge Arresters

Type 1 and Type 2 surge arresters will be provided on each main distribution switchboard.

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# Communications Specification

## Scope

The ICT scope proposed for the New South Glasgow Hospitals Project covers the following infrastructure items:

ICT Spaces

- Primary and Secondary Main IT rooms
- Hub Rooms (on floors)
- Entrance Facility 1 and 2 for Service Providers
- Electrical risers

ICT Infrastructure

- Vertical cabling infrastructure
- Fibre optic backbone (distributes LAN services throughout the facility)
- Telecommunications copper cable (distributes Analog services throughout the facility)
- Horizontal cabling infrastructure
- Cat 6a cabling

Structured Cabling to Facilitate Service types

- Data – Data access for workstations
- Internal telephone – Internal telephone network for making internal calls only
- External telephone – Connection to external telephone network
- Emergency telephone – Connection to emergency telephone network
- Staff telephone – Staff telephone access
- Telemedicine – for conferencing
- Patient Entertainment – providing TV, radio facilities at the bedhead
- Video Conference – Access to video conference system
- Nurse call
- Public address
- Public information

## Voice / Data Network

The voice/data network will utilise VOIP Technology but still retain copper backbone cabling for analogue services.

### ICT 01 - Main Fibre Optic Backbone Routes

A fibre optic cable, comprising of 48cores of 50/125um multimode fibre, will extend from the Primary Equipment Room in the Adult Hospital to each of the Intermediate Hub Rooms as detailed in the drawings in a star topology. It will also connect to the Main IT room in the Children's Hospital.

The fibre optic cable will be terminated on to fibre optic patch shelves within the communication cabinets in each of these rooms.

### ICT 02 - Resilient Fibre Optic Routes

A fibre optic cable, comprising of 48cores of 50/125um multimode fibre, will extend between the Secondary Equipment Room in the Children's Hospital and each of the Intermediate Hub Rooms, as detailed in the drawings, in a star topology.

The fibre optic cable will be terminated on to fibre optic patch shelves within the communication cabinets in each of these rooms.

The fibre optic cables will be run in a diverse route from the Primary Fibre Optic backbone described above.

### ICT 03 – Meshed Fibre Optic Routes

A fibre optic cable, comprising of 24cores of 50/125um multimode fibre, will extend from the each Hub Room on each floor to the next Comms Room on each floor wings in a loop topology. This will provide a meshed configuration.

The fibre optic cable will be terminated on to fibre optic patch shelves within the communication cabinets in each of these rooms.

### ICT 04 – FM Backbone

The FM back bone will comprise of a series of hubs provided to suit the building layout and wiring topology located in plant areas, linked to a core switch and server located in the FM Office within the Energy Centre. A 12 core 50/125um multimode fibre optic backbone will be used for this purpose. Wireless applications will be integrated with the Clinical Wireless Infrastructure enabling a single wireless network using VLANs where appropriate.

### ICT05 - Primary and Secondary Incoming Routes

Two distinct and separate routes into the hospital for data and voice communications will be provided. The primary external link will extend directly to the Adult Hospital. The secondary link will extend to the Children's Hospital. Incoming ducts will be provided to these locations to allow Service Providers to provide voice and data services.

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### ICT 06 - Multipair Backbone Routes

A copper multi-pair backbone cable will extend from a Voice Termination Frame (VTF) located within the Main Communications Rooms to voice patch panels within the HUBSs to provide analog services.

The intention by the NHS is to use Voice over IP Telephony and will therefore be utilising the fibre optic backbone for connection to the telephone system. The multicore backbone is only for some essential services (i.e. lifts, fax machines etc) which may be connected back to the local Hub Rooms.

## ICT Spaces

### Main IT Rooms

We have noted the hot isle, cold isle configuration in the drawings and will assist the NHS with the design and implementation of this strategy.

- The campus main IT room will be constructed with a raised floor, under which cabling and cooling will be delivered. Cables will enter racks from the below.
- Racks will be standard 42u height 800mm x 1000mm (space for 1200mm), all doors will be lockable. Racks must be mounted securely and earthed appropriately to an earth bar in the room. The 2 No. Main Comms Rooms will accommodate 6 No. comms Racks, 10 Server Racks and 10 Equipment Racks.  BMS, CCTV and Entertainment equipment will be housed here as well.
- Forced air conditioning will be used in the campus main IT room to ensure environmental conditions are maintained.
- An Inert gas fire suppression system (bottles will be stored in this room) will be installed in the campus main IT room. This room will be sealed and pressure tested.
- After construction, the campus main IT room will be cleaned and made dust free; it will be fitted with a dust seal also.
- The UPS system will be fully redundant
- Anti-static floor tiles will be provided
- Access control systems will be used to prevent unauthorised access to the room.
- Leak detection systems will be installed in floor void.

### Hub rooms

IT hub rooms will generally be located in the Plant rooms, and are used to distribute the edge network about each building.  We will provide Hub rooms at strategic locations in the hospitals and will have fibre and copper connections back to the Main Comms Room

- The hub rooms may be constructed with a raised floor.
- Racks (42u height 800mm x 1000mm) will be installed in each hub room to serve the NHS needs (passive and active).
- Forced air cooling will be used in hub rooms using AC units.
- Inert gas fire suppression systems are not installed in hub rooms.
- After construction, the hub rooms will be cleaned and made dust free, a dust seal will be fitted also.
- Anti-static finish to the floor will be provided.
- Access control systems will be provided to prevent unauthorised access.

### Patch cabinets

These are used where there may be not enough space for Hub rooms and small patch cabinets may be required. Below is an outline of the secure space that will facilitate the patch cabinet

- An appropriately sized wall mounted secure cabinet will be installed in a secure space. This enclosure will facilitate active and passive equipment
- A raised floor will not be provided
- Fire suppression system will not be provided
- Access control systems will be provided to prevent unauthorised access.

### Entrance Facilities

Entrance Facilities receive incoming ducts from outside via ducts and distribute via secure risers. There will be a primary and secondary network point each serving up to 4 carriers. New network incomers will be provided from Govan and Hardgate roads. Data and voice will be run in a combined services trench with connections to the Main Hospital Buildings, Laboratories and Energy Centre.



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Below is a summary of the Entrance Facility room specification:

- Termination equipment for fibre optic and copper multicore cables. This equipment will be provided by the Service Provider
- Raised floors will not be installed in EF's.
- Fire suppression systems will be installed in EF's.
- UPS will be provided to give N+1 support.
- Access control systems will be provided to prevent unauthorised access.

### Wireless Networks

On site paging facilities will be provided along with wireless handsets on the IP Network.

## FM Backbone

### Integrated Building Management System

There is a requirement to provide an Independent Protocol network to support communication, interaction, data transfer and data retrieval from and between the various engineering systems that provide service to the buildings. The Building Management System will be fully integrated with this network and will provide control over the engineering plant and facilities to enable management of maintenance and energy usage. The network will be totally independent of the Clinical network except for an interface, which will be engineered via the server.

The network will comprise of a series of hubs generally located in plant areas linked to a core switch in the FM office within the Energy Centre. Each hub will communicate with local field devices using Cat 6 copper cable and will communicate with other hubs and the server with fibre optic cabling.

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# Specification for Special Installations – Renal Water, Filtered Water Systems

## General

The special water services systems will comply, where relevant, with the relevant clauses of the NHS Model Engineering Specification Parts C01, C02 C07, C82, D08, addendums to Part C, SHTN 02, SHTM 2027, 2040, HTM 04-01, BS 6700 and descriptions and requirements set out below.

## Filtered water system

To meet the Scottish Office guidelines for the protection of pipework in government buildings, the hospital will require a filtration unit to ensure that the feed water has low turbidity.

The installation will comprise a back-washable microfiltration system capable of filtration levels of 0.2 micron absolute.

The cold water filtration plant will include a duty/duty plant to provide continuous operation whilst each plant goes through a backwash cycle and each plant will be capable of producing 36 m3/hr of filtrate.

The plant will incorporate PVDF membranes capable of an automatic backwash onto the surface of the membrane utilising compressed air. The membranes will have a life expectance between replacement of in excess of 5 years.

Each plant will be supplied with a dedicated controller to control all plant operation and ensure even operation of the plant.

## Filtration units

Each unit will be a complete skid mounted plant and comprise: a number of PVDF membrane modules with integral pipework. feed pump, butterfly valves with pneumatic actuators, chemical dosing pumps, filtrate flow meter, and control panel. An interface unit will be complete with air receiver, oil water separator, and drier.

All pipework will be BS316 stainless steel.

## Renal

The installation will comprise a 137 Station Renal RO water purification and distribution system with the maximum simultaneous treatments anticipated to be 66. Each dialysis station will be supplied with a flow rate of 1500ml/min.

The final RO dialysis water quality will be to meet UK Renal Association standards 4th Edition for use with low flux membranes (for UPW)

| | |
|---|---|
| Microbial count | <0.1 CFU/ml |
| Endotoxin | <0.03 IU/ml |

The RO system will comprise:-

- Five high capacity micron pre-filters complete with disposable element mounting brackets, polypropylene housing and pressure gauges indicating pressure drop and the need to change element.
- A feedwater cylindrical break tank manufactured ball valve and air gap to conform to water authority regulations, low level switch for pump protection, service outlet, drain point and overflow connections.
- Two run and one standby stainless steel booster pump set with adjustable timed autochangeover and trip for low water in break tank, pressure relief valves, pressure gauge, non-return valves and isolating valves.
- One backwash pump for timed periodic backwashing of the carbon filter, controlled from the central control panel.
- Five high capacity micron pre-filters complete with disposable element mounting brackets, polypropylene housing, inlet/outlet adapters and pressure gauges indicating pressure drop and the need to change element.
- One Base Exchange softener comprising two reinforced GRP softener vessels, duty and standby/regenerating. Each vessel shall be charged with cation resin in sodium form. Water meter initiated automatic controls for continuity of supply and shall include manual override.
- One salt saturator/brine tank manufactured from medium density polythene including lid, draw tubes and interconnections to softener.
- Three automatic back-washable carbon filters each comprising, reinforced GRP pressure vessel charged with activated carbon medium for removal of free chlorine and general water conditioning, one valved manifold with all necessary valves for backwash and service flow, controls with resettable time clock to initiate backwash.
- Four high capacity 5 micron pre-filters complete with disposable element mounting brackets, polypropylene housing, and pressure gauges to indicate pressure drop and the requirement to change the element.



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- Three double pass RO unit designed each producing 2000l/h, total 6000l/h (at 10ºC) permeate when supplied with pre-treated water with a temperature in the range 10ºC to 25ºC (operating limits are 1ºC to 35ºC). Each unit will include:-
  - Pressure vessels containing high output spiral wound polyamide based thin film composite permeators
  - Stainless steel centrifugal pumps
  - Control panel with graphic display
  - Conductivity meters for feedwater and RO permeate incorporating alarm facilities
  - Concentrate and permeate rate of flow monitoring and control
  - Status mode indicating lights
  - Combined break tank and CIP tank for cleaning and disinfection
- Wall mounted control panel and distribution board with volt free contacts to provide BMS interface.
- Two mimic panels (located in technicians workshop and nurse base) indicating:-
  - Pump Run/fault
  - RO unit Run/fault
  - Ring disinfect
- Six bacterial sample ports.
- Five Distribution systems will distribute the treated water to the terminal points each comprising PEX pipework, isolation valves, male and female stainless steel Walther couplings, all supports and phenolic foam pipe insulation.
- Each distribution system will incorporate a heat sanitisation unit for automatic sanitisation of distribution pipework, with individually adjusted heating intervals, heating times, temperature holding times and cool down times. The unit will comprise: Stainless steel insulated holding tank fitted with heating elements, level controls for low level protection and permeate feed, stainless steel recirculation pump, stainless steel solenoid valves for isolation of RO unit, drain and distribution ring flow and return. Fully automatic controls incorporating alphanumeric display, RO interface with emergency manual override.
- A media enclosure will be provided for each dialysis station complete with drain coupling with air gap and stainless steel Walther coupling.

On completion of commissioning of the RO system, 10 sets of samples will be taken, one from each of the flow and return of each of the five ringmains for microbial analysis and cultured and enumerated in line with approved methods (i.e. 7 days @ 20-22 Degrees C using TGEA or R2A agar) in order to show compliance with the specification stated in the “Requirements”. One set of samples will be collected and analysed for chemical compliance.

## Renal acid concentrate system

The RO system will be supplied with acid concentrate to supply 43 outlet points from bulk storage tanks located outside the hospital building. The complete installation will comprise:-

- A Delivery Point Control Panel, for delivery personnel to use, with isolation key, stop / start buttons, level indicator lamps, lamps test button and camlock fitting fill point.
- Two Transfer pumps, (resistant to the acid solution) pumping solution from transfer tanks to bulk tanks.
- One Acid Delivery Pipe, from delivery panel to the holding tank
- One 3000 Litre Acid Holding Tank, (unbunded) complete with inlet, outlet, overflow, inspection hatch, high-high, high, low and low-low level switches
- One Control Panel, installed near acid tanks complete with electrical control systems including level indicator lights, lamp test and emergency stop controls for each acid tank.
- One Transfer Pump, acid resistant to maintain supply of acid from holding tanks to transfer tanks on ward level float switch controlled
- Two 100 Litre Transfer Tanks, located on ward level.
- Two Circulation Pump Systems, to deliver the acid solution from transfer tanks around the ring mains at a controlled pressure of less than 1 bar.
- Two Acid concentrate distribution systems constructed from PVC reinforced tubing including acid concentrate connections

## Endoscope washer system

The final rinse water for the endoscope washers will be provided to BS EN ISO 15883-4:2008.

It is estimated that ten endoscope washer machines will be installed (subject to future confirmation) and have feed water flow demand for final rinse as follows:-

Demand= 46 l/cycle x 1.71 cycles/hr x 10 washers = 0.78 m3/hr

| | |
|---|---|
| Peak Flow: | With Diversity Allowance<br>Based on typical washer demand as below<br>Fill rate per minute at 2-5 barg = 15.3 l/min<br>15.3 l/min x 60mins x 10 washers = 9.18 m3/hr |
| Working Hours: | 16 Hrs |
| Production Rate: | Up to 800 l/hr @10oC of RO Water. |

Should the feedwater exceed any of the recommended guidelines in Table A, it is possible that the system offered will require additional pre-treatment in order to fully comply with the standard.



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Sampling: One hygienic sample point will be provided adjacent to the first washer ringmain loop. It is at this point that sampling to comply with the relevant water quality standard should occur. Samples taken elsewhere in the system, or within equipment or devices connected to the system, may not provide relevant, accurate or repeatable results.

The system will comprise:

- Three feedwater Pressure Booster Pumps, stainless steel centrifugal pumps controlled from main panel with adjustable timed auto-changeover and trip for low water in break tank; includes pressure relief valves, pressure gauge, non-return valves and isolating valves.
- One Duplex Base Exchange Softener, comprising two reinforced grp softener vessels, one duty and one standby/regenerating, vessels charged with softener resin; water meter initiated automatic controls for continuity of supply, includes manual override and bypass facility.
- One Salt Saturator/Brine Tank, for use with softeners, manufactured from medium density polythene, includes lid, draw tubes, interconnections to softener.
- Two Automatic Back-washable Carbon Filters, comprising: two reinforced GRP pressure vessel charged with high quality activated carbon medium for removal of free chlorine and general water conditioning, one valved manifold with all necessary valves for backwash procedure and service flow, controls with resettable time clock to initiate backwashing, typically, twice each week. Each vessel sized for 100% duty and running in parallel in normal operation at 50% duty.
- Two Reverse Osmosis Units, designed to produce up to 800 l/h permeate when supplied with adequately pre-treated water with a temperature in the range 10 to 25°C (operating limits are 1 to 35°C), and includes the following built-in features:
  - Pressure vessels containing high output spiral-wound polyamide-based thin-film composite permeators.
  - Pre-filter assembly using 5µm disposable filter elements.
  - Stainless steel high-pressure centrifugal pump.
  - Fascia panel incorporating controls and instrumentation.
  - Conductivity meter for feedwater and RO permeate incorporating alarm facilities.
  - Feed and permeate rate of flow meters.
  - Status mode indicating lights.
  - Integral combined break tank and CIP tank used for cleaning/disinfection.
- One 500 Litre Purified Water Storage and Recirculation Tank, self supporting, Stainless Steel construction with conical base complete with connections for service and drain; additional connections for make up supplies from Reverse Osmosis unit, overflow, and recirculated water return; tank fitted with level controls for operation of RO unit and for pump protection, air vent filter and complete with electrical immersion heaters, lagging and aluminium cladding.
- One Distribution Pressure Booster Pump, stainless steel centrifugal pump controlled from local panel with trip for low water in treated water tank; includes pressure relief valves, pressure gauge, non-return valves and isolating valves.
- One Inline Sanitary Ultraviolet Disinfector, maximum capacity 154 l/m, 316 stainless steel construction, high intensity lamp, high purity quartz thimble and splash-proof control box.
- One Multi-Round, 0.2 Micron Microbial Removal Filter Assembly, comprising sanitary stainless steel housing complete with disposable filter elements, isolating valves and two pressure gauges for determining pressure drop and need to replace filter element and vent valves.
- One wall mounted control panel combines functions of system electrical isolator, power distribution board and automatic auto-changeover controls for feedwater pumps and contains:
  - status display and alarm lights,
  - volt free contacts to provide interface with BMS
- One Remote Mimic Panel, installed in local washroom, with indicative lights to show critical failure.
- Dynamic Distribution System, constructed from approximately welded, stainless steel pipework.

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# Specification for Building Management System

## General

The Building Management System will comply with the relevant clauses of the NHS Model Engineering Specification Part C54, addendums to Part C, and descriptions and requirements set out below.

## Building Management System

### Overview

The targeted strategy proposed for this system utilises advances in both the field side technology and also the 'Front End' system advances, namely Open System Integration Framework.

The key objectives are:

- High Level of Distributed Control
- Modular Approach
- Full Open Protocol
- A Front End GUI that works as a Systems Integration platform

### Field Side Environment

The field side environment can be broken into three main branches:

- Primary plant control (AHU's,Chillers, Boilers, pumpskids, fans, etc.)
- Environmental Control (Chilled Beams, FCU's, underfloor heating, etc)
- Supervisory function Control (Systems requiring overview, leak detection, metering, etc.)

The main focus here is to have a distributed control strategy with the controllers in the field adjacent to the process. This has a number of advantages:

- Resilient to failure, when compared with a central system
- Minimum of wiring and containment
- Utilises IP based network for comms
- Systems are deployed fully complete after FAT
- Commissioning much more streamlined
- Systems can be made available without the rest of the system being complete
- Greater flexibility of system during lifetime of facility

### Primary Plant Control

The control solution for this type of application is a fully contained controller with associated electrical requirements. Also the sensing and actuation required for the process being controlled are connected directly to this unit.

With regard to Air Handling Units, the control enclosure will be integrated. This allows complete FAT scenarios, junction box points maybe utilised to allow the units to be split for transport.

IP based control, such as BACnet, has major advantages in terms of open protocol and integration over the lifetime of the facility; all major plant (Boilers, Chillers, AHU's) will be specified with this type of philosophy, this ties in with the combined energy sustainability management approach adopted under the Campus wide Power Management System outlined below.

Pump skids, Fans, etc. have a fully complete control and power cabinet associated and this can be skid mounted or adjacent, as appropriate. The potential to consider, during detailed design phase, on board VFD's with pumps, this will give a very minimal panel needed for local isolation and marshalling. The key here is standardised off site manufacture, to give high standards of installation, seem-less commissioning and commonality of plant during the lifetime of the facility.

### Environmental Control

Within the building there are key environmental controls that equate in real terms to occupant comfort and also key occupant driven demand side energy usage. Both of these elements controlled effectively utilising systems such as KNX.

The two key areas break into HVAC and Lighting control, with KNX these control functions can be combined on a common back plane. This allows the wiring to be combined with the power wiring and effectively eliminates BMS wiring within environmental control spaces. Also this system allows much more flexibility in terms of design, construction, commissioning and subsequent reworking during the lifetime of the facility.

### Supervisory Function Control

Similar to 'Environmental control' there are many classical BMS offerings in the market place, KNX can be utilised for these functions, with direct plug and play for the likes of metering, leak detection and impulse clocks and also third party systems that require BMS monitoring.

### Systems Integration and GUI

The Open System Integration framework solution with seamless transfer of information to and from certified field devices.

This system for the proposed project application is a software solution of two parts:

- The Integration of field systems
- The Graphical User Interface (GUI)

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### Integration of Field Systems

With the Framework solution certified drivers are available for different industry standard field device protocols, such as:

- IP
- BACnet
- KNX
- DALI
- LON
- OPC
- And others

This in real terms means that, a system can be built as follows:

- BACnet can be utilised for the AHU's, chillers and burner management.
- KNX is used for the environmental control
- KNX and DALI are used for lighting control and metering

All of these are interfaced to the Open System Integration environment with the certified 'Drivers', at this point all data points from all of the systems are now in a common environment.

### Programming

Programming of this system is done with standard toolboxes for applications, such as AHU display; out of the box there is a generic bones that can be customised for the specific site.

The standard environment is a Function Block scenario, with blocks being linked together graphically.

## Power Management System Overview

### General

Campus wide energy management needs to be viewed in two halves:

- Supply Side
- Demand Side

The approach for optimum overall efficiency, as proposed with this scheme, is that the demand side is dealt with entirely via the Building Management System (BMS) outlined above and that the supply side of consisting of, on site generating capacity and also connected capacity from the national grid, be dealt with by a Power Management System (PMS).

Integration of both systems happens in the Integration Layer as outlined in the Energy Management Scheme Overview Schematic overleaf.

The PMS, when compared to BMS, requires a much higher degree of guaranteed security in operation as it must also ensure continuity electrical supply in an effective manner to the campus. This also includes the integration of emergency electrical generation.

The most effective way to achieve this standard is to utilise IEC 61850 protocol which is a network utility approach to manage HV national grid distribution networks primarily.

This methodology offers several advantages emanating from the fact that the control is local to the switchgear and combined within the protection releases.

The overall energy supply, on site capacity, is a combination of different plant:

- Boilers
- Vapour Compression Chillers
- Absorption Chillers
- CHP Engine Sets

These combined give the best energy performance over the entire demand side operating range. This combination has to be viewed in a symbiotic light to ensure that the highest operating efficiencies overall are achieved.

For example; with the proposed integration of absorption chiller into the scheme and the gas fired CHP engines, it is desirable that the engines are loaded as much as is possible to ensure highest efficiency electricity is available to the demand side, while the heat being captured effectively and utilised for chilling (Via absorption chilling) and heating.

Also the system will factor key plant characteristics and potentially present and forecast weather, to ensure effective sequencing of plant to take advantage of ambient conditions and also performance curves of equipment.



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# Design Strategy For Pneumatic Tube System

## General

A PC controlled pneumatic tube system (PTS) will be installed in the Acute and Children's Hospitals with links to the Laboratory building via the service link tunnel.

The preliminary plan for the PTS is a ten zone network to serve around 92 stations within the hospital buildings, with four zones covering the Ward Tower itself. A dedicated zone between A&E and Pathology will be provided to maintain a high priority service, three dedicated systems will be provided between the network hub and specimen reception to maximise traffic handling capacity with automatic empty carrier return using transponder fitted carriers.

The system will be capable of supporting 300 (carriers) per hour on the power assisted links and 40 (carriers) per hour on the direct link from A&E. A proposed layout is illustrated on the schematics drawings accompanying this document

A front end PC will be provided complete with dedicated printer and modem for remote operation and analysis.

The system will incorporate an advanced platform software control package with full automatic dual control redundancy to provide optimal flexibility, performance and convenience in the management and maintenance of the pneumatic tube system.

The controller will have battery backup for system memory and status, and be capable of being remotely controlled through the PC.

Tubing will be 160 mm diameter solvent welded rigid UPVC, with intumescent fire sleeves when passing through firewalls or floors.

The equipment will be supplied and installed in accordance with SHTM2009, utilising optical carrier detectors, safety extra low voltage cabling to the stations, electronic positioning sensors, volt free contacts for BMS alarm status and fire alarm interface at the controller.

## Stations

The stations will generally be of front-loading design with a wipeable membrane type keypad.

A 'spare carrier' rack holding up to four carriers will be wall mounted adjacent to the station.

The stations are to be designed to comply with the latest Health & Safety Regulations. Access to the station mechanism is to be protected by an electronically controlled opening/ closing guard door with full mechanical interlock.

The stations in-built LCD display will show:

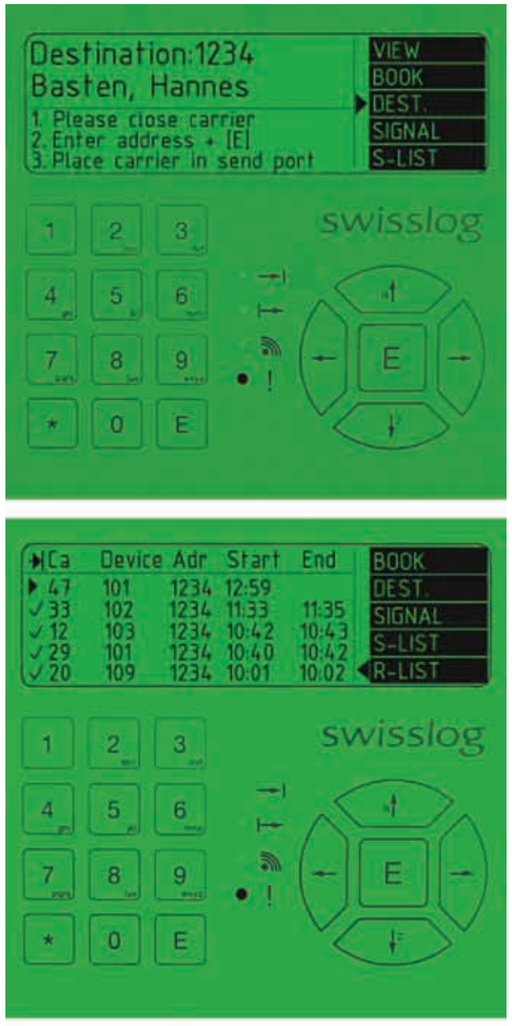
- Time and date
- Carrier destination
- The station the last carrier arrived from
- Station status - ready, selection OK, out of use, maintenance, faulty, basket full, invalid address and purge

The display will also have a directory of all system station names and numerical addresses.

The stations indicators display will show:

- Carrier being despatched
- Carrier incoming
- Carrier arrived at destination
- System busy
- System faulty

Stations will be fully automatic and capable of accepting a carrier when another carrier is incoming to that station.




Station display information



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Destinations will be addressed by the use of the 4 digit number or by accessing the station name through the directory.

Destinations may be restricted if required.

The destination setting can be optionally set to return to 1 of 3 settings after a carrier has been sent:

- Force new address input
- Default to a pre-set address
- Default to “last number re-dial”

Wrongly addressed carriers will not be accepted by the system. A code reader at the station will allow only carriers to be introduced into the system, e.g. objects such as cans will not be accepted.

Incoming carriers will be able to be re-directed to another station.

All stations will be fitted with air control to ensure carrier soft arrival. This system will provide total safety of even delicate glass samples.

The station will automatically clear and eject a blocked carrier exit by agitating the station mechanism.

The station will be set to automatically return a carrier to the station from where it has been received by use of a single keystroke.

Carriers will be received into a cabinet below the station. The cabinet will be either an open type, or secure, accessible only by the use of a swipe card. Arrival signal units will be able to be programmed to discriminate to different user addresses, thereby allowing urgent full carriers to be immediately notified to the user, whilst allowing no alarm for empty returns.

The use of the station will be restricted by a user identifiable touch key and security card.

The station will include an in-built carrier arrival indicator consisting of a warning bleep and light. The bleep is to be enabled or disabled as required at the station by the user.

Remote indicators will be provided in some locations to indicate the arrival of a carrier at the station, as indicated in the schedule. These are generally from the Clean Utility Rooms to the appropriate Staff Base, and indicate on the Nurse Call Panel.

## Carriers

Carriers will have transparent bodies with coloured ends and are available in various lengths The coloured ends can be used for different purposes, for example red for pathology or green for Pharmacy.

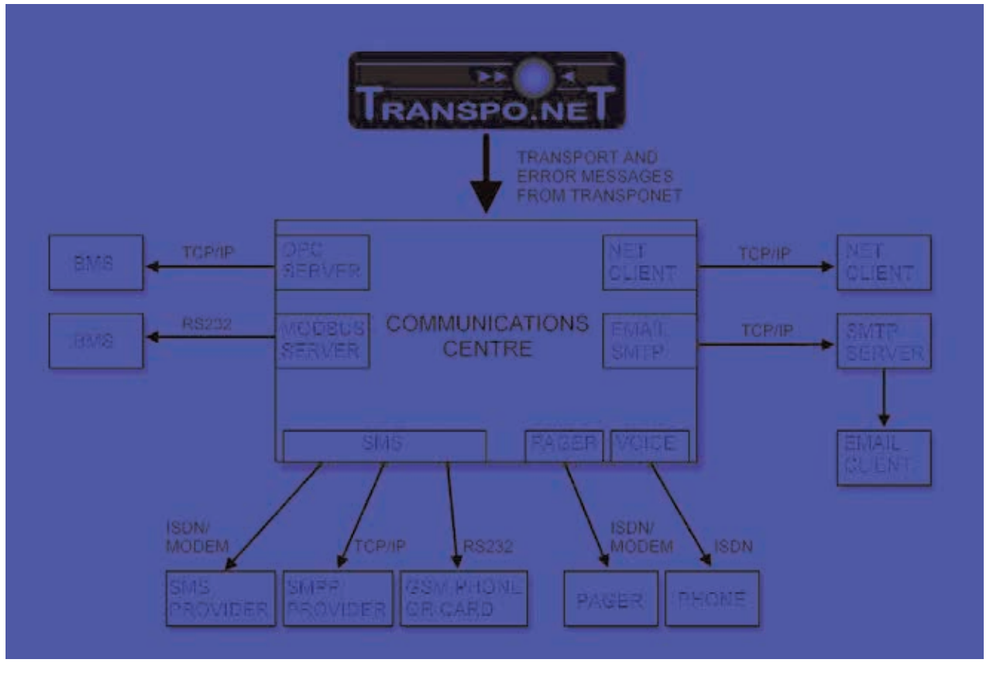
Each carrier will come complete with transponder technology that allows automatic redistribution and allow only correct carriers to be sent from any station.

Carriers will be secured during both the send and receive operations.

## PC & Printer

A PC based maintenance System Control Center will be provided for use by the hospital engineering and operations departments to configure the system, monitor system operations, schedule system operations and troubleshoot system errors, and to run a remote facility management PC and Communications Centre which will provide all external communications interfaces as illustrated below.

The supervisor terminal will be positioned in allocation to be agreed with the Board, and be used to monitor the activity of the system, all carrier movements plus the status of all of the equipment.



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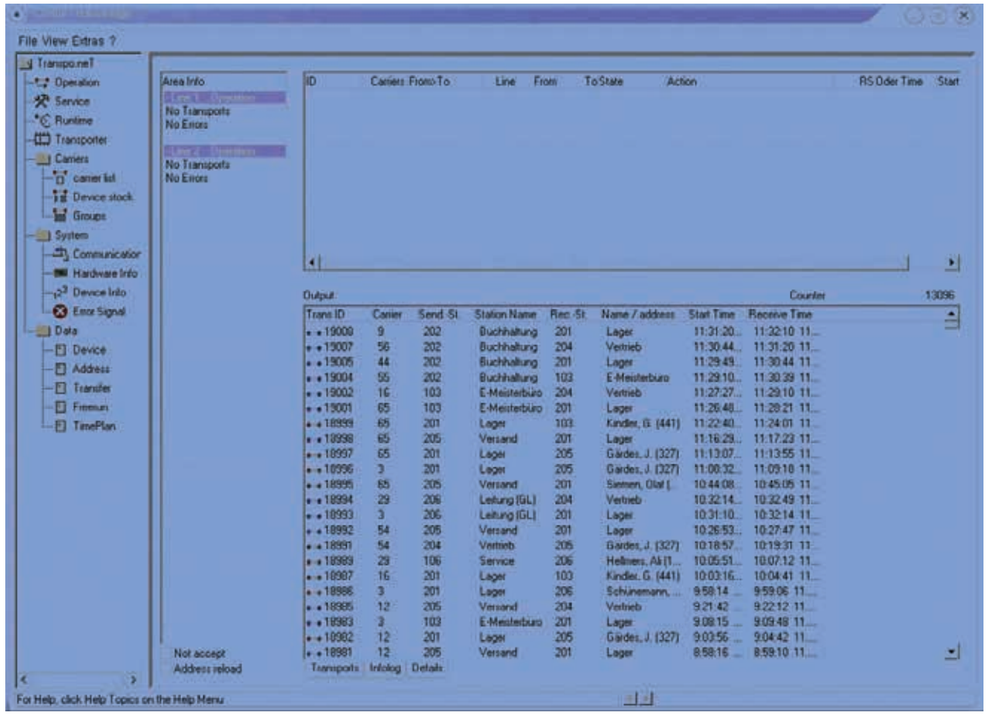
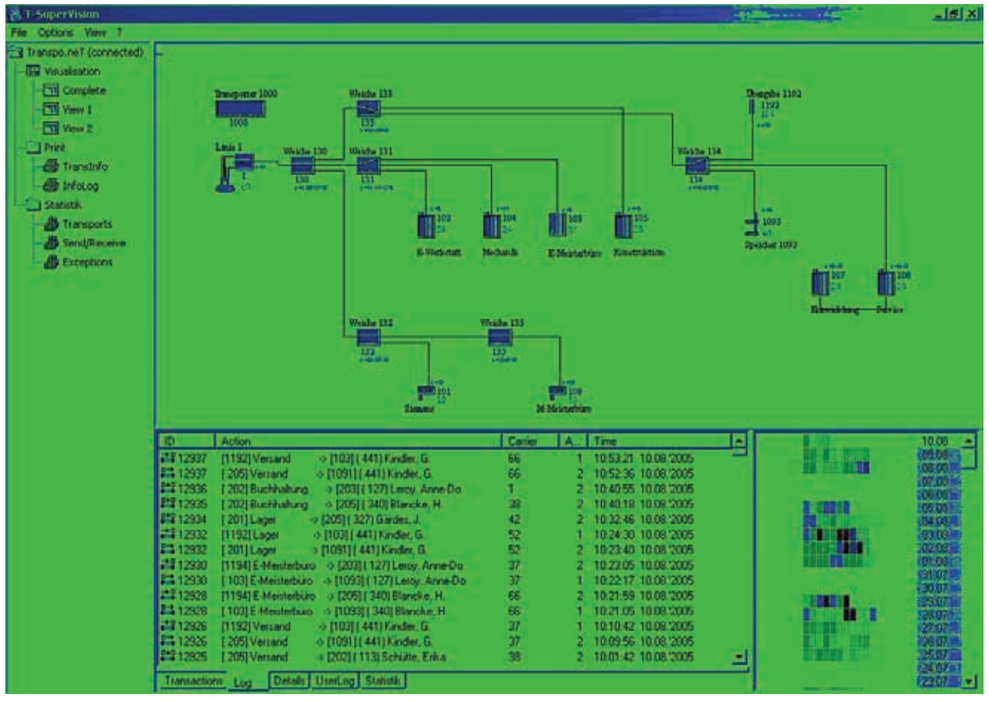
In the event of the requirement to track down individual sending of carriers from particular stations on the network it will be possible to interrogate the PC to display all transactions between a particular requested timeframe between any 2 stations. This function can be repeated right across the network.




For historical information the PC will be able to produce the last 20,000 transactions.

In addition the monitoring PC will identify the load time of each carrier into the load / despatch tube of each and every single station on the network. The time that the carrier is accepted into the station ready to be transported will also be registered. The PC will also log the time that each carrier is discharged from the network. In the event of a localised power failure to the PC the system will continue to operate.



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## Additional Features

### Follow Me / Redirection Facility.

Each station on the network will have this ability, and will be controlled by the user. This will allow users to divert their station address to any other one within the network, enabling them to still receive carriers even if they are working within another area of the hospital.

### Automatic Isolation of stations

Stations can be isolated electronically on a ‘timed’ basis if required.

This facility will be programmed at the central processor unit PC.

### Manual Operation of Station

Any station nominated by the user can be closed locally without affecting any other station or diverter on the network, thus giving the user full control of their station.

### Alpha Numeric Address

The system will include Alpha Numeric address facilities. Once an address code is inserted the user has the opportunity to check it before accepting the displayed, programmed target address. If satisfied then the confirmation key can be pressed.

### Modem

This will enable external connection to allow remote technical support from the Facilities Management Department or any other external point.

Carrier Monitoring

All carrier transactions through the network will be monitored in real time.

### Power Failure

In the event that a power failure occurs, the system will automatically be reinitiated and any carriers that are contained within the system will be removed and taken to their pre-programmed destination or to the assigned ‘dump’ station.

### Fire Alarm

In the event that the fire alarm system is activated (either in a real event, by accident or a planned test) then the system will close down following completion of any transaction in progress. As and when the Fire Alarm is reset then the system will be reinstated. This can be carried out either manually or automatically. A manual ‘test’ key will be provided to override and disable this facility for fire alarm testing, so as to avoid disruption to the system operation. This is to be positioned at the main control location (to be agreed).

The system will be linked to the BMS via volt free contacts within the main control unit. In a fault condition the system will activate the alarm.



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# Outline Specification – Roads, Carparks, Pavements & Cycle Paths

## Contents

1.0 Paving

2.0 Carriageway Kerbs

3.0 Walls

4.0 Gravel Pavings

5.0 Special Surfacing / Paving for Sport / General Amenity

Note: This section should be read in conjunction with the Structural Engineer's (WSP) specification for Roads and Carparks specification.

## 1.0 Paving

### 1.1 Natural stone flag paving to pedestrian areas in the hospital Adult entrance and Children's hospital external entrance space

Type: Natural granite pavers
Finish: Fine picked
Size: 600 x 200mm
Colour: Silver Grey, Mid Grey, Dark grey
Pattern: Stretcher bond
Jointing: 6mm
Natural Granite products to comply with the performance levels in European Standard BS EN 1341.

### 1.2 Natural stone block paving to roadways and parking bays in the hospital Adult entrance and Children's hospital external entrance space

Type: Natural granite pavers
Finish: Fine picked
Size: 100 x 100mm
Colour: Dark grey
Pattern: Herring bone
Jointing: 6mm
Natural Granite products to comply with the performance levels in European Standard BS EN 1341

### 1.3 Concrete paving to pedestrian secondary entrance areas

Type: Exposed granite aggregate Concrete pavers
Finish:
Size: 400x200, 600x750, 450x450
Colour: Silver Grey, Mid Grey, Dark grey
Pattern: random
Jointing: 6mm

### 1.4 Concrete paving to pedestrian pathways

Type: Standard concrete pavers
Finish: Standard
Size: 450 X 600
Colour: Grey
Pattern: Stretcher bond
Jointing: 6mm

### 1.5 Laying paving- General

Appearance: Smooth and even with regular joints and accurate to line, level and profile
Falls: To prevent ponding
Bedding of paving units: Firm so that rocking or subsidence does not occur or develop.

- Bedding/Laying course: Consistently and accurately graded, spread and compacted to produce uniform thickness and support for paving units.

Slopes: Lay paving units upwards from the bottom of slopes
Paving units: Free of mortar and sand stains
Cutting: Cut units cleanly and accurately, without spalling, to give neat junctions with edgings and adjoining finishes.

### 1.6 Regularity

Maximum variation in gap under a 3 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface):10 mm
Sudden irregularities: not permitted
Difference in level between adjacent blocks/pavers/setts: 2mm (maximum)

## 2.0 Carriageway Kerbs

### 2.1 Kerbs to entrance plaza

Type: Split stone reproduction of natural granite kerb with exposed granite aggregate
Size: 200mm wide depth to engineer's detail
Colour: Grey
Joints: Narrow mortar joints. Ends of units buttered with bedding mortar as laying proceeds. Joints completely filled, tightly butted and surplus mortar removed immediately.- joint width: 3mm

### 2.2 Proprietary precast concrete edge kerbs

Type: British standard Concrete kerb
Size: 125mm wide depth to engineers detail
Colour: Grey
Joints: Narrow mortar joints. Ends of units buttered with bedding mortar as laying proceeds. Joints completely filled, tightly butted and surplus mortar removed immediately.- joint width: 3mm



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### 2.3 Laying Kerbs, Edgings and Channels
Cutting: Neat, accurate and without spalling. Form neat junctions.

- Long units (450mm and over) minimum length after cutting :300mm
- Short units minimum length after cutting: the lower of the one third of their original length or 50mm
- Bedding of units: Position true to line and leveled along top and front of faces, in mortar bed on accurately cast foundations or on a race of fresh concrete.
- Securing of units: After bedding has set, secured with a continuous haunching of concrete or on a race of fresh concrete with backing concrete cast monolithically.

### 2.4 Radius kerbs/channels
Usage: Radii of 15 m or less

### 2.5 Angle Kerbs
Usage: Internal and external 90° changes of direction
Cutting of mitres: not permitted

### 2.6 Accuracy
Deviations (maximum):

- Level : +/- 6mm
- Horizontal and vertical alignment: 3mm in 3m

## 3.0 Walls
### 3.1 Concrete seating wall to main entrance and Children's Park
Height: 500mm
Width: 1200mm
Length: Refer to drawings
Finish: Faced with re-used sandstone cladding from demolished existing buildings on site.

### 3.2 Stone wall facing
Material: Site sandstone cladding
Pattern: Random stretcher bond
Size: to be determined
Stone section: Hand selected stone at the specified sizes

## 4.0 Gravel Pavings
### 4.1 Loose gravel to maintenance strips
Gravel: Loose laid and racked to uniform thickness
Type: Pea gravel

- Size: Graded 6mm
- Thickness: 75mm
- Colour: Buff

### 4.2 Permeable resin bound gravel to main park paths
Chippings: 6mm natural gravel aggregate
Colour: Buff
Application: Hand applied and trowelled
Binder- uniformly at a rate to manufacture's specification
Clean chippings: Cover at a rate to manufactures specification
Completion: Before trafficking, remove excess chippings

### 4.3 Porous self binding gravel to secondary paths in parks
Gravel: Granite and Quartzite
Size: Graded 6mm maximum
Thickness: to engineers specification
Colour: Buff

### 4.4 Laying generally
Materials: Chippings to be suitable for use with respective binders/emulsions
Channels gullies etc: Keep clear
Finished surfaces:

- Lines and levels: To prevent ponding
- Overall texture: Even

## 5.0 Special Surfacing / Paving for Sport / General Amenity
### 5.1 Impact absorbing surfacing to play areas
Extent of impact absorbing surfacing: lay to the impact areas shown in the relevant parts of BS EN 1176
Surface Course: Impact absorbing continuous, joint-free, porous rubber granules and polyurethane binders.
Colour: Yellow, Red, Blue, orange, green
Thickness: as per manufactures recommendations
Critical fall height when tested to BS EN 1177: 2.0m

### 5.2 Play surface testing
Standard: To BS EN 1177 and BS 7188, where applicable.
Testing boding: A United Kingdom Accreditation Service (UKAS) independent laboratory.
Timing: within ten days of completing the surfacing works.



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# Outline Specification – Soft Landscaping

## Contents

1.0 Topsoil and Growing Media

2.0 Seeding / Turf

3.0 Planting Trees and Shrubs

4.0 Indicative Plant List

## Topsoil and Growing Media

### 1.1 Imported topsoil

Quantity: provide as necessary to make up any deficiency of topsoil existing on site ant to complete the work.

Standard: to BS 3882.

Imported topsoil shall be a suitable medium for growing the ordinary range of cultivated plants under satisfactory conditions of management.

Topsoil must be as dug soil from an approved source. Manufactured or composite screened topsoil would not normally be acceptable.

It shall comply with BS 3882 and also with the following specification.

Topsoil will not be allowed on site until the relevant test certificates have been furnished by the Trade Contractor.

Depth:
450 mm deep for all shrub beds
150 mm deep for low maintenance grass areas
Depth for tree pits refer to drawings
Physical and Chemical Properties:
Texture medium loam: Sand (0.05-2.00 mm) max 75% min 20%
Silt (0.002-0.05 mm) max 60% min 5%
Clay (less than 0.002mm) max 30% min 5%
Soil reaction: 6.0 - 7.5 ph
Stone Content: 2 mm - 50 mm 20 % max. by dry weight, of which the fraction of 2 mm - 5mm must not exceed 15 % by dry weight.
Max. stone size: 40 mm, any dimension
Electrical conductivity: 100-1500 micromole per cm on a 1:2.5 (w/v) soil-water extract

Nitrogen (N): Not less than 0.2 per cent Extractable
Phosphorus (P): Not less than 45 ppm Extractable
Potassium (K): Not less than 240 pm Extractable
Magnesium (Mg): Not less than 80 ppm
Organic matter: Not less than 4 per cent by dry weight in any circumstance.

Where the textural clay of soil offered contains more than 27 % clay and less than 45 % sand, the sub-contractor shall raise the organic matter of the soil to 5 % by dry weight.

Where the soil contains more than 60% sand the organic matter of the soil is required to be raised to 6 % by dry weight.

Where organic matter is required to be incorporated into topsoil the type of material must be agreed with the Construction Manager.

General condition: Free of weed seeds and all pernicious weeds and roots. It shall be building materials, foreign matter and chemical contamination.
Phytotoxic elements: Total Copper 130mg/kg max. on air dried soils
Total Nickel 70mg/kg max. on air dried soils
Total Zinc 300mg/kg max. on air dried soils
Water Soluble Boron 3mg/kg max.
Zootoxic elements: Arsenic 40mg/kg max. on air dried soils
Cadmium 15mg/kg max. on air dried soils
Chromium 1,000mg/kg max. on air dried soils
Lead 2,000mg/kg max. on air dried soils
Mercury 20mg/kg max. on air dried soils

### 1.2 Grading subsoil

General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.
Area of thicker topsoil: Excavate locally.

### 1.3 Spreading top soil

Temporary roads/ surfacing: remove before spreading topsoil
Layers:
- Depth: 150mm (maximum)
- Gently firm each layer before spreading the next

Depths after firming and settlement: 150mm (minimum)
Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

### 1.4 Finished levels of topsoil after settlement

Above adjoining paving or kerbs: 30mm
Below dpc of adjoining buildings: not less than 150mm
Shrub areas: higher than adjoining grass areas by 50mm
Within root spread of existing trees: Unchanged
Adjoining soil areas: Marry in



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### 1.5 Topsoil storage heaps
Location: to be agreed.
Height (maximum): 1.5 m.
Width (maximum): 2.0 m.
Protection:
- Do not place any other material on top of storage heaps.
- Do not allow construction plant to pass over storage heaps.
- Prevent compaction and contamination, by fencing and covering as appropriate.

## 2.0 Seeding / Turf
### 2.1 Seeded areas
Growth and development: Healthy, vigorous grass sward, free from the visible effects of pests, weeds and disease.
Appearance: A closely knit, continuous ground cover of even density, height and colour.

### 2.2 Grass seed for all grassed areas
Mixture: 35% Chewings fescue, 35% Slender red fescue, 20% Smooth stalked meadow grass, 10% Brown top bent.
Application rate: 20–35 g/m_.

### 2.3 Quality of seed for all grassed areas
Freshness: Produced for the current growing season.
Certification: Blue label certified varieties.

- Standard: EC purity and germination regulations.
- Official Seed Testing Station certificate of germination, purity and composition: Submit when requested.

### 2.4 Edges to seeded areas adjacent to planting beds and tree pits
Timing: After seeded areas are well established.
Edges: Clean straight lines or smooth curves.
- Mulch and soil: Draw back to permit edging.

Arisings: Remove.
Completion: Re-spread soil and mulch.

## 3.0 Planting Trees and Shrubs
### 3.1 Planting General:
Free from toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
Certification: Submit a certificate giving supply source, content analysis, confirmation of suitability for purpose and confirmation of absence of harmful substances.
Certified materials: Give notice before ordering or using.
Condition: Materially undamaged, sturdy, healthy and vigorous.
Appearance: Of good shape and without elongated shoots.
Hardiness: Grown in a suitable environment and hardened off.
Health: Free from pests, diseases, discoloration, weeds and physiological disorders.
Budded or grafted plants: Bottom worked.
Root system and condition: To requirements of The National Plant
Specification and balanced with branch system.
Species: True to name.
Origin/ Provenance: British grown.
Origin and Provenance have the meaning given in the National Plant Specification.

### 3.2 Plants/ Trees - Specification Criteria
Name, forms, dimensions, provenance and other criteria: As scheduled and defined in the National Plant Specification.

### 3.3 Container Grown Plants/ Trees
Growing medium: With adequate nutrients for plants to thrive until permanently planted.
Plants: Centred in containers, firmed and well watered.
Root growth: Substantially filling containers, but not root bound, and in a condition conducive to successful transplanting.
Hardiness: Grown in the open for at least two months before being supplied.
Containers: With holes adequate for drainage when placed on any substrate commonly used under irrigation systems.

### 3.4 Labelling and Information
Standard: To BS 3936.

### 3.5 Supply of Plants/ Trees
Suppliers: Members of the Horticultural Trades Association Nursery Certification Scheme.

### 3.6 Plants/ Trees Reserved at Supplier's Premises
Types/ Species: As scheduled.
Pre-delivery inspection: All plants to be inspected by Landscape Architect before supplying to site, then clearly identified as being reserved.
Labelling: Identify inspected plants/ trees as reserved for use on this project.



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### 3.7 Plant/ Tree Substitution
Plants/ trees unobtainable or known to be likely to be unobtainable at time of ordering: Submit alternatives, stating:
- Price.
- Difference from specified plants/ trees.

Further alternatives: Proposed substitutions may not be acceptable and submission of further alternatives may be required
Approval: Obtain before making any substitution.

### 3.8 Plant/ Tree Handling, Storage and Transport
Standard: To HTA 'Handling and establishing landscape plants' (obtainable from the Horticultural Trades Association) Part I, Part II and Part III, paragraphs 1.3.3 to 1.3.6, 3.0, and 4.0.
Frost: Protect plants/ trees from frost.
Handling: Handle plants/ trees with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.
Plant packaging: Coextruded polyethylene bags with black interior and white exterior. To minimise storage of plant stock, operations are to be arranged so that trees and shrubs are planted immediately following the cultivation of planting areas.

### 3.9 Planting Generally
Standard: To HTA 'Handling and establishing landscape plants' Part III, paragraphs 6.2 to 6.6.
Appearance: Plant upright or well balanced with best side to front.

### 3.10 Treatment of Tree Wounds
Cutting: Keep wounds as small as possible.
Cut cleanly back to sound wood using sharp, clean tools.
Leave branch collars. Do not cut flush with stem or trunk.
Set cuts so that water will not collect on cut area.
Fungicide/ Sealant: Do not apply unless instructed.

### 3.11 Surplus Material
General: Remove subsoil, stones, debris, wrapping material, canes, ties, temporary labeling, prunings and other arisings/ rubbish.

### 3.12 ultivation of Shrub Beds
Compacted topsoil: Break up to full depth.
Cultivation: Loosen, aerate and break up soil into particles of 2-8 mm.
Depth: Top 350mm of planting beds.
Timing: Within a few days before planting.
Weather and ground conditions: Suitably dry.
Surface: Leave regular and even.
Undesirable material brought to the surface: Remove, including weeds, roots, stones and clods larger than 50 mm in any dimension, tufts of grass and foreign matter.

### 3.13 Planting Pits
Timing: Excavate no more than 2 days before planting, with topsoil retained for use where specified.
Pit bottom improvement: to be broken to a depth of 75mm.
Plants should be planted in tree pits of the following sizes (mm) unless directed otherwise:-

| | |
|---|---|
| Herbaceous | 150 x 150 x 150 |
| Shrubs, transplants and whips | 300 x 300 x 300 |
| Feathered and standard trees | 900 x 900 x 450 |
| up to 3 metres high | (0.36 m_) |
| Selected and heavy standards | 1000 x 1000 x 600 |
| up to 4.25 metres high | (0.60 m_) |
| Extra heavy standards | 1200 x 1200 x 600 |
| up to 4.9 metres high | (0.86 m_) |

### 3.14 Backfilling Material
Composition: Previously prepared mixture of topsoil excavated from pit and additional topsoil as required.

### 3.15 After Planting
Watering: Immediately after planting, thoroughly and without damaging or displacing plants or soil.
Firming: Lightly firm soil around plants and fork and/ or rake soil, without damaging roots, to a fine tilth with gentle cambers and no hollows.



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### 3.16 Tree Pits
Sizes: Of adequate dimensions to permit planting at the same depth to which they have been previously grown, enabling the roots to be spread in their natural position.
Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
Pit bottoms: With slightly raised centre. Break up to a depth of 150 mm.
Pit sides: Scarify.
Additional requirements: None.
Backfilling material: Reuse excavated material.

Accessories: Long double staking.

### 3.17 Staking Generally
Stakes: Softwood, peeled chestnut, larch or oak, straight, free from projections and large or edge knots and with pointed lower end.
Preservative treatment: Water based, non-CCA, service life 20 years.
Nails: To BS 1202-1, galvanized, minimum 25 mm long and with 10 mm diameter heads.
Minimum stake sizes: 100mm dia.

### 3.18 Short Double Staking for Standard Trees
Staking: Drive stakes vertically at least 300mm into bottom of pit on either side of tree position before planting. Consolidate material around stakes during backfilling.
Height of stakes: Cut to approximately 600mm above ground level.
Cross bar: Wood, as stake.
Firmly fix on windward side of tree and as close as possible to stem.

### 3.19 Backfilling Material
Composition: Previously prepared mixture of topsoil excavated from pit and additional topsoil as required, together with:
Ameliorant/ Conditioner: Tree compost at 1 nr 80 litre bag per tree.
Coverage: To manufacturer's/ supplier's recommendations.
Fertilizer: Sierrablen Yellow fertilizer tablets to be added to the backfill material at 200mm depth.
Coverage: As per suppliers/ manufacturers recommendations.

### 3.20 Mulching Trees
Material: Medium bark mulch.
Purity: Free of pests, disease, fungus and weeds.
Preparation: Clear all weeds. Water soil thoroughly.
Coverage: Within 1m diameter of tree, to a depth of 50mm.

### 3.20 Native Buffer / Screening Planting Generally
To be specified

### 3.21 Notch planting
Notching: Make a vertical 'I', 'L', 'T' or 'H' notch, deep enough to accommodate full depth of roots.
Planting: Plant tree, close notch with root collar at ground level and firm the soil.

### 3.22 Whip Protection
Product reference: Spiral Shelters.
Type: Spiral.
Size/ Colour: 50mm dia by 60cm height, colour: slight tint.
Support: 90cm 12-14lb/100 bamboo cane- as per manufacturers recommendation.
General: Ensure that protection methods do not impede natural movement of shrubs or restrict growth.



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## 4.0 Indicative Plant List

| Botanical Name | Common Name | Specification | Spacing | Minimum Topsoil/Substrate Depth |
|---|---|---|---|---|
| **Entrance Street Tree (Large)** | | | | |
| Quercus robur 'Fastigiata Koster' | Cypress Oak | 6m height, 2m clear stem (fastigiated growth), RB/CG | 1 per m2 | 1000mm topsoil minimum |
| **Entrance Street Tree (small)** | | | | |
| Carpinus betulus Fastigiata Frans Fontaine | Hornbeam | 12-14cm girth RB/CG | 1 per m2 | 1000mm topsoil minimum |
| **Woodland Trees** | | | | |
| Betula pubescens | Downy Birch | 12-14cm girth RB/CG | 1 per m2 | 1000mm topsoil minimum |
| Betula pendula | Silver Birch | 12-14cm girth RB/CG | 1 per m2 | |
| Carpinus betulus | Hornbeam | 12-14cm girth RB/CG | 1 per m2 | |
| Fagus sylvatica | Beech | 12-14cm girth RB/CG | 1 per m2 | |
| Quercus robur | Pedunculate Oak | 12-14cm girth RB/CG | 1 per m2 | |
| **Park Trees** | | | | |
| Acer pseudoplatanus | Sycamore | 12-14cm girth RB/CG | 1 per m2 | 1000mm topsoil minimum |
| Carpinus betulus | Hornbeam | 12-14cm girth RB/CG | 1 per m2 | |
| Fagus sylvatica | Beech | 12-14cm girth RB/CG | 1 per m2 | |
| Quercus robur | Pedunculate Oak | 12-14cm girth RB/CG | 1 per m2 | |
| Sorbus aucuparia | Rowan | 12-14cm girth RB/CG | 1 per m2 | |
| **Street Trees** | | | | |
| Platanus × acerifolia | London Plane | 12-14cm girth RB/CG | 1 per m2 | 1000mm topsoil minimum |
| **Square Trees** | | | | |
| Amelanchier lamarckii | Snowy mespilus | 12-14cm girth RB/CG | 1 per m2 | 1000mm topsoil minimum |

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| | | | | |
|---|---|---|---|---|
| **Native Screen/Buffer Planting** | | | | |
| Crataegus monogyna | Hawthorn | 10L CG | 2 per m2 | 1000mm topsoil minimum |
| Corylus avellana | Hazel | 10L CG | 2 per m2 | |
| Viburnum opulus | Guelder-rose | 10L CG | 2 per m2 | |
| Ilex aquifolium | Holly | 10L CG | 2 per m2 | |
| Ligustrum vulgare | Wild Privet | 10L CG | 2 per m2 | |
| Rosa canina | Dog -rose | 10L CG | 2 per m2 | |
| **Formal Structure Planting (sun)** | | | | |
| Ajuga reptans | Bugle | 2L CG | 6 per m2 | 500mm topsoil minimum |
| Deschampsia cespitosa | Tufted Hair Grass | 2L CG | 6 per m2 | |
| Deschampsia flexuosa | Wavy hair-grass | 2L CG | 6 per m2 | |
| Filipendula ulmaria | European meadowsweet | 2L CG | 6 per m2 | |
| Hedera helix | Ivy | 2L CG | 3 per m2 | |
| Leucanthemum vulgare | Oxeye Daisy | 2L CG | 8 per m2 | |
| Lonicera nitida ‘Maygreen’ | Lonicera | 3L CG | 3 per m2 | |
| Silene dioica | Red campion | 2L CG | 8 per m2 | |
| Lavandula angustifolia | Lavender | 2L CG | 6 per m2 | |
| Stachys lanata | Woolly lamb’s ear | 2L CG | 6 per m2 | |
| Alchemilla mollis | Lady’s-mantle | 2L CG | 6 per m2 | |
| **Formal Structure Planting (shade)** | | | | |
| Anemone nemorosa | Woodland Anemone | 2L CG | 7 per m2 | 500mm topsoil minimum |
| Choisya ternata aztec pearl | Mexican Orange Blossom | 5L CG | 3 per m2 | |
| Digitalis purpurea | Foxglove | 2L CG | 7 per m2 | |
| Dryopteris dilatata | Broad buckler-fern | 2L CG | 7 per m2 | |
| Galanthus nivalis | Snowdrop | 5-7cm bulb | 20 per m2 | |
| Hyacinthoides non-scripta | Bluebell | 5-7cm bulb | 20 per m2 | |
| Symphoricarpus alba | Snowberry | 2L CG | 3 per m2 | |
| Viburnum davidii | Viburnum | 5L CG | 3 per m2 | |



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| | | | | |
|---|---|---|---|---|
| **Riparian Planting** | | | | |
| Juncus articulatus | Jointed Rush | 2L CG | 2 per m2 | 300mm aquatic topsoil minimum |
| Juncus effusus | Soft Rush | 2L CG | 2 per m2 | |
| Iris pseudacorus | Yellow flag Iris | 2L CG | 2 per m2 | |
| Sparganium erectum | Branched bur-reed | 2L CG | 2 per m2 | |
| Typha latifolia | Bulrush | 2L CG | 2 per m2 | |
| **Informal Meadow (EM2 – Standard General Purpose Meadow Mixture available from Emersgate Seeds)** | | | | |
| | | % mix | | |
| Achillea millefolium | Yarrow | 0.5 | Sow rate 1g/ m2 | 250mm Substrate |
| Centaurea nigra | Common Knapweed | 2.5 | | |
| Daucus carota | Wild Carrot | 0.8 | | |
| Galium verum | Lady's Bedstraw | 2 | | |
| Knautia arvensis | Field Scabious | 1.2 | | |
| Leucanthemum vulgare | Oxeye Daisy | 1.5 | | |
| Lotus corniculatus | Birdsfoot Trefoil | 2 | | |
| Plantago lanceolata | Ribwort Plantain | 0.5 | | |
| Plantago media | Hoary Plantain | 1 | | |
| Primula veris | Cowslip | 0.5 | | |
| Prunella vulgaris | Selfheal | 2.5 | | |
| Ranunculus acris | Meadow Buttercup | 2 | | |
| Rhinanthus minor | Yellow Rattle | 1.5 | | |
| Rumex acetosa | Common Sorrel | 1.5 | | |
| Agrostis capillaris | Common Bent | 8 | | |
| Cynosurus cristatus | Crested Dogstail | 40 | | |
| Festuca rubra ssp. juncea | Slender-creeping Red-fescue | 28 | | |
| Phleum bertolonii | Smaller Cat's-tail | 4 | | |

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| Bulb Planting | | | | |
|---|---|---|---|---|
| Crocus vernus | Spring crocus | 5-7cm bulb | 20 per m2 | 200mm Topsoil |
| Galanthus nivalis | Snowdrop | 5-7cm bulb | 20 per m2 | |
| Narcissus spp | Daffodil | 5-7cm bulb | 20 per m2 | |

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# Outline Specification – Site Enclosure

## Contents

1.0 Fencing

## 1.0 Fencing

### 1.1 Palisade fencing to north west site boundary

Height: 1800 mm.
Design load: To BS 6180
- Applied horizontally at: Design height.

Material/ Protection: Steel, galvanized to BS EN ISO 1461 after fabrication.
Surface finish: Powder coating.
Colour/ Texture: Black.

### 1.2 INSTALLATION GENERALLY

Set out and erect:

- Alignment: Straight lines or smoothly flowing curves.
- Tops of posts: Following profile of the ground.
- Setting posts: Rigid, plumb and to specified depth, or greater where necessary to ensure adequate support.

Fixings: All components securely fixed.

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# Outline Specification – External Fittings & Furniture

## Contents

1.0 Site / Street Furniture and Equipment

## 1.0 Site / Street Furniture and Equipment

### 1.1 Bollards standard to arrival square

Height: 1100mm
Diameter:140mm.
Material: 316 stainless steel.
Finish: Bead blasted 316 stainless steel bollard body, Brushed 316 stainless steel top cap.
Colour: silver.

### 1.2 Bollard Illuminated to arrival square, court yards and roof garden

Height: 1100mm
Diameter:140mm.
Material: 316 stainless steel.
Finish: Bead blasted 316 stainless steel bollard body, Brushed 316 stainless steel top cap.
Colour: silver.
Lighting specification: to lighting engineers' detail

### 1.3 Bollard Illuminated to maintenance strips around building

Height: 1100mm
Diameter: 210mm
Material:

- Top: Die cast aluminium
- Post: Extruded aluminium

Finish: Powder coated texture surface
Colour: silver

### 1.4 Timber bench seat to park areas and courtyards

Material: FSC certified hardwood.

- Treatment: Supplier's standard 30 year service life.

Finish: sanded with pencil rounded edge.
Colour: natural finish.
Supports: Cast aluminium
Size: Various
Features: Back and arm rests

### 1.5 Cast stone benches to arrival square

Material: cast stone.
Finish: Polished and Waterproofed.
Colour: Light Grey.
Size: Various
Feature: Back and arm rest

### 1.6 Wall mounted timber seats to Courtyards

Material: FSC certified hardwood.

- Treatment: Supplier's standard 30 year service life.

Finish: sanded with pencil rounded edge.
Colour: natural finish
Size: various
Feature: Back rest

### 1.7 Bins

Material: stainless steel.
Finish: Brushed.
Colour: None.
Size: 90L

### 1.8 Cycle stands

Type: Sheffield cycle stand
Material: stainless steel.
Finish: Brushed.
Colour: None.

### 1.9 Tree grills

Material: Reinforced cast stone
Colour: Granite grey
Finish: Acid Etched and Waterproofed
Size: 1200L x 1200w mm
Fixing: Embedded at pavement level



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# Drainage Specifications

R12 Below ground drainage systems

## General

### 110 BELOW GROUND DRAINAGE SYSTEMS Small bore dia. Surface Water up to 300 Dia.

- Surface water and rainwater drainage sources: One piece gullies and Rainwater downpipes
- (non-siphonic).
- Foul drainage sources: None.
- Land drainage sources: None.
- Pressure relief drainage sources: None.
- Pipes, bends and junctions: Plastics - structured wall and PVC-U - plain wall.
  - Accessories:
  - Access points;
  - Connectors - saddle; and
  - Roding points.
- Manholes, inspection chambers, traps, and separators:
  - Inspection chambers - plastics;
  - Manholes and inspection chambers - concrete; and
  - Manholes and inspection chambers - brick.
    - Accessories:
    - Manhole channels and branches - conventional;
    - Manhole steps; and
    - Sealing for concrete manholes - bituminous strips.
- Disposal: To outfalls.
- Accessories – general:
  - Access covers and frames;
  - Access covers and frames - precast concrete beatings;
  - Access ladders; and
  - Concrete (general).

### 110A BELOW GROUND DRAINAGE SYSTEMS Large bore dia Surface Water over 300 Dia

- Surface water and rainwater drainage sources: One piece gullies and Rainwater downpipes
- (non-siphonic)
- Foul drainage sources: None
- Land drainage sources: None .
- Pressure relief drainage sources: None .
- Pipes, bends and junctions: Concrete.
  - Accessories:
  - Access points;
  - Connectors - saddle; and
  - Roding points.
- Manholes, inspection chambers, traps, and separators:
  - Inspection chambers - plastics;
  - Manholes and inspection chambers - concrete; and
  - Manholes and inspection chambers - brick.
  - Accessories:
  - Manhole channels and branches - conventional;
  - Manhole steps; and
  - Sealing for concrete manholes - bituminous strips.
- Disposal: To outfalls.
- Accessories – general:
  - Access covers and frames ;
  - Access covers and frames - precast concrete seatings;
  - Access ladders; and
  - Concrete (general).



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### 110C BELOW GROUND DRAINAGE SYSTEMS Small bore dia Foul Water up to 300 Dia from NON HAZARDOUS sources

- Surface water and rainwater drainage sources: None
- Foul drainage sources: Discharge stack and branch pipes
- Land drainage sources: None .
- Pressure relief drainage sources: None .
- Pipes, bends and junctions: Plastics - structured wall and PVC-U - plain wall.
  - Accessories:
  - Access points;
  - Connectors - saddle; and
  - Roding points.
- Manholes, inspection chambers, traps, and separators:
  - Inspection chambers - plastics;
  - Manholes and inspection chambers - concrete; and
  - Manholes and inspection chambers - brick.
  - Accessories:
  - Manhole channels and branches - conventional;
  - Manhole steps; and
  - Sealing for concrete manholes - bituminous strips.
- Disposal: To outfalls.
- Accessories – general:
  - Access covers and frames ;
  - Access covers and frames - precast concrete seatings;
  - Access ladders; and
  - Concrete (general).

### 110D BELOW GROUND DRAINAGE SYSTEMS Small bore dia Foul Water up to 300 Dia from HAZARDOUS sources

- Surface water and rainwater drainage sources: None
- Foul drainage sources: Discharge stack and branch pipes
- Land drainage sources: None .
- Pressure relief drainage sources: None .
- Pipes, bends and junctions: Clay - flexible joints.
  - Accessories:
  - Access points;
  - Connectors - saddle; and
  - Roding points.
- Manholes, inspection chambers, traps, and separators:
  - Inspection chambers - plastics;
  - Manholes and inspection chambers - concrete; and
  - Manholes and inspection chambers - brick.
  - Accessories:
  - Manhole channels and branches - conventional;
  - Manhole steps; and
  - Sealing for concrete manholes - bituminous strips.
- Disposal: To outfalls.
- Accessories – general:
  - Access covers and frames ;
  - Access covers and frames - precast concrete seatings;
  - Access ladders; and
  - Concrete (general).

## Products

### 313 ONE PIECE GULLIES - ROAD

- Standards:
- Cast iron: To BS 437 and Kitemark certified, or Agrément certified.
  - Clay: To BS EN 295-1 and Kitemark certified, or Agrément certified.
  - Concrete: To BS 5911-6 and Kitemark certified, or Agrément certified.
  - Plastics: To BS 4660 and Kitemark certified, or Agrément certified.
  - Polypropylene: To BS EN 1852-1.
- Material: Concrete.
- Manufacturer: Contractor’s choice.
  - Product reference: Contractor’s choice.
- Sizes: 900 x 450 mm.
- Outlet sizes: DN 150.
- Silt buckets: Aluminium.
  - Product reference: Contractor’s choice.

### 329 PIPES, BENDS AND JUNCTIONS - SUPPLY

- Pipes and fittings: From same manufacturer for each pipeline.

### 336 PIPES, BENDS AND JUNCTIONS - CLAY - FLEXIBLE JOINTS Small bore dia Foul Water up to 300 Dia from HAZARDOUS sources

- Material and standard: Vitrified clay to BS EN 295-1, Kitemark certified.
- Manufacturer: Contractor’s choice.
  - Product reference: Contractor’s choice.
- Sizes:
  - DN 100;
  - DN 150;
  - DN 225; and
  - DN 300.
- Crushing strength (minimum): FN 40.
- Jointing type: EDPM sealing rings or polypropolene sleeve for smaller diameters.

### 336A PIPES, BENDS AND JUNCTIONS - CLAY - FLEXIBLE JOINTS Small bore dia Foul Water up to 300 Dia from NON HAZARDOUS sources

- Material and standard: Plastics - structured wall and PVC-U - plain wall.
- Manufacturer: Contractor’s choice.
  - Product reference: Contractor’s choice.
- Sizes:
  - DN 100;
  - DN 150;
  - DN 225; and
  - DN 300.
- Crushing strength (minimum): FN 40.
- Jointing type: SBR Rubber.

### 342 PIPES, BENDS AND JUNCTIONS - CONCRETE SURFACE WATER over 300 dia

- Standards: To BS 5911-1 and BS EN 1916, with flexible joints.
- Manufacturer: Contractor’s choice.
  - Product reference: Contractor’s choice.
- Sizes:
  - DN 375;
  - DN 450;
  - DN 525;
  - DN 675;
  - DN 1050; and
  - DN 1200.
- Shapes: Circular.
- Cement type and content: To BS 5911-1 and BS EN 1916.
- Accessories: Cast in lifting anchors.



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### 344 PIPES, BENDS AND JUNCTIONS - PLASTICS - STRUCTURED WALL - SURFACE WATER DRAINAGE AND NON HAZARDOUS FOUL DRAINAGE

- Standard: To WIS 04-35-01, Kitemark or Agrément certified.
- Material: PVC-U.
- Manufacturer: Contractor's choice.
  - Product reference: Contractor's choice.
- Recycled content: 10% (minimum) to BS EN ISO 14021.
- Sizes: 225, 300.
- Jointing type: Spigot and socket.

### 346 PIPES, BENDS AND JUNCTIONS - PVC-U - PLAIN WALL - SURFACE WATER DRAINAGE AND NON HAZARDOUS FOUL DRAINAGE

- Standard: BS EN 1401-1, class SN4, with flexible joints, Kitemark certified.
- Manufacturer: Contractor's choice.
  - Product reference: Contractor's choice.
- Recycled content: 10% (minimum) to BS EN ISO 14021.
- Sizes: DN 100 and DN 160.
- Application area code: UD.

### 359 FLEXIBLE COUPLINGS

- Standard: To BS EN 295-4 or WIS 04-41-01 and Kitemark certified, or Agrément certified.
- Manufacturer: Contractor's choice.
  - Product reference: Contractor's choice.

### 371 RODDING POINTS At untrafficked areas around buildings

- Standards:
  - Cast iron: To BS 437 and Kitemark certified, or Agrément certified.
  - Clay: To BS EN 295-1 and Kitemark certified, or Agrément certified.
  - Concrete: To BS 5911-6 and Kitemark certified, or Agrément certified.
  - Plastics: To BS 4660 and Kitemark certified, or Agrément certified.
- Material: Clay.
- Manufacturer: Contractor's choice.
  - Product reference: Contractor's choice.
- Sizes: DN 150.

### 373 ROOT BARRIERS

- Manufacturer: Contractor's choice.
  - Product reference: Contractor's choice.

### 401 INSPECTION CHAMBERS - PLASTICS Shallow small diameter foul and surface water drainage

- Standard: To BS 7158 or BS EN 13598-1, or Agrément certified.
- Diameter: 475 mm.
- Manufacturer: Contractor's choice.
- Bases:
  - Product reference: Contractor's choice.
- Shaft units:
  - Product reference: Contractor's choice.
- Access covers and frames:
  - Product reference: Contractor's choice.
  - Loading grades to BS EN 124: B125 and C250.

### 407 MANHOLES AND INSPECTION CHAMBERS - CONCRETE For new foul and surface water drainage systems

- Standards:
  - To BS 5911-3 and BS EN 1917 and Kitemark certified; or
  - To BS 5911-4 and BS EN 1917.
- Manufacturer: Contractor's choice
- Shape: Circular
- Sizes:
  - DN 1050;
  - DN 1200;
  - DN 1500; and
  - DN 1800.
- Cement type and content: To BS 5911-1 and BS EN 1916.
- Chamber sections:
  - Product reference: Contractor's choice.
  - Jointing type: Bituminous strips.
- Cover slabs:



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- Product reference: Contractor’s choice.
- Thickness: 175 mm.
- Loading grades to BS EN 124:
- B125;
- C250; and
- D400.
- Openings: To suit access covers.

- Steps: Required in chambers over 900mm deep.

### 409 MANHOLES - CONCRETE - ADDITIONAL COMPONENTS FOR DEEP MANHOLES

- Standards:
- To BS 5911-3 and BS EN 1917 and Kitemark certified; or
- To BS 5911-4 and BS EN 1917.
- Manufacturer: Contractor’s choice.
- Cement type and content: To BS 5911-3 and BS EN 1917 and Kitemark certified; or to BS 5911-4
- and BS EN 1917.
- Landing slabs:
- Product reference: Contractor’s choice.
- Sizes: As directed on manhole schedule.
- Reducing slabs:
- Product reference: Contractor’s choice.
- Sizes: As directed on manhole schedule.
- Straight backed tapers:
- Product reference: None.
- Nominal sizes: N/A.
- Shaft sections:
- Product reference: Contractor’s choice.
- Sizes: As directed on manhole schedule.

### 433 MANHOLE CHANNELS AND BRANCHES - CONVENTIONAL

- Material: Clay.
- Manufacturer: Contractor’s choice.
- Product reference: Contractor’s choice.

### 439 MANHOLE STEPS To Type B manholes

- Standard: To BS EN 13101.
- Type: D.
- Manufacturer: Contractor’s choice.
- Product reference: Contractor’s choice.
- Material: Galvanized steel.

### 444 SEALING FOR CONCRETE MANHOLES - BITUMINOUS STRIPS

- Manufacturer: Contractor’s choice.
- Product reference: Contractor’s choice.

### 464A STORMWATER HONEYCOMB UNITSTo be installed during phase 1

- Manufacturer: Conder Products (or similar approved).
- Product reference: Condercell (or similar approved).
- Size: 60125mm L x 20150mm W x 610mm H.

### 471 ACCESS COVERS AND FRAMES External in areas other than where there is block paving

- Standard: To BS EN 124.
- Types: Single seal.
- Manufacturer: Contractor’s choice.
- Product reference: Contractor’s choice.
- Materials: Ductile cast iron.
- Finishes: Self finish.
- Sizes: As directed on Manhole Schedule.
- Loading grades to BS EN 124:
- B125;
- C250; and
- D400.
- Edging trims: Not required.
- Accessories: n/a.



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### 471A ACCESS COVERS AND FRAMES External in areas where there is block paving
- Standard: To BS EN 124.
- Types: Recessed covers for blockwork filling.
- Manufacturer: Contractor’s choice.
  - Product reference: Contractor’s choice.
- Materials: Ductile cast iron.
- Finishes: Self finish.
- Sizes: As directed on Manhole Schedule.
- Loading grades to BS EN 124:
  - B125;
  - C250; and
  - D400.
- Edging trims: Not required.
- Accessories: n/a.

### 471B ACCESS COVERS AND FRAMES Internal
- Standard: To BS EN 124.
- Types: To suit individual floor types, foul chambers to be double sealed.
- •Manufacturer: Contractor’s choice.
  - - Product reference: Contractor’s choice.
- Materials: Ductile cast iron.
- Finishes: Self finish.
- •Sizes: As directed on Manhole Schedule.
- Loading grades to BS EN 124:
  - B125;
  - C250; and
  - D400.
- Edging trims: Not required.
- Accessories: n/a.

### 475 ACCESS LADDERS Type A manholes
- Standard: To BS 4211.
- Manufacturer: Contractor’s choice.
  - Product reference: Contractor’s choice.
- Finish: Galvanized to BS EN ISO 1461.
- Accessories: Safety chains and hoops.

### 483 CONCRETE (GENERAL)
- Standard: To BS 8500-2.
- Concrete: Designated, GEN1 or Standardized prescribed, ST2.

### 485 CONCRETE (STRUCTURAL)
- Standard: To BS 8500-2.
- Concrete: Designated, GEN3 or Standardized prescribed, ST4.

### 487 CONCRETE (ADOPTABLE MANHOLE BENCHINGS AND SURROUNDS)
- Standard:
  - Scotland: To WRc ‘Sewers for Scotland’.
- Concrete: In situ.

### 489 CONCRETE (ADOPTABLE MANHOLE BENCHING TOPPING)
- Standard:
  - Scotland: To WRc ‘Sewers for Scotland’.
- Concrete: High strength.

### 492 GEOTEXTILE MEMBRANES - FILTER
- Manufacturer: Contractor’s choice.
  - Product reference: Contractor’s choice.

### 494 GEOTEXTILE MEMBRANES - IMPERVIOUS
- Manufacturer: Contractor’s choice.
  - Product reference: Contractor’s choice.



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## FABRICATION

### 510 VERMIN GRATINGS FOR OUTFALLS AND OUTLET HEADWALLS

- Construction: Mild steel frame extending 75 mm beyond pipe opening all around, with 25 mm
- maximum opening steel mesh grille. Top hinged on built-in fish-tail straps and with bottom pin lock.
- Finish: Galvanized to BS EN ISO 1461 after fabrication.
- Submit: Shop drawings.
  - Timing: Before manufacture.

## EXECUTION

### 611 EXISTING DRAINS

- Setting out: Before starting work, check invert levels and positions of existing drains, sewers, inspection chambers and manholes against drawings. Report discrepancies.
- Protection: Protect existing drains to be retained and maintain normal operation if in use.

### 616 SELECTED FILL FOR BACKFILLING

- Selected fill: As-dug material, free from vegetable matter, rubbish, frozen soil and material retained on a 40 mm sieve.
  - Compaction: By hand in 100 mm layers.

### 623 LOWER PART OF TRENCH – GENERAL

- Trench up to 300 mm above crown of pipe: Vertical sides, width as small as practicable.
  - Width (minimum): External diameter of pipe plus 300 mm.

### 625 LOWER PART OF TRENCH - TRANSITION DEPTH

- Trench widths up to 300 mm above crown of pipe (maximum):
  - DN 100 pipelines more than 6.0 m deep: 600 mm.
  - DN 150 pipelines more than 5.4 m deep: 700 mm.
  - DN 225 pipelines more than 4.0 m deep: 800 mm.
  - DN 300 pipelines more than 2.9 m deep: 900 mm.

### 631 TYPE OF SUBSOIL

- General: Where type of subsoil at level of crown of pipe differs from that stated for the type of bedding, surround or support, give notice.

### 635 FORMATION FOR BEDDINGS

- Timing: Excavate to formation immediately before laying beddings or pipes.
- Mud, rock projections, boulders and hard spots: Remove. Replace with consolidated bedding material.
- Local soft spots: Harden by tamping in bedding material.
- Inspection of excavated formations: Give notice.

### 641 PIPES AT DIFFERENT LEVELS IN COMMON TRENCH

- Subtrench: Permissible provided soil of step is stable and unlikely to break away.
  - Subtrench not permissible: Trench depth as required for lower pipe. Increase thickness of bedding to upper pipe as necessary.
- Lower pipe: Backfill with compacted granular material to at least half way up higher pipe.
- Clear horizontal distance between pipes (minimum):
  - Pipes up to DN 700: 350 mm.
  - Pipes exceeding DN 700: 500 mm.

### 667 CLASS S SURROUND To all drainage other than <1.2m deep in trafficked areas and <0.9m deep in untrafficked areas

- Type of subsoil: Sand, silty sand, clayey sand - loose.
- Trench width up to 300 mm above crown of pipe (maximum):
  - DN 100 nominal pipe size: 600 mm.
  - DN 150 nominal pipe size: 700 mm.
  - DN 225 nominal pipe size: 800 mm.
  - DN 300 nominal pipe size: 900 mm.
- Granular material: Contractor’s choice.
  - Pipe sizes DN 100 and DN 150: Size 4/10.
  - Pipe sizes DN 225 and DN 300: Size 4/10, 10/20 or 4/20.
  - Pipe sizes DN 375-500: Size 10/20 or 4/20.
  - Pipe sizes DN 600 and above: Size 10/20, 20/40, 4/20 or 4/40.
- Bedding:
  - Material: Granular, compacted over full width of trench.
  - Thickness (minimum): 50 mm for sleeve jointed pipes, 100 mm for socket jointed pipes. Where trench bottom is uneven, increase depth by 100 mm.
- Pipes: Dig slightly into bedding, rest uniformly on barrels and adjust to line and gradient.

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- Initial testing before placing surround: Required.
- Surround:
  - Material: Granular.
  - Depth: To 50 mm above crown of pipe.
  - Compaction: By hand in 100 mm layers.
- Backfilling:
  - Material: Protective cushion of selected fill.
  - Depth: 150 mm (250 mm for adoptable sewers) above crown of pipe.
  - Compaction: By hand in 100 mm layers.

### 678 CLASS Z SURROUND To all drainage other than where >1.2m deep in trafficked areas and >0.9m deep in untrafficked areas

- Type of subsoil: refer to NSGAGC GLRP0010 ASR2 Southern General Geo-Env Report Draft-issue1-rev by URS Corporation.
- Blinding:
  - Material: Concrete (general).
  - Thickness (minimum): 25 mm.
  - Width: Full width of trench.
  - Allow to set before proceeding.
- Pipes:
  - Temporary support: Folding wedges of compressible board. Prevent flotation.
  - Clearance under pipes (minimum): 100 mm.
  - Adjust pipes to line and gradient.
- Initial testing before placing surround: Required.
- Surround:
  - Material: Concrete (general).
  - Depth: To 150 mm above crown of pipe.
  - Width: Full width of trench.
- Vertical construction joints:
  - Location: At face of flexible pipe joints.
  - Material: 18 mm thick compressible board pre-cut to profile of pipe.
  - Socketed pipes: Fill gaps between spigots and sockets with resilient material to prevent entry of concrete.

### 680 CONCRETE SURROUND FOR PIPE RUNS NEAR FOUNDATIONS

- Class Z surround: Provide in locations where bottom of trench is lower than bottom of foundation and as follows (horizontal clear distance between nearest edges of foundations and pipe trenches):
- Trenches less than 1 m from foundations: Top of concrete surround not lower than bottom of foundation.
- Trenches more than 1 m from foundations: Top of concrete surround not lower than D mm below bottom of foundation, where D mm is horizontal distance of trench from foundation, less 150 mm.

### 683 LAYING PIPELINES

- Laying pipes: To true line and regular gradient on even bed for full length of barrel with sockets (if any) facing up the gradient.
- Ingress of debris: Seal exposed ends during construction.
- Timing: Minimize time between laying and testing.

### 685 JOINTING PIPELINES

- Connections: Durable, effective and free from leakage.
- Junctions, including to differing pipework systems: With adaptors intended for the purpose.
- Cut ends of pipes: Clean and square. Remove burrs and swarf. Chamfer pipe ends before inserting into ring seal sockets.
- Jointing or mating surfaces: Clean and, where necessary, lubricate immediately before assembly.
- Allowance for movement: Provide and maintain appropriate clearance at ends of spigots as fixing and jointing proceeds.
- Jointing material: Do not allow to project into bore of pipes and fittings.

### 687 CONCRETE SURROUND FOR CROSSOVERS

- Class Z surround: Provide where two pipelines (other than plastics pipes) cross with less than 300mm separation.
  - Extent, on both pipes: 1 m centred on the crossing point, and beyond as necessary to come within 150 mm of nearest flexible joints.



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### 689 PIPELINES PASSING THROUGH STRUCTURES

- Pipelines that must be cast in or fixed to structures (including manholes, catchpits and inspection chambers): Provide 600 mm long rocker pipes adjacent to the external face of the structure (or both
- faces where appropriate, e.g. walls to footings), with flexible joints at both ends.
  - Distance to rocker pipe from structure (maximum):150 mm.
- Provision for movement for pipelines that need not be cast in or fixed to structures (e.g. walls to footings):
  - Rocker pipes as specified above; or
  - Openings in the structures to give 50 mm minimum clearance around the pipeline. Closely fit a rigid sheet to each side of opening to prevent ingress of fill or vermin.

### 691 BENDS AT BASE OF SOIL STACKS

- Type: Nominal 90° rest bends.
  - Radius to centreline of pipe (minimum): 200mm for 110mm dia stacks, 300mm for 150mm dia stacks.
- Height of invert of horizontal drain at base of stack below centreline of lowest branch pipe (minimum): 450 mm for buildings up to 3 storeys, 750mm for other buildings.
- Bedding: Do not impair flexibility of pipe couplings.
  - Material: Concrete (general).

### 693 DIRECT CONNECTION OF GROUND FLOOR WCS TO DRAINS

- Drop from crown of WC trap to invert of drain (maximum): 1.3m.
- Horizontal distance from the drop to a ventilated drain (maximum): 6 m.

### 695 BACKDROP PIPES OUTSIDE MANHOLE WALLS

- Excavation beneath backdrop pipe: Backfill.
  - Material: Concrete (general).
- Pipe encasement:.
  - Material: Concrete (general).
  - Thickness (minimum): 150 mm.

### 697 INSTALLING FLEXIBLE COUPLINGS

- Ends of pipes to be joined: Cut cleanly and square.
- Outer surfaces of pipes to be joined: Clean and smooth. Where necessary, e.g. on concrete or iron pipes, smooth out mould lines and/ or apply a cement grout over the sealing area.
- Clamping bands: Tighten carefully to make gastight and watertight seals.

### 699 CONNECTIONS TO SEWERS

- General: Connect new pipework to existing adopted sewers to the requirements of the adopting authority or its agent.

### 705 INITIAL TESTING OF PIPELINES

- Before testing:
  - Cement mortar jointing: Leave 24 h.
  - Solvent welded pipelines: Leave 1 h.
- Method: Block open ends of pipelines to be tested and pressurise. Air test short lengths to BS EN 1610.

### 711 TRENCH SUPPORTS

- Removal of trench supports and other obstacles: Sufficient to permit compacted filling of all spaces.

### 713 INSTALLING ROOT BARRIERS

- Root barrier installation: Full depth of excavation. Fit closely to trench wall nearest the tree.

### 715 BACKFILLING TO PIPELINES

- Backfilling above top of surround or protective cushion: Material excavated from trench, compacted

in layers 300 mm (maximum) thick.

- Heavy compactors: Do not use before there is 600 mm (total) of material over pipes.

### 718 BACKFILLING OVER CONCRETE

- Minimum times from placing concrete:

- Backfilling generally: 24 h.

- Heavy compactors and traffic loads: 72 h.

### 720 BACKFILLING UNDER ROADS AND PAVINGS

- Backfilling from top of surround or protective cushion up to formation level: Granular sub-base material, laid and compacted in 150 mm layers.

### 722 PUBLIC ROADS AND PAVINGS – E&W, SCOT

- Excavating and backfilling of trenches: To Department for Transport ‘Specification for the

reinstatement of openings in highways’.



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### 726 FOAMED CONCRETE BACKFILL
- Preparation: Seal off openings in, and ends of, abandoned pipelines and ducts. Seal off cavities in or next to the excavation which are not to be filled.
- Backfilling: To British Cement Association ‘Foamed concrete - specification for use in the reinstatement of openings in highways’.

### 732 TEMPORARY BRIDGES
- Trench bridges: As necessary to prevent construction traffic damaging pipes after backfilling.

### 734A INSTALLING ACCESS POINTS AND GULLIES
- Setting out relative to adjacent construction features: Square and tightly jointed.
- Permissible deviation in level of external covers and gratings: +0 to -6 mm.
- Raising pieces (clay and concrete units): Joint with 1:3 cement:sand mortar.
- Exposed openings: Fit purpose made temporary caps. Protect from traffic.

### 736 INSTALLING RODDING POINTS
- Bedding and surround:
  - Material: Concrete (general).
  - Thickness (minimum): 150 mm..
- Permissible deviation in level of external covers and gratings: +0 to -6 mm.

### 741 INSTALLING INSPECTION CHAMBERS - PLASTICS
- Bedding:
  - Material: Concrete (general).
  - Thickness (minimum): 150 mm.
- Surround:
  - Material: Not required.
  - Thickness (minimum): Not required.
- Backfilling: Granular material - manufactured, size 4/10, to 100 mm above crown of pipes, then selected fill.
  - Compaction: By hand in 100 mm layers.
- Concrete collar:
  - Material: Concrete (general).
  - Thickness (minimum): 225 mm.
  - Width (minimum): 300 mm.
- Seating: Not required.

### 743 INSTALLING CONCRETE MANHOLES
- Bases:
  - Material: Concrete (general).
  - Thickness (minimum): 225 mm.
- Surround:
  - Material: Concrete (general).
  - Thickness (minimum): 150 mm.
  - Height: Full height.
- Backfilling:
  - Material: Granular material - manufactured, size 4/10, to 100 mm above crown of pipes, then selected fill.
  - Compaction: By hand in 100 mm layers.

### 753 FIXING MANHOLE STEPS
- Fixing: Bed in joints.
- Positioning: 300 mm vertical centres staggered 300 mm horizontally, with lowest step 300 mm (maximum) above benching and top step 450 mm (maximum) below top of cover.

### 755 JOINTING CONCRETE MANHOLE CHAMBER SECTIONS
- Jointing and sealing: Bituminous strips.
- Inner joint surface: Trim surplus jointing material extruded into chamber and point neatly.

### 757 LAYING CONVENTIONAL CHANNELS, BRANCHES AND BENCHING
- Main channel: Bed solid in 1:3 cements and mortar.
  - Branches: Connect to channel, preferably at half pipe level, so that discharge flows smoothly in direction of main flow.
  - Branches greater than nominal size 150 mm: Connect the branch soffit level with the main drain soffit.
  - Connecting angles more than 45° to direction of flow: Use three-quarter section channel bends.
- Benching:
  - Material: Concrete (general) to adoptable standards if manholes are to be adopted.
  - Profile: Rise vertically from top of main channel to a level not lower than soffit of outlet pipe, then slope upwards at 10% to walls.



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- Topping:
- Material: 1:3 Cement sand mortar or to adoptable standards if manholes are to be adopted .
  - Application: Before benching concrete has set, and with dense smooth uniform finish.

### 759 LAYING PREFORMED PLASTICS CHANNELS, BRANCHES AND BENCHING

- Main channel: Bed solid in 1:3 cement sand mortar.
  - Branches: Connect to channel, preferably at half pipe level, so that discharge flows smoothly in direction of main flow.
  - Connecting angles more than 45° to direction of flow: Use three-quarter section channel bends.
- Bedding: 1:3 cement sand mortar. Use clips or ensure adequate mechanical key.
- Benching:
  - Material: Concrete (general).
  - Profile: Rise vertically from top of main channel to a level not lower than soffit of outlet pipe, then slope upwards at 10% to walls.
  - Topping:
- Material: 1:3 Cement sand mortar.
- Application: Before benching concrete has set, and with dense smooth uniform finish.

### 766A INSTALLING UNDERGROUND STORAGE TANK UNITS

- To be installed and backfilled in accordance with manufacturers instructions

### 771 INSTALLING OUTFALLS

- Pipe outflow invert (minimum): Seasonal peak level or 150 mm above normal water level, whichever is the higher.
- Pipe surround and backfill to the last 2 m run of drain: Excavated subsoil, rammed home.

### 773 INSTALLING ACCESS COVERS AND FRAMES

- Seating: Brickwork as section F10.
- Bedding and haunching of frames: Continuously.
  - Material: 1:3 cement :sand mortar.
  - Top of haunching: 30 mm below surrounding surfaces.
- Horizontal positioning of frames:
  - Centred over openings.
  - Square with joints in surrounding paving.
- Vertical positioning of frames:
  - Level; or
  - Marry in with levels of surrounding paving.
- Permissible deviation in level of external covers and frames: +0 to -6 mm.

### 776 EXPOSED OPENINGS IN INSPECTION CHAMBERS, ACCESS POINTS, FITTINGS AND EQUIPMENT

- General: Fit purpose made temporary caps. Protect from site traffic.

## COMPLETION

### 901 REMOVAL OF DEBRIS AND CLEANING

- Preparation: Lift covers to manholes, inspection chambers and access points. Remove mortar droppings, debris and loose wrappings.
  - Timing: Before cleaning, final testing, CCTV inspection if specified, and immediately before handover.
- Cleaning: Thoroughly flush pipelines with water to remove silt and check for blockages. Rod pipelines between access points if there is any indication that they may be obstructed.
- Washings and detritus: Do not discharge into sewers or watercourses.
- Covers: Securely replace after cleaning and testing.

### 903 TEMPORARY MEASURES

- Water used to stabilize tanks and the like during installation: Drain.

### 911 TESTING AND INSPECTION

- Dates for testing and inspection: Give notice.
  - Period of notice: To be agreed with Employer.

### 921 FINAL TESTING OF PRIVATE GRAVITY DRAINS AND SEWERS UP TO DN 300

- Before testing:
  - Cement mortar jointing: Leave 24 h.
  - Solvent welded pipelines: Leave 1 h.
- Standard: To Building Regulations.
- Method: Air.



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### 931 FINAL TESTING OF ADOPTABLE AND LARGE PRIVATE SEWERS

- Standard (sewers up to and including size DN 750):
  - Scotland: To WRc ‘Sewers for Scotland’.
- Method: Air.

### 941 WATER TESTING OF MANHOLES AND INSPECTION CHAMBERS

- Timing: Before backfilling.
- Standard:
  - Exfiltration: To BS EN 1610.
  - Method: Testing with water (method W).
  - Infiltration: No identifiable flow of water penetrating the chamber.

### 971 CCTV INSPECTION OF PRIVATE PIPELINES

- General: Carry out and record internal inspection using CCTV equipment.
  - Locations to be inspected: Foul and Surface Water Drains.
- Illumination: Of adequate intensity.
- Recording: Provide continuous position recording, still photographs and stopping of the camera at any point.
  - Copy of videotape recording: Submit.

### 978 LIFTING KEYS

- Lifting keys: Supply suitable keys for each type of access cover.
  - Timing: At completion.

### 980 INSTRUCTIONS

- Manufacturer’s user instructions: Submit for attenuation tanks.



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# Specification for Water Mains

## General

The water main services systems will comply with the relevant clauses of the NHS Model Engineering Specification Parts C01, C07, C82, addendums to Part C, SHTM 2023, 2027, 2040, SHTM 04-01, BS 6700, Scottish Water Byelaws 2004, and descriptions and requirements set out below.

## Site External Water Mains

Wholesome mains cold water will be derived from two separate street public water mains with a separate water main entering the site from each main. The two 150mm respective site water mains will run in a shared trench with the fire and gas main. The site water mains supply will be capable of isolation by valves within all buildings supplied. To safeguard against the event of a mains failure from either public street main and ensure resilience to the hospital site water supply the two site mains will be linked by a valve chamber with a normally closed valve for sole use by Scottish Water if and when required.

All incoming water supplies to buildings will have external isolation valves.

Site water mains will be installed in accordance with NJUG requirements for utility apparatus with regards to depth, colour coding, identification markers, and position.

Underground pipework will use Polyethylene PE 100 SDR 11.

## Water Meters

A water meter will be incorporated with direct reading and a BMS interface onto both incoming mains supply at the entry to the site and also sub meters within each building served by the site water mains. All sub meters will be linked to the BMS. This additional metering will allow for any leakage from buried mains in soft dig areas to be detected by meter readings.

The site's two main water meters will be fitted with isolation valves and non return valves.

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# Specification for Fire Mains

## General

The fire water services systems will comply with the relevant clauses of the NHS Model Engineering Specification Part C01, C24, C82, addendums to Part C, BS 9990:2006, and descriptions and requirements set out below.

## Fire Mains Installation

Two separate water main connections from Govan and Hardgate Roads will be brought onto the site each with 1No 150mm branches to run as fire mains around the site to serve fire hydrants located not more than 90m apart and not more than 90m from the entry to a building as required by BS 9990:2006. The fire mains will form a ring around the building and be interlinked by a normally closed Fire Brigade valve to ensure resilience to the site fire main network. The fire mains will be unmetered unless specifically requested by the local water authority.

Each of the two fire mains will be capable of supplying 25 litres/second respectively at all times.

A 100mm branch from the fire ring main will supply the basement sprinkler and wet riser storage tanks.

The fire mains below ground will be in polyethylene pipe to PE100 and be fusion welded. All pipe tees and bends will be fitted with anchor points to be sized and installed by others.

The type, number and location of fire hydrants will be approved by the local fire brigade.

Fire Hydrants will be ductile iron to BS 750:2006 Type 2.

Fire hydrants will be sited below ground in purpose built chambers of engineering brick class B. Pipe connections to the hydrants will be 125mmOD pipe. Hydrants chambers will be identified “Fire Hydrant” and have indicator plates giving location and size. Hydrant chambers will not be sited in roadways or other locations where heavy external loads may be expected.

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# Specification for Heating Mains

## General

The heating mains installation will comply with the relevant clauses of the NHS Model Engineering Specification Parts C01, C02, C07, C82, addendums to Part C and descriptions and requirements set out below.

## Heating Mains

Primary heating circuits will emanate from the Energy Centre arranged as A and B circuits feed from their respective boiler system.

The flow and return pipework will be routed from the energy centre using pre-insulated buried pipework and enter the basement corridor system of the main hospital. At this point the A and B circuits will join a header which, for resilience purposes, will allow either A or B circuits to feed the hospital.

The buried pipe system will employ an HDPE outer casing with welded steel pipework to carry the heating medium. The space between the casing and steel pipe will be filled with insulating polyurethane foam.

A leak detection system will be incorporated to signal any failure of the system and be linked to the BMS.

Thermal expansion will be incorporated into the system using soft foam bends and expansion loops as necessary.

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# Specification for Gas Mains

## General

The gas supply and distribution systems will comply with the relevant clauses of the NHS Model Engineering Specification Part C01, C82, addendum to Part C, BS6644, IGE Guidance, Clean Air Act, and descriptions and requirements set out below.

## Gas Mains Installation

The gas supply for the Adult Hospital and Children's Hospital will run from a new meter housing and booster station at the boundary of the site on Govan Road and run as a medium pressure supply (150mbar) in a soft dig trench alongside other site piped services to the Energy Centre and with a branch to serve the Laboratory Building. The medium pressure gas main will continue in soft dig to the Acute building to serve the kitchen/ catering areas with a low pressure supply of 21mbar via a medium to low pressure regulator sited external to the hospital building. Similarly the medium pressure supply to the Laboratory building shall be equipped with medium to low pressure regulator to provide an incoming supply to the Laboratory building at 21mbar.

Whilst the current solution is based on s supply being brought o the site at Low Pressure, consideration will be given to bringing in a medium pressure supply to avoid the need for onsite boosters.

## Energy Centre

The medium pressure supply into the Energy Centre will be taken to the heating boilers and CHP unit for direct use at this pressure, thus avoiding the need for individual plant gas boosters. All gas/dual fuel boilers and CHP plant will be individually metered and lined to the BMS system.

## Acute/Children's Hospital

From the medium/low pressure regulator gas at 21mbar will be distributed around the Acute/Children's Hospital to serve catering areas. All subsidiary gas use areas will be sub metered and linked to the BMS system.

Gas pipework below ground will be polyethylene PE80 with fusion joints. Pipework above ground will be in heavy duty mild steel with screwed joints.

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# Specification for Electric Mains

## General

Refer to the Electrical Services Mains Schematic Drawing SK-201.

For a description of the substations, refer to specification 4.34 “Electrical Source and Mains”.

This specification describes the proposed incoming Utility 33,000V supply, the 11,000V distribution system and its controls, and the proposed method of operation of the 11,000V distribution system.

In this specification, reference to the loads of the NSGH Adult and Children’s Hospitals and the Laboratory include an allowance for the full diversified estimated maximum demand plus 25% additional future capacity. No spare capacity has been allowed for the Retained Estate, which is stated as estimated maximum demand.

## Estimated Supply Capacity

The new supply to the NSGH site must be capable of supporting the following loads:-

| | |
|---|---|
| Existing Retained Estate | 6658kVA |
| New Adult and Children’s Hospital | 12500kVA |
| Laboratories | 2380kVA |
| Total site load | 21538kVA |

Total supply capacity requirement is therefore in the order of 21.5MVA.

## Incoming Utility Services

The Incoming Utility supply will be derived at 33kV from the Govan Grid Connection Point. The11kV supply up to and including the Utility Primary 11kV switchboard will, under normal supply conditions, provide two independent incoming 11kV supplies to the Hospital’s 11kV system. The configuration of Utility 33kV and 11kV feeders and switchgear will allow the Utility Company to maintain or rapidly restore the 11kV supply to the hospital under most scenarios of a planned outage, or during any unplanned failure, of part of a leg of the Utility 33kV/11kV supply system. This will be achieved by the Utility switching the 33kV and 11kV feeder and bus section switchgear.

Two main incoming 11kV Utility supplies from the Utility Primary 11kV Switchboard are proposed, entering the site routed via diverse routes. Each of these will be terminated into one of the two NSGH 11kV main intake switchboards, each located within one of the two Energy Centre generator halls. Under normal supply conditions the supply arrangement will provide two independent incoming 11,000V supplies to the Hospital’s 11,000V system. The two separate sections of the Energy Centre, and the equipment contained in them, will be designated A and B respectively.

The segregation of the two parts of the Energy Centre will provide a high degree of fire separation between the two sections.

In the event of a loss of supply from either section of the Utility Primary 11,000V switchboard, or one of the metered services from it, the lost Utility service will be replaced by automatic switching of the incoming and interconnector 11,000V switches on both NSGH Main Intake Switchboards to isolate the failed service and replace it with a feed from the remaining service. This will be done via the automatic controls for the NSGH 11,000V distribution system.

The overall arrangement will provide an incoming 11kV supply having an inherently high degree of resilience. This incoming supply will also be backed up by the Standby generator provisions; refer to the later section of this specification, “Standby Generators”, for a description of this system.

## 11kV Distribution System

From each of the two 11kV main intake switchboards, two 11kV ring mains will be installed around the NSGH new-build site to supply local substations, each limb of each ring having the A or B designation of the Main Intake switchboard serving it. The A and B limbs of each ring will each serve one transformer of every substation on that ring. The ring cables will be routed via diverse routes to avoid the possibility of common mode failure due to damage, and will be operated in the “normally open” configuration. The two rings will form the basis of the site’s dual-unified support strategy. The substations will be configured as per the Schematic Drawing SK201, as follows, the transformer ratings are proposed and are provisional:-

### Ring 1:

Sub Station 1A/1B (Located on the Roof of the Children’s Hospital) - 2 x 1600kVA transformers.

Sub Station 2A/2B (Located on the Podium Roof, Children’s Hospital area) - 2 x 2000kVA transformers.

Sub Station 3A/3B (Located on the Podium Roof, Towers 1 & 2 area) - 2 x 2000kVA transformers.

### Ring 2:

Sub Station 4A/4B (Located on the Podium Roof, Towers 3 & 4 area) - 2 x 1600kVA transformers

Sub Station 5A/5B (Located on the Podium Roof, Theatres area) - 2 x 2000kVA transformers

Sub Station 6A/6B (Located on the Podium Roof, Emergency Centre area) - 2 x 1600kVA transformers.

A separate ring will be provided to serve the Laboratories and Retained Estate. This will initially be configured to serve the Laboratories alone, and the Laboratory switchboard will be provided with facilities to facilitate the reconfiguration of the ring at a later date by the Board to serve the Retained Estate, without loss of supply to the Laboratories. Ducts will be provided from the Energy Centre to the boundary of the Retained Estate to facilitate its connection.

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The 11kV ring mains will be routed around the NSGH site, externally and within the new main NSGH Building, via diverse routes. The open ring configuration is proposed primarily for resilience but will also more readily facilitate extension for future expansion. The open ring configuration will restrict the extent of the effects of a ring fault to one half of the ring.

A Power Management System will control the operation of the ring switchgear. This will be programmed to automatically detect and isolate ring faults and reconfigure the ring to restore supply to as much of the site as possible in the event of a ring fault. Refer to the later controls section of this Specification.

The proposed 11kV rings will operate in open configuration. Should a fault occur anywhere within a ring system the section of the ring having the fault will be automatically isolated, and the ring reconfigured to rapidly restore supplies to all affected substations under the control of the Power management System. This automatic operation will effectively move the open point to the faulty section of the ring.

The configuration is intended to provide two nominally equally loaded rings, which, in normal configuration, will each comprise two equally loaded limbs. Each ring will have its own dedicated matched standby generator facility and CHP provision.

11kV Main Intake Switchboards

Each of the two 11kV Main intake Switchboards will comprise an incoming 1250A 11kV Utility supply switch, the outgoing 11kV 630A service circuit breakers, and 11kV 1250A bus-section switches to connect to the adjacent Generator Switchboard. These will be linked by 11kV 1250A busbars. The 11kV switchgear will be vacuum insulated circuit-breakers, the outgoing service circuit breakers having protection relays, automatic tripping units, and motorised open/close mechanisms. The incoming feeder switches and bus-section switches will have motorised open/close mechanisms. The Interconnector between Main Intake Switchrooms A and B will have switches with motorised open/close mechanisms. These will be hard-wire interlocked to ensure that only three of the four switches can be closed at any time, to prevent paralleling of the incoming Utility supplies. The switchgear with motorised mechanisms will be controlled by the 11kV control system.

Protection relays will be of the electronic type. IDMT 3-phase overcurrent and earth-fault protection will be provided on all 11kV load circuit breakers. Ring feeder protection will be provided in the form of unit protection, with a pilot cable, to allow full selective protection of each section of the ring.

The protection relays, motorised mechanisms and switchgear trip units in the two Main Intake Switchboards will be powered from a common dual-redundant power supply unit. Consideration will be given to combining this with the power supply units for the Power Management System if that proves technically feasible.

Each Main Intake Switchboard will incorporate the circuit breakers for two 11kV CHP units and the outgoing circuit breakers for two transformers (substations 7 & 8) feeding the main chillers; a motorised Bus-section switch will be provided for the connection of the adjacent Standby Generator switchboard.

## Substations, Transformers and Ring Main Units

The substations will comprise two 11kV/400V dry type cast resin insulated transformers, each with its own Ring Main Unit (RMU), each serving a Low Voltage switchboard. As previously described, each half of each substation will be served from one limb of the ring, designated A and B. The two parts of each substation will be separated by fire resistant compartment walls, providing a high degree of resilience in the event of fire in one part of the substation. The RMUs will have motorised ring switches controlled by the 11kV control system. For a more complete description of the substation equipment refer to Section 4.34 of this specification.

## Power Management System

The focus of the combined system control approach is to achieve maximum efficient operation of the CHP units with the focus of minimising carbon output from the campus.

The basic facet of the control strategy is that the primary control is decentralised at each unit.  For example on board chiller and boiler control.

A Power Management System (PMS) of electrical control and real time metering of the MV electrical distribution is run through the protection control units, utilising the established IEC61850 utility grade standard.  The primary LV feeders are also metered and integrated into the PMS.  These can also be controlled should the need arise.

The PMS handles the complete electrical system during emergency conditions.

The PMS can manage load augmentation utilising the emergency generation units, should the need arise.

The CHP interface of the PMS calculates the optimum load output for each CHP unit, in terms of carbon from the whole campus and also efficiency of each unit.  The CHP system is considered holistically and will cater in it’s calculations for units out of service.

At the application layer level, an algorithm models the system in real time, taking real time energy usage form the PMS and also the campus BMS, it factors in the current weather conditions from the weather station and also a weather forecast file.  The system utilises a “learned” approach to developing a continuous look up table to predict the upcoming load requirements of the campus.

This algorithm allocates the optimum load for the CHP island, the chillers and boilers.



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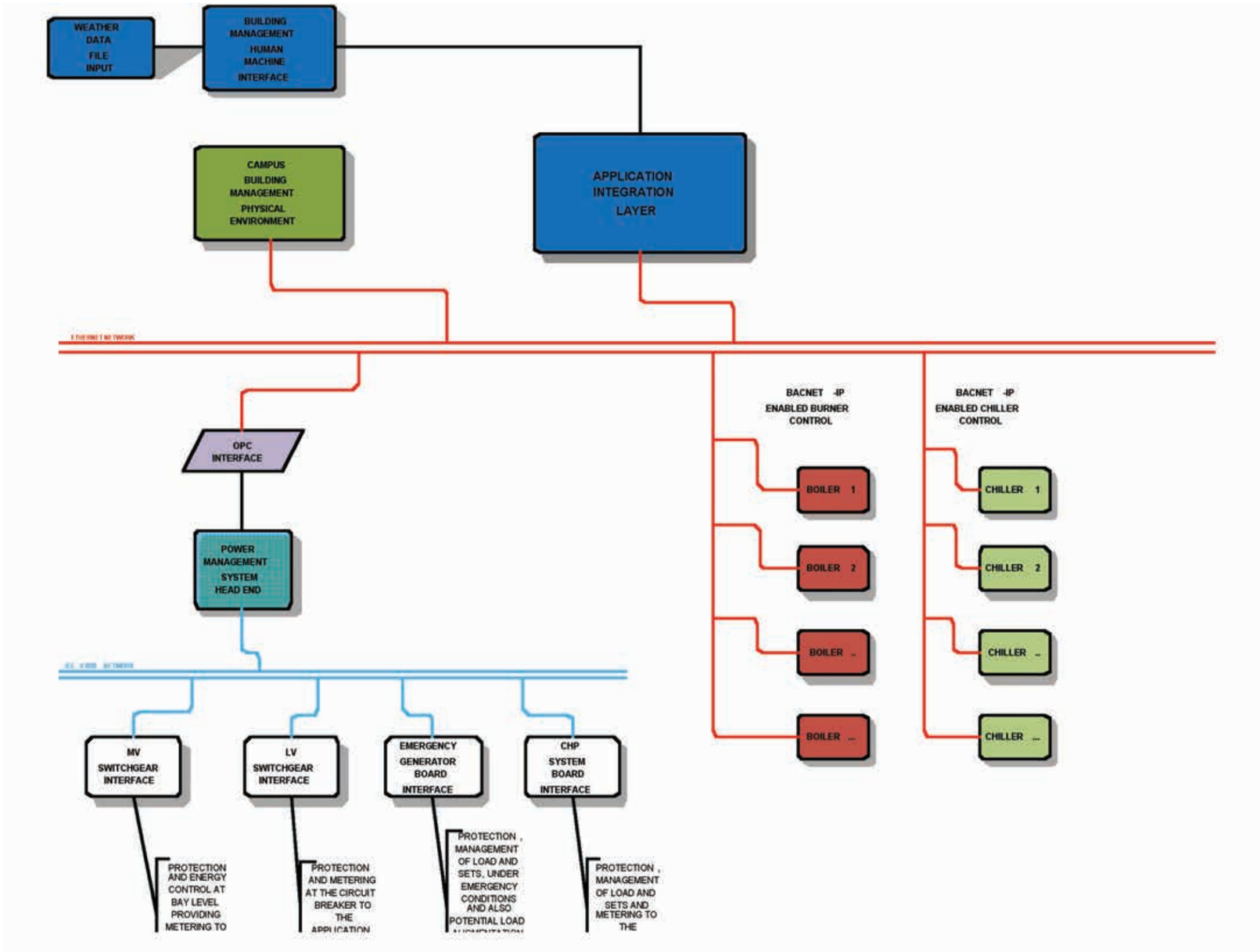




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## 11kV System Controls

The 11kV ring switchgear control system will comprise duplicate Power Management System controllers operating in parallel in “hot standby” configuration. The Power Management System controllers will monitor the ring protection system relays and from these will identify the location of any first fault which occurs on a ring. The Power Management System controllers will control the motorised 11kV ring circuit breakers on the Main Intake Switchboards, the substation ring main unit (RMU) motorised ring switches and selected low voltage circuit breakers throughout the NSGH site. On detection of a fault on the ring (including the 11kV busbars of any substation RMU), the protection unit on the ring feeder circuit breaker on the affected limb will trip the breaker, and the Power Management System controllers will identify the location of the fault and will operate the ring switchgear on either side of the fault to isolate the faulty part of the ring. The control system will then close the ring switchgear at the original open point to restore the supply to the healthy part of the ring from the other, healthy, limb of the ring, and will close the ring feeder circuit breaker which previously tripped (assuming that the fault was not on the section of ring fed by that breaker), to restore the supply to the remainder of the ring.

The control of the LV circuit breakers will permit load shedding control under conditions of standby generator operation when only partial generator back-up is available.

The Power Management System controllers will communicate to a front end touch screen Human Machine Interface (HMI) panel located within the main control room.

A manual override facility will be provided, together with electronic and hard-wired interlocks where necessary, to avoid the risk of closing switchgear onto faulty sections. Switchgear status (open/closed/tripped etc) will also be monitored, to ensure that any tripped switchgear is not accidentally closed under automatic or manual control, particularly when reconfiguring the ring after a failure of a section..

The system will provide automatic reconfiguration of a ring as described for only the first detected fault on either ring. It will be programmed to allow further reconfiguration necessary due to further faults on the same ring only under manual control from the HMI or locally at the substations and Main Intake Switchboards.

Manual control will be possible only by authorised personnel in possession of the appropriate high-level password for the control system.

A Control Bus ring will link the local Power Management System controllers at each substation with the main Power Management System controllers in the Main Control Room. This will provide the resilience of a ring for the control system.

The two Power Management System controllers will each have a dedicated power supply, rated to simultaneously serve both Power Management System controllers. The Power Management System controller power supply will be provided with mutual automatically switched cross-feeds to ensure that in the event of failure of one power supply, the feed to the affected Power Management System controller will be switched to the remaining healthy power supply.

## Control of the 11kV System During Incoming Utility Supply Failure

The Power Management System controllers will also be linked to the standby generator control system to control the 11kV system switchgear in the event of a partial or total Utility incoming supply failure.

For any Utility supply failure, the Utility incoming circuit breaker on the affected Main Intake switchboard will open and the associated standby generators will start, but the Power Management System controller will inhibit other any action for a preset short time delay (to be determined) to confirm whether the Utility supply will be restored quickly by the Utility Company.

If the Utility supply is quickly restored, and proved healthy, the Utility incoming circuit breaker will be closed to reconnect the supply and the standby generators will be shut down.

Should the Utility supply not be quickly restored, the following will occur.

For the failure of a single incoming Utility supply, after the Utility incoming circuit breaker has opened, the switches on the interconnector between Main Intake switchboards A and B will be closed, thus restoring the supply. The standby generators will be shut down. If the interconnector is not available, or its connection is delayed, the standby generators will be connected to serve the load until either the interconnector is available or the failed Utility supply has been restored and proved healthy for a preset time. The load will then be transferred to the interconnector or the Utility supply.

For the failure of both Utility incoming services, the standby generators will be connected to the system to serve the NSGH load, until the Utility supplies have been restored and proved healthy for a preset time. The load will then be transferred back to the Utility supplies. If only a single Utility supply only is restored, after it has been reconnected to its main Intake switchboard, the interconnector may be used to serve the other Main Intake switchboard by seamless transfer from the standby generators.

In all cases when the Standby Generators are supporting the load, the load will be transferred back to the restored Utility supplies by agreement with the Utility Company (refer also to the Standby Generator section of this specification for further description).

Measures will be taken to avoid tripping of the ring feeder and Utility circuit breakers due to transformer inrush currents upon re-energisation of the rings. The standby generators will not be connected to the load but will shut down.

Refer also to the Standby Generator section of this specification for further description.



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## 11kV Cables

The 11kV cables will generally be 3-core XLPE insulated, steel wire armoured, LSOH sheathed with stranded copper conductors, and will have a voltage rating of 6350/11000V. External cables will be run buried direct in soft ground, or in ducts under hard surfaces. Route marker/cable identification tiles, buried warning tape and protector tiles will be provided.

## Emergency Power-Off Systems

A system of emergency power-off (EPO) buttons will be provided in the Main Intake Switchrooms, the Generator Switchrooms, and the Ring Substations. The operation of any EPO button in a room will automatically isolate that room only from the 11kV supply.

The Generator Hall will be separated from the adjacent Main Intake Switchroom by a fire-rated wall, with one bus-section switch located on either side. The operation of an EPO button will cause all circuit breakers, ring switches and bus-section switches immediately outside the room to open and lock out, thus ensuring that all 11kV supplies to that room are completely isolated. For the Main Intake Switchroom, this will involve the tripping of the ring circuit switches on the nearer side of the first substation on the two rings.

A similar provision will be installed in each ring substation, with intertripping of the 11kV and LV circuit breakers to prevent a backfeed from the LV system to the 11kV system. This intertripping facility will operate in the event of the 11kV transformer feeder circuit breaker tripping due to a fault.

The EPO system will be linked to the fire alarm and gaseous suppression systems in each room, to provide local isolation of power supplies under fire alarm conditions.

## Standby Generators and Controls

The NSGH site will be provided with 11kV standby generators, capable of supporting the whole of the new Adult and Children's Hospital, the new Laboratory building and the Retained Estate. The standby generators will be provided in two separate, equally sized groups, one group installed in each of the two Energy Centre Generator Halls (1 & 2). The two groups will be identical, and each will be sized to support half the load of the full NSGH estate including Retained Estate. This will provide independent standby generator support for each the A switchroom and the B switchroom, and the corresponding substations. Only the appropriate group of standby generators will start in the event of the failure of one incoming 11kV Utility service. The following description applies equally to each group of generators.

The standby generators will be connected to an 11kV Generator Switchboard, which will be similar in specification to the Main Intake Switchboard, to which it will be connected via two normally open bus-section switches (one on the Main Intake switchboard, one on the Standby Generator switchboard) in series (refer to "Emergency Power Off" above). The generator circuit breakers will be motorised and will be controlled by the Standby Generator Power Management System controller.

The ITPD requires that the generators shall be rated for Continuous Operating Power, as per ISO8528, and installed in N + 1 redundant configuration. However, the definition of Continuous Operating Power as defined by ISO8528 refers to operation for unlimited hours. As the generators will be used for Standby Power only, this bid includes for Limited Time Running Power (LTP) generators, as defined by ISO8528, which will be capable of supporting a constant electrical load for 500 hours per year.

The governors will be electronic, providing class A1 in accordance with BS5514 Part 4. Space will be provided for additional generator capacity to allow future load growth of 25% of the initial installed capacity. It is currently estimated that, at handover, each group of generators will incorporate six standby sets each nominally rated at 2000kW/2500kVA @ nominal 0.8pf. There will be a provision for connection of a trailer mounted LV generator when necessary, via a step-up transformer, to provide back-up and retain redundancy if a single 11kV standby set is out of service for an extended period for major maintenance. This will also provide a facility for "last ditch" back-up in the unlikely event that the main standby generator system becomes totally disabled for any reason.

The two groups of standby generators will each be controlled by a dual, hot-standby, Power Management System controllers system to monitor the status of the standby sets and the incoming mains to the site. These will be interconnected with the 11kV Power Management System. The links with the 11kV control system will allow load to be shed to suit the available generator load, should any generators fail in service or be unavailable at start-up, and also inhibit connection of the generators if the Utility supply is quickly restored before the generators are connected to the load. Links with the BMS will allow it to inhibit the mechanical plant operation until sufficient generation capacity has become available.

Upon Utility supply failure the generators serving the affected switchroom will automatically start, the generators will mutually synchronise with the first generator to reach operational speed, prior to supplying load to the hospital. After a short proving period to verify that the Utility supply will not return quickly, the generators will be connected to the load. The general mechanical load will initially be held off by the Building Management System (BMS) at the local Motor Control Panels and then added by the BMS in an agreed prioritised sequence, to give priority to the hospital lighting and power loads (including the life safety and essential mechanical systems).

When the building loads are supported by multiple generator operation, should a generator fail the entire load will be removed from the standby generator system to avoid stalling of the remaining generator/s. The system will then be loaded up via the Power Management System, and the BMS system will then load the mechanical services to suit the remaining available standby capacity. Motorised breakers will be provided in the low voltage distribution system for the 'lower priority loads' in order to limit the load under reduced standby supply conditions. Prioritisation of the loads will be subject to detailed discussion and agreement with the Board.



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The system will also be provided with G59/1 for allowance for short term parallel operation with the mains utility supply. This will be provided to permit, after a Utility supply failure, seamless transfer back to mains once stable Utility supplies have been confirmed as being restored. A manually instigated automatic transfer facility back to incoming mains supply will be provided, with a key switch or other secure facility to provide a fully automatic transfer if required. It will also allow seamless test running of the generator system against the Hospital load.

Each standby set will have its own daily service fuel tank, served from a transfer connection to the combined standby heating and power bulk fuel storage system.

Sound attenuation will be provided in the fabric of the Generator Switchrooms, and by inlet and exhaust air attenuators. Exhaust attenuators (silencers) will be provided within the Generator switchroom. These measures will be specified to ensure that Local Authority's environmental noise level limits are achieved.

## Test Facilities

A manually instigated automatic testing system will be provided, which will allow automatic testing of single standby sets and the whole system. This shall be under the control of the Standby Generator control system. The method of testing remains to be finalised.

## CHP Systems

It is proposed to connect two 11kV CHP units to each of the Main Intake Switchboards. The CHP Units will be self-contained. They will be sized, and their controls interlinked, to ensure that they operate in a way which matches the available heating and electrical loads, and maximises the potential for energy saving and reduction of the carbon footprint of the NSGH.

Operation of the CHP units will be enabled only when a Utility supply is available at the Main Intake switchboard (either directly or via the Interconnector). During a loss of this incoming supply the local CHP units will be disabled.

The CHP systems will be housed in acoustic housings to ensure that the environmental noise levels meet the limits imposed by the local Planning Authority.

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# Outline Specification – Site Lighting

## Contents

1.0 Site Lighting

## 1.0 Site Lighting

### 1.1 Luminaires generally

Standards: To BS EN 60598-1 and BS EN 55015.

### 1.2 Illuminated bollards

Refer to Specification – External Fittings and Furniture section 1.2

### 1.3 Lighting columns to roads

Type: Single and double headed post top lights as indicated on drawings
Standard: To BS EN 60598-2-3.
- Approval: Kitemark certified.

Photometric performance: To BS 5225-1.
Ingress protection to BS EN 60529: to manufacturer's recommendation.
Material: Steel.
Finish and colour: Aluminium colour textured surface.
Mounting: pole mounted 8m high.

### 1.4 Lighting columns to the Central Park

Type: Single headed post top light
Standard: To BS EN 60598-2-3.
- Approval: Kitemark certified.

Photometric performance: To BS 5225-1.
Ingress protection to BS EN 60529: to manufacturer's recommendation.
Material:
- Top shade: Spun copper
- Reflector: spun matt and polished alumimium
- Enclosure: vacuum formed clear polycarbonate
- Base: dia cast aluminium
- Struts: Stainless steel

Finish: Copper, brushed
Mounted: pole mounted 6m high

### 1.5 Lighting columns to the Children's Park and roof garden

Type: Single and double headed post top lights as indicated on drawings
Standard: To BS EN 60598-2-3.
- Approval: Kitemark certified.

Photometric performance: To BS 5225-1.
Ingress protection to BS EN 60529: to manufacturer's recommendation.
Material:
- Diffuser: Extruded opal polycarbonate
- Top shade: Spun copper
- Base: dia cast aluminium
- Struts: Stainless steel

Finish: Copper, brushed
Mounted: pole mounted 6m high

### 1.6 Ground mounted up lights to selected trees

Standard: To BS EN 60598-2-3.
- Approval: Kitemark certified.

Photometric performance: To BS 5225-1.
Ingress protection to BS EN 60529: to manufacturer's recommendation.
Material: Steel.
Finish and colour: stainless steel surface
Mounting: Installation sleeve.

### 1.7 Feature lighting to arrival square

Type: Tapered lighting column with Circular parabolic floodlights
Standard: To BS EN 60598-2-3.
- Approval: Kitemark certified.

Photometric performance: To BS 5225-1.
Ingress protection to BS EN 60529: to manufacturer's recommendation.
Material: Cor-Ten steel
Finish and colour:  Cor-Ten Steel



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### 1.8 LED lighting strip to seating wall in arrival square and children's park

Type: LED Strip lighting
Standard: To BS EN 60598-2-3.
- Approval: Kitemark certified.

Photometric performance: To BS 5225-1.
Ingress protection to BS EN 60529: to manufacturer's recommendation.
Materials: Steel
Finish and colour: Stainless steel

### 1.9 Bollard Illuminated to arrival square, court yards and roof garden

Height: 1100mm
Diameter:140mm.
Material: 316 stainless steel.
Finish: Bead blasted 316 stainless steel bollard body, Brushed 316 stainless steel top cap.
Colour: silver.
Lighting specification: to lighting engineers' detail

### 1.10 Bollard Illuminated to maintenance strips around building

Height: 1100mm
Diameter: 210mm
Material:
- Top: Die cast aluminium
  - Post: Extruded aluminium

Finish: Powder coated texture surface
Colour: silver



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## Submission Reference:

Section 4.57 – Minor Building Works

## Submission Response:

Minor Building Works

### 1.0 Break-through into Neurology & Maternity

The elements of work associated with breaking through into these existing buildings will include (but not limited to):

- Making good

  This will involve ‘making good’ in and around the newly formed ‘openings’ and ensuring the integrity of the structure remains intact.

- Flooring

  There will be a gentle transition from the existing floor finishes to finishes in the ramp.

- Ceiling

  Ceiling finishes will accommodate exposure to external environments

- Doors & Ironmongery

  External weather proof doors will be introduced at the exit points, with ironmongery to suit

- Lock suiting

  The external doors to both the new and existing building will be suited such that access can be gained by the Board and appointed staff.

- Security

  Brookfield will ensure that existing security is not compromised

  For a fully integrated scheme and to ensure services are inter-linked, Brookfield will assist the Board to investigate compatibly between systems listed below:

a. IT

b. Phones

c. Lighting

d. Fire Alarms

e. Pneumatic Tubes (if required)

f. CCTV

### 2.0 Bicycle Stores (Public cycle spaces / Staff cycle spaces)

Staff and Public Cycle Shelters - Contemporary shelters at designated locations to suit easy access, designed to compliment the environment, whilst providing a modern and stylish solution to secure cycle storage, weather protection and promoting cycle usage.

### 3.0 Tunnel Emergency Exit Enclosure

We will provide an unobtrusive shelter that can house the exit from the emergency tunnel with a secure mechanism to stop unwanted access.

### 4.0 Bus Shelter

Portal frame shelter in single and modular units, to provide a stylish modern shelter that can withstand the elements.

### 5.0 Café Pavilion (Optional)

A bespoke ‘standalone’ simple lightweight steel frame unit with low wall and glass enclosure to house the ‘Café’ and hub for both staff and visitors, It will offer catering facilities to the community.

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# NHS Mandatory Documentation

## Submission Reference

7.1 NHS Mandatory Documentation

## Submission Response

In relation to the architectural design, structural design and services design of the new buildings comprised in the Works, the documents listed in the following Table 2 below set out that guidance which the Board considers to be mandatory. Brookfield response to each document is set out in the Proposals Comply/Compliance Narrative columns as requested in the ITSFB.

Table 2 (extract from ITPD Vol 2/1 Section 5.1.2) – ITSFB Clarification Appendix 1

| Document | Title | Proposals Comply? (Yes/No) | Compliance Narrative (How compliance is being Achieved) |
|---|---|---|---|
| CEL 25 | Fire Safety policy for NHS Scotland 2008 | yes | Volume 2 Section 2.10 Fire Strategy report takes cognizance of the document |
| SHTM 81 | Part 1: version 4, Fire Precautions in new healthcare premises | yes | Compliance is shown within Volume 2 Section 2.10 Fire Strategy report together with those areas where fire engineering has been used wherever beneficial to meet, or surpass, the minimum fire safety performance standards contained in the document. |
| SHTM81 | Part 2: version 1, Guidance on the fire engineering of healthcare premises | yes | Compliance is shown within Volume 2 Section 2.10 Fire Strategy report together with those areas where fire engineering has been used wherever beneficial to meet, or surpass, the minimum fire safety performance standards contained in the document. |
| SHTM 82 | Alarm and detection systems Version 2 | yes | Compliance is shown within Volume 2 Section 2.10 Fire Strategy report together with those areas where fire engineering has been used wherever beneficial to meet, or surpass, the minimum fire safety performance standards contained in the document. |
| SHTM 82 SUPP A | Automatic fire control systems and voice alarm systems | yes | Compliance is shown within Volume 2 Section 2.10 Fire Strategy report together with those areas where fire engineering has been used wherever beneficial to meet, or surpass, the minimum fire safety performance standards contained in the document. |
| SHTM 83 | Fire safety in healthcare premises – general fire precautions Version 2 | yes | Compliance is shown within Volume 2 Section 2.10 Fire Strategy report together with those areas where fire engineering has been used wherever beneficial to meet, or surpass, the minimum fire safety performance standards contained in the document. |
| SHTM 85 | Fire precautions in existing hospitals Version 3 | no | This document covers existing hospitals rather than new |
| SHTM 86 | Fire risk assessment Part 2 Healthcare Premises Version 4 | no | This document covers occupied hospitals rather than new |
| SHTM 87 | Textiles and furniture Version 2 | yes | Refer to Volume 2 Section 2.10 Fire Strategy report takes cognisance of the document |

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| Document | Title | Proposals Comply? (Yes/No) | Compliance Narrative (How compliance is being Achieved) |
|---|---|---|---|
| HTM 05 – 01 | Firecode – Fire safety in the NHS | yes | Volume 2 Section 2.10 Fire Strategy report covers areas of compliance with Firecode (HTM) where there is no Scottish Equivalent document (SHTM). |
| HTM 05 – 02 | Firecode – Fire safety in the NHS | yes | Volume 2 Section 2.10 Fire Strategy report covers areas of compliance with Firecode (HTM) where there is no Scottish Equivalent document (SHTM). |
| HTM 05 – 03 | Firecode – Fire safety in the NHS | yes | Volume 2 Section 2.10 Fire Strategy report covers areas of compliance with Firecode (HTM) where there is no Scottish Equivalent document (SHTM). |
| HSANs | All published Health & Safety Action Notices | yes | Our design has been informed by the guidance provided insofar as our design has developed. We will continue to progress our design solution with reference to the guidance in these documents |
| NHSE 10 | Cubicle Rails | yes | This NHS Estates Alert (2004) instructed Mental Health Trusts to remove all non-collapsible bed and shower curtain rails in psychiatric In-patient settings by 2005. Compliance is shown for NCH DCFP where the specification will ensure no accessible part of a system will bear enough load great enough to present a ligature risk. |
| NHSE HN04 | Curtain Tracks | yes | This NHS Estates Hazard Notice (1998) reported action should be taken to identify curtain tracking installed in areas used by patients vulnerable to suicide, assess the risk, and where necessary, upgrade tracking to ensure that no accessible part of the system will bear a load great enough to present a hanging risk. Compliance is shown for NCH DCFP where the specification will ensure no accessible part of a system will bear enough load great enough to present a ligature risk. |
| NHSE HN03 | Centre Pivot Window | yes | This NHS Estates Hazard Notice (2003) applies to all centre pivot windows. Compliance is shown as the window specification includes window restrictors to both sides of the window complying with BS6375 – 2 (The restrictor will be capable of withstanding 1000 N applied force). |
| SAN05/08 | Flooring Materials | yes | This Safety Action Notice SAN(SC)05/08 applies to flooring materials and the risk of ‘slip and trip’ accidents. Compliance is shown as specification requires compliance with SHTM 61. |
| SN(01)01 | Cubicle Rail | yes | This NHS Safety Notice SN(01)01 applies to Mental Health Trusts and the adult psychiatric setting. Compliance is shown for NCH DCFP where the specification will ensure no accessible part of a system will bear enough load great enough to present a ligature risk. |

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| Document | Title | Proposals Comply? (Yes/No) | Compliance Narrative (How compliance is being Achieved) |
|---|---|---|---|
| HVHNs | All published High Voltage Hazard Notices | yes | These will be completed at the appropriate stage of design/construction |
| SHTM | EnCOde – making energy work in healthcare | yes | Design Strategy for Energy Volume 3 Section 3.20 describes the approach taken |
| | EnCOde resource material | yes | Design Strategy for Energy Volume 3 Section 3.20 describes the approach taken |
| CEL 18 | Healthcare Associated Infection: SHFN 30 and HAI SCRIBE Implementation Strategy | yes | Application of the HAI SCRIBE Implementation process as per Volume 2 Section 2 of the submission document |
| | HAI SCRIBE | yes | Application of the HAI SCRIBE Implementation process is as per Volume 2 Section 2 of the submission document |
| SHFN 30 | Infection Control in the built environment design and planning | yes | Refer to Volume 2 Section 2 of the submission document |
| | Access Audit Survey Toolkit V1 | no | This Access Audit Survey Toolkit applies to existing facilities and aims to help all Healthcare Providers surveys the accessibility of their existing properties to assess whether they meet the requirements of Section 21 of the Disability Discrimination Act 1995. The new facilities will comply with the requirements of the Disability Discrimination Act 1995. |
| | Access Audit Checklist V1 | no | This Access Audit Survey Checklist applies to existing facilities and aims to help all Healthcare Providers surveys the accessibility of their existing properties to assess whether they meet the requirements of Section 21 of the Disability Discrimination Act 1995.. |
| | Fully accessible Toilets | yes | Accessible WCs comply with HBN 00-02 Sanitary Spaces which exceeds the requirements of the Scottish Building Regulations. |
| | SHFN 14 Disability Access | yes | As per sections 5.7.7 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Sections 2.1, 2.3-2.9, 2.13, 2.15, 2.16, 2.17 of the submission document |
| | SHFN Access Audits of primary healthcare facilities | yes | As per sections 5.7.7 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Sections 2.1, 2.3-2.9, 2.13, 2.15, 2.16, 2.17 of the submission document |
| SFPN 3 | Escape bed lifts Version 2 | yes | Volume 2 Section 2.10 Fire Strategy report takes cognizance of the document |
| SFPN 4 | Hospital main kitchens Version 2 | yes | Volume 2 Section 2.10 Fire Strategy report takes cognizance of the document |

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| Document | Title | Proposals Comply? (Yes/No) | Compliance Narrative (How compliance is being Achieved) |
|---|---|---|---|
| SFPN 5 | Commercial enterprises on hospital premises Version 2 | yes | Compliance is shown within Volume 2 Section 2.10 Fire Strategy report together with those areas where fire engineering has been used wherever beneficial to meet, or surpass, the minimum fire safety performance standards contained in the document. |
| HBN 04-01 | Adult in-patient Facilities | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 00-04 | Common activity spaces: circulation areas | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 15 – 03 | Hospital helipads | yes | Refer to Volume 2 Section 2.10 Fire Strategy report takes cognizance of the document. Structural design has been undertaken in accordance with the HBN and the particular documentation referenced therein. |
| SHTM 00 | Scottish Health Technical memorandum 00: Best practice guidance for healthcare engineering | yes | Refer to the relevant Design Strategies and Specifications for further details |
| SHTM 2005 | Building management Systems Part 1 - 4 | yes | Specification for BMS Volume 4 Section 4.44 describes the arrangement of the Building Management System |
| HTM 06-01 Part A | Part A Elec Services Supply and distribution | yes | Refer to Design Strategies for Electrical services systems Volume 3 Sections 3.10, 3.11 & 3.12 and associated specifications Volume 4 Sections 4.34, 4.35 & 4.36 |
| HTM 06-01 Part B | Part B Elec Services Supply and distribution | yes | Refer to Design Strategies for Electrical services systems Volume 3 Sections 3.10, 3.11 & 3.12 and associated specifications Volume 4 Sections 4.34, 4.35 & 4.36 |
| SHTM 06-01 Part A | Part A Elec Services Supply and Distribution | yes | Refer to Design Strategies for Electrical services systems Volume 3 Sections 3.10, 3.11 & 3.12 and associated specifications Volume 4 Sections 4.34, 4.35 & 4.36 |
| SHTM 06-01 Part B | Part B Elec Services Supply and Distribution | yes | Refer to Design Strategies for Electrical services systems Volume 3 Sections 3.10, 3.11 & 3.12 and associated specifications Volume 4 Sections 4.34, 4.35 & 4.36 |
| SHTM 2007 | Scottish Health Technical memorandum 2007 (Part 3 of 4): Validation and verification electrical services: supply and distribution | yes | Refer to Design Strategies for Electrical services systems Volume 3 Sections 3.10, 3.11 & 3.12 and associated specifications Volume 4 Sections 4.34, 4.35 & 4.36 |

| Document | Title | Proposals Comply? (Yes/No) | Compliance Narrative (How compliance is being Achieved) |
|---|---|---|---|
| SHTM 2007 | Scottish Health Technical memorandum 2007 (Part 4 of 4): Validation and verification electrical services: supply and distribution | yes | Refer to Design Strategies for Electrical services systems Volume 3 Sections 3.10, 3.11 & 3.12 and associated specifications Volume 4 Sections 4.34, 4.35 & 4.36 |
| SHTM 2009 | Pneumatic Tube Systems<br>Parts 1 – 2 | yes | Design Strategy for the Pneumatic Tube System Volume 3 Sections 3.17 & 4.45 for further detail |
| SHTM 2010 | Sterilization<br>Parts 1 – 6 | yes | Our design has been informed by the guidance provided insofar as our design has developed. We will continue to progress our design solution with reference to the guidance in these documents |
| SHTM 2011 | Emergency Electrical Services<br>Parts 1 – 4 | yes | Refer to Design Strategy for Electrical services systems Volume 3 and associated specification Volume 4 Section 4.34 |
| SHTM 2014 | Abatement of electrical Interference<br>Parts 1 – 4 | yes | Refer to Design Strategies for Electrical services systems Volume 3 Sections 3.10, 3.11 & 3.12 and associated specifications Volume 4 Sections 4.34, 4.35 & 4.36 |
| SHTM 2015 | Bedhead services | yes | See below |
| | Part 1 Overview and management responsibilities | yes | Refer to Design Strategy for Electrical services systems Volume 3 Section 3.11 & and associated specification Volume 4 Section 4.35 |
| | Part 2 Design considerations | yes | Refer to Design Strategy for Electrical services systems Volume 3 Section 3.11 & and associated specification Volume 4 Section 4.35 |
| | SHTM 2015 forms | yes | These will be completed at the appropriate stage of design/construction |
| SHTM 2020 | Electrical safety code for low voltage systems | yes | See below |
| | Volume 1 Operational management | yes | Refer to Design Strategy for Electrical services systems Volume 3 Section 3.11 and associated specification Volume 4 Section 4.35 |
| | SHTM Volume 1 forms | yes | These will be completed at the appropriate stage of design/construction |
| | SHTM Volume 2 forms | yes | These will be completed at the appropriate stage of design/construction |
| SHTM 2021 | Electrical safety code for high voltage systems | yes | See below |
| | Part 1 Overview and management responsibilities | yes | Refer to Design Strategy for Electrical services systems Volume 3 Section 3.10 and associated specification Volume 4 Section 4.34 |
| | Part 2 Operational Management | yes | Refer to Design Strategy for Electrical services systems Volume 3 Section 3.10 and associated specification Volume 4 Section 4.34 |

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| Document | Title | Proposals Comply? (Yes/No) | Compliance Narrative (How compliance is being Achieved) |
|---|---|---|---|
| | SHTM 2021 forms | yes | These will be completed at the appropriate stage of design/construction |
| HTM 02-01 Part A | Medical gas pipeline systems : Part A | yes | Refer to Design Strategy Volume 3 Section 3.16 for further detail |
| HTM 02 01 Part B | Medical gas pipeline systems : Part B | yes | Refer to Design Strategy Volume 3 Section 3.16 for further detail |
| SHTM 02-01 Part A | Medical gas pipeline systems : Part A | yes | Refer to Design Strategy Volume 3 Section 3.16 for further detail |
| SHTM 02-01 Part B | Medical gas pipeline systems : Part B | yes | Refer to Design Strategy Volume 3 Section 3.16 for further detail |
| SHTM 2022 March 2004 | Supp 1 Dental compressed air and vacuum systems | yes | Design Strategy Volume 3 Section 3.16 describes this |
| | SHTM 2022 forms | yes | These will be completed at the appropriate stage of design/construction |
| SHTM 2003 | Access and accommodation for engineering services | yes | The arrangement of engineering services in ceiling voids, risers and plantrooms follows the principles set down in the HTM. Refer to plantroom layouts on drawings contained in Volume 2 Section 2.23 and Design Strategy for Plant Replacement Volume 3 Section 3.23 |
| | Part 1 Overview and management responsibilities | yes | The arrangement of engineering services in ceiling voids, risers and plantrooms follows the principles set down in the HTM. Refer to plantroom layouts on drawings contained in Volume 2 Section 2.23 and Design Strategy for Plant Replacement Volume 3 Section 3.23 |
| | Part 2 Good practice guide | yes | The arrangement of engineering services in ceiling voids, risers and plantrooms follows the principles set down in the HTM. Refer to plantroom layouts on drawings contained in Volume 2 Section 2.23 and Design Strategy for Plant Replacement Volume 3 Section 3.23 |
| SHTM 2024 | Lifts | yes | See below |
| | Part 1 Overview and management responsibilities | yes | Lifts will be provided to meet Health Services standards HTM & SHTM documentation |
| | Part 2 Design considerations | yes | Lifts will be provided to meet Health Services standards HTM & SHTM design and documentation. |

| Document | Title | Proposals Comply? (Yes/No) | Compliance Narrative (How compliance is being Achieved) |
|---|---|---|---|
| | Part 3 Validation and verification | yes | Validation & verification will be done in accordance with SHTM and European standard code requirements. |
| | Part 4 Operational management | yes | 24 hour x 7 day fully comprehensive maintenance cover in accordance SHTM to be confirmed with the Board. |
| | SHTM 2024 forms | yes | SHTM 2024 documentation will be provided confirming the equipment for lifts & escalators proposed will be in compliance. |
| HTM 03-01 | Specialised ventilation for Healthcare Premises Part B | yes | Ventilation will be provided to meet clinical, process and environmental requirements. Refer to Design Strategy for Ventilation Volume 3 Section 3.9 and Specification Volume 4 Section 4.33. |
| HTM 03-01 Part B | Specialised ventilation for Healthcare Premises Part B | yes | Ventilation will be provided to meet clinical, process and environmental requirements. Refer to Design Strategy for Ventilation Volume 3 Section 3.9 and Specification Volume 4 Section 4.33. |
| HTM 03-01 Part A | Specialised ventilation for Healthcare Premises Part A | yes | Ventilation will be provided to meet clinical, process and environmental requirements. Refer to Design Strategy for Ventilation Volume 3 Section 3.9 and Specification Volume 4 Section 4.33. However, the same comments apply as for SHTM03-01 |
| SHTM 03-01 Part A | Specialised ventilation for Healthcare Premises Part A | yes | Ventilation will be provided to meet clinical, process and environmental requirements. Refer to Design Strategy for Ventilation Volume 3 Section 3.9 and Specification Volume 4 Section 4.33. However, the following amendments are proposed:- Clause 3.10 recommends limiting supply temperatures to 7°C below room temperature. The limitation on supply temperature may be exceeded in order to provide economic plant and distribution sizes. However, terminals will be selected to avoid draughts and resulting discomfort. Clause 7.187 suggests limiting plantroom temperatures to 32°C. If plantroom temperatures are to be limited to 32°C, then in the majority of cases this would be impractical by mechanical ventilation alone, and would require the provision of cooling. Therefore, plantrooms will be ventilated to maintain suitable operating temperatures for equipment installed. Clause 5.6 suggests that in spaces requiring air change rates in excess of 15 per hour, circular diffusers should be used. Circular diffusers may not be the most appropriate pattern to select, alternatives being swirl, perforated plate, etc. Diffusers will be selected to achieve draught-free conditions. |

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| Document | Title | Proposals Comply? (Yes/No) | Compliance Narrative (How compliance is being Achieved) |
|---|---|---|---|
| SHTM 03-01 Part B | Specialised ventilation for Healthcare Premises Part B | yes | Ventilation will be provided to meet clinical, process and environmental requirements. Refer to Design Strategy for Ventilation Volume 3 Section 3.9 and Specification Volume 4 Section 4.33. |
| | SHTM 2025 forms | yes | Ventilation will be provided to meet clinical, process and environmental requirements. Refer to Design Strategy for Ventilation Volume 3 Section 3.9 and Specification Volume 4 Section 4.33. However the same comments apply as for SHTM 03-01. |
| SHTM 2027 | Hot and cold water supply, storage and mains services | yes | Hot and cold water services are described in Design Strategy for Hot and Cold Water Services Volume 3 Section 3.7 and specification sections Volume 4 Sections 4.27, 4.28 & 4.51. Refer to comments made for SHTM 04-01 part A |
| | Part 1 Overview and management responsibilities | yes | Hot and cold water services are described in Design Strategy for Hot and Cold Water Services Volume 3 Section 3.7 and specification sections Volume 4 Sections 4.27, 4.28 & 4.51. Refer to comments made for SHTM 04-01 part A |
| | Part 4 Validation and verification | yes | Hot and cold water services are described in Design Strategy for Hot and Cold Water Services Volume 3 Section 3.7 and specification sections Volume 4 Sections 4.27, 4.28 & 4.51. Refer to comments made for SHTM 04-01 part A |
| HTM 04-01 Part A | Control of Legionella…drinking systems Part A | yes | Hot and cold water services are described in Design Strategy for Hot and Cold Water Services Volume 3 Section 3.7 and specification sections Volume 4 Sections 4.27, 4.28 & 4.51. Refer to comments made for SHTM 04-01 part A |
| HTM 04-01 Part B | Control of Legionella…drinking systems Part B | yes | Hot and cold water services are described in Design Strategy for Hot and Cold Water Services Volume 3 Section 3.7 and specification sections Volume 4 Sections 4.27, 4.28 & 4.51. Refer to comments made for SHTM 04-01 part A |

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| Document | Title | Proposals Comply? (Yes/No) | Compliance Narrative (How compliance is being Achieved) |
|---|---|---|---|
| SHTM 04-01 Part A | Control of Legionella…drinking systems Part A | yes | Hot and cold water services are described in Design Strategy for Hot and Cold Water Services Volume 3 Section 3.7 and specification sections Volume 4 Sections 4.27, 4.28 & 4.51. However, the following adjustments are proposed:- Fig 2 shows A small CWS break cistern serving each cold water system, prior to the main filtration plant will be provided. However, a secondary break cistern before each bulk storage cistern will not be provided. At least two equally sized bulk storage cisterns with a total of 100% of the design capacity in each location have been provided. The recommended quantities of water storage given in Table A1 are considered excessive for modern hospitals. Therefore, reduced levels have been used. Refer to Design Strategy for Hot and Cold Water Services Volume 3 Section 3.7 for further details. Clauses 9.13/9.23 recommend providing peak continuous hot water output for 20 minutes. Following the recommendations of the SHTM, results in excessive storage capacity, which can increase energy consumption and increase the risk of Legionella, the HTM approach is also outdated and relates back to when there was high usage of baths at set periods of the day. Modern hospitals predominantly use showers, which use less water and have a much higher diversity factor. This approach will not be followed, but diversity will be considered using the principles of BS 6700. |
| SHTM 04-01 Part B | Control of Legionella…drinking systems Part B | yes | Hot and cold water services are described in Design Strategy for Hot and Cold Water Services Volume 3 Section 3.7 and specification sections Volume 4 Sections 4.27, 4.28 & 4.51. |
| SHTM 2030 | Washer disinfectors | yes | No significant service provided as CSSD services provided from central support but our response complies with equipment list requirements |
| | Part 1 Design considerations | yes | No significant service provided as CSSD services provided from central support but our response complies with equipment list requirements |
| | Part 2 Operational management | yes | No significant service provided as CSSD services provided from central support but our response complies with equipment list requirements |
| | Part 3 Validation and verification | yes | No significant service provided as CSSD services provided from central support but our response complies with equipment list requirements |
| SHFN | Access Audit Survey Toolkit V1 | no | Repeat item – see narrative above |
| SHFN | Access Audit checklist V1 | no | Repeat item – see narrative above |

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| Document | Title | Proposals Comply? (Yes/No) | Compliance Narrative (How compliance is being Achieved) |
|---|---|---|---|
| SHFN | Fully Accessible Toilets | yes | Repeat item – see narrative above |
| SHFN 14 | Disability Access | yes | Repeat item – see narrative above |
| SHFN | Access audits of primary healthcare facilities | yes | Repeat item – see narrative above |
| SFPN 3 | Escape bed lifts Version 2 | yes | Repeat item – see narrative above |
| SFPN 4 | Hospital main kitchens Version 2 | yes | Repeat item – see narrative above |
| SFPN 5 | Commercial enterprises on hospital premises Version 2 | yes | Repeat item – see narrative above |
| HBN 00-02 | Sanitary spaces | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Sections 2of the submission document |
| HBN 04-01 | Adult in-patient Facilities | yes | Repeat item – see narrative above |
| HBN 00*-04 | Common activity spaces: circulation areas | yes | Repeat item – see narrative above |
| HBN 15 – 03 | Hospital helipads | yes | Repeat item – see narrative above |
| SHTM 00 | Scottish Health Technical Memorandum 00: Best practice guidance for healthcare engineering | yes | Repeat item – see narrative above |
| SHTM 2005 | Building Management Systems: Parts 1 – 4 (incl) | yes | Repeat item – see narrative above |
| HTM 06-01 Part B | Part B Elec Services Supply and Distribution | yes | Repeat item – see narrative above |
| HTM 06-01 Part A | Part A Elec Services Supply and Distribution | yes | Repeat item – see narrative above |
| SHTM 2007 | Scottish Health Technical memorandum 2007 (Part 3 of 4): Validation and verification Electrical services : supply and distribution | yes | Repeat item – see narrative above |
| SHTM 2007 | Scottish Health Technical memorandum 2007 (Part 4 of 4): Validation and verification Electrical services : supply and distribution | yes | Repeat item – see narrative above |
| SHTM 2009 | Pneumatic Tube Systems: Parts 1 – 2 (incl) | yes | Repeat item – see narrative above |
| SHTM 2010 | Sterilization: Parts 1 – 6 (incl) | yes | Repeat item – see narrative above |
| SHTM 2011 | Emergency electrical Services: Parts 1 – 4 (incl) | yes | Repeat item – see narrative above |
| SHTM 2014 | Abatement of Electrical Interference: Parts 1 – 4 (incl) | yes | Repeat item – see narrative above |

| Document | Title | Proposals Comply? (Yes/No) | Compliance Narrative (How compliance is being Achieved) |
|---|---|---|---|
| SHTN 2015 | Bedhead services | yes | Repeat item – see narrative above |
| | Part 1 Overview and management responsibilities | yes | Repeat item – see narrative above |
| | Part 2 Design considerations | yes | Repeat item – see narrative above |
| | SHTM 2015 forms | yes | Repeat item – see narrative above |
| SHTM 2020 | Electrical Safety code for low voltage systems | yes | Repeat item – see narrative above |
| | Volume 1 Operational management | yes | Repeat item – see narrative above |
| | SHTM Volume 1 forms | yes | Repeat item – see narrative above |
| | HTM Volume 2 forms | yes | Refer to Design Strategy for Electrical services systems Volume 3 Section 3.11 and associated specification Volume 4 Section 4.35 |
| SHTM 2031 | Clean steam for sterilisation | yes | No significant service provided as CSSD services provided from central support but our response complies with equipment list requirements |
| SHTM 2035 | Mains signaling | yes | See below |
| | Part 1 Overview and management responsibilities | yes | This will apply on where relevant and is now generally replaced by IT systems integration |
| | Part 2 Design consideration | yes | This will apply on where relevant and is now generally replaced by IT systems integration |
| | Part 3 Validation and verification | yes | This will apply on where relevant and is now generally replaced by IT systems integration |
| SHTM 2040 | The control of legionellae in healthcare premises – a code of practice | yes | See below |
| | Part 1 Overview and management responsibilities | yes | Ventilation will be provided to meet clinical, process and environmental requirements. Refer to Design Strategy for Ventilation Volume 3 Section 3.9 and Specification Volume 4 Section 4.33. |
| | Part 4 Validation and verification | yes | Ventilation will be provided to meet clinical, process and environmental requirements. Refer to Design Strategy for Ventilation Volume 3 Section 3.9 and Specification Volume 4 Section 4.33. |
| | Part 5 Good practice guide | yes | Ventilation will be provided to meet clinical, process and environmental requirements. Refer to Design Strategy for Ventilation Volume 3 Section 3.9 and Specification Volume 4 Section 4.33. |

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| Document | Title | Proposals Comply? (Yes/No) | Compliance Narrative (How compliance is being Achieved) |
|---|---|---|---|
| | Part 6 supplementary guidance applicable to intermittently used Healthcare premises | yes | Ventilation will be provided to meet clinical, process and environmental requirements. Refer to Design Strategy for Ventilation Volume 3 Section 3.9 and Specification Volume 4 Section 4.33. |
| | SHTM 2040 forms | yes | These will be completed at the appropriate stage of design/construction |
| HTM 08-01 | Acoustics | yes | The design of the structure complies with the HTM stipulated response factors for induced vibration for all hospital areas. Refer to Acoustic report Volume 3 Section 3.4 |
| MEIGaN | Medical electrical Installation Guidance Notes (MEIGaN) | yes | Refer to Specification for Electrical Power Supplies Volume 4 Section 4.35 for details |
| SHTM 54 | User Manual | yes | Will be provided if bid proposals are taken forward |
| SHTM 55 | Windows | yes | Compliance is shown as specification requires compliance with SHTM 55 as per Volume 4 Section 4.12 of the bid submission. |
| SHTM 56 | Partitions | yes | Compliance is shown as specification requires compliance with SHTM 56 as per Volume 4 Section 4.14 of the bid submission. |
| SHTM 57 | Internal glazing | yes | Compliance is shown as specification requires compliance with SHTM 57 as per Volume 4 Section 4.14 of the bid submission. |
| SHTM 58 | Internal doorsets | yes | Compliance is shown as specification requires compliance with SHTM 58 as per Volume 4 Section 4.15 of the bid submission. |
| SHTM 59 | Ironmongery | yes | Compliance is shown as specification requires compliance with SHTM 59 as per Volume 4 Section 4.15 of the bid submission. |
| SHTM 60 | Ceilings | yes | Compliance is shown as specification requires compliance with SHTM 60 as per Volume 4 Section 4.18 of the bid submission. |
| SHTM 61 | Flooring | yes | Compliance is shown as specification requires compliance with SHTM 61 as per Volume 4 Section 4.17 of the bid submission. |
| SHTM 62 | Demountable storage systems | yes | Compliance is shown as specification requires compliance with SHTM 62 as per Volume 4 Section 4.19 of the bid submission. |
| SHTM 63 | Fitted storage systems | yes | Compliance is shown as specification requires compliance with SHTM 63 as per Volume 4 Section 4.19 of the bid submission. |
| SHTM 64 | Sanitary assemblies | yes | Compliance is shown as specification requires compliance with SHTM 64 as per Volume 4 Section 4.23 of the bid submission. |

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| Document | Title | Proposals Comply? (Yes/No) | Compliance Narrative (How compliance is being Achieved) |
|---|---|---|---|
| SHTM 66 | Cubicle curtain track | yes | Compliance is shown as specification requires compliance with SHTM 66 as per Volume 4 Section 4 of the bid submission. |
| SHTM 67 | Laboratory fitting out systems | yes | Compliance is shown as specification requires compliance with SHTM 67 as per Volume 4 Section 4 of the bid submission. |
| SHTM 68 | Duct and Panel assemblies | yes | Compliance is shown as specification requires compliance with SHTM 68 as per Volume 4 Section 4 of the bid submission. |
| SHTM 69 | Protection | yes | Compliance is shown as specification requires compliance with SHTM 69 as per Volume 4 Section 4 of the bid submission. |
| SHTM 87 | Textiles & Furniture | yes | Compliance is shown as specification requires compliance with SHTM 87 as per Volume 4 Section 4.19 of the bid submission. |

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# NHS Guidance Documentation

In relation to the architectural design, structural design and services design of the new buildings comprised in the Works, the documents listed in the following Table 3 set out that guidance which the Board considers to be guidance. Brookfield response to each document is set out in the Proposals Comply/Compliance Narrative columns as requested in the ITSFB.

Our design has been informed by the guidance provided in SHBNs and HBNs (and other docs) insofar as our design has developed. We will continue to progress our design solution with reference to the guidance in these documents.

Table 3 (extract from ITPD Vol 2/1 Section 5.1.3) – ITSFB Clarification Appendix 1

| Document | Title | Proposals Comply (Yes/No) | Compliance Narrative (How compliance is being achieved) |
|---|---|---|---|
| | NHSSCOTLAND National Cleaning Services Specification | yes | Our design has been informed by the guidance provided insofar as our design has developed. We will continue to progress our design solution with reference to the guidance in these documents |
| SFPN 6 | The prevention and control of deliberate fire-raising in NHS Scotland healthcare premises Version 3 | yes | This is largely an operational management issue. However where relevant, Volume 2 Section 2.10 Fire Strategy report takes cognizance of the document |
| SFPN 10 | Laboratories on hospital premises | yes | Volume 2 Section 2.10 Fire Strategy report takes cognizance of the document |
| SFPN 11 | Reducing unwanted fire signals in healthcare premises | yes | This is largely an operational management issue. However where relevant, Volume 2 Section 2.10 Fire Strategy report takes cognisance of the document |
| SHGN | Magnetic Resonance Imaging | yes | Our design has been informed by the guidance provided insofar as our design has developed. We will continue to progress our design solution with reference to the guidance in these documents |
| SHGN | “Safe” hot water and surface temperatures | yes | All sanitary fitting accessed by the public and patients will be provided with TMV3 blending valves. Surface temperatures of heat emitters will be either specifically low surface temperature or out of reach of occupants, e.g at high level. |
| SHGN | Static discharges | yes | Refer to Specification for Electrical Power Supplies Volume 4 Section 4.35 |
| SHGN | Structured cabling for IT systems | yes | Refer to Specification Volume 4 Section 4.42 |
| SHTN 2 | Domestic Hot and Cold Water Systems for Scottish Health Care Premises | yes | Hot and cold water services are described in Design Strategy for Hot and Cold Water Services Volume 3 Section 3.7 and specification sections Volume 4 Sections 4.27, 4.28 & 4.51. |
| SHTN 4 | General Purpose Estates and Facilities Model Safety Permit-to-Work system | yes | We intend to comply with this system where we are required work within the existing estates and facilities. |
| SHTN 5 | The Operation and Management of Emergency Electrical Generators in Scottish Healthcare Premises. | yes | Refer to Design Strategy for Mains Power Distribution Volume 3 Section 3.10 |
| SHTN 6 | The Safe Operation and Maintenance of Thermostatic Mixing Valves | yes | All sanitary fitting accessed by the public and patients will be provided with TMV3 blending valves. |

| Document | Title | Proposals Comply (Yes/No) | Compliance Narrative (How compliance is being achieved) |
|---|---|---|---|
| SHPN 03 | General Design Guidance | yes | Our design has been informed by the guidance provided insofar as our design has developed. We will continue to progress our design solution with reference to the guidance in these documents |
| SHPN 06 Part 1 | Facilities for diagnostic imaging and interventional radiology | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| SHPN 08 | Facilities for rehabilitation services | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| SHPN 13 Part 2 | Decontamination Facilities: Local Decontamination Unit | yes | Our design has been informed by the guidance provided insofar as our design has developed. We will continue to progress our design solution with reference to the guidance in these documents |
| SHPN 20 | Facilities for mortuary and post mortem room services | yes | Our design has been informed by the guidance provided insofar as our design has developed. We will continue to progress our design solution with reference to the guidance in these documents |
| SHPN 22 | Accident and emergency facilities for adults and children | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2of the submission document |
| SHPN 27 | Intensive care unit | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2of the submission document |
| SHPN 28 | Facilities for cardiac services | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2of the submission document |
| SHPN 35 | Accommodation for people with mental illness | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 23 of the submission document |
| SHPN 52 | Accommodation for day care: Day surgery unit | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2of the submission document |
| SHPN 52 | Accommodation for day care: Endoscopy unit | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2of the submission document |
| SHPN 52 | Accommodation for day care: Medical investigation and treatment unit | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2of the submission document |
| SHPN 54 | Facilities for cancer care centres – design and briefing guide | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2of the submission document |
| SHPN 06 Part 2 | Facilities for diagnostic Imaging | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2of the submission document |

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| Document | Title | Proposals Comply (Yes/No) | Compliance Narrative (How compliance is being achieved) |
|---|---|---|---|
| SHPN 23 | Hospital Accommodation for Children and Young People | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2of the submission document |
| SHPN 28 | Facilities for Cardiac Services | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2of the submission document |
| SHPN 57 | Facilities for Critical Care | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2of the submission document |
| | Wayfinding: Effective Wayfinding and Signing Systems guidance for healthcare | yes | As per sections 7.15.1 - 7.15.11 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 3 Section 3.2 of the submission document |
| | Handover checklist for buildings | yes | We intent to comply with the handover checklist |
| HBN 04 Supp | Isolation facilities in acute settings | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 06 | Facilities for diagnostic imaging and interventional radiology | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 06 Vol 2 | PACS and specialist imaging | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 06 Vol 3 | Extremity and open MRI | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 08 | Facilities and rehabilitation services | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 10 | Catering department | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 12 | Out-patients department | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 22 | Accident and emergency facilities for adults and children | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 23 of the submission document |
| HBN 23 | Hospital accommodation for children and young people | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2of the submission document |
| HBN 26 | Operating Departments – Facilities for Surgical Procedures | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 23 of the submission document |

| Document | Title | Proposals Comply (Yes/No) | Compliance Narrative (How compliance is being achieved) |
|---|---|---|---|
| HBN 28 | Facilities for Cardiac Services | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 23 of the submission document |
| HBN 29 | Accommodation for pharmaceutical services | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 37 | In-patient facilities for older people | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 40 Vol 1 | Common activity spaces: public areas | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 40 Vol 2 | Common Activity spaces: treatment areas | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 40 Vol 3 | Common activity spaces: staff areas | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 45 | External works for health buildings | yes | As per Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 51 | Accommodation at the main entrance of a District General Hospital | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 52 Vol 1 | Accommodation for day care: Day surgery unit | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 52 Vol 1 Supp 1 | Review of schedules of accommodation | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 52 Vol 3 | Accommodation for day care: Medical investigation and treatment unit | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 54 | Facilities for cancer care centres | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 57 | Facilities for critical care | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 00-02 | Sanitary spaces | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 00 - 07 | Resilience planning for the healthcare estate | yes | As per Volume 2 Section 2 of the submission document. |

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| Document | Title | Proposals Comply (Yes/No) | Compliance Narrative (How compliance is being achieved) |
|---|---|---|---|
| HBN 07 - 01 | Satellite dialysis units | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 07 - 02 | Main renal units | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 09 - 02 | Maternity care facilities | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HBN 14 - 01 | Pharmacy and radiopharmacy | yes | As per sections 5.1.1.7 & 5.2.6 of Volume 2/1 Employer's Requirements (Hospitals) and as per Volume 2 Section 2 of the submission document |
| HFN 05 | Design against crime: a strategic approach to hospital planning (now achieved) | yes | Dates back to 1994, see response to secure by design |
| NHS Estates Improving the patient experience | Friendly healthcare environments for children and young people | yes | Compliance is shown as per Volume 2 Sections 2.1, 2.7, 2.8, 2.9, 2.14, 2.16, 3.1, 3.2, 3.3 of the submission document. |
| NHS Estates Improving the patient experience | Welcoming Entrances and reception areas | yes | Compliance is shown as per Volume 2 Sections 2.1, 2.3, 2.11, 2.14, 2.15, 2.16, 3.1, 3.2 of the submission document. |
| NHS Estates Improving the patient experience | The Art of Good Health : Using visual arts in healthcare | yes | Compliance is shown as per Volume 2 Sections 2.16 and 3.3 of the submission document. |
| NHS Estates Improving the patient experience | The Art of Good Health : A practical guide | yes | Compliance is shown as per Volume 2 Sections 2.16 and 3.3 of the submission document. |

Table 3 – NHS Guidance Documentation

Brookfield

# Additional Guidance

**Submission Reference**

7.2 Additional Guidance

**Submission Response**

Further to the requirement noted in Section 2.2, that the Contractor shall comply with all Law and Consents, and the requirements in relation to NHS Mandatory Documentation and NHS Guidance Documentation above, the Contractor shall also comply with the standards and documents listed below. Brookfield response to each document is set out in the Proposals Comply/Compliance Narrative columns as requested in the ITSFB.

Our design has been informed by the guidance provided in SHBNs and HBNs (and other docs) insofar as our design has developed. We will continue to progress our design solution with reference to the guidance in these documents.

| Document / Standard | Proposals Comply (Yes/No) | Compliance Narrative (How compliance is being achieved) |
|---|---|---|
| Health and Safety Legislation, including construction (Design and Management) Regulations 2007 | yes | Risk assessments undertaken on civil and structural design to date. Compliance with this regulation is a statutory obligation. |
| The Technical Standards complying with the Building Standards (Scotland) Regulations 1990 as amended by all subsequent Amendment Regulations | no | These Regulations were made under the previous Building (Scotland) Act 1959 & 1970 now withdrawn and no longer applicable; they have been replaced by regulations made under the Building (Scotland) Act 2003. Compliance comments are referred to under the appropriate section later in this document. |
| Disability Discrimination Act 1995 | yes | The 1995 Disability Discrimination Act protects disabled people from discrimination in access to services, facilities and goods, as well as in education and employment. Compliance is shown by taking full consideration of SHFN 14 Disability Access, SHFN 20 Access Audits of primary healthcare facilities and BS 8300:2001. |
| Current British Standards, European Standards, and Codes of Practice, as appropriate | yes | Volume 2 Section 2.10 Fire Strategy report takes cognisance of the requirements of the relevant Current British Standards, European Standards, and Codes of Practice in relation to fire.<br>Civil and Structural design has been carried out in accordance with relevant standards as scheduled in Volume 2 Section 3.26 of the ITPD submission. |
| Strathclyde Fire Brigade and the Glasgow City Council's Fire Officer requirements | yes | Volume 2 Section 2.10 Fire Strategy report takes cognizance of the requirements of the fire and local authority |
| The Board's Approved Codes of Practice, Procedure and Policy documents as listed in Appendix G | yes | We will work with the Board to ensure our bid complies with all Approved Codes of Practice, Procedure and Policy documents as listed in Appendix G as our detailed design develops |
| Control of Substances Hazardous to Health; | yes | This is a mandatory regulation and compliance is achieved by our proposed solutions being reviewed and commented on by our Health and Safety advisors |
| Health Department Letters (or Management Executive Letters) as appropriate published he SEHD; | yes | The Scottish Government Health Directorate issues a wide range of guidance on all matters pertaining to the delivery of healthcare in Scotland. Where these apply to capital developments, such as CEL 48 (2008), which refers to single room accommodation and bed spacing, Brookfield will, as in the case of CEL 48 (2008) comply with the guidance. |

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| Document / Standard | Proposals Comply (Yes/No) | Compliance Narrative (How compliance is being achieved) |
|---|---|---|
| NHS QIS (Quality Improvement Scotland) 2003. | yes | NHS Quality Improvement Scotland helps NHS Boards improve patient care by; providing advice, guidance and setting standards; supporting implementation and improvement; assessing, measuring and reporting the performance of NHS Board's. NHS Quality Improvement Scotland also have central responsibility for patient safety and clinical governance across NHSScotland. It is the umbrella organisation for the Scottish Health Council which monitors NHS Boards to make sure they are involving patients and the public in decisions about services, and taking account of their views; and the Scottish Intercollegiate Guidelines Network (SIGN) promoting consistence in clinical practice and clinical outcome. Its guidelines contain recommendations for effective practice based on current evidence.<br>The Healthcare Environment Inspectorate, whose remit is to inspect Scottish hospitals, ensuring the highest standards of infection prevention and cleanliness.<br>NHS Quality Improvement Scotland have issued a wide range of advice and guidance on clinical operational issues. Compliance with NHS QIS will be achieved by identifying which documents published by MHS QIS to this project and integrating the requirements where these are design specific. |
| NHS Model Engineering Specifications; | yes | We will work with the Board to ensure our bid complies with all Board identified requirements as our detailed design develops |
| The Building (Scotland) Act 2003 | yes | Compliance is shown within Volume 2 Section 2.10 Fire Strategy report together with those areas where fire engineering has been used wherever beneficial to meet, or surpass, the minimum fire safety performance standards contained in the document. Other Parts of the Act will also be complied with |
| The Building (Scotland) Regulations 2004 | yes | Compliance is shown within Volume 2 Section 2.10 Fire Strategy report together with those areas where fire engineering has been used wherever beneficial to meet, or surpass, the minimum fire safety performance standards contained in the document. Other Parts of the Regulations will also be complied with |
| Requirements of the utilities companies | yes | We will work with the Board to ensure our bid complies with all Board identified requirements as our detailed design develops |
| Building Research Establishment Digest Recommendations; | yes | Our design has been informed by the guidance provided insofar as our design has developed. We will continue to progress our design solution with reference to the guidance in these documents |
| Local Bye-Law and Regulations; | yes | Our design has been informed by the guidance provided insofar as our design has developed. We will continue to progress our design solution with reference to the guidance in these documents |

Brookfield

| Document / Standard | Proposals Comply (Yes/No) | Compliance Narrative (How compliance is being achieved) |
|---|---|---|
| Scottish Centre for Infection and Environmental health guidance / recommendations | no | The Scottish Centre for Infection and Environmental Health (SCIEH) was a multi-disciplinary organisation comprising expertise from Environmental Health, Clinical Infectious diseases, Information Sciences, Public Health Medicine, Nursing, Social Sciences and Veterinary Public Health.<br>SCIEH was responsible for the national surveillance of communicable diseases and environmental health hazards and the provision of expert support on infection and environmental health to Health Boards and local authorities in Scotland.<br>The Centre offered current and topical support within the field of public health to a wide range of professional bodies representing medical, veterinary, nursing and environmental health professionals. It was replaced by Health Protection Scotland (HPS). HPS provides a wide range of guidance on infection control to hospitals and the public at large. Brookfield will agree with the Board which guidelines apply to capital developments, and will comply as appropriate. |
| All other bodies and authorities having jurisdiction; | no | It will be necessary to identify these specific bodies and authorities with the Board and Brookfield will comply with the relevant guidance and requirements. |
| Secure by Design | yes | Secured by Design is a police initiative to encourage the building industry to adopt crime prevention measures in developing design to assist in reducing the opportunity for crime, creating a safer and more secure environment. The design team will liaise with the relevant Architectural Liaison Officer or Crime Prevention Design Advisor to ensure that the opportunity for crime is designed out during the design process and the proposals comply with the Secured by Design certification requirements. |
| The Ionising Radiations Regulations 1999 (IRR99); | yes | Our design has been informed by the guidance provided insofar as our design has developed. We will continue to progress our design solution with reference to the guidance in these documents |
| The Radioactive Substances Act (1993) | yes | Our design has been informed by the guidance provided insofar as our design has developed. We will continue to progress our design solution with reference to the guidance in these documents |
| Medical and Dental Guidance Notes: A good practice guide on all aspects of ionizing radiation protection in the clinical environment, Institute of Physics and Engineering (IPEM), York, 2002; | yes | Our design has been informed by the guidance provided insofar as our design has developed. We will continue to progress our design solution with reference to the guidance in these documents |
| Various related to the additional security required re use of radioactive materials e.g. IRR99, RSA93, NHS Security Management guidance note 001/2004; | yes | Our design has been informed by the guidance provided insofar as our design has developed. We will continue to progress our design solution with reference to the guidance in these documents |

Brookfield

| Document / Standard | Proposals Comply (Yes/No) | Compliance Narrative (How compliance is being achieved) |
|---|---|---|
| Guidelines for the use of PET-CT in Children (UK PET-CT Advisory Board), British Nuclear Medicine Society (BNMS), London 2008; | yes | Our design has been informed by the guidance provided insofar as our design has developed. We will continue to progress our design solution with reference to the guidance in these documents |
| Healthcare interpretation if IEE Guidance Note 7 (Chapter 10) and IEC 60364-7-710 for Electrical Installations in Medical Locations. Annex to MEIGaN, Leeds, June 2005 | yes | Refer to Specification for Electrical Power Supplies Volume 4 Section 4.35 for details |
| Releasing Time to Care (RTTC): The Productive Ward (NHS Innovations, 2008) | yes | Tribal worked with the NHS Institute of Innovation and Improvement in developing The Productive Ward. Releasing Time to Care is primarily about the organisation and processes on a Ward. The principles of a Well Organised Ward have been applied to our ward design solutions to facilitate patient observation, high levels of patient hygiene with 100% single rooms and en-suite accommodation and efficient delivery of nursing procedures facilitated by functional and ergonomically designed clinical rooms. |
| Delivering Quality & Value, Institute for Modernisation & Improvement; | yes | Delivering Quality and Value is an initiative by the NHS Institute for Innovation and Improvement. By ensuring the NHS is being run as efficiently as possible patients are then given the best opportunity to receive, and benefit from, clinically and cost effective healthcare. The inpatient units have been designed to minimise staff walking distances and to provide a therapeutic environment in which to deliver high levels of clinical care |
| The Internal environment: Evaluation of the King's Fund, Enhancing the Healing Environment Programme (NHS Estates, 2004); | no | The Enhancing the Healing Environment (EHE) programme encourages and enables nurse-led teams to work in partnership with patients to improve the environment in which they deliver care. Our approach during the design development stage will be to adopt the same engagement ethos with clinical users to deliver an enhanced healing environment and to achieve the stakeholder ownership that has been achieved in many of the teams in the King's Fund initiative |
| Lighting and colour for hospital design, Dalke et. AI (NHS Estates, 2004); | no | This is a Department of Health (NHS Estates) guidance document. It covers the visual environment in hospitals and the use of appropriate colour design and lighting needed for contemporary hospital design. |
| The role of hospital design in the recruitment, retention and performance of NHS nurses in England, CABE, July 2004 | yes | This is a report by CABE which provides evidence that well designed hospitals have a significant influence on the performance of nurses and have a positive impact on their recruitment and retention. During the design development stage a CABE review will be carried out to ensure that these requirements are met. Refer to AEDET review score |
| Notes for Guidance on the Clinical Administration of Radiopharmaceuticals and Use of Sealed Radioactive Sources, Administration of Radioactive Substances Advisory Committee (ARSAC); | yes | Our design has been informed by the guidance provided insofar as our design has developed. We will continue to progress our design solution with reference to the guidance in these documents |

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| Document / Standard | Proposals Comply (Yes/No) | Compliance Narrative (How compliance is being achieved) |
|---|---|---|
| Provision of Paediatric Radionuclide Imaging Services, British Nuclear Medicine society (BNMS), London 2003 | yes | The British Nuclear Medicine Society guidance, Provision of Paediatric Radionuclide Imaging Services, provides recommendations including a safe play area and a child friendly imaging area. Our proposal has a dedicated child imaging area that will be designed to be child friendly and age appropriate, and include a safe play area and a child friendly imaging area |
| Published papers on operational radiation safety e.g. Zanzonico P et al, Operational Radiation Safety for PET-CT, SPECT-CT and cyclotron facilities. Health Physics 2008; | no | We are aware of this document. The guidance contained in this document is not relevant to the stage of deign that has been reached so far. We would expect to work closely with your Radiation Protection Advisor during the next stages of the project to apply this guidance as deemed appropriate, and to the satisfaction of you RPA. |
| Standards for Intensive Care Units, A Joint Document for the intensive Care Society and the Intercollegiate Board for Training in Intensive Care Medicine, May 2006 | yes | The Standards for Intensive Care beds pulls together advice from a number of sources and includes a number of recommendations relating to the design of intensive care units. Our proposal exceeds the recommendations providing 100% single beds and the bed areas at 26sqm meet the Society's recommendation of 25.5sqm |
| Leather P, Pygras M, Beale D and Lawrence C. Windows in the Workplace: Sunlight, View and Occupational Stress. Environment and Behaviour 1998; 30:: 739 – 762; | no | This article investigates the direct and indirect effects of windows in the workplace on job satisfaction, intention to quit, and general well-being. The impact of three specific influencing mechanisms are examined: general level of illumination, sunlight penetration, and view. The extent to which these environmental features might moderate the negative consequences of job stress is investigated. The results showed a significant direct effect for sunlight penetration on job satisfaction, intention to quit, and general well-being. A view of natural elements (i.e., trees, vegetation, plants, and foliage) was found to buffer the negative impact of job stress on intention to quit and to have a similar, albeit marginal, effect on general well-being. No effects for general level of illumination were found |
| Leslie RP. Capturing the Daylight Dividend in Buildings: Why and How? Building and Environment 2003; 38: 381 – 385 | no | This article reviews the literature on day lighting, the design of buildings to use light from the Sun. Day lighting supports human health and activities and reduces energy demand. Current research suggests health, productivity, and economic benefits from day lighting. Good day lighting techniques include configuring buildings properly, elongating buildings along an east–west axis, locating critical visual tasks near the building's perimeter. |
| Heerwagen J. Green Buildings, Organizational Success and Occupant Productivity. Building Research and Information 2000:; 28: 353 – 367; | yes | Our design has been informed by the guidance provided insofar as our design has developed. We will continue to progress our design solution with reference to the guidance in these documents |
| National Overview – Adult Renal Services (March 2003) NHS Quality Improvements Scotland; | yes | Our design has been informed by the guidance provided insofar as our design has developed. We will continue to progress our design solution with reference to the guidance in these documents |

Brookfield

| Document / Standard | Proposals Comply (Yes/No) | Compliance Narrative (How compliance is being achieved) |
|---|---|---|
| Adult Renal Services (Feb 2002) Clinical Standards Board for Scotland | no | This document applies to clinical standards and processes and does not contain any relevant guidance on design issues |
| Treatments of Adults & Children with Renal Failure – Standards & Audit Measures 3rd Edition, Renal Association (August 2002) | no | This document applies to clinical standards and processes and does not contain any relevant guidance on design issues |
| The higher European Pharmacolela (EP) XV1 Standard : Water for diluting concentrated Haemodialysis solutions'; | yes | Our design has been informed by the guidance provided insofar as our design has developed. We will continue to progress our design solution with reference to the guidance in these documents |
| ISO 13959: 'Water for Haemodialysis and related therapies' or AAMI (Association for the Advancement of Medical Instrumentation) standards and | yes | Our design has been informed by the guidance provided insofar as our design has developed. We will continue to progress our design solution with reference to the guidance in these documents |
| European Renal Association best Practice Guidance – 4th Edition 2007. NB New guidelines are due in 2009 and should be considered at that time. | no | Unable to locate this document. However, once released, it will be reviewed in conjunction with the Board to determine the relevant aspects at that time |

**AGREEMENT**

between

**GREATER GLASGOW HEALTH BOARD** of Dalian House, 350 St Vincent Street, Glasgow G3 8YZ ("the *Employer*"); and

**BROOKFIELD CONSTRUCTION (UK) LIMITED** having its principal place of business at 23 Hanover Square, London, W1S 1JB (the "*Contractor*").

WHEREAS: -

The *Employer* wishes to have the *Contractor* Provide the Works for the New South Glasgow Hospital comprising management and delivery of design and construction services as follows: -

| Stage | Heading | Outline Activities |
|---|---|---|
| Stage 1 | Design and Construct Laboratories | Detailed design and construction of the Laboratories and FM Hub. Concurrent with Stage 2. |
| Stage 2 | Design Development - New Hospitals Building | Detailed design of New Adult Acute and New Children's Hospitals to Full Business Case Submission. Concurrent with Stage 1. |
| Stage 3 | Design and Construct New Hospitals Building | Design and Construction of New Adult Acute and New Children's Hospitals and Energy Centre. Consecutive to Stage 2. |
| Stage 3A | Demolition of Surgery Block | Demolition of surgical block and associated buildings and completion of soft landscaping. |

**NOW IT IS AGREED THAT**

1. The *Contractor* will Provide the Works in accordance with the NEC Engineering and Construction Contract, Option C: Target contract with activity schedules, June 2005 (as the same are amended in by the Contract Data) (*"the conditions of contract"*) and the principles stated in Appendix 1 of this Agreement.

2. The *Contractor* acknowledges and agrees that the final Price for Work Done to Date plus the *agreed profit* will not exceed the following sums for each Stage: -

| Stage | Stage Maximum Price |
|---|---|
| Stage 1 | £76,533,905.69 |
| Stage 2 | £17,850,685.69 |
| Stage 3 | £483,690,624.25 |
| Stages 3A | £4,382,458.97 |

(in each case "the Stage Maximum Price").

If the effect of a compensation event is to increase the total of the Prices for a Stage, the relevant Stage Maximum Price will be increased in accordance with the MPTC calculator set out in the Contract Documents: Part Three: (Maximum Price Target Calculator)

If the effect of a compensation event is to reduce the total of the Prices for a Stage and Clause 63.11 of the *conditions of contract* applies, the relevant Stage Maximum Price will be reduced in accordance with the MPTC calculator set out in the Contract Documents: Part Three (Maximum Price Target Calculator)

The *Contractor* acknowledges and agrees that the final Price for Work Done to Date for the whole of the *works* plus the *agreed profit* for the whole of the *works* will not exceed the Project Maximum Price, being the total of the Stage Maximum Prices.

3. On Completion of the whole of the *works*, the *Employer* calculates the total sum payable to the *Contractor* by adding together (i) the Price for Work Done to Date for each Stage, (ii) the *Contractor*'s share of savings or share of excess for each Stage, and (iii) the *agreed profit* for each Stage ("Project Cost"). If the Project Cost is less than the Project Maximum Price and the *Contractor* has exceeded one or more of the Stage Maximum Prices and has paid 100% of that excess, the *Contractor* is paid that 100% excess, subject to the Project Maximum

Price. If the Project Cost is less than the Project Maximum Price and the *Contractor* has not exceeded one or more of the Stage Maximum Prices the *Contractor* is not entitled to further payment. If the Project Cost is more that the Project Maximum Price, the *Contractor* is paid the Project Maximum Price and the *Employer* recovers any over payment as a debt.

4. The *Employer* will pay the *Contractor* the amounts due for each Stage of the *works* in accordance with this Agreement, the *conditions of contract*, the Contract Data and as may be detailed in the Works Information. The *Contractor* will provide the Works for each Stage for the following Stage Target Price (as hereinafter defined).

| Stage | Stage Target Price |
|---|---|
| Stage 1 | £75,779,610.42 |
| Stage 2 | £17,850,685.69 |
| Stage 3 | £477,128,752.52 |
| Stages 3A | £4,352,332.82 |

The Stage Target Price is the total of the Prices for the relevant Stage together with the *Contractor's* accepted risk allowance and the *agreed profit.*

5. The *Contractor* acknowledges and agrees that as at the Contract Date the *Contractor* shall be authorised to proceed with Stage 1 and Stage 2 only. The *Contractor* is authorised to commence and proceed with Stage 3 upon written authorisation given by the *Employer* in the form attached as Appendix 2 hereto. The *Contractor* is authorised to commence and proceed with Stage 3A upon written authorisation given by the *Employer* in the form attached as Appendix 3 hereto. In the event that the *Contractor* commences and proceeds with Stage 3 or Stage 3A without such written authority from the *Employer*, the *Contractor* does so at his own cost and risk.

6. The documents forming part of this contract are:

6.1 this Agreement

6.2 the *conditions of contract*,

6.3 Contract Data part one including Works Information — data provided by the *Employer*

6.4 The *Contractor*'s Tender Return Submission dated 10 September 2009 Including:

(i) Contract Data part two - Data provided by the *Contractor*

7. In the event of conflict between the documents forming part of this contract the following order of priority will apply: -

7.1 This Agreement (excluding Appendix 1)

7.2 The *conditions of contract*,

7.3 Contract Data part one including the Works Information

7.4 Contract Data part two

7.5 Appendix 1 of this Agreement

IN WITNESS WHEREOF these presents consisting of this and the 2 preceding pages together with Appendices 1, 2 and 3 and the Contract Data part one (including its Appendices) and Contract Data part two are executed as follows: -

EXECUTED for and on behalf of the *Employer* at Glasgow on the 18th day of December 2009 as follows: -

[redacted]

(Authorised official) Before this witness: -

[redacted]

Full name JANE GRANT

Address Dalian House

351 St. Vincent St

Glasgow

EXECUTED for and on behalf of the *Contractor* at Glasgow on the 18th day of December 2009 as follows:

[redacted]

(Director/Authorised Signatory) Before this witness:

[redacted]

Full name TIMOTHY ANDREW BIDWELL

Address C/O 23 HANOVER SQUARE

LONDON

W1S 1JB

**This is Appendix 1 to the foregoing Agreement between Greater Glasgow Health Board and Brookfield Construction (UK) Limited**

**Principles governing the Agreement**

**Definitions**

| **Defined Term** | **Definition** |
|---|---|
| "Overriding Objective" | means the objective set out in Paragraph 4. |
| "Overriding Principle" | means principle set out in Paragraph 1. |
| "Professional Advisor" | means any party providing specialist advice to the *Employer.* |
| "Supply Chain" | means the individuals and organisations appointed by the *Contractor* and approved by the *Employer* who will be responsible for the majority of the management and delivery of design and construction (and where appropriate operation) in relation to the *works* including the Specified Subcontractors and Specified Consultants. |

1. The Overriding Principle of this agreement is to work together with the Supply Chain and the *Employer* (and any Professional Adviser) in a co-operative and collaborative manner to achieve the Overriding Objective acting in good faith and in the spirit of mutual trust and respect.
2. In order to work together in co-operative and collaborative manner the *Employer* and the *Contractor* agree that they should each give to and welcome from each other, the Supply Chain and any Professional Adviser feedback on performance and shall share information openly and highlight any difficulties at the earliest practical time. The parties shall support collaborative behaviour and confront behaviour that does not comply with the Overriding Principle.
3. The terms of the Agreement shall be interpreted according to their natural meaning but in the event of any ambiguity in their natural meaning they shall be interpreted so as to give best effect to the Overriding Principle.
4. In entering into the Agreement the parties' Overriding Objective is by working together in accordance with the terms of the Agreement to achieve the successful delivery by the *Contractor* of the *works*: -

4.1 to the standard and functionality defined or as reasonably inferred from the *Employer*'s requirements set out in the Works Information to a quality which meets or exceeds these requirements;

4.2 at a cost to the *Employer* that offers best value for money taking into account whole life (as well as capital) costs over the proposed design life of the *works* through the application of the principles of value engineering;

4.3 to the timescale acceptable to the *Employer* and agreed between the parties without compromising health and safety or the *Employer*'s required standards and the quality of the completed *works* and in any event before the Completion Dates set out in the Agreement; and

4.4 with an appropriate allocation of the risks associated with the *works* to the party best able to manage such risks.

5. The *Contractor* shall carry out the management and be responsible for the delivery, design and construction of the *works* in accordance with the Agreement and shall work and liaise with the *Employer*, the Supply Chain and any Professional Adviser as necessary or appropriate or as requested by the *Employer* in order to achieve the Overriding Objective.

6. The *Contractor* shall engage persons from the key people set out in the Contract Data — part two in the performance of the *works* to be provided by the *Contractor* under the Agreement and shall not replace any of the key people without the approval of the *Employer* (such approval not to be unreasonably withheld). The *Contractor* will ensure that where a member of its key personnel is replaced that they have the skills, qualifications, experience and ability to provide the best service to the *Employer.*

7. When engaging its Supply Chain the *Contractor* shall either use the appropriate contract from the NEC3 Suite of Contracts and where they do not use the NEC3 Suite of Contracts they shall ensure that the forms of contract used reflect the principles and procedures identified in the Agreement and the NEC3 Suite of Contracts.

8. Until the later of the end of the *defects date* and the end of the last *defect correction period*, the performance of the Contractor shall, in relation to the *works*, be monitored against the Key Performance Indicators defined in the Works Information.

9. Until the later of the end of the *defects date* and the end of the last *defect correction period* amendments may be made to the Key Performance Indicators by agreement between the *Employer* and the *Contractor* except where the *Employer* is required by the Scottish Government or regulatory bodies to provide Key Performance Indicators. In such cases the

*Employer* will provide information on any requirements to the *Contractor* as soon as reasonably practicable.

10. At two-month intervals or at such intervals as the parties may agree during the performance of the *works*, the *Employer* and the *Contractor* shall undertake formal reviews of the performance of the *Contractor* against its Key Performance Indicators. In addition the performance of the *Employer* against the *Employer*'s Key Performance Indicators as set out in the Agreement will be monitored. The *Employer* and the *Contractor* will discuss any way in which the performance of the *Contractor* and/or the *Employer* may be improved.

11. The formal review process will also include an open book process where the *Contractor* will be subject to an independent ongoing review.

12. The *Contractor* shall keep a comprehensive record as specified by the *Employer* of all performance monitoring carried out under the Agreement in such form as the *Employer* may reasonably request for a period of 6 years after the expiry or earlier termination of the Agreement and shall provide copies of such records to the Project Manager for the works to enable him to record, disseminate and compare the performance of the *Contractor*. Each record shall be retained in a format that can be read and copied and kept with the IT requirements on an electronic based database.

13. Throughout the period of the Agreement and up to the date final payment is made in accordance with Clause 50.1, the *Contractor* will be required to operate an open book accounting regime providing the *Employer* or their nominated representative with access to such relevant financial or other information as may be required to provide evidence that the Overriding Principle is being applied and that the Overriding Objective is being met. This open book accounting regime will be applied to the Specified Subcontractors and the Specified Consultants therefore the *Contractor* should make all Specified Subcontractors and Specified Consultants aware of this requirement.

14. The open book regime referred to above will be achieved in three stages:

14.1 a detailed review on the valuation of the *Contractor* and the Specified Subcontractors and Specified Consultants processes, costing structures and accounts to ensure that systems are in place to enable the Contractor and the Specified Subcontractors and Specified Consultants to work within the Agreement.

14.2 ongoing financial audits to ensure that costs fall within the contractual definition of Defined Cost.

14.3 ongoing reviews of the procurement processes to ensure that all parties are operating systems for the delivery of the *works* in accordance with this agreement.

15. Until Completion the *Contractor* shall look for and achieve in conjunction with the Supply Chain continuous improvement in the quality and functionality of the *works* while reducing low life costs, wastage, construction related accidents and the time taken to deliver the works. Innovation and best practice will be shared with the *Employer*.

16. To achieve the aim set out in Clause 15 the *Contractor* shall actively participate in the continuous improvement "learning sets" with the Project Manager and the Supply Chain in relation to the Agreement. This commitment is likely to involve meetings at least once every 3 months in relation to the *works* and meetings at least once every 6 months in relation to the lessons to be learned. The *Contractor* shall also use reasonable endeavours to procure the involvement of members of its Supply Chain in such learning sets where considered appropriate.

**This is Appendix 2 to the foregoing Agreement between Greater Glasgow Health Board**

**and**

**Brookfield Construction (UK) Limited**

**GREATER GLASGOW HEALTH BOARD** of Dalian House, 350 St Vincent Street, Glasgow G3 8YZ ("the *Employer*"); and

**BROOKFIELD CONSTRUCTION (UK) LIMITED** having its principal place of business at 23 Hanover Square, London, W1S 1JB (the "*Contractor*").

WHEREAS

1. The *Employer* and the *Contractor* entered into the Agreement dated [ ] whereby the *Contractor* is to Provide the Works in connection with the New South Glasgow Hospital Project.
2. The *Employer* wishes the *Contractor* to continue to Provide the Works by commencing and carrying out:

| | | |
|---|---|---|
| Stage 3 | Design and Construct New Hospitals Building | Design and Construction of New Adult Acute and New Children's Hospitals and Energy Centre. Consecutive to Stage 2. |

NOW IT IS AGREED THAT

1. The *Employer* hereby authorises the *Contractor* to commence and carry out Stage 3 of the *works* ie the Design and Construction of the New Adult Acute and New Children's Hospitals.
2. The *Contractor* will continue to Provide the Works in accordance with the Agreement.
3. The Agreement is amended and modified to the following extent:-

   [*Any amendments to Works Information and/or Contract Data which will have come about during Stage 2 including adjusted target/Maximum Price*]

EXECUTED for and on behalf of the *Employer* at [ ] on the [ ] day of [ ] 200[ ] as follows:-

.....

(Authorised official)

Before this witness: -

..... ..... Full name

..... ..... Address

EXECUTED for and on behalf of the *Contractor* at [ ] on the [ ] day of [ ] 200[ ] as follows: -

.....

(Director/Authorised Signatory)

Before this witness: -

..... Full name

..... Address

**This is Appendix 3 to the foregoing Agreement between Greater Glasgow Health Board and Brookfield Construction (UK) Ltd**

**GREATER GLASGOW HEALTH BOARD** of Dalian House, 350 St Vincent Street, Glasgow G3 8YZ ("the *Employer*"); and

**BROOKFIELD CONSTRUCTION (UK) LTD** having its principal place of business at 23 Hanover Square, London, W1S 1JB (the "*Contractor*").

WHEREAS

1. The *Employer* and the *Contractor* entered into the Agreement dated [ ] whereby the *Contractor* is to Provide the Works in connection with the New South Glasgow Hospital Project.
2. The *Employer* wishes the *Contractor* to continue to Provide the Works by commencing and carrying out:

| Stage | Description | Outline Activities |
|---|---|---|
| Stage 3A | Demolition of Surgery Block | Demolition of surgical block and associated buildings and completion of soft landscaping. |

NOW IT IS AGREED THAT

3. The *Employer* hereby authorises the *Contractor* to commence and carry out Stage 3A of the *works* ie the Demolition of surgical block and associated buildings and completion of soft landscaping.
4. The *Contractor* will continue to Provide the Works in accordance with the Agreement.
3. The Agreement is amended and modified to the following extent: -

[*Any amendments to Works Information and/or Contract Data which will have come about during Stage 2 including adjusted target/Maximum Price*]

EXECUTED for and on behalf of the *Employer* at [ ] on the [ ] day of [ ] 200[ ] as follows: -

.....

(Authorised official)

Before this witness: -

..... ..... Full name

..... ..... Address

EXECUTED for and on behalf of the *Contractor* at [ ] on the [ ] day of [ ] 200[ ] as follows: -

.....

(Director/Authorised Signatory)

Before this witness: -

..... Full name

..... Address

**CONTRACT DATA PART ONE —**

**DATA PROVIDED BY *THE EMPLOYER***



A49342285

**Contract Data Part one - Data provided by the *Employer***

**Statements given in all Contracts**

**1. General**

- The *conditions of contract* are the core clauses and the clauses for main Option C, dispute resolution Option W2 and Secondary Options — X2, X4, X5, X7, X13, X16, X18.5, Y(UK)2 and Z of the NEC3 Engineering and Construction Contract (June 2005).
- The works are Management and delivery of design and construction services for the New South Glasgow Hospital Project as the *works* are more specifically referred to in the Works Information
- The *Employer* is

  Name: Greater Glasgow Health Board

  Address: Dalian House, 350 St Vincent Street, Glasgow G3 8YZ
- The *Project Manager* is

  Name: Peter Moir

  Address: St Andrew's House, 80 Queen Elizabeth Avenue, Hillington, Glasgow G52 4NQ
- The *Supervisor* is

  Name: Peter Moir or such other party notified by the Employer

  Address: St Andrew's House, 80 Queen Elizabeth Avenue, Hillington, Glasgow G52 4NQ
- The *Adjudicator* is

  Name: To be nominated by the Scottish branch of the Royal Institute of Chartered Surveyors

  Address: RICS Scotland, 9 Manor Place, Edinburgh EH3 7DN
- The Works Information comprises
  - The Contract Documents: Part Five (Works Information);
  - The Employers Requirements; and
  - The Contractor's Proposals including the M&E Clarification Log.
- The Works Information agreed relationship and hierarchy is set out in Appendix 5 to this Contract Data Part one.
- The Site Information is set out in the Contract Documents: Part Six (Site Information)

  The boundaries of the site are set out in the Contract Documents: Part Six (Site Information).

- The Gateway Procedure is in the Contract Documents: Part One (Gateway Procedure)
- The Schedule of Cost Components is in the Contract Documents: Part Two (Schedule of Cost Components)
- The *language* of the contract is English.
- The *law of the contract* is the law of Scotland subject to the jurisdiction of the Courts of Scotland.

- The *period for reply* to a communication is
    - To *Contractor's* submission of particulars of design for acceptance (Clause 21.2)
        - Stages 1, 3 and 3A – Three (3) weeks
        - Stage 2 – two (2) weeks
    - Reply to a *Contractor* notification of a compensation event (clause 61.4, fourth paragraph, first bullet point) is four (4) weeks
    - Reply to all other communications unless otherwise stated in this contract two (2) weeks
- The *Adjudicator* nominating body is:

  The Scottish Branch of the Royal Institute of Chartered Surveyors
- The *tribunal* is the Scottish Courts
- The following matters will be included in the Risk Register:

  The Employer Risks not included in the total of the Prices/Maximum Price are as noted in the Risk Register reference Appendix E – Board Accepted Risks set out in the Contract Documents: Part Seven (Risk Register) All other risks are deemed to be included in the total of the Prices/Maximum Price

**3. Time**

- The *starting date* is 18 December 2009
- The access dates are:

| Part of the Site | Award Contract | Start on Site |
|---|---|---|
| 1. Stage 1 Laboratories | 18th December 2009 | 4th March 2010 |
| 2. Stage 2 Design Development | 18th December 2009 | NA |
| 3. Stage 3 Works | 8th November 2010 | 28th February 2011 |
| 4. Stage 3A Works | 1st February 2015 | 20th July 2015 |

- The *Contractor* submits revised programmes at intervals no longer than four (4) weeks alternatively calendar monthly

**4. Testing and Defects**

- The *defects date* is 104 Weeks after Completion of the relevant *section* of the *works*.
- The *defect correction period* is two (2) weeks (or such longer period as may be agreed between the *Employer* and the *Contractor*, having regard to the nature of the Defect, the

*Employer's* operational requirements or any period for procurement of necessary Plant and Materials) except that:

- the *defect correction period* for accommodation occupied by the NHS for patients on an operational basis is 2 days unless notified as an urgent repair requiring immediate attention
- the *defect correction period* for works which are urgent requiring immediate attention and might affect the safe and secure running of the site eg security systems, fire alarm systems, building heating systems, building potable water supplies, sanitation, building mains electricity supply systems (excluding works to be carried out by utility providers) is 24 hours provided that where replacement parts are required in order to fully rectify the Defect and procurement of such parts will take longer than 24 hours, the *Contractor* will, for the purposes of assessing compliance with this obligation, only be obliged to remove all risks to safety caused by the Defect and ensure the resumption of the *Employer's* operations within the 24 hour period and the replacement of the defective part(s) will be carried out within a period to be agreed with the *Employer*.

**5. Payment**

- The *currency of this contract* is the pound sterling (£)
- The *assessment interval* is four (4) weeks alternatively calendar monthly.
- The interest rate is 5% per annum
- The *overhead percentage* is:

| Stage | *Overhead %* |
|---|---|
| 1 | 3.92% |
| 2 | 0.93% |
| 3 | 4.12% |
| 3A | 2.79% |

- The *agreed profit* is: -

| Stage | *agreed profit* |
|---|---|
| 1 | £1,571,017.64 |

| Stage | agreed profit |
|---|---|
| 2 | £50,475.19 |
| 3 | £9,872,732.41 |
| 3A | £91,202.59 |

**Optional Statements for Clause 5**

The Contractor's share percentages and the share ranges are

| Pain/Gain | Difference in Price from Target Cost | NHS GGC % share | Contractor % share |
|---|---|---|---|
| = Maximum Price (MP) | | 0 | 100 |
| Pain | 76-99% | 10 | 90 |
| Pain | 51-75% | 20 | 80 |
| Pain | 26-50% | 30 | 70 |
| Pain | 0-25% | 40 | 60 |
| = Target Price | | 0 | 0 |
| Gain | £1-£4.99m | 80 | 20 |
| Gain | £5m-£9.99m | 70 | 30 |
| Gain | £10m-£12.99m | 40 | 60 |
| Gain | £13m-£14.99m | 20 | 80 |
| Gain | £15m | 20 | 80 |

The *Contractor* prepares forecasts of Defined Cost for the *works* at intervals no longer than four (4) weeks alternatively calendar monthly.

**6. Compensation Events**

- The place where weather is to be recorded is: the Site
- The weather measurements to be recorded each month are
  - the cumulative rainfall (mm);
  - the number of days with rainfall more than 5mm;

- the number of days with minimum air temperatures less than Zero degrees Celsius;
- the number of days with snow lying at 09.00 hrs GMT;
- and these measurements:

- The weather measurements are supplied by The Met Office.
- The weather data are the records of past weather measurements for each calendar month which were recorded at Glasgow Airport and which are available from The Met Office.

**8. Risks and Insurance**

The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the works, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the *Contractor*) caused by activity in connection with this contract for any one event is

**£20,000,000.00 (twenty million pounds sterling)**

The minimum limit of indemnity for insurance in respect of death or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with this contract for any one event is

**£10,000,000.00 (ten million pounds sterling)**

The amount of the minimum limit of indemnity for insurance (CAR) in respect of loss or damage to the works in connection with this contract is the replacement cost

And the amount for replacement of any Plant and Materials provided by the *Employer* is

**£10,000,000.00 (ten million pounds sterling)**

The amount of the minimum limit of indemnity for Professional Indemnity Insurance for design liability in connection with this contract for any one event is

**In any one event £20,000,000 (twenty million pounds sterling)**

The *Contractor* to provide documentary evidence to establish that it has discharged its obligations under this contract with respect to insurance.

The *Contractor* provides all other insurances required by the *law of the contract*

**Optional Statements**

**If the *Employer* has decided the *completion date* for the whole of the *works***

The *completion date* for the whole of the *works* is 31st January 2016

**If no programme is identified in part two of the Contract Data**

The *Contractor* is to submit a first programme for acceptance within four (4) weeks of the Contract Date

**If the *Employer* has identified work which is to meet a stated *condition* by a *key date***

The *key dates* and *conditions* to be met are

| **Condition to be met** | **key date** |
|---|---|
| Stage 2: Completion of Detailed design to allow FBC to be submitted to Scottish Government by 9th November 2010 | 8th November 2010 |

**If there are additional *Employer's* risks**

- These are the additional *Employer's* risks

1. Completion is delayed as a result of a *Contractor's* insurable event; insurable events include fire, lightening, explosion, storm, tempest, flood bursting or overflowing water tanks, apparatus or pipes, earthquake, aircraft and other aerial devices or articles dropped there from.

   Clarification - limit of the *Employer's* risk:

   Where there is delay as a result of the *Contractor's* insurable event the completion date is changed, but there is no effect on the Prices; cost incurred in remedy of the event is a Disallowed Cost. The *Project Manager* notifies a compensation event if timing or sequence of operations is to be changed to alleviate the effect of the delay.
2. Any variance in the rate of insurance due to market conditions, will form part of the Project Maximum Price.
3. The *works* are delayed or suspended due to an act of terrorism
4. Any other Employer Risks noted in the Risk Register reference Appendix E – Board Accepted Risks set out in the Contract Documents: Part Seven (Risk Register) issued with the ITSFB. All other risks are deemed to be included in the total of the Prices/Maximum Price

**If Option X5 is used**

- The *completion date* for each *section* of the *works* is

| Section | Description | *completion date* |
|---|---|---|
| 1 - Stage 1 | Laboratories | 10th March 2012 |
| 2 - Stage 3 | New Hospital | 31st January 2015 |
| 3 - Stage 3A | Demolition of Surgical Block | 19th July 2016 |

**If Options X5 and X7 are used together**

- Delay damages for the sections of the *works*

| Section | Description | Amount per week or pro-rated part thereof |
|---|---|---|
| 1 - Stage 1 | Laboratories | £50,000 |
| 2 - Stage 3 | New Hospital | £250,000 – provided that in the first 4 weeks after the *completion date* delay damages will be levied at 25% of £250,000; in weeks 5 – 8 inclusive after the *completion date* delay damages will be levied at 50% of £250,000; in weeks 9 – 12 inclusive after the *completion date* delay damages will be levied at 75% of £250,000; and from week 13 after the *completion date* delay damages will be levied at 100% of £250,000 |
| 3 - Stage 3A | Demolition of Surgical Block | £20,000 |

**If Option X13 is used**

The amount of the performance bond is: -

Stage 1 – 5% of the Maximum Price for Stage 1

Stage 3 – 5% of the Maximum Price for Stage 3

Stage 3A – 5% of the Maximum Price for Stage 3A

**If Option X18 is used**

The *end of liability date* is twelve (12) years after the Completion of the whole of the *works*.

**If Option Z is used**

*The additional conditions of contract are*

**Amendments and additions to existing Clauses:**

**Z 1 Additions to Clause 11.2 - Identified and Defined Terms**

11.2(34) "Collateral Warranty Agreement" is an agreement substantially in the relevant form attached as Appendix Parts 1 and 2 hereto to be granted in favour of the *Employer* by the *Contractor* and (i) each Specified Subcontractor and (ii) each Specified Consultant (any changes to the said form(s) having been approved by the *Employer,* which approval will not be unreasonably withheld or delayed).

11.2(35) "Contract Documents" is the ancillary information comprising part of Contract Data Part one and signed by the parties for identification and deemed to be incorporated in and forming part of this Agreement.

11.2(36) "Contractors Proposals" is the contractors tender response comprising ten volumes:

Volume 1 – Schedule of Accommodation

Volume 2 – Drawings

Volume 3 – Design Narratives

Volume 4 – Specifications

Volume 5 – Components

Volume 6 – Equipment

Volume 7 – SHTM

Volume 8 – ADB

Volume 9 – Programme

Volume 10 - Logistics

and signed by the parties for identification and deemed to be incorporated in and forming part of this Agreement.

11.2(37) The "Supply Chain Member (SCM)" *is* the individuals and organisations appointed by the *Contractor* and approved by the *Employer* who will be responsible for the majority of the management

and delivery of design and construction (and where appropriate operation) in relation to the *works*.

11.2(38) "Documents" includes, without limitation, all technical information (whether or not stored in computer systems), drawings, models, calculations, specifications, schedules, details, plans, programs, budgets, reports or other documents, work or other things provided or to be provided by or on behalf of the *Contractor* in connection with the *works*.

11.2(39) "Employer's Requirement" is the description of the Employer's technical requirements for the works supplemented and amended by the Logs and signed by the parties for identification and deemed to be incorporated in and forming part of this Agreement.

11.2(40) "Agreement" is the form of agreement entered into between the *Employer* and the *Contractor* in respect of the works forming part of this contract.

11.2(41) "Full Business Case" is the *Employer's* submission to the Scottish Government for approval to proceed with Stage 3 and Stage 3A of the *works*.

11.2(42) "Laboratories" is the new laboratory block as the same is more particularly described in the *Works Information*.

11.2(43) "Laboratory Consultant" is BMJ Architects Limited, 2 Central Quay, 89 Hydepark Street, Glasgow, G3 8BW.

11.2(44) "Novation Agreement" is an agreement in the relevant form set out in Appendix Part 3 hereto.

11.2(45) "Specified Subcontractors" is those Supply Chain Members specified as such in the Works Information.

11.2(46) "Specified Consultants" is those Supply Chain Members specified as such in the Works Information.

11.2(47) "Stage" has the meaning ascribed to it in the recital to the Agreement.

11.2(48) "*conditions of contract*" is the NEC Engineering and Construction Contract, Option C: Target contract with activity schedules, June 2005 (as the same are amended by the Contract Data)

11.2(49) "Stage Maximum Price" is the maximum price payable for each Stage of the *works* as set out in Clause 2 of the Agreement unless later changed in accordance with this contract and "Stage Maximum Prices" are construed accordingly.

11.2(50) "Project Maximum Price" is the total of the Stage Maximum Prices.

11.2(51) "Project Cost" is the sum of the Price for Work Done to Date for the whole of the *works* plus the *agreed profit* for the whole of the *works*, all adjusted by the Contractor's *share* for each of the Stages.

11.2(52) "Design Deliverables" are those elements of design to be delivered by the *Contractor* to the *Employer* during Stage 2 being:

- to achieve 85% User Group sign off to 1:200 Drawings for Adult Hospital (Current Programme Completion Date for Milestone is 17 May 2010);
- to achieve 85% User Group sign off to 1:200 Drawings for Children's Hospital (Current Programme Completion Date for Milestone is 27 May 2010);
- to achieve 95% sign off to Standard Room Type ADB sheets and 1:50 Drawings (Current Programme Completion Milestone is 27 August 2010);
- Conclusion of Planning Submission - Final Reserved Matters Approvals (Current Programme Completion Milestone is 30 June 2010);
- Achieve Formal Planning Consent from Glasgow City Council (Current Programme Completion Milestone is 6 October 2010).

11.2(53) "Key Subcontract" means those subcontracts entered into with the Key Subcontractors.

11.2(54) "Key Subcontractors" means those subcontractors specified as being a Key Subcontractor in the Works Information.

**Z 2 Amendment to clause 11.2 (25) - Identified and Defined Terms**

At end of first bullet point after 'records' add: 'including amounts for invoices that the *Contractor* is liable to pay but has not paid within 28 days from having been included in the *Project Manager's* assessment',

**Z3 Amendment to clause 11.2 (8) - Identified and Defined Terms**

Delete and replace with "The Overhead is the sum of the amounts calculated by applying the *overhead percentage* to the Defined Cost of subcontracted and other work."

**Z4 Amendment to clause 11.2 (4) - Identified and Defined Terms**

Delete and replace with "the Contract Date is the date of execution of this contract"

**Z5 Amendment to clause 11.2 (29) - Identified and Defined Terms**

Delete "plus the Fee" and replace with "plus the Overhead."

**Z 6 Amendment to Clause 11.2(30) – Identified and Defined Terms**

Delete and substitute "The Prices are the sum of (i) the lump sum prices for each of the activities in the Activity Schedule (unless later changed in accordance with this contract) plus (ii) the total of such lump sum prices multiplied by the *overhead percentage*"

**Z7 Amendment to Clause 17.1 – Ambiguities and Inconsistencies**

Add the following sentence to the end of Clause 17.1

"Instructions issued under this clause do not necessarily give rise to a compensation event"

**Z8 Addition to Clause 17 – Ambiguities and inconsistencies**

"17.2 The *Project Manager* and the *Contractor* agree that inconsistencies and ambiguities between (a) the NHS Mandatory Documentation and NHS Guidance Documentation and building control or (b) between the NHS Mandatory Documentation and NHS Guidance Documentation and the Schedules of Accommodation or (c) between the NHS Mandatory Documentation and NHS Guidance Documentation and any information issued to the *Contractor* by the *Employer*, will be dealt with in accordance with the procedures set out in the Works Information."

**Z9 Amendment to Clause 19 – Prevention**

Add new Clause 19.2

"Notwithstanding the provisions of Clause 60 and subject to Clause 19.4, the *Contractor*'s sole right to payment in respect of the occurrence of an event under Clause 19.1 is as provided in Clause 93."

Add new Clause 19.3

"The *Contractor* and the *Employer* take all reasonable steps to mitigate the effect of the occurrence of an event under Clause 19.1."

Add new Clause 19.4

"If the *Project Manager* instructs the *Contractor* to take steps to Provide the Works in a manner not prevented by the occurrence of an event under Clause 19.1, and such instruction changes the Works Information, the *Contractor* is entitled to notify a compensation event under clause 60."

**Z10 Amendment to Clause 21.1 - The *Contractor's* design**

At the end of the Clause add: "the *Contractor* designs the parts of the *works* which the Works Information states he is to design using the degree of skill and care that would reasonably be expected of a competent professional design and build contractor experienced in carrying out projects of a similar nature, scope and complexity to those comprised in the *works*.

**Z11 Amendment to Clause 21.2 – The Contractor's Design**

After the first sentence add: - "The *Project Manager* either accepts the design or rejects it and notifies the *Contractor* of his reasons for doing so within the *period of reply* to the *Contractor*'s submission of particulars of his design for acceptance."

After the second sentence add: - "A failure by the *Project Manager* to either accept the design or reject it and notify the *Contractor* of his reasons for doing so within the *period of reply* is treated as acceptance of the design by the *Project Manager*. Where the *Project Manager* rejects the design and notifies *Contractor* of his reasons for doing so, the *Contractor* amends the particulars of design taking into account the reasons notified by the *Project Manager* and resubmits the particulars of design to the *Project Manager* for acceptance. Within one (1) week of the *Contractor* resubmitting such particulars of his design for acceptance the *Project Manager* either accepts the design or rejects it and notifies the *Contractor* of his reasons for doing so. A failure by the *Project Manager* to either accept the resubmitted design or reject it and notify the *Contractor* of his reasons for doing so within the period of one (1) week is treated as acceptance of the re-submitted design by the *Project Manager.* This process of re-submission is repeated until such time as the *Project Manager* has accepted or is treated to have accepted the design. "

In the third sentence, after "has accepted" add: - " or is treated to have accepted"

**Z12 Amendment to Clause 22.1 – Using the *Contractor's* design**

Delete and replace with: -

"22.1 The copyright and all intellectual property rights in the Documents remain vested in the *Contractor* or the person responsible for the production (as the case may be).

22.2 Where documentation (including drawings) is (or are) provided by the *Employer* copyright and such documentation and drawings remain vested in the *Employer*.

22.3 The *Employer* has an irrevocable, non-exclusive royalty free licence to copy and use the Documents and to reproduce the designs contained in them for any purpose relating to the *works* including (but without limitation) the construction, completion, maintenance, promotion, advertisement, reinstatement, repair, any extension of the *works* and for dissemination within the NHS as part of the feedback of information to better or enable the NHS to realise improvements in its methods and practice of construction and in the design and procurement of its construction.

22.4 The *Contractor* shall not be liable for any use by the *Employer* of the Documents for any purpose other than that for which the same is prepared and provided."

**Z13 Amendment to Clause 24.2 – People**

24.2 After the words "The *Contractor* then arranges that after one day" add: "(or such other period as may be agreed between the parties in writing)".

**Z14 Addition to Clause 31 – The programme**

31.5 A failure by the *Project Manager* to either accept the programme or notify the *Contractor* of his reasons for not accepting it within the two-week period is treated as acceptance of the programme by the *Project Manager*. Where the *Project Manager* notifies the *Contractor* of his reasons for not accepting the programme, the *Contractor* amends the programme taking into account the reasons notified by the *Project Manager* and resubmits the programme to the *Project Manager* for acceptance. Within one (1) week of the *Contractor* resubmitting the programme for acceptance the *Project Manager* either accepts the programme or rejects it and notifies the *Contractor* of his reasons for doing so. A failure by the *Project Manager* to either accept the resubmitted programme or notify the *Contractor* of his reasons for not accepting the programme within the period of one (1) week is treated as acceptance of the programme by the *Project Manager*. This process of re-submission is repeated until such time as the *Project Manager* has accepted or is treated to have accepted the programme."

"31.6 The *Contractor* complies with section 6.8 of Volume 2/1 of the Employers Requirements Section of the Works Information in connection with commissioning and handover for the whole of the *works*. The *Contractor*

accepts and agrees that the *Project Manager* is not under any obligation to certify Completion unless and until the *Contractor* fully complies with such requirements."

**Z15 Amendment to Clause 40.3 – Tests and Inspections**

Add at the end: "The *Contractor* may watch any test done by the *Supervisor*".

**Z16 Amendment to Clause 43.2 – Correcting Defects**

Add at the beginning: - "Unless a different period is agreed in writing between the *Contractor* and the *Supervisor*,"

**Z16A Amendment to Clause 50.2 – Assessing the Amount Due**

Add as a second bullet: "the *agreed profit* as a proportion of the Work Done to Date".

Re-order bullets 2 and 3 as bullets 3 and 4.

**Z17 Amendment to Clause 50.6 – Assessing the Amount Due**

Delete "Fee" and replace with "Overhead".

**Z18 Amendment to Clause 51 – Payment**

In the first sentence of Clause 51.1 delete "one week" and replace with "two weeks".

In the first sentence of Clause 51.2 delete "three" and replace with "four".

**Z 19 Addition to Clause 51 - Payment**

51.5 If the Defined Cost plus the Overhead at an assessment date exceeds the amount for the assessment interval as shown in the *Contractor*'s cash flow forecast, then the *Project Manager* certifies payment up to the amount forecast. Any amount exceeding the forecast is not certified but held over to the next assessment interval, where if the Defined Cost plus the Overhead at the next assessment date again exceeds the *Contractor*'s cash flow forecast for the assessment interval the process is repeated. This clause does not apply where the *Contractor* provides a valid and acceptable reason for an exception to the limitation of the *Project Manager*'s assessment certification.

51.6 If the *Employer* intends to withhold payment of any amount due under the contract he notifies the *Contractor* no later than 7 days before the final date for payment of the sum due specifying:

- the amount proposed to be withheld
- the ground for withholding payment or
- if there is more than one ground, each ground and the amount attributable to it

**Z20 Amendment to Clause 52.1 – Defined Cost**

Delete "Fee" and substitute "Overhead and *agreed profit*"

**Z21 Amendment to Clause 52.2 - Defined Cost**

Add at the end: "The *Contractor* keeps these records until the later of the issue of the Defects Certificate or the final payment being made under this contract pursuant to Clause 50.1".

**Z 22 Amendments to Clause 53 – The *Contractor*'s share**

Delete Clause 53.1 and substitute "The *Project Manager* assesses the *Contractor's* share of the difference between the total of the Prices and the Price for Work Done to Date for each Stage. "

In Clause 53.2, after "total of the Prices" where it appears twice, add "for the relevant Stage"

In Clause 53.3, delete "of the whole of the *works*" where it appears twice and substitute in each case "at the end of each Stage

In Clause 53.3 after "final total of the Prices", add "for each Stage"

In Clause 53.4 after "final total of the Prices", add "for each Stage"

**Z23 Amendment to Clause 54.3 – The Activity Schedule**

In the third bullet point add: "other than in accordance with this contract" at the end.

**Z24 Amendment to Clause 60.1(19) – Compensation Events**

Add new bullet point 6, "does not arise from a Subcontractor ceasing to trade or becoming insolvent (or other equivalent event)"

Add at the end, "provided that the occurrence of such event only entitles the *Contractor* to a change to the Completion Date or a change to a Key Date and not to a change in the Prices and Clauses 61 – 65 are interpreted accordingly."

**Z25 Amendment to Clause 60.3 - Compensation Events**

After the words "the *Contractor* is" add: "subject to Clause 60.1(12)".

**Z 25 Amendment to Clause 61.4 - Notifying of Compensation events**

In line 15 delete "two" and substitute "four"

**Z26 Amendment to Clause 63.1 – Assessing Compensation Events**

In the third bullet delete "Fee" and substitute "Overhead and *agreed profit*"

**Z26A Amendment to Clause 63.4 – Assessing Compensation Events**

After "the Prices" add: "the *agreed profit*".

**Z27 Amendment to clause 80.1 - Employer's Risks**

Bullet point 3, sub-bullet 1 second line after 'power,' add 'terrorism (except to the extent insured by the *Contractor* in relation to the works at the time of any loss or damage),'

**Z28 Addition to Clause 84.2 – Insurance cover**

Add at the end of line 3 before the full stop, "except in the case of professional indemnity insurance which is in the name of the *Contractor* and runs from the *starting date* to the date twelve years after Completion of the whole of the *works*"

Add to the Insurance Table:

| | |
|---|---|
| Liability for negligent management or design – professional indemnity insurance | The amount specified in the Contract Data for any one claim or series of claims arising out of one single incident during any period of insurance which shall not be more than 12 months from the date the *Contractor* starts to Provide the Works for a period of twelve years from Completion of the whole of the *works*, with insurers of good repute carrying on business in the European Union provided always that such insurance is available at rates and terms which are commercially reasonable to contractors of a similar size and standing in the UK In determining whether or not insurance is available as aforesaid, the financial characteristics and claims' record of the *Contractor* shall be ignored. |

**Z29 Amendment to Clause 91.2 – Reasons for Termination**

In the third bullet delete "Subcontractor" and substitute "Key Subcontractor" wherever the term occurs.

**Z30 Amendment to Clause 91.7 – Reasons for Termination**

Add at the end "notwithstanding that a delay to the Completion Date has previously been notified to the *Contractor* in respect of such event"

**Z31 Addition to Clause 91 - Reasons for termination**

91.8 The *Employer* may terminate the *Contractor's* obligations to Provide the Works for Stages 3 and 3A either (i) on completion of Stage 2 or (ii) if the Full Business Case is not approved by the Scottish Government (R22)

**Z32 Addition to 92.2 - Procedures on termination**

P5 The *Contractor* hands over to the *Project Manager* all hard copy and electronic data for the *Contractor's* design including material prepared by a subcontractor, the Works Information for the *Contractor's* design and Site Information obtained so far as prepared at termination. At such termination the *Employer* has the right to use such material for completion of the *works*.

**Z33 Termination Table — additions**

| Terminating Party | Reason | Procedure | Amount Due |
|---|---|---|---|
| The *Employer* | R22 | P1, P2 and P5 | A1 (excluding principle bullet point 3) and A2 |

**Z34 Amendment to Clause 93.1 – Payment on Termination**

Delete the 3rd principal bullet and substitute "other Defined Cost reasonably incurred in expectation of completing the Stage during which termination occurs".

**Z35 Amendment to Clause 93.2 – Payment on Termination**

In A4 delete "direct fee percentage" and substitute "*overhead percentage*"

**Z36 Amendment to Clause 93.7 - Payment on Termination**

Add new Clause: - "Subject to any Defined Cost reasonably incurred in expectation of completing the Stage during which termination occurs (Clause 93.1), on termination the *Employer* shall not be liable to the *Contractor* for loss of profit, loss of expectation of profit, loss of use, loss of production or indirect and consequential damages."

**Z37 Addition to Clause W2.1(1) – Dispute Resolution**

Add at the end: - "The word "dispute" in this Clause W2 includes any difference under or in connection with this contract".

**Z38 Addition to Clause W2.3(8) – the adjudication**

After "reasons" add the words, "(which will be in writing)"

**Z39 Addition to Clause W2.3(11) – The adjudication**

Delete the first sentence and replace with, "The decision of the *Adjudicator* is binding until the dispute is finally determined by the *tribunal* or by agreement."

**Z40 Addition to Clause X7**

Add new Clause X7.4: "The *Employer's* right to deduct Delay Damages pursuant to this Clause X7 is the *Employer's* sole and exclusive remedy in respect of delay to completion of the *works*.

**Z41 Amendment to Clause X13**

Delete and substitute: "The *Contractor* gives the *Employer* performance bonds for each of Stages 1, 3 and 3A of the *works*, provided by a bank or insurer which the *Project Manager* has accepted, for the amounts stated in the Contract Data and in the form set out in Appendix 6. A reason for not accepting the bank or insurer is that its commercial position is not strong enough to carry the bond. If the bond for Stage 1 is not given by the Contract Date, it is given to the *Employer* within four weeks of the Contract Date. If the bond for Stage 3 is not given when the *Employer* authorises the *Contractor* to commence and proceed with Stage 3, it is given to the *Employer* within four weeks of such authorisation. If the bond for Stage 3A is not given when the

*Employer* authorises the *Contractor* to commence and proceed with Stage 3A, it is given to the *Employer* within four weeks of such authorisation. "

**Z42 Amendment to Option X16**

Delete X16 and substitute:

"In respect of each of the Stages an amount is retained by the *Employer* in each amount due. The following applies to each of the Stages: -

| Stage | Retention |
|---|---|
| 1 - Design and Construct Laboratories | • 5% retained in each amount due until Completion of *section 1.*<br>• Amount retained is halved at Completion of *section 1* and remains at this amount until the Defects Certificate for *section 1* is issued.<br>• Amount retained released on issue of Defects Certificate for *section 1*<br>• No amount retained after issue of Defects Certificate for *section 1* |
| 2 – Design Development - New Hospitals Building | • 10% retained in each amount due and released on delivery of the Design Deliverables to the *Employer*<br>• No amount retained after all information for Full Business Case received from *Contractor* i.e. completion of Stage 2 |
| 3 - Design and Construct New Hospitals Building | • The *Employer* retains 2½% of the total of the Prices for Stage 3. No sums retained from each amount due until the final year of the Stage 3 *works* (or such other period as the *Employer*, acting reasonably, may determine)<br>• Amount retained released on issue of Defects Certificate for *section 2*<br>• No amount retained after issue of Defects Certificate for *section 2* |

| | |
|---|---|
| 3A - Demolition of Surgery Block | • 5% retained in each amount due until Completion of *section 3*.<br>• Amount retained is halved at Completion of *section 3* and remains at this amount until the Defects Certificate for *section 3* is issued.<br>• Amount retained released on issue of Defects Certificate for *section 3*<br>• No amount retained after issue of Defects Certificate for *section 3* |

**Z43 New Clause — Assignation**

Z43.1 The *Employer* has the right to assign this contract to another NHS body without having to seek the *Contractor*'s consent.

Z43.2 The *Employer* notifies the *Contractor* of the intention to assign the contract to another NHS body.

Z43.3 The *Employer* notifies the *Contractor* of the assignation of the contract to another NHS body.

**Z44 New Clause - Confidentiality**

Z44.1 The *Contractor* shall not append their name or give authority to the appending of their name to any publicity concerning this agreement or the works or indulge in any publicity concerning the *works* without the prior written consent of the *Employer*.

Z44.2 The *Contractor* warrants the accuracy of all information of a legal, commercial or financial nature provided by them to the *Employer*. Details must be provided by the *Contractor* to the *Employer* regarding any matter which affects the ability of the *Contractor* to perform the *works* as and when they take place, which affects the legal, commercial or financial standing of the *Contractor*.

Z44.3 The *Contractor* undertakes to treat any information derived from or obtained in the course of the Agreement as confidential and to take all the necessary

precautions to ensure that its employees and sub-contractors and their employees treat any information as confidential and in doing so the *Contractor* shall ensure that its employees and sub-contractors and their employees keep secret and do not disclose information of a confidential nature by him or them by reason of the Agreement.

Z44.4 Subject to Clause Z46, the *Employer* undertakes to treat any information obtained by it concerning the legal, financial or commercial standing of the *Contractor* as confidential and to take all necessary precautions to ensure that its employees do the same".

**Z45 New Clause – Data Protection**

Z45.1 The *Contractor* warrants and will at all times comply with the provisions of the Data Protection Act 1998 ("the 1998 Act") and any other subordinate legislation enacted pursuant thereto.

Z45.2 The *Contractor* shall only undertake such processing of personal data as is reasonably required in connection with the performance of its obligations under pursuant to the Agreement. To the extent required by the 1998 Act the *Contractor* shall notify the Information Commissioner of any processing which is being carried out and maintain any such notification in full force and effect.

Z45.3 The *Contractor* in its role as Data Processor undertakes to comply with the obligations imposed on a Data Controller under the 7th Data Protection Principle as set out in Part 1 of Schedule 1 of the 1998 Act in respect of all personal data processed pursuant to this contract.

Z45.4 The *Contractor* shall not, other than in accordance with the 1998 Act, transfer any personal data to any country or territory outside the European Economic Area.

Z45.5 Terms defined within the 1998 Act shall have the same meaning when used in this clause.

**Z46 New Clause – Freedom of Information**

The *Contractor* co-operates, facilitates, supports and assists the *Employer* to comply with the Freedom of Information (Scotland) Act 2002 and any codes of practice applicable from time to time relating to access to public authorities' information. In the event that the *Employer* is required to provide information to any person as a

result of a request made to it under such Act and/or codes, the *Employer* shall adhere to the requirements of such Act and/or codes in disclosing information relating to this Agreement, the Project Documents and the *Contractor*.

**Z47 New Clause: Collateral Warranty Agreements**

Z47.1 As soon as possible and in any event within 14 days following execution by each Specified Subcontractor of its subcontract the *Contractor* delivers to the *Employer* Collateral Warranty Agreements from each Specified Subcontractor in favour of the *Employer* together with a copy of the relevant subcontract.

Z47.2 Within 10 days of request by the *Employer* the *Contractor* delivers to the *Employer* Collateral Warranty Agreements from each Specified Consultant in favour of the *Employer* together with a copy of the relevant appointment.

**Z48 New Clause – Novation Agreements**

On execution of the Agreement, the *Contractor* enters into a Novation Agreement with the *Employer* and the Laboratory Consultant. At the same time, the *Contractor* delivers to the *Employer* a Collateral Warranty Agreement from the Laboratory Consultant generally in terms of the relevant Collateral Warranty Agreement.

**Z49 New Clause – Failure to deliver Collateral Warranty Agreements and/or Novation Agreements**

When any Collateral Warranty Agreement or Novation Agreement is not delivered as required pursuant to Clauses Z47 and Z48 (save where the reason for the non provision of the Novation Agreement is refusal or delay on the part of the Laboratory Consultant to execute such an agreement) one quarter of the Price for Work Done to Date plus *agreed profit* is retained in assessments of the amount due until the *Contractor* has delivered such Collateral Warranty Agreement or Novation Agreement to the *Employer*.

**Z50 New Clause – Third Parties**

The *Contractor* performs its obligations under this contract in such a manner and at such times that no act, omission or default of the *Contractor* in relation thereto constitutes, causes or contributes to any breach by the *Employer* of any third party agreement or any other obligation it may owe to a third party relating to the works, details of which the *Contractor* was made aware of prior to the Contract Date.

**Z51 New Clause - Inconsistencies**

In the case of any inconsistency between these *additional conditions of contract* and the other terms of the contract, the *additional conditions of contract* prevail. In the

event of any inconsistency between the Core Clauses and any other term of this contract (except these *additional conditions of contract*) the Core Clauses prevail.

**Z52 New Clause – Approval**

No inspection, testing, approval or review nor any omission to inspect, test, approve or review on the part of the *Employer* diminishes any duty or liability under this contract of the *Contractor*.

**Z53 New Clause – Set off**

Without derogating from its rights under this contract or under the *law of the contract*, whenever any sum of money is recoverable by the *Employer* against the *Contractor*, such sum is deducted from any sum due or which may become due to the *Contractor* under this or any other contract with the *Employer*.

**Z54 New Clause – Security**

Z54.1 The *Contractor* acknowledges that the Site forms part of the larger Southern General Hospital site and that the Southern General Hospital is a live and functioning acute hospital. The *Contractor* takes measures to prevent its employees, Subcontractors and suppliers of the Contractor from entering into or otherwise interfering with the operation of the existing Southern General hospital, except for access to or egress from the Site.

Z54.2 The *Project Manager* may instruct the *Contractor* to take measures to prevent unauthorised persons being admitted on the Site. The instruction is a compensation event if the measures are additional to those required by the Works Information.

Z54.3 The *Contractor* does not take photographs of the Site or the *works* or any part of them unless he has obtained the approval of the *Project Manager*.

Z54.4 The *Contractor* takes the measures needed to prevent his and his Subcontractors' people taking, publishing or otherwise circulating such photographs.

**Appendix 1 to Contract Data part one: Form of Sub-Consultant Warranty**



A49342285

**CONSULTANT'S COLLATERAL WARRANTY**

This Agreement is among

(1) **GREATER GLASGOW HEALTH BOARD** of Dalian House, 350 St Vincent Street Glasgow, G3 8YZ ("the Beneficiary" which expression shall include its successors in title or permitted assignees under this Agreement)

(2) [ ] (Registered number [ ]) of [ ] (" Main Contractor" which term shall include any successor including any parties taking over the obligations of Main Contractor. under the Project Agreement)

(3) [ ], (registered number [ ]) whose registered office is at [ ] ("the Consultant")

WHEREAS:

A The Beneficiary has entered or is about to enter into an agreement with the Main Contractor ("the Building Contract") in connection with the design and construction of the New South Glasgow Hospital, Govan, Glasgow ("the Project").

B The Main Contractor has engaged or is about to engage the Consultant under an appointment ("the Appointment"), which expression shall include all documents incorporated therein and any agreed amendment thereto, to carry out [ ] services as more particularly described in the Appointment ("the Services"), which expression shall include any additional services performed by the Consultant under the Appointment including in connection with any modifications or variations made thereunder.

C It is a condition precedent of the Building Contract that the Consultant, the Main Contractor and the Beneficiary enter into this agreement ("this Agreement").

NOW IT IS AGREED:

1 The Consultant warrants and undertakes to the Beneficiary that it has complied and will continue to comply with all the terms and obligations under the

Appointment on the Consultant's part to be performed and observed and shall complete the Services in accordance with the Appointment.

2. Without prejudice to Clause 1 of this Agreement, the Consultant further warrants and undertakes to the Beneficiary that:

2.1 it has exercised and will continue to exercise all the reasonable skill, care and diligence to be expected from a competent and qualified professional designer experienced in carrying out services similar in nature, size and complexity to the Services including in the selection of goods and materials for the Project; and

2.2 it has not and will not specify for use in relation to the Project any products or materials not in conformity with relevant British or European standards or Codes of Practice or which are at the time of specification generally known within the United Kingdom to an experienced professional designer of works such as the Project to be deleterious to health and safety or to the durability of buildings and/or other structures and/or finishes and/or plant and machinery in the particular circumstances in which they are used;

Provided that:

2.3.1 the obligations of the Consultant under this Agreement shall be no greater in extent or quantity than if the Beneficiary had been named as joint employer with Main Contractor under the Appointment; and

2.3.3 the Consultant shall be entitled in any action or proceedings brought by the Beneficiary to rely on any limitation in the Appointment and to raise the equivalent rights in defence of liability (excluding counterclaim and set-off in respect of amounts due to the Consultant under the Appointment) as it would have if the Beneficiary had been named as joint employer with the Main Contractor under the Appointment;

3. The Beneficiary has no authority to issue any direction or instruction to the Consultant in relation to the Appointment unless and until the Beneficiary has given notice under Clauses 4 or 5, below. The Beneficiary or its appointee has no liability to the Consultant in relation to amounts due under the Appointment unless and until the Beneficiary has given notice under Clauses 4 or 5.

4. The Consultant agrees that it will, if so required by notice in writing given by the Beneficiary, subject to Clause 6, below, accept the instructions of the Beneficiary or its appointee, as the case may be, (which for the avoidance of doubt and without limitation may include a third party appointed by the Beneficiary to act as "the Employer" under the Appointment) to the exclusion of the Main Contractor in respect of the Project upon the terms and conditions of the Appointment. The Main Contractor acknowledges that the Consultant shall be entitled to rely on a notice given to the Consultant by the Beneficiary under this Clause 4 and further acknowledges that such acceptance of the instructions of the Beneficiary or its appointee, as the case may be, to the exclusion of the Main Contractor shall not constitute any breach of the Consultant's obligations to the Main Contractor under the Appointment.

5. The Consultant further agrees that it will not without first giving the Beneficiary not less than 35 days notice in writing exercise any right or purported right it may have to determine its employment under the Appointment, treat the same as having been repudiated by the Main Contractor, or discontinue the performance of any duties or obligations thereunder. Further, the Consultant shall within 14 days of giving the said notice, provide statements to the Beneficiary containing the following:

5.1 all amounts properly due and payable to the Consultant under the Appointment on or before the date of issue of the said notice which remain unpaid;

5.2 in the reasonable estimation of the Consultant, the amount of any monetary claim (if any) asserted by the Consultant against the Main Contractor under the Appointment arising out of or in connection with the breach for which the said notice was served; and

5.3 where the Consultant intends to terminate the Appointment due to some default or breach of contract of a non-financial nature:

5.3.1 the provision of the Appointment alleged to have been breached or not fulfilled;

5.3.2 supporting information in reasonable detail to enable the Beneficiary to identify the material facts;

5.3.3 the steps reasonably required to remedy the specified breaches or conditions not fulfilled;

5.3.4 the time within which the specified steps can reasonably be expected to be taken;

5.3.5 (if applicable) the amount of damages claimed and the basis of their calculation; and

5.3.6 (if applicable) the relief to be sought.

The Consultant warrants to the Beneficiary that to the best of the Consultant's knowledge and belief, having made all proper and appropriate enquiries, the statements submitted under this Clause 5 shall be true, complete and accurate statements of the amounts to which the Consultant considers itself entitled. In the event that the Consultant shall delay in giving such notice and information within the said 14 days, the period of 35 days shall be extended to correspond with the period of any such delay. The Consultant's right to determine its employment under the Appointment or to treat the same as having been repudiated or to discontinue performance shall cease if, within the said 35 day period (extended as appropriate) and subject to Clause 6 the Beneficiary shall give notice in writing to the Consultant requiring the Consultant to accept the instructions of the Beneficiary or its appointee to the exclusion of the Main Contractor in respect of the Project upon the terms and conditions of the Appointment.

6. It shall be a condition of any notice given by the Beneficiary under Clauses 4 or 5 above, that the Beneficiary or its appointee, as the case may be, accepts liability for payment of the sums due under the Appointment and detailed in the statements provided under Clause 5 (and makes payment within a period of 28 days of such notice from the Beneficiary), and for subsequent performance of the Main Contractor's obligations. Upon the issue of any notice by the Beneficiary under clauses 4 or 5, the Appointment shall remain in full force and effect as if no right of determination of its employment under the Appointment, or any right of the Consultant to treat the Appointment as having been repudiated by the Main Contractor. had arisen and the Consultant shall be liable to the Beneficiary and/or its appointee, as the case may be, under the Appointment in lieu of its liability to the Main Contractor.

7. The Beneficiary may at any time following the issue of any notice by the Beneficiary under Clauses 4 or 5, serve a further notice that following the expiry

of 28 days from the giving of such notice the Beneficiary will have no liability (save in respect of the Beneficiary's antecedent breach) for any sums due or to become due to the Consultant in respect of the period following expiry of the last mentioned 28 day period. The Beneficiary may exercise any of its rights pursuant to Clauses 4 or 5 on more than one occasion.

8. The Consultant shall maintain for the period expiring 12 years after completion of the Services or until termination of the Consultant's employment under the Appointment, Professional Indemnity Insurance in an amount of not less than £[10]m [(ten million pounds)] sterling for any one claim or series of claims arising out of one single incident during any period of insurance which shall not be more than 12 months with insurers of good repute carrying on business in the European Union provided always that such insurance is available at rates and terms which are commercially reasonable to consultants of a similar size and standing in the UK. In determining whether or not insurance is available as aforesaid, the financial characteristics and claims' record of the Consultant shall be ignored. The Consultant shall immediately inform the Beneficiary if such insurance ceases to be available at rates and terms which are commercially reasonable in order that the Consultant and the Beneficiary can consider alternative means of best protecting their respective positions in respect of the Project in the absence of such insurance provided that the Beneficiary shall be entitled to require the Consultant to maintain such lesser amount of Professional Indemnity Insurance as is available to the Consultant at rates and terms which are commercially reasonable. As and when it is reasonably requested to do so by the Beneficiary (but not more than once in any period of insurance) the Consultant shall produce for inspection documentary evidence satisfactory to the Beneficiary (acting reasonably) that its Professional Indemnity Insurance is being maintained.

9. The Consultant hereby grants to the Beneficiary or its appointee and all those authorised by the Beneficiary an irrevocable, non-exclusive and royalty-free licence (which shall be capable of assignation) to use and reproduce all technical information (whether or not stored in computer systems), drawings, models, calculations, specifications, schedules, details, plans, programs, budgets, reports or other documents, work or other things whatsoever provided or to be provided by the Sub-Contractor in connection with the Project (the **"Documents"**) for any purpose relating to the Project including (but without limitation) the construction, completion, maintenance, promotion, advertisement, reinstatement, repair and any extension of the Project and for dissemination within the NHS as part of the feedback of information to better or enable the NHS to realise improvements in its

methods and practice of construction and in the design and procurement of its construction. Such licence shall carry the right to grant sub-licenses and shall subsist notwithstanding that the Appointment is terminated or the obligations and duties thereunder have been completed. For the avoidance of doubt, the grant of such licence or sub-licences shall not impose any additional liability on the Consultant. The Consultant will not assign or agree to assign the copyright in any of the documents without the prior written consent of the Beneficiary. The Consultant shall on reasonable demand provide to the Beneficiary or its appointee and those authorised by the Beneficiary additional copies of any documents on receipt of reasonable copying costs. The Consultant shall not be liable for any use by the Beneficiary of any of the documents for any purpose other than those authorised by this clause.

10. This Agreement may be assigned on a maximum of two occasions in whole or in part by the Beneficiary to any party to whom the Beneficiary's interest in the Main Contract or any part thereof is assigned or disposed to without the consent of the Main Contractor or the Consultant being required and any such assignation shall be effective upon written notice thereof being given to the Main Contractor and to the Consultant. No other or further assignation of this Agreement, other than permitted by this clause, by the Beneficiary or any other party shall be permitted. The Consultant shall not be entitled to assign or transfer any rights or obligations hereunder without the consent of the Beneficiary.

11. The Consultant undertakes that it will not raise as a defence to any action by the Beneficiary for alleged breach of this Agreement the fact that the obligations of the Main Contractor to the Beneficiary in respect of the Services have been released as a result of the termination of the Building Contract.

12. No failure, approval, act or forbearance on the part of the Beneficiary in respect of any right of the Beneficiary pursuant to this Agreement shall constitute any waiver of any right of the Beneficiary under or arising out of this Agreement nor relieve the Consultant of any of its duties or obligations under or arising out of this Agreement.

13. Any notice, consent or demand to be given or made by any party under this Agreement (hereinafter called a **"Notice"**) shall only be validly served if in writing and delivered personally or sent by pre-paid first class recorded delivery post to the following address and marked for the attention of the following person in the case of each party:

| Party: | Address: | Person: |
|---|---|---|
| Beneficiary | Dalian House, 350 St Vincent Street Glasgow, G3 8YZ | Head of Board Administration |
| Main Contractor | | |
| Contractor | | |

Any party may by Notice to the other party/parties change its address or the title of the person for whose attention Notices are to be given or made pursuant to this Clause. Any such Notice shall be deemed to have been received:

13.1 if delivered personally, at the time of delivery;

13.2 in the case of pre-paid first class recorded delivery post, on the first Business Day after the date of posting.

If any Notice is delivered after 5 p.m. on a Business Day, or at any time during a day which is not a Business Day, that Notice shall be deemed to have been received at 9 a.m. on the next Business Day. For the purposes of this Clause, "Business Day" means any day which is not a Saturday, a Sunday or a public holiday in Scotland. In proving service it shall be sufficient to prove that the envelope containing such Notice was properly addressed to the relevant party and either delivered personally to that address or delivered into the custody of the postal authorities as a pre-paid first class recorded delivery letter. For the avoidance of doubt, Notices shall not be validly served if sent by e-mail or fax

14 No action or proceedings for any breach of this Agreement shall be commenced against the Consultant after the expiry of twelve years from Completion or earlier termination of the Consultant's employment under the Appointment.

15. The definitions of words and phrases used in this Agreement shall be those set out in the Appointment except where expressly defined in this Agreement.

16. This Agreement shall be governed by and construed in accordance with Scots Law and the parties hereto submit to the exclusive jurisdiction of the Scottish Courts.

IN WITNESS WHEREOF these presents consisting of this and the preceding 8 pages have been executed as follows:

**SUBSCRIBED** for and on behalf of the said **GREATER GLASGOW HEALTH BOARD** at

on the day of 2009:

..... AUTHORISED SIGNATORY

..... FULL NAME

.....AUTHORISED SIGNATORY

..... FULL NAME

**SUBSCRIBED** for and on behalf of the said [ ] at

on the day of [ ]

2009by:

..... DIRECTOR

..... FULL NAME

BEFORE THIS WITNESS

..... WITNESS

..... FULL NAME

..... ADDRESS

**SUBSCRIBED** for and on behalf of the said [ ] at

on the day of [ ] 2009:

under a Power of Attorney dated.....

BEFORE THIS WITNESS

..... WITNESS

..... FULL NAME

..... ADDRESS

..... ADDRESS

**Appendix 2 to Contract Data part one: Form of Sub-Contractor Warranty**



A49342285

**SUB-CONTRACTOR'S COLLATERAL WARRANTY**

This Agreement is among

(1) **GREATER GLASGOW HEALTH BOARD** of Dalian House, 350 St Vincent Street Glasgow, G3 8YZ ("the Beneficiary" which expression shall include its successors in title or permitted assignees under this Agreement)

(2) [ ] (Registered number [ ]) of [ ] (" Main Contractor" which term shall include any successor including any parties taking over the obligations of Main Contractor. under the Project Agreement)

(3) [ ], (registered number [ ]) whose registered office is at [ ] ("the Sub-Contractor")

WHEREAS:

A The Beneficiary has entered or is about to enter into an agreement with Main Contractor ("the Building Contract") in connection with the design and construction of the New South Glasgow Hospital, Govan, Glasgow ("the Project").

B The Main Contractor has engaged or is about to engage the Sub-Contractor under a [design and build] contract ("the Sub-Contract"), which expression shall include all documents incorporated therein and any agreed amendment thereto, to carry out [design and] works as more particularly described in the Sub-Contract ("the Sub-Contract Works"), which expression shall include any additional works performed by the Sub-Contractor under the Sub-Contract including in connection with any modifications or variations made thereunder.

C It is a condition precedent of the Building Contract that the Sub-Contractor, the Main Contractor and the Beneficiary enter into this agreement ("this Agreement").

NOW IT IS AGREED:

1 The Sub-Contractor warrants and undertakes to the Beneficiary that it has complied and will continue to comply with all the terms and obligations under the Sub-Contract on the Sub-Contractor's part to be performed and observed and shall complete the Sub-Contract Works in accordance with the Sub-Contract.

2. Without prejudice to Clause 1 of this Agreement, the Sub-Contractor further warrants and undertakes to the Beneficiary that:

2.1 it has exercised and will continue to exercise all the reasonable skill, care and diligence to be expected from a competent and qualified professional designer experienced in carrying out works similar in nature, size and complexity to the Sub-Contract Works in:

2.1.1 the design of the Sub-Contract Works; and

2.1.2 the selection of goods and materials for the Sub-Contract Works, and in particular in ensuring that it has not and will not specify for use in relation to the Sub-Contract Works any products or materials not in conformity with relevant British or European standards or Codes of Practice or which are at the time of specification generally known within the United Kingdom to an experienced professional designer of works such as the Sub-Contract Works to be deleterious to health and safety or to the durability of buildings and/or other structures and/or finishes and/or plant and machinery in the particular circumstances in which they are used;

2.2 the Sub-Contract Works will on completion satisfy all performance specifications and other requirements contained in the Sub-Contract;

2.3 the Sub-Contract Works and all materials and goods comprised therein will correspond as to description, quality and condition with the requirements of the Sub-Contract; and

2.4 the Sub-Contract Works will on completion comply with the requirements of the Sub-Contract in respect of compliance with Legislation, Guidance and Good Industry Practice (all as defined in the Sub-Contract);

Provided that:

2.5.1 the obligations of the Sub-Contractor under this Agreement shall be no greater in extent or quantity than if the Beneficiary had been named as joint employer with the Main Contractor under the Sub-Contract; and

2.5.3 the Sub-Contractor shall be entitled in any action or proceedings brought by the Beneficiary to rely on any limitation in the Sub-Contract and to raise the equivalent rights in defence of liability (excluding counterclaim and set-off in respect of amounts due to the Sub-Contractor under the Sub-Contract) as it would have if the Beneficiary had been named as joint employer with the Main Contractor under the Sub-Contract;

3. The Beneficiary has no authority to issue any direction or instruction to the Sub-Contractor in relation to the Sub-Contract unless and until the Beneficiary has given notice under Clauses 4 or 5, below. The Beneficiary or its appointee has no liability to the Sub-Contractor in relation

to amounts due under the Sub-Contract unless and until the Beneficiary has given notice under Clauses 4 or 5.

4. The Sub-Contractor agrees that it will, if so required by notice in writing given by the Beneficiary, subject to Clause 6, below, accept the instructions of the Beneficiary or its appointee, as the case may be, (which for the avoidance of doubt and without limitation may include a third party appointed by the Beneficiary to act as "the Employer" under the Sub-Contract) to the exclusion of the Main Contractor in respect of the Project upon the terms and conditions of the Sub-Contract. The Main Contractor acknowledges that the Sub-Contractor shall be entitled to rely on a notice given to the Sub-Contractor by the Beneficiary under this Clause 4 and further acknowledges that such acceptance of the instructions of the Beneficiary or its appointee, as the case may be, to the exclusion of the Main Contractor shall not constitute any breach of the Sub-Contractor's obligations to the Main Contractor under the Sub-Contract.

5. The Sub-Contractor further agrees that it will not without first giving the Beneficiary not less than 35 days notice in writing exercise any right or purported right it may have to determine its employment under the Sub-Contract, treat the same as having been repudiated by the Main Contractor, or discontinue the performance of any duties or obligations thereunder. Further, the Sub-Contractor shall within 14 days of giving the said notice, provide statements to the Beneficiary containing the following:

5.1 all amounts properly due and payable to the Sub-Contractor under the Sub-Contract on or before the date of issue of the said notice which remain unpaid;

5.2 in the reasonable estimation of the Sub-Contractor, the amount of any monetary claim (if any) asserted by the Sub-Contractor against the Main Contractor under the Sub-Contract arising out of or in connection with the breach for which the said notice was served; and

5.3 where the Sub-Contractor intends to terminate the Sub-Contract due to some default or breach of contract of a non-financial nature:

5.3.1 the provision of the Sub-Contract alleged to have been breached or not fulfilled;

5.3.2 supporting information in reasonable detail to enable the Beneficiary to identify the material facts;

5.3.3 the steps reasonably required to remedy the specified breaches or conditions not fulfilled;

5.3.4 the time within which the specified steps can reasonably be expected to be taken;

5.3.5 (if applicable) the amount of damages claimed and the basis of their calculation; and

5.3.6 (if applicable) the relief to be sought.

The Sub-Contractor warrants to the Beneficiary that to the best of the Sub-Contractor's knowledge and belief, having made all proper and appropriate enquiries, the statements submitted under this Clause 5 shall be true, complete and accurate statements of the amounts to which the Sub-Contractor considers itself entitled. In the event that the Sub-Contractor shall delay in giving such notice and information within the said 14 days, the period of 35 days shall be extended to correspond with the period of any such delay. The Sub-Contractor's right to determine its employment under the Sub-Contract or to treat the same as having been repudiated or to discontinue performance shall cease if, within the said 35 day period (extended as appropriate) and subject to Clause 6 the Beneficiary shall give notice in writing to the Sub-Contractor requiring the Sub-Contractor to accept the instructions of the Beneficiary or its appointee to the exclusion of the Main Contractor in respect of the Project upon the terms and conditions of the Sub-Contract.

6. It shall be a condition of any notice given by the Beneficiary under Clauses 4 or 5 above, that the Beneficiary or its appointee, as the case may be, accepts liability for payment of the sums due under the Sub-Contract and detailed in the statements provided under Clause 5 (and makes payment within a period of 28 days of such notice from the Beneficiary), and for subsequent performance of the Main Contractor's obligations. Upon the issue of any notice by the Beneficiary under clauses 4 or 5, the Sub-Contract shall remain in full force and effect as if no right of determination of its employment under the Sub-Contract, or any right of the Sub-Contractor to treat the Sub-Contract as having been repudiated by the Main Contractor. had arisen and the Sub-Contractor shall be liable to the Beneficiary and/or its appointee, as the case may be, under the Sub-Contract in lieu of its liability to the Main Contractor.

7. The Beneficiary may at any time following the issue of any notice by the Beneficiary under Clauses 4 or 5, serve a further notice that following the expiry of 28 days from the giving of such notice the Beneficiary will have no liability (save in respect of the Beneficiary's antecedent breach) for any sums due or to become due to the Sub-Contractor in respect of the period following expiry of the last mentioned 28 day period. The Beneficiary may exercise any of its rights pursuant to Clauses 4 or 5 on more than one occasion.

8. The Sub-Contractor shall maintain for the period expiring 12 years after Completion (or equivalent event under the Sub-Contract) or until termination of the Sub-Contractor's employment under the Sub-Contract, Professional Indemnity Insurance in an amount of not less than £[10]m [(ten million pounds)] sterling for any one claim or series of claims arising out

of one single incident during any period of insurance which shall not be more than 12 months with insurers of good repute carrying on business in the European Union provided always that such insurance is available at rates and terms which are commercially reasonable to contractors of a similar size and standing in the UK. In determining whether or not insurance is available as aforesaid, the financial characteristics and claims' record of the Sub-Contractor shall be ignored. The Sub-Contractor shall immediately inform the Beneficiary if such insurance ceases to be available at rates and terms which are commercially reasonable in order that the Sub-Contractor and the Beneficiary can consider alternative means of best protecting their respective positions in respect of the Project in the absence of such insurance provided that the Beneficiary shall be entitled to require the Sub-Contractor to maintain such lesser amount of Professional Indemnity Insurance as is available to the Sub-Contractor at rates and terms which are commercially reasonable. As and when it is reasonably requested to do so by the Beneficiary (but not more than once in any period of insurance) the Sub-Contractor shall produce for inspection documentary evidence satisfactory to the Beneficiary (acting reasonably) that its Professional Indemnity Insurance is being maintained.

9. The Sub-Contractor hereby grants to the Beneficiary or its appointee and all those authorised by the Beneficiary an irrevocable, non-exclusive and royalty-free licence (which shall be capable of assignation) to use and reproduce all technical information (whether or not stored in computer systems), drawings, models, calculations, specifications, schedules, details, plans, programs, budgets, reports or other documents, work or other things whatsoever provided or to be provided by the Sub-Contractor in connection with the Project (the "**Documents**") for any purpose relating to the Project including (but without limitation) the construction, completion, maintenance, promotion, advertisement, reinstatement, repair and any extension of the Project and for dissemination within the NHS as part of the feedback of information to better or enable the NHS to realise improvements in its methods and practice of construction and in the design and procurement of its construction. Such licence shall carry the right to grant sub-licenses and shall subsist notwithstanding that the Sub-Contract is terminated or the obligations and duties thereunder have been completed. For the avoidance of doubt, the grant of such licence or sub-licences shall not impose any additional liability on the Sub-Contractor. The Sub-Contractor will not assign or agree to assign the copyright in any of the documents without the prior written consent of the Beneficiary. The Sub-Contractor shall on reasonable demand provide to the Beneficiary or its appointee and those authorised by the Beneficiary additional copies of any documents on receipt of reasonable copying costs. The Sub-Contractor shall not be liable for any use by the Beneficiary of any of the documents for any purpose other than those authorised by this clause.

10. This Agreement may be assigned on a maximum of two occasions in whole or in part by the Beneficiary to any party to whom the Beneficiary's interest in the Main Contract or any part thereof is assigned or disposed to without the consent of the Main Contractor or the Sub-Contractor being required and any such assignation shall be effective upon written notice thereof being given to the Main Contractor and to the Sub-Contractor. No other or further assignation of this Agreement, other than permitted by this clause, by the Beneficiary or any

other party shall be permitted. The Sub-Contractor shall not be entitled to assign or transfer any rights or obligations hereunder without the consent of the Beneficiary.

11. The Sub-Contractor undertakes that it will not raise as a defence to any action by the Beneficiary for alleged breach of this Agreement the fact that the obligations of the Main Contractor to the Beneficiary in respect of the design and construction of the Sub-Contract Works have been released as a result of the termination of the Building Contract.

12. No failure, approval, act or forbearance on the part of the Beneficiary in respect of any right of the Beneficiary pursuant to this Agreement shall constitute any waiver of any right of the Beneficiary under or arising out of this Agreement nor relieve the Sub-Contractor of any of its duties or obligations under or arising out of this Agreement.

13. Any notice, consent or demand to be given or made by any party under this Agreement (hereinafter called a **"Notice"**) shall only be validly served if in writing and delivered personally or sent by pre-paid first class recorded delivery post to the following address and marked for the attention of the following person in the case of each party:

| Party: | Address: | Person: |
|---|---|---|
| Beneficiary | Dalian House, 350 St Vincent Street Glasgow, G3 8YZ | Head of Board Administration |
| Main Contractor | | |
| Contractor | | |

Any party may by Notice to the other party/parties change its address or the title of the person for whose attention Notices are to be given or made pursuant to this Clause. Any such Notice shall be deemed to have been received:

13.1 if delivered personally, at the time of delivery;

13.2 in the case of pre-paid first class recorded delivery post, on the first Business Day after the date of posting.

If any Notice is delivered after 5 p.m. on a Business Day, or at any time during a day which is not a Business Day, that Notice shall be deemed to have been received at 9 a.m. on the next Business Day. For the purposes of this Clause, "Business Day" means any day which is not a Saturday, a Sunday or a public holiday in Scotland. In proving service it shall be sufficient to prove that the envelope containing such Notice was properly addressed to the relevant party and either delivered personally to that address or delivered into the custody of the postal

authorities as a pre-paid first class recorded delivery letter. For the avoidance of doubt, Notices shall not be validly served if sent by e-mail or fax

14 No action or proceedings for any breach of this Agreement shall be commenced against the Sub-Contractor after the expiry of twelve years from Completion or earlier termination of the Sub-Contractor's employment under the Sub-Contract.

15. The definitions of words and phrases used in this Agreement shall be those set out in the Sub-Contract except where expressly defined in this Agreement.

16. This Agreement shall be governed by and construed in accordance with Scots Law and the parties hereto submit to the exclusive jurisdiction of the Scottish Courts.

IN WITNESS WHEREOF these presents consisting of this and the preceding 8 pages have been executed as follows:

**SUBSCRIBED** for and on behalf of the said **GREATER GLASGOW HEALTH BOARD** at
on the day of 2009:

..... AUTHORISED SIGNATORY

..... FULL NAME

.....AUTHORISED SIGNATORY

..... FULL NAME

**SUBSCRIBED** for and on behalf of the said **[** **]** at
on the day of [ ] 2009
by:

..... DIRECTOR

..... FULL NAME

BEFORE THIS WITNESS

..... WITNESS

..... FULL NAME

..... ADDRESS

**SUBSCRIBED** for and on behalf of the said **[** **]** at
on the day of [ ] 2009:

under a Power of Attorney dated.....

BEFORE THIS WITNESS

..... WITNESS

..... FULL NAME

..... ADDRESS

..... ADDRESS

**Appendix 3 to Contract Data part one: Form of Novation Agreement**



A49342285

**NOVATION AGREEMENT**

**amongst**

**Greater Glasgow Health Board** of Dalian House, St Vincent Street, Glasgow (hereinafter referred to as "the **Board**");

and

**Brookfield Construction (UK) Limited**, incorporated under the Companies Acts (Company Number 3808946) and having its Registered Office at 23 Hanover Square, London W1S1JB (hereinafter referred to as the "**Contractor**" which term shall include its successors and assignees);

and

**Boswell Mitchell and Johnston Limited,** incorporated under the Companies Acts (Company Number SC258273) and having its Registered Office at 2 Central Quay, 89 Hydepark Street, Glasgow, G3 8BW (hereinafter referred to as "the "**Consultant**"");

WHEREAS

(A) By an agreement dated 6 November 2009 ("the **Appointment**") the Board has appointed the Consultant to carry out services as detailed in the Appointment (**"the Services"**) in connection with a new Laboratory Block forming part of the New South Glasgow Hospitals Project at the Southern General Hospital, Glasgow (the **"Project"**).

(B) The Board and the Contractor have entered into or shall enter into a building contract ("the **Building Contract**") for, inter alia, the construction and completion of the Project, as more particularly described therein (hereinafter referred to as "the **Works**");

(C) It is intended that the Contractor will in terms of the Building Contract be responsible to the Board for all design and construction work required as part of the Project, including the Services undertaken or to be undertaken by or on behalf of the Consultant under the Appointment;

(D) It is a condition of the Building Contract and the Appointment that the Contractor and the Consultant shall enter into a Novation Agreement with the Board in respect of the Appointment in connection with the Works, under exception of those aspects of the Services covering cost consultancy and quantity surveying (hereinafter referred to as the **"Excluded Services"**).

(E) The Board, the Contractor and the Consultant have agreed to novate the Appointment, under exception of the Excluded Services, so that it shall be between the Contractor and the Consultant to the exclusion of the Board on the terms and conditions of this agreement

(F) The Contractor and the Consultant have agreed that the terms of the Appointment shall as from the date of this Novation Agreement be amended as set out in Clause 3A below.

NOW THEREFORE the parties hereto DO HEREBY AGREE as follows: -

1. The Board hereby novates to the Contractor its entire rights, benefits, liabilities and obligations under and pursuant to the Appointment including its accrued rights, benefits, liabilities and obligations with the exception of (a) the right to receive, and obligation on the Consultant to perform the Excluded Services and (b) the Board's obligation to pay the Outstanding Fee if any (as hereinafter defined).

2. The Consultant and the Contractor hereby release and discharge the Board from any and all of the obligations and liabilities under the Appointment, past, present or future owed by the Board to the Consultant under or in connection with the Appointment with the exception of the Board's obligation to pay the Outstanding Fee if any (as hereinafter defined), provided that nothing in this clause shall operate to exclude or limit the liability or obligations of the

Consultant to the Board in terms of the collateral warranty granted or to be granted to the Board in terms of this Agreement or in respect of the Excluded Services whether such liabilities or obligations arise or occur before or after the date of this Agreement.

3. The Consultant shall provide the Services (with the exception of the Excluded Services) to the Contractor from the effective date specified in clause 10 of this Agreement.

3A The Parties agree that the terms of the Appointment are hereby amended by their replacement with the terms and conditions set out in Appendix A to this Novation Agreement and the Consultant agrees to perform the Services under the Appointment in accordance with these amended terms and conditions from the date of this Novation Agreement. Consequently, the Parties agree that their sole obligations in respect of and in connection with the Services as performed after the date of this Novation Agreement shall be as set out in Appendix A.

4. Subject to Clause 1 the Consultant accepts the liability of the Contractor under the Appointment in substitution for the liability of the Board.

5. The Consultant hereby warrants and undertakes to the Contractor that it has performed and will continue to perform each and all of its obligations, duties and undertakings under and pursuant to the Appointment as and when required by and in all respects in accordance with the Appointment. The Contractor shall have the right to enforce its rights and remedies in connection with the Appointment and to pursue all claims and demands in connection with any breach, negligence, omission, default of the Consultant or those for whom it is responsible in connection with the Appointment and/or the Works irrespective of when losses, costs, expenses or claims occurred or the breach, negligence, omission or default occurred. For the purposes of this Clause 5, the expression "the Appointment" shall include the original appointment between the Board and the Consultant and the novated appointment between the Contractor and the Consultant as attached at Appendix A.

6. The Contractor undertakes to the Consultant and to the Board to perform all the duties and obligations on the Board's part under the Appointment and to be bound by the terms of the Appointment as if the Contractor had been the employer under the Appointment from the date of commencement of the Services (with the exception of the Excluded Services) or the date of the Appointment, whichever is the earlier, in substitution for the Board.

7.1 The Consultant shall owe no greater duty to the Contractor hereunder than it would have owed to the Contractor if the Contractor had been named as employer under the Appointment from the outset in substitution for the Board.

7.2 The Consultant shall be liable to the Contractor subject to and in accordance with the terms of the Appointment for the Services (with the exception of the Excluded Services) and performance of its obligations under the Appointment whether performed prior to, on or after the effective date referred to in Clause 10 below and irrespective of: -

(i) to whom the relevant Service or obligation was performed;

(ii) whether or not any losses, costs, expenses or claims could be conceived as having been suffered by the Board or the Contractor and irrespective of whether attributable to the period before or after the effective date referred to in clause 10 or suffered or incurred by the Contractor;

(iii) the fact that the Board has suffered no losses, costs, expenses or claims or could not have suffered losses, costs, expenses or claims or in either case the losses, costs, expenses or claims caused, were in whole or in part attributable to an act, omission, breach, default or negligence in the period before or after such effective date or are different in extent, nature or otherwise from those suffered or incurred or which could have been suffered or incurred by the Board.

7.3 The Consultant shall not be entitled in defence or mitigation of any claim to state a defence of no loss or to state a defence that the Contractor has suffered or incurred a loss, which would not have been suffered or incurred by the Board.

8. For the avoidance of doubt, the parties hereto agree and undertake that save to the extent expressly provided otherwise, nothing contained in this Agreement shall:

(i) limit, vary or discharge any right or liability arising under or in connection with the Appointment save to the extent of the identity of the creditor and/or debtor in respect of the relevant right and/or obligation;

(ii) waive, discharge, limit or affect any of the rights, obligations or liability of the Consultant and any beneficiary under or in connection with any collateral warranty agreement issued pursuant to the Appointment;

(iii) adversely affect any right of step-in granted to any party under any collateral warranty agreement referred to above.

9. The Consultant acknowledges and agrees that the Consultant has been paid the whole fee due to the Consultant by the Board in connection with the Appointment, therefore there is no outstanding fee due to the Consultant by the Board in connection with the Appointment ("the **Outstanding Fee**").

10. The provisions of this Agreement shall take effect between the parties hereto on the effective date of the Building Contract notwithstanding the dates of execution hereof ("The **Effective Date**").

11. The Consultant hereby undertakes to execute and deliver to the parties (including the Board) collateral warranty agreements in terms of those specified in the Appointment in favour of the parties (including the Board) and within the timescales referred to therin but for the avoidance of doubt on the date of execution hereof in respect of the Board.

12. Words and expressions used in this Agreement shall, unless the context otherwise requires, bear the same meaning ascribed to them in the Appointment. The rules of construction and interpretation provided for in the Appointment shall apply to this Agreement. Save insofar as expressly amended hereby the terms of the Appointment shall continue in full force and effect.

13. This Agreement and the rights and obligations of the parties hereto shall be governed and construed according to the Law of Scotland and the parties hereby prorogate the non-exclusive jurisdiction of the Scottish Courts;

IN WITNESS WHEREOF these presents and the preceding 2 pages are executed as follows: -

**Signed for and on behalf of Greater Glasgow Health Board**

at ..... on .....
by:

..... (Signature)

..... (Full name in CAPITALS)
Authorised Signatory

..... (Signature)

..... (Full name in CAPITALS)
Witness

..... (Full address - witness only)

.....

**Signed for and on behalf of Brookfield Construction (UK) Limited**

at ..... on .....
by:

..... (Signature)

..... (Full name in CAPITALS)
Director/Company Secretary/Authorised Signatory

..... (Signature)

..... (Full name in CAPITALS)
Director/Company Secretary/Authorised Signatory/Witness

..... (Full address - witness only)

.....

**Signed for and on behalf of Boswell Mitchell and Johnston Limited**

at ..... on .....
by:

..... (Signature)

..... (Full name in CAPITALS)
Director/Company Secretary/Authorised Signatory

..... (Signature)

..... (Full name in CAPITALS)
Director/Company Secretary/Authorised Signatory/Witness

..... (Full address – witness only)

.....

# APPENDIX A

**AGREEMENT**

between

**BROOKFIELD CONSTRUCTION (UK) LIMITED** of 23 Hanover Square, London, United Kingdom W1S 1JB ("the *Employer*"); and

**BOSWELL MITCHELL AND JOHNSTON LIMITED** having its principal place of business at 2 Central Quay, 89 Hydepark Street, Glasgow G38BW (the "*Consultant*").

WHEREAS: -

The *Employer* has been appointed to carry out the design and construction of the New South Glasgow Hospital ("the Project") and wishes to have the *Consultant* Provide the *services* in connection with the same.

**NOW IT IS AGREED THAT**

1. The *Consultant* will Provide the Services in accordance with the NEC Professional Services Contract, Option A: Priced Contract with activity schedule June 2005 (as the same are amended by the Contract Data) ("*the conditions of contract*") and the principles stated in Appendix 1 of this Agreement.
2. The *Employer* will pay the *Consultant* in accordance with Section 5 of the *conditions of contract.*
3. Not used.
6. The documents forming part of this contract are:
   - 6.1 this Agreement
   - 6.2 the *conditions of contract*,
   - 6.3 Contract Data part one — data provided by the *Employer*
   - 6.4 Contract Data part two – data provided by the *Consultant*
7. In the event of conflict between the documents forming part of this contract the following order of priority will apply:-
   - 7.1 This Agreement (excluding Appendix 1)
   - 7.2 The *conditions of contract*,

7.3 Contract Data part one

7.4 Contract Data part two

7.5 Appendix 1 of this Agreement

IN WITNESS WHEREOF these presents consisting of this and the 1 preceding page together with Appendix 1 and the Contract Data part one (including its Appendices) and Contract Data part two are executed as follows: -

EXECUTED for and on behalf of the *Employer* at [ ] on the [ ] day of [ ] 2009 as follows: -

(Authorised official) Before this witness: -

Full name .....

Address .....

.....

.....

EXECUTED for and on behalf of the *Consultant* at [ ] on the [ ] day of [ ] 2009 as follows: -

(Director/Authorised Signatory) Before this witness: -

Full name .....

Address .....

.....

.....

**This is Appendix 1 to the foregoing Agreement between Brookfield Construction (UK) Limited**

**and**

**Boswell Mitchell and Johnston Limited**

**Principles governing the Agreement**

**Definitions**

| **Defined Term** | **Definition** |
|---|---|
| "Building Contract" | means the contract between or to be entered into between the Employer and Greater Glasgow Health Board in relation to the design and construction of the New South Glasgow Hospital. |
| "Overriding Objective" | means the objective set out in Paragraph 4. |
| "Overriding Principle" | means principle set out in Paragraph 1. |
| "Professional Advisor" | means any party providing specialist advice to the *Employer*. |

1. The Overriding Principle of this agreement is to work together with the *Employer* and its Professional Advisers in a co-operative and collaborative manner to achieve the Overriding Objective acting in good faith and in the spirit of mutual trust and respect.
2. In order to work together in co-operative and collaborative manner the *Employer* and the *Consultant* agree that they should each give to and welcome from each other, and any Professional Adviser, feedback on performance and shall share information openly and highlight any difficulties at the earliest practical time. The parties shall support collaborative behaviour and confront behaviour that does not comply with the Overriding Principle.
3. The terms of the Agreement shall be interpreted according to their natural meaning but in the event of any ambiguity in their natural meaning they shall be interpreted so as to give best effect to the Overriding Principle.
4. In entering into the Agreement the parties' Overriding Objective is by working together in accordance with the terms of the Agreement to achieve the successful delivery by the *Consultant* of the *services*: -

4.1 to the standard and functionality defined or as reasonably inferred from the *Employer*'s requirements set out in the Building Contract to a quality which meets or exceeds these requirements;

4.2 at a cost that offers best value for money taking into account whole life (as well as capital) costs over the proposed design life of the *works* through the application of the principles of value engineering; and

4.3 to the timescale acceptable to the *Employer* and agreed between the parties without compromising health and safety or the *Employer*'s required standards and the quality of the completed *works* and in any event before the Completion Dates set out in the Building Contract.

5. The *Consultant* shall carry out the management and be responsible for the delivery of the *services* in accordance with the Agreement and shall work and liaise with the *Employer* and any of its Professional Advisers as necessary or appropriate or as requested by the *Employer* in order to achieve the Overriding Objective.

6. The *Consultant* shall engage persons from the key people set out in the Contract Data — Part two in the performance of the *services* to be provided by the *Consultant* under the Agreement and shall not replace any of the key people without the approval of the *Employer* (such approval not to be unreasonably withheld). The *Consultant* will ensure that where a member of its key personnel is replaced that they have the skills, qualifications, experience and ability to provide the best service to the *Employer*.

7. Throughout the period of the Agreement the performance of the *Consultant* shall in relation to the *services* be monitored against the Key Performance Indicators defined in the Scope and/or the Contract Data.

8. During the period of the Agreement amendments may be made to the Key Performance Indicators by agreement between the *Employer* and the *Consultant* except where the *Employer* is required by the Scottish Government or regulatory bodies to provide Key Performance Indicators. In such cases the *Employer* will provide information on any requirements to the *Consultant* as soon as reasonably practicable.

9. At 2 monthly intervals or at such other intervals as the parties may agree during the performance of the Agreement, the *Employer* and the *Consultant* shall undertake formal reviews of the performance of the *Consultant* against its Key Performance Indicators. The *Employer* and the *Consultant* will discuss any way in which the performance of the *Consultant* may be improved.

10. The *Consultant* shall keep a comprehensive record as specified by the *Employer* of all performance monitoring carried out under the Agreement in such form as the *Employer* may reasonably request for a period of 6 years after the expiry or earlier termination of this

Agreement and shall provide copies of such records to the *Employer* for the *services* to enable him to record, disseminate and compare the performance of the *Consultant*. Each record shall be retained in a format that can be read and copied and kept with the IT requirements on an electronic based database.

11. The *Consultant* shall throughout the period of the Agreement look for and seek to achieve continuous improvement in the quality of the *services* while reducing low life costs, wastage (in accordance with WRAP guidance), and the time taken to deliver the *services*. Innovation and best practice will be shared with the *Employer*.

12. To achieve the aim set out in Clause 11 the *Consultant* shall actively participate in the continuous improvement "learning sets" with the Employer in relation to the Agreement. This commitment is likely to involve meetings at least once every 3 months in relation to the *services* and meetings at least once every 6 months in relation to the lessons to be learned. The *Consultant* shall also use reasonable endeavours to procure the involvement of any of its subconsultants in such learning sets where considered appropriate.


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**CONTRACT DATA PART ONE —**

**DATA PROVIDED BY *THE EMPLOYER***

**Contract Data Part one - Data provided by the *Employer***

**1. General**

- The *conditions of contract* are the core clauses for main Option C, dispute resolution Option W2 and Secondary Options — X2, X8, X18.3, Y(UK)2 and Z of the NEC3 Engineering and Construction Contract (June 2005).
- The services are management and delivery of design services for the New South Glasgow Hospital Project as the *services* are more specifically referred to in the Scope.
- The *Employer* is

  Name: Brookfield Construction (UK) Limited

  Address: 23 Hanover Square, London, United Kingdom W1S 1JB
- The *Adjudicator* is

  Name: To Be Appointed as below

  Address: [tba]
- The *Services* are: As Set out in Appendix 2 to this Agreement
- The Scope is as set out in Appendix 2 to this Agreement

- The *language* of the contract is English.
- The *law of the contract* is the law of Scotland subject to the jurisdiction of the Courts of Scotland.
- The *period for reply* to a communication is
  - to *Consultant's* submission of particulars of design for acceptance is five (5) weeks
  - Reply to all other communications unless otherwise stated in this contract three (3) weeks
- The *Adjudicator* nominating body is:

  The Scottish Branch of the Royal Institute of Chartered Surveyors
- The *tribunal* is the Scottish Courts

**2. The Parties' main responsibilities:**

Not used

**3. Time**

- The *starting date* is 22 Dec 09
- The Consultant submits revised programmes at intervals no longer than three (3) weeks.

**4. Quality**

- The quality policy statement and quality plan are provided within 4 weeks of the Contract Date.
- The *defects date* is 104 Weeks after Completion of the *services*.

**5. Payment**

- The *assessment interval* is four (4) weeks alternatively calendar monthly.
- The *currency of this contract* is the pound sterling (£)
- The interest rate is 5% per annum

**8. Indemnity, Insurance and liability**

The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the works, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the Consultant) caused by activity in connection with this contract for any one event is

**£10,000,000.00 (ten million pounds sterling)**

The minimum limit of indemnity for insurance in respect of death or bodily injury to employees of the *Consultant* arising out of and in the course of their employment in connection with this contract for any one event is

**£10,000,000.00 (ten million pounds sterling)**

The amount of the minimum limit of indemnity for Professional Indemnity Insurance for design liability in connection with this contract for any one event is

**[In any one event / In the aggregate] of £10,000,000 (ten million pounds sterling)**

Consultant to provide documentary evidence to establish that it has discharged its obligations under this contract with respect to insurance.

**Optional Statements**

**If the Employer has decided the completion date for the whole of the *works***

The *completion date* for the whole of the *services* is 4 March 2012.

**If no programme is identified in part two of the Contract Data**

The Consultant is to comply with Brookfield Design Programme ref BCL-GS1-CND1-0002 Rev 01 dated 14 Dec 09.

**If the Employer has identified work which is to meet a stated *condition* by a *key date***

The *key dates* and *conditions* to be met are Completion of the Stage 1 Laboratory Works by 4th March 2012

**If the Employer states any *expenses***

- The *expenses* stated by the *Employer* are:

| Item | Amount |
|---|---|
| ..... | ..... |
| ..... | ..... |
| ..... | ..... |

**If Option A is used**

- The *Consultant* prepares forecasts of the total *expenses* at intervals no longer than 4 weeks.

**If Option X5 is used**

Not used

**If Options X5 and X7 are used together**

Not used

**If Option X8 is used**

- The *collateral warranty agreements* are:

| Agreement reference | Third Party |
|---|---|
| Form as set out in Appendix 3 to this Agreement | Greater Glasgow Health Board<br>[Others] |

**If Option X18 is used**

The *end of liability date* is twelve (12) years after the Completion of the whole of the *services*.

**If Option Z is used**

*The additional conditions of contract are*

**Amendments and additions to existing Clauses:**

**Z 1 Additions to Clause 11.2 - Identified and Defined Terms**

11.2(14) "Agreement" is the form of agreement entered into between the *Employer* and the *Consultant* in respect of the services forming part of this contract

11.2(15) "the Client" is the Greater Glasgow Health Board.

11.2(17) "Laboratories" is the new laboratory block as the same is more particularly described in the Scope.

11.2(18) "Stage" has the meaning ascribed to it in the recital to the Agreement.

11.2(19) "*conditions of contract*" is the NEC Professional Services Contract, Option A: Priced contract with activity schedules, June 2005 (as the same are amended in by the Contract Data).

11.2(21) "Documents" includes, without limitation, all technical information (whether or not stored in computer systems), drawings, models, calculations, specifications, schedules, details, plans, programs, budgets, reports or other documents, work or other things provided or to be provided by or on behalf of the *Consultant* in connection with the *services*.

**Z2 Amendment to clause 11.2 (4) - Identified and Defined Terms**

Delete and replace with "the Contract Date is the date of execution of this contract"



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**Z3 Amendment to Clause 16.1 – Ambiguities and inconsistencies**

Add the following sentence to the end of Clause 16.1

"Instructions issued under this clause do not necessarily give rise to a compensation event"

**Z4 Addition to Clause 16 – Ambiguities and inconsistencies**

"16.2 Inconsistencies and ambiguities between (a) the NHS Mandatory Documentation and NHS Guidance Documentation and building control or (b) between the NHS Mandatory Documentation and NHS Guidance Documentation and the Schedules of Accommodation or (c) between the NHS Mandatory Documentation and NHS Guidance Documentation and any information issued to the Consultant by the Employer, are to be dealt with in accordance with the procedures set out in the Scope and/or the Contract Data."

**Z5 Amendment to Clause 18 – Prevention**

Add new Clause 18.2

"Notwithstanding the provisions of Clause 60 and subject to Clause 18.4, the *Consultant*'s sole right to payment in respect of the occurrence of an event under Clause 18.1 is as provided in Clause 92."

Add new Clause 18.3

"The *Consultant* and the *Employer* take all reasonable steps to mitigate the effect of the occurrence of an event under Clause 18.1."

Add new Clause 18.4

"If the *Employer* instructs the *Consultant* to take steps to Provide the Services in a manner not prevented by the occurrence of an event under Clause 18.1, and such instruction changes the Scope, the *Consultant* is entitled to notify a compensation event under clause 60."

**Z6 Amendment to Clause 21.12 - The *Consultant's* design**

Delete and replace with: "The *Consultant's* obligation is to perform the *services* using the degree of skill and care that would reasonably be expected of a competent professional designer experienced in carrying out design activities of a similar nature, scope and complexity to those comprised in the *services*.

**Z7 Not used.**

**Z 8 Addition to Clause 51 - Payment**

51.6 If the amount to be paid at an assessment date exceeds the amount for the assessment interval as shown in the *Consultant*'s cash flow forecast, then the *Employer* certifies payment up to the amount forecast. Any amount exceeding the forecast is not certified but held over to the next assessment interval, where if amount to be paid at the next assessment date again exceeds the *Consultant*'s cash flow forecast for the assessment interval the process is repeated. This clause does not apply where the *Consultant* provides a valid and acceptable reason for an exception to the limitation of the *Employer's* assessment certification.

**Z9 Amendment to Clause 60.1(11)**

Add new bullet point 6, "does not arise from a sub-consultant ceasing to trade or becoming insolvent (or other equivalent event)"

Add at the end, "provided that the occurrence of such event only entitles the Consultant to a change to the Completion Date or a change to a Key Date and not to a change in the Prices and Clauses 61 – 65 are interpreted accordingly."

**Z10 Amendment to Clause 61.4 - Notifying of Compensation events**

In line 15 delete "two" and substitute "four"

**Z11 Amendment to Clause 70 – the Parties' use of material**

Delete and replace with: -

"70.1 The copyright and all intellectual property rights in the Documents remain vested in the *Consultant* or the person responsible for the production (as the case may be).

70.2 Where documentation (including drawings) is (or are) provided by the *Employer* copyright and such documentation and drawings remain vested in the *Employer*.

70.3 The *Employer* has an irrevocable, non-exclusive royalty free licence to copy and use the Documents and to reproduce the designs contained in them for any purpose relating to the *works* including (but without limitation) the construction, completion, maintenance, promotion, advertisement, reinstatement, repair, any extension of the *works* and for dissemination within

the NHS as part of the feedback of information to better or enable the NHS to realise improvements in its methods and practice of construction and in the design and procurement of its construction.

70.4 The *Consultant* shall not be liable for any use, misuse or variation whatsoever of the *Employer* of the Documents for any purpose other than that for which the same is prepared and provided."

**Z12 Addition to Clause 81.1 – Insurance cover**

Add to the Insurance Table:

| | |
|---|---|
| Liability for negligent management or design – professional indemnity insurance | The amount specified in the Contract Data for any one claim or series of claims arising out of one single incident during any period of insurance which shall not be more than 12 months from the date the *Consultant* starts to Provide the Services for a period of twelve years from Completion of the whole of the *services*, with insurers of good repute carrying on business in the European Union provided always that such insurance is available at rates and terms which are commercially reasonable to Consultants of a similar size and standing in the UK In determining whether or not insurance is available as aforesaid, the financial characteristics and claims' record of the Consultant shall be ignored. |

**Z13 Not Used**

**Z14 Amendment to Clause 90.4 – Reasons for Termination**

Add at the end "notwithstanding that a delay to the Completion Date has previously been notified to the *Consultant* in respect of such event"

**Z15 Not used.**

**Z16 Addition to 91 - Procedures on termination**

"91.2 The *Consultant* hands over to the *Employer* all hard copy and electronic data for the *Consultant*'s design including material prepared by a sub-consultant, so far as prepared at termination. At such termination the *Employer* has the right to use such material for completion of the *services*.

**Z17 Amendment to Clause 92 - Payment on Termination**

92.3 : - "On termination the *Employer* shall not be liable to the *Consultant* for loss of profit, loss of expectation of profit, loss of use, loss of production or indirect and consequential damages."

**Z18 Addition to Clause W2.1(1) – Dispute Resolution**

Add at the end: - "The word "dispute" in this Clause W2 includes any difference under or in connection with this contract".

**Z19 Addition to Clause W2.3(8) – the adjudication**

After "reasons" add the words, "(which will be in writing)"

**Z20 Addition to Clause W2.3(11) – The adjudication**

Delete the first sentence and replace with, "The decision of the *Adjudicator* is binding until the dispute is finally determined by the *tribunal* or by agreement."

**Z21 Amendment to Clause X8 – Collateral Warranty Agreements**

Add at the end: "and provides them to the *Employer* within 7 days of the *Employer*'s written request".

**Z22 New Clause - Confidentiality**

Z22.1 The *Consultant* shall not append their name or give authority to the appending of their name to any publicity concerning this agreement or the services or indulge in any publicity concerning the services without the prior written consent of the *Employer*.

Z22.2 Not used.

Z22.3 The *Consultant* undertakes to treat any information derived from or obtained in the course of the Agreement as confidential and to use best endeavours to

ensure that its employees and sub-consultants and their employees treat any information as confidential and in doing so the *Consultant* shall ensure that its employees and sub-consultants and their employees keep secret and do not disclose information of a confidential nature by him or them by reason of the Agreement. Nothing in this clause shall prevent the disclosure or use of any information to obtain insurance, professional or legal advice or during the course of any legal proceedings or where disclosure is required in accordance with any law or regulation.

**Z23 New Clause – Data Protection**

Z23.1 The *Consultant* warrants and will at all times comply with the provisions of the Data Protection Act 1998 ("the 1998 Act") and any other subordinate legislation enacted pursuant thereto.

Z23.2 The *Consultant* shall only undertake such processing of personal data as is reasonably required in connection with the performance of its obligations under pursuant to the Agreement. To the extent required by the 1998 Act the *Consultant* shall notify the Information Commissioner of any processing which is being carried out and maintain any such notification in full force and effect.

Z23.3 The *Consultant* in its role as Data Processor undertakes to comply with the obligations imposed on a Data Controller under the 7th Data Protection Principle as set out in Part 1 of Schedule 1 of the 1998 Act in respect of all personal data processed pursuant to this Contract.

Z23.4 The *Consultant* shall not, other than in accordance with the 1998 Act, transfer any personal data to any country or territory outside the European Economic Area.

Z23.5 Terms defined within the 1998 Act shall have the same meaning when used in this clause.

**Z24 New Clause – Failure to deliver Collateral Warranty Agreements**

When any Collateral Warranty Agreement is not delivered as required pursuant to Clause X8, one quarter of any amount due to the *Consultant* is retained in assessments of the amount due until the *Consultant* has delivered such Collateral Warranty Agreement to the *Employer*.

**Z25 New Clause – Third Parties**

The *Consultant* performs its obligations under this contract in such a manner and at such times that no act, omission or default of the *Consultant* in relation thereto constitutes, causes or contributes to any material breach by the *Employer* of any third party agreement or any other obligation it may owe to a third party relating to the works, details of which the *Consultant* was made aware of prior to the Contract Date.

**Z26 New Clause - Inconsistencies**

In the case of any inconsistency between these *additional conditions of contract* and the other terms of the contract, the *additional conditions of contract* prevail. In the event of any inconsistency between the Core Clauses and any other term of this contract (except these *additional conditions of contract*) the Core Clauses prevail.

**Z27 New Clause – Approval**

No inspection, testing, approval or review nor any omission to inspect, test, approve or review on the part of the *Employer* diminishes any duty or liability under this contract of the *Consultant*.

**Z28 New Clause – Set off**

Without derogating from its rights under this contract or under the *law of the contract*, whenever any sum of money is recoverable by the *Employer* against the *Consultant*, such sum is deducted from any sum due or which may become due to the *Consultant* under this contract.

**Z29 New Clause – Security**

Z29.1 The *Consultant* acknowledges that the Site forms part of the larger Southern General Hospital site and that the Southern General Hospital is a live and functioning acute hospital. The Consultant takes measures to prevent its employees, sub-consultants and suppliers of the Consultant from entering into or otherwise interfering with the operation of the existing Southern General hospital, except for access to or egress from the Site.

Z29.2 The *Employer* may instruct the *Consultant* to take measures to prevent unauthorised persons being admitted on the Site.

Z29.3 The *Consultant* does not take photographs of the Site or the works or any part of them unless he has obtained the approval of the *Employer*.

Z29.4 The *Consultant* takes the measures needed to prevent his and his sub-consultants' people taking, publishing or otherwise circulating such photographs.

**Z29 Addition to Clause 82.1**

Z29.1 Any liability under Clause 82.1 shall be limited to an amount that is no more £10,000,000 (ten million pounds).



A49342285

**This is Appendix 2 referred to in the foregoing Contract Data Part One**



A49342285

# Appendix 2 – Consultant Agreement
## New South Glasgow Hospital – Stage 1 Laboratory Works

## Architectural Responsibilities & Scope of Service

**General Commission**

**The Architect shall:**

**1.** Study in detail the Employer's Requirements for the Project and receive Brookfield's instructions.

**2.** Discuss with Brookfield and assist in the preparation of Brookfield's requirements including timescale and any financial limits; assess these and give general advice on how to proceed.

**3.** Develop the detailed design from the approved scheme design for incorporation within the Employer's Requirements as detailed within Contract Data 1 Part 1 to the Building Contract and include specifications and schedules prepared by the Architect in the Employer's Requirements

**3.1.** Where applicable provide information for the preparation of bills of quantities for incorporation into the Employer's Requirements and/or (as the case may require) the Contractor's Proposals

**4.** Within the scope of the Architect's discipline advise Brookfield of any further information or investigations which in the opinion of the Architect Brookfield should obtain in respect of any matter which might affect the Contractor's Proposals. Study all data relevant to the scope of service and information relating to the Project and relevant to the works which are reasonably accessible to the Architect and report on same to Brookfield.

**4.3.** Give any relevant advice with regard to the final form and content of the Employer's Requirements to be included within the Building Contract.

**4.4.** Co-ordinate all matters relating to design (whether undertaken or to be undertaken by the Consultants the Building Contractor (Brookfield Construction UK Ltd) or any specialist (collectively in this Schedule "Designers") or any one or more of them) including:- use best endeavours to ensure that all architectural design work for the Project is carried out in accordance with statutory requirements including, but not limited to, all necessary orders, regulations and bye-laws (whether local or otherwise) and that all information required in connection therewith is submitted to the appropriate authority or delegated person to meet Project programme requirements.

**5.** In conjunction with Brookfield, liaise with any advisers who are appointed by Brookfield or Greater Glasgow Health Board ("the Board"). As an additional duty prepare information relevant for Brookfield's or the Board negotiations with third parties including ground landlords, financing bodies and adjoining site owners.

# Appendix 2 – Consultant Agreement
## New South Glasgow Hospital – Stage 1 Laboratory Works

## Architectural Responsibilities & Scope of Service

**6.** Advise Brookfield on the need to obtain statutory approvals and of their duties under CDM Regulations

**7.** Receive information about the site from the client (CDM Reg. 11)

**8.** Not Used

**9.** Use all reasonable endeavours to obtain from the Board and others employed by the Board and statutory authorities as necessary information on ownership and the identity of any owners, landlords and tenants of the Site, any existing buildings on the Site, ownership and responsibility for boundaries, boundary fences and other enclosures, and any known easements, wayleaves, rights, encroachments, underground services, rights of way, rights of support, rights of light and other relevant matters

**10.** Visit the Site and carry out an initial appraisal

**11.** In co-ordination with, and with the assistance of the Other Consultants, Designers and Specialist Subcontractors where appointed co-ordinate and supervise the making of any measured, topographical and dimensional surveys of the Site and adjacent land and buildings and the taking of levels needed for the preparation of the tender. Render such assistance as may be necessary to others in connection with:

- The digging of trial holes
- The carrying out of other site/soil investigations
- The gathering of other geological data in relation to the Site
- The investigation of and preparation of advice on existing drainage and services

**12.** In co-ordination with, and with the assistance of the Other Consultants, Designers and Specialist Subcontractors, where appointed gather and analyse information and data relating to the boundaries of and the structure and buildings previously erected on the Site and immediately adjacent thereto and in relation to the history and archaeology of the Site.

**13.** As an additional duty prepare with the Other Consultants and Designers plans and reports on the site and its surrounds and on the condition of any boundary structures.

# Appendix 2 – Consultant Agreement
## New South Glasgow Hospital – Stage 1 Laboratory Works

## Architectural Responsibilities & Scope of Service

**A to E** **Appraisal, Brief, Outline, Detailed, Final Proposals**

**1.** Carry out such studies as may be reasonably necessary to determine the feasibility of the Boards requirements for the Project

**2.** As an additional service review with Brookfield Construction (UK) Limited (Brookfield) (or if the Board shall require with the Project Manager) alternative design and construction methods and cost implications

**3.** Advise on the need for an environmental impact study

**4.** Develop the Boards requirements and submit them to Brookfield for approval

**5.** The Architect shall satisfy himself upon the adequacy of all architectural proposals for the design and construction of the project and the suitability of materials thereto.

**6.** Complete development of Project brief.

**7.** Assist in the preparation of a pre-development programme and outline proposals for the Employer's Requirements and liaise with cost consultants in the preparation of cost plans and cash flow statements

**8.** Submit and negotiate where required applications for approvals under Building Acts, Building Regulations or other statutory requirements

**9.** In liaison with the CDM Co-ordinator and other Consultants and Designers:

**9.1.** Develop the outline proposals taking into account any amendments requested by the Board

**9.2.** Provide information to the Consultants for their preparation of an approximation of construction cost

**10.** Submit outline proposals for the Employer's Requirements to be incorporated into the Building Contract.

**11.** In liaison with the Other Consultants and Designers develop the Employer's Requirements from the approved outline proposals (taking into account the requirements of the Health & Safety Plan).

**12.** Develop the detailed design from the approved scheme design for incorporation within the Employer's Requirements and include specifications and schedules prepared by the Architect in the Employer's Requirements to be incorporated into the Building Contract.

**13.** Where applicable provide information for the preparation of bills of quantities for incorporation into the Employer's Requirements and/or (as the case may require) the Contractor's Proposals all of which are to be incorporated into the Building Contract.

# Appendix 2 – Consultant Agreement
## New South Glasgow Hospital – Stage 1 Laboratory Works

## Architectural Responsibilities & Scope of Service

**14.** Develop Final Proposals from the approved Detailed Proposals.

**15.** Provide sufficient information to discuss the Contractor's Proposals with and incorporate the input of the Other Consultants, Designers and Specialist Subcontractors where appointed from time to time as may be necessary to enable them to carry out their respective duties.

**16.** Act in the capacity of the lead designer in the development of the final design by directing and integrating the design work of the Other Consultants, Designers and Specialist Subcontractors into the overall scheme. Co-ordinate, review and comment in principle on the design work of other consultants and specialist sub contractors and (within the scope of the Architects discipline) use all reasonable endeavours to see that their design work complies with the specifications and cost plan and the Employer's Requirements and Works Information included with Contract Data Part 1 to the Building Contract.

**17.** Prepare as an additional duty any report or additional documentation required for consideration of alternative proposals for the execution of the works.

**18.** Develop the scheme design for incorporation within the Employer's Requirements and consult as circumstances shall require with the local planning authority, building control, Fire Officer's Committee and the Services Engineer.

**19.** With the Other Consultants, Designers and Specialist Sub-contractors where appointed, advise Brookfield on the implication of any proposed changes to the design on the cost of the Project and on the overall time period for the construction of the Project.

**20.** Provide information to Brookfield, the Other Consultants and Designers, Specialist Subcontractors and others from time to time as may be necessary to enable them to carry out their respective duties.

**21.** Prepare and provide as an additional duty architectural written description of any alternative proposals describing the scope and nature of the works.

**22.** Prepare and provide outline construction specifications for inclusion in the Contractor's Proposals which are to be included in the Building Contract.

**23.** Advise on the need for site staff and the need for inclusion thereof within the Employer's Requirements.

**24.** Pass relevant information to the CDM Co-ordinator, in good time, for incorporation in the initial Health and Safety Plan.

**25.** Assist in the preparation and production of the Contractors' Proposals Documentation to be included in the Building Contract.

# Appendix 2 – Consultant Agreement
## New South Glasgow Hospital – Stage 1 Laboratory Works

## Architectural Responsibilities & Scope of Service

**J** **Design Development**

**1.** Continue and develop the services described in Stages A to E above to the extent they are not complete throughout the construction period and where necessary up to the issue and acceptance by others of the Final Statement or Final Certificate under the Building Contract.

**2.** Provide information to discuss proposals with and incorporate the design and other information of the Other Consultants and Designers into the scheme design and detailed proposals for the Project

**3.** Agree with Brookfield and the Other Consultants and Designers a Schedule of Design Information to be prepared under this Stage of the works covering all Design and Presentation Work to be undertaken which Schedule may only be amended with the consent of all parties. Provide a report at intervals to be agreed, but not to exceed one per month, on the progress of the design in relation to the Schedule of Design Information. Develop the scheme design and detailed proposals from the design contained in the Contractor's Proposals within the project Contract Sum allowances and any nett or gross lettable floor areas and parking bay provision which form part of the Employer's Requirements or Contractor's Proposals included with Contract Data Part 1 to the Contract.

**4.** Prepare, submit and agree with Brookfield a drawing schedule identifying all drawings anticipated to be produced by the Architect to include drawing titles, drawing numbers, scales and whether CAD or manual.

**5.** Prepare, submit and agree with Brookfield production programmes all to agree with the Design Programme included within Contract Data Part 1 to this Agreement. These are to be updated regularly and must include the following:

- Labour histogram including staff names, job titles and job functions.
- Design Team Programme: identifying the drawing groups of each consultant and integrating their production - in a bar chart format and must accord with the Brookfield Master Programme and Schedule of Design Information.
- Architects Drawing Production Programme identifying all drawings by number and title with target issue dates listed at Preliminary and Approved for Construction stages, all in accordance with Brookfield's Master Programme and Schedule of Design Information. An update is to be issued each month and actual drawing issue dates are to be recorded thereon.
- Specification Production Programme identifying the specifications to be issued and the timescale for their production.

**6.** Act in capacity of the Lead designer and co-ordinate the work of other the Other Consultants and Designers and in conjunction with the CDM Co-ordinator co-ordinate all the elements of design including the design work of the Designers and integrate such work into the overall design of the Works

# Appendix 2 – Consultant Agreement
## New South Glasgow Hospital – Stage 1 Laboratory Works

## Architectural Responsibilities & Scope of Service

7. In accordance with the schedule of Design Information provide relevant information to discuss proposals with and incorporate input of Other Consultants, Designers and Specialist Subcontractors into the scheme design and detailed design proposals. Request in sufficient time information from Brookfield, the Other Consultants, Designers, and Specialist Subcontractors. Examine all drawings prepared for the project or any part thereof and satisfy himself as to the adequacy of the design therein contained for the purposes of the overall architectural design and co-ordination of elements of the works.

8. Provide relevant information to Other Consultants, Designers and Specialist Subcontractors for their preparation or revision of their designs and cost estimates.

9. In the event of a proposed change to the design advise Brookfield of the effects of the proposed change upon the design of the Works and upon design work generally in accordance with the terms of this Agreement.

10. On receipt of any confirmation by the Client of a decision to proceed with a change order, following issue of approximate costing as item J9, the Architect together with the Other Consultants, Designers, and Specialist Subcontractors where appointed should provide Brookfield with reasonable detail to enable a firm price for the change to be derived within the timescale identified in this Agreement.

11. Modify as an additional duty and revise the design, specification, drawings or other documents prepared in whole or part by the Architect by reason of instructions received from Brookfield's Project Manager from time to time or as may be necessary for construction reasons. Any such modification and revision shall be without prejudice to any liability of the Architect in respect of documents existing prior to the modification and revision being made.

12. Prepare as may be required an application to satisfy any outstanding matters in order to secure a full planning permission

13. Prepare and make applications for approvals under the Building Acts and Building Regulations and other statutory requirements

14. Prepare and make all the necessary the Building Regulation submissions

15. Submit and negotiate where required applications for approvals under Building Acts, Building Regulations or other statutory requirements

16. Advise Brookfield on revisions to the scheme design to deal with requirements of planning authorities and where necessary prepare a revised planning application for the Project.

17. Negotiate if necessary in relation to the Building Acts and Building Regulations and other statutory requirements and revise production information and any waivers or relaxations under the Building Acts and Building Regulations and other statutory requirements

# Appendix 2 – Consultant Agreement
## New South Glasgow Hospital – Stage 1 Laboratory Works

## Architectural Responsibilities & Scope of Service

**18.** Supply Brookfield with a copy of the notice of grant or any refusal of planning permission, subject to payment of any additional fee justified under this Agreement.

**18.1.** If instructed to do so as an additional service, prepare and submit or assist in the preparation and submission of any appeals.

**19.** Advise Brookfield on revisions to scheme design to deal with requirements of planning authorities and where necessary prepare a revised planning application for the Project

**20.** Prepare as may be required an application to satisfy any outstanding matters in order to secure a full planning permission, as listed in the Employers Requirement or other requirements to the Building Contract.

**21.** Prepare and give all necessary notices under the Building Acts and Building Regulations

**22** Obtain any other approvals and/or consents required at any time for the Project.

**23.** As an additional service/duty consult and liaise as necessary for the proper performance of the Services with all owners (whether landlords or tenants) of properties adjacent to the Site and/or their surveyors.

**24.** Assist Brookfield in any liaison with the Boards and/or the Boards technical supervisors, including, for example, the provision of drawings and documents.

**25.** Prepare a project quality plan for work carried out by the Architect, for incorporation into Brookfield's overall Quality Plan.

**26.** Co-operate with and pass any relevant information to the CDM Co-ordinator, in good time, for incorporation in the Health and Safety File pursuant to the Health and Safety Requirements.

**F** **Production Information**

**1.** Advise and agree with Brookfield on a timetable for the supply of production information and continue the preparation and submission of drawing schedules and production programmes in order to deliver the Services so as to not impact upon the Completion Date identified in the Building Contract and in accordance with the Programme ref BCL-GS1-CND1-0002 Rev 01 dated 14 Dec 09 included within Contract Data Part 1 to this Agreement.

**2.** Prepare production drawings in accordance with the agreed Drawing Production Programme and in compliance with all requirements of the Employer Requirements and Contractors Proposals included with Contract Data Part 1 to the Contract and Programme ref BCL-GS1-CND1-0002 Rev 01 dated 14 Dec 09 included within Contract Data Part 1 to this Agreement.

**3.** Supply to Brookfield all Drawings and Specifications electronically together with one copy to the Other Consultants, and Designers where appropriate. Drawings and

# Appendix 2 – Consultant Agreement
## New South Glasgow Hospital – Stage 1 Laboratory Works

## Architectural Responsibilities & Scope of Service

specifications will be uploaded to the Extranet system in the following formats. Drawings in PDF and DWF and specifications in PDF format.

General Arrangement and Location Drawings will be issued to Brookfield in DWG format on Compact Disk and to be utilised by Brookfield and their Contractors at their own risk.

**4.** Prepare in accordance with the agreed Specification Production Programme such schedules and specifications of materials and workmanship which may reasonably be required by Brookfield to construct the Works.

**5.** Provide Brookfield with general arrangement drawings interface details performance specifications and other technical information reasonably necessary to seek quotations from sub-contractors and suppliers and in sufficient detail to enable completion of these works in compliance with the Building Contract.

**5.1.** Provide relevant information with the other Consultants for the preparation of bills of quantities and/or schedules of work.

**6.** Assist Brookfield in the evaluation of quotations received from sub-contractors and suppliers.

**7.** Provide relevant information to discuss proposals with and incorporate material supplied by or required of the Consultants into production information.

**7.1.** Act in the capacity of Lead designer in order to co-ordinate all production information.

**8.** Examine to the timescale called for in the agreed Schedule of Design Information Specialist subcontractors' and suppliers' drawings and details, with particular reference to tolerances and dimensional co-ordination, finish, durability, appearance and performance criteria, and report to Brookfield on any matters which in the opinion of the Architect are unsatisfactory or likely to affect the Project Cost Plan and/or Project Programmes as identified in the Building Contract and furthermore ensure that they are in full accordance with the Employers Requirements and Contractors Proposals as included with Contract Data Part 1 to the Building Contract..

**9.** Provide relevant information to the Other Consultants, and Designers for any necessary revisions of their proposals

**10.** Provide relevant information for revisions to cost estimates

**11.** Where required and within the scope of service prepare additional production information

**K** **Operation on Site**

**1.** Provide all such further information reasonably required for construction purposes and at each issue of drawn information provide CAD files in PDF and DWF format to

# Appendix 2 – Consultant Agreement
## New South Glasgow Hospital – Stage 1 Laboratory Works

## Architectural Responsibilities & Scope of Service

Brookfield for archive purposes.

2. Attend meetings as reasonably requested by Brookfield but in any event all main design team and Building Contract site meetings in connection with the design or progress of the Works. Attendance at meetings will not normally be more often than once a week

3. Review design information from Other Consultants, Designers or specialist Subcontractors.

4. Advise Brookfield concerning drawings and samples to be submitted to the Employer and prepare sample boards of proposed finishes, ironmongery etc.

5. Advise Brookfield on any requirement for sample taking and carrying out tests of materials components techniques and workmanship.

6. Prepare and deliver to Brookfield a written statement confirming that, save for any identified outstanding or defective items, those items of the Works that the Architect has designed or had design responsibility for have been completed in accordance with the Employer's Requirements and other requirements of Contract Data Part 1 to the Building Contract and all (if any) subsequent instructions issued by the Boards Project Manager pursuant to the Building Contract insofar as the same shall have been evident during the Architect's visits from time to time to the Site.

7. Issue monthly reports at regular site meetings on quality of construction and general compliance with the Employer's Requirements, and Contractors Proposals and all other requirements of Contract Data Part 1 to the Building Contract.

8. As reasonably required by Brookfield visit the sites of extraction and fabrication and assembly of materials and components to inspect materials and workmanship before delivery to site and report to the Brookfield thereon.

9. Inspect and advise on the compliance of off-site and on-site goods and materials generally in accordance with the conditions of the Building Contract, the Employer's Requirements and the Contractor's Proposals and the drawings, specifications and other documents produced by the Architect, Other Consultants, and Specialist Subcontractors where appointed from time to time as the Architect may in his professional opinion consider necessary or as may be requested by Brookfield.

10. Attend any inspection of the Works prior to anticipated Practical Completion if requested by Brookfield

11. With the Other Consultants and Specialist Subcontractors, provide Brookfield, (in a time period as directed in the Employers Requirements) before the date of Practical Completion of the Project, for onward transmission to the Employer, three paper prints and or CAD files in DWG and PDF format of all 'as designed' drawings showing the Project in detail, the external works, main lines of drainage and services, details, documents, detailed technical specification and information necessary to fully show and describe the Project.

# Appendix 2 – Consultant Agreement
## New South Glasgow Hospital – Stage 1 Laboratory Works

## Architectural Responsibilities & Scope of Service

**12.** Assist the Client as an additional service in the compilation of maintenance and operational manuals as may be specified in the Building Contract.

**12.1.** Assist the CDM Co-ordinator in the compilation of maintenance and operational manuals incorporating all relevant information prepared by the Architect properly co-ordinated with the design information obtained from the other Consultants.

**12.2.** As an additional service and in conjunction with the other Consultants advise upon the arrangements for a programme for the maintenance of the Buildings and the arrangement of maintenance contracts.

**13.** Assist Brookfield in the detailed preparation or examination of any financial claim or following the taking of a step in or towards resolution of any dispute or difference or towards any arbitration or litigation in connection with the Works at additional cost.

# Appendix 2 – Consultant Agreement
## New South Glasgow Hospital – Stage 1 Laboratory Works

## Architectural Responsibilities & Scope of Service

**Practical Completion**

1. Give guidance and advice to Brookfield during the Defects Liability Period as to the correction of any fault in design, workmanship or materials and where requested by Brookfield and where appropriate with the Other Consultants, and Designers modify and revise the design, specification, drawings or other documents prepared in whole or part by the Architect and integrate and make compatible any alteration to the Project with the remainder of the Project. Any such modification and revision shall be without prejudice to any liability of the Architect in respect of documents existing prior to the modification and revision being made.

# Appendix 2 – Consultant Agreement
## New South Glasgow Hospital – Stage 1 Laboratory Works

## Architectural Responsibilities & Scope of Service

**Scope of Services**

The main work elements for which the Architect is required to perform the Consultancy Services shall include but not be limited to:

- Relationship and setting out between Ordnance Grid, Site Grid and Building Grid.
- Building footprint and relationship to any existing buildings, structure and boundaries
- Servicing and access requirements
- Co-ordination with landscaping
- Co-ordination of column positions and sizes
- Perimeter wall construction and features
- Building surround paving etc.
- Means of escape
- Roofscape, including maintenance access
- Specialist areas such as reception areas, goods delivery points, loading bays, compactors
- Staircases, lift shafts and service risers/ducts
- Lightning conductor routes in liaison with the Services Consultant/Engineer.
- All openings
- Form and type of cladding (rain-screens; curtain walls; copper; solar shading; etc)
- Liaison with the Board representative and with other consultants on:
- All specialist FM installations/equipment
- All specialist medical installations/equipment
- Special architectural features
- Entrances
- Signage of all types
- Window and door types
- Storey heights
- Trade interface requirements
- External wall construction
- Materials specifications and detail/performance specifications for the Works
- Fire protection requirements
- Compartmentation
- Fire walls - position, type of construction, fire rating and surface finish
- Openings in fire walls and treatment thereof
- Fixtures, Fittings & Fixed Furniture - Internal joinery; specialist areas, etc
- Door, window and ironmongery specification and schedules
- Finishes and schedules and the like
- Partitions walls and door positions and function and finish
- All balustrading/screening features and the like
- Toilet layouts co-ordinate waste outlets and ventilation positions with the Services Consultant
- Accessible service ducts/hatches etc.
- Ceiling grid and type
- Features, steps/bulkheads
- Positions of lights, grilles, sprinklers, switches, sockets etc. agreed with Building Services consultant and/or the Services contractor
- Spatial zones for structural and services elements

# Appendix 2 – Consultant Agreement
## New South Glasgow Hospital – Stage 1 Laboratory Works

## Architectural Responsibilities & Scope of Service

- Perimeter interface; wall/floor and wall/ceiling
- Entrance/exit internal/external interface
- Internal wall elevations in special areas, i.e. Toilets, kitchens etc.
- Specifications for all builders-work materials and workmanship
- Details at appropriate scales to fully illustrate particularly difficult areas of construction and architectural detail
- Details of all builders' work required in connection with the building services
- Landscape architecture.

1. The Architect is required to be fully responsible for all aspects of the Architectural design of the Works with the exception of any specialist services that are specifically excluded.

2. The Architect is to utilise best endeavours to produce an overall design which is compliant with the Employer's Requirements and Contractors Proposals as incorporated within Contract Data Part 1 to the Building Contract, unless otherwise agreed with Brookfield. Where appropriate define zonal arrangements and positions for the structural and building services elements.

3. Complete designs, fully dimensioned drawings and NBS specifications which shall fully define the scope of the Works and standards in sufficient detail to enable Brookfield to confirm Cost Plan price.

4. Where reasonable assist Brookfield in testing the designs against cost targets where a breakdown of the cost plan has been provided in detail by Brookfield.

5. Advice Brookfield on and incorporate into the design any major builder's works required in connection with and identified by the building services design.

6. Continue consultations, and co-ordinate consultations by the other Consultants, with the Local Authority, Planning, Building Control, Fire and Statutory Authorities to ensure that the scheme design incorporates their requirements. Advice Brookfield on fees related to these authority requirements.

7. Where design is to be provided by Brookfield Sub-contractors, and other Designers ensure that such design is fully co-ordinated with the overall design and meets the specified requirements and cost allowances. Encourage value engineering by sub-contractors.

8. Examine shop fabrication drawings submitted by the Work Package Sub-contractors for the Works or parts thereof, in respect of general dimensions, adequacy of components and compliance with performance criteria. Advise Brookfield of any non-compliance.

9. Advise Brookfield of any variations arising from the sub-contractors design, assist in their evaluation, and advise on their impact on other building elements. As additional service the Architect shall revise and update his drawings where superseded or changed by approved subcontract designs.

# Appendix 2 – Consultant Agreement
## New South Glasgow Hospital – Stage 1 Laboratory Works

## Architectural Responsibilities & Scope of Service

**Scope of Deliverables**

Provide all information required for the construction of the project in compliance with Programme ref BCL-GS1-CND1-0002 Rev 01 dated 14 Dec 09. The following list is indicative of the scope and level required but is not exhaustive.

**Site planning**

- The main setting out information

Site Plans @ 1:200 or 1:500 scale indicating

- Relationship and setting out between Ordnance Grid, Site Grid and Building Grid.
- Building footprint and relationship to any existing buildings, structure and boundaries
- Servicing and access requirements
- External works, car parking and landscaping

**Envelope and Structure**

Layout plans at each level @ 1:100 scale detailing

- Column positions and sizes
- Perimeter walls and features
- Building surround paving etc.
- Means of escape
- Roofscape, including maintenance access
- Specialist areas such as reception areas, goods delivery points, loading bays, compactors
- Staircases, lifts and service risers/ducts
- Lightning conductor routes

Elevations to 1:100 and/or 1:50 scale as appropriate to show

- All openings
- Form and type of cladding
- Building features
- Entrances
- Building signage
- Window and door types

Sections @ 1:50 and/or 1:20 scale detailing

- Storey heights
- Interface requirements
- Perimeter wall construction
- Building features
- Internal wall elevations

Materials specifications and detail/performance specifications for the Works

**Internal**

Layout Plans at each level @ 1:100 scale identifying

- Fire protection requirements
- Compartmentation
- Fire walls - position, type of construction, fire rating and surface finish

# Appendix 2 – Consultant Agreement
## New South Glasgow Hospital – Stage 1 Laboratory Works

## Architectural Responsibilities & Scope of Service

- Openings in fire walls and treatment thereof
- All means of escape
- Door and ironmongery schedule

Floor Plans at each level @ 1:100 scale showing
- Partitions walls and door positions and function and finish
- All balustrading/screening features and the like
- Toilet layouts including waste outlets and ventilation positions
- Accessible service ducts/hatches etc.

Reflected Ceiling Plans at each level @ 1:100 scale showing
- Ceiling grid and type
- Features, steps/bulkheads
- Positions of lights, grilles, sprinklers etc. agreed with building services consultant and/or the building services contractor

Sections at 1:100, 1:50 and 1:20 scale identifying
- Spatial zones for structural and building services elements
- Perimeter interface; wall/floor and wall/ceiling
- Entrance/exit internal/external interface
- Internal wall elevations in special areas, i.e. Toilets, kitchens etc.

Specifications for all materials and workmanship

Finishes, door, window, joinery and ironmongery schedules and the like

Details at appropriate scales to fully illustrate particularly difficult areas of construction and architectural detail

Details of all builders' work required in connection with the building services.

**External works**
Layouts at 1:100 scale including indicative levels
- Roads hardstandings, car parking and pavements
- Pedestrian routes levels and associated drainage
- Hard and soft landscaping areas
- Lighting, signage, furniture etc.
- Interface with building envelope

Details at appropriate scales to fully illustrate particularly difficult areas of construction and architectural detail

Material Specification for surface treatment/finish.

# Appendix 2 – Consultant Agreement
## New South Glasgow Hospital – Stage 1 Laboratory Works

## Architectural Responsibilities & Scope of Service

In accordance with our ISO 9001 quality assurance systems the Architect must ensure that:

1 He acknowledges receipt of all design input requirements for the project, as listed in the Employers Requirements and Contractors Proposals all as incorporated in Contract Data Part 1 to the Building Contract documents.

2 He confirms that the design input requirements are adequate for his work. The design responsibilities are as defined in this Scope of Works documents, as detailed in this Consultant Services Agreement.

3 If he believes that the design input requirements are inadequate or unclear, he must identify specifically where there are inadequacies or lack of clarity. It is also necessary that he identifies who, in his opinion, is best placed to resolve the inadequacies or lack of clarity. These can be carried out by use of Brookfield R.F.I systems (Blank form attached).

4 All documents issued by him, to Brookfield, must be checked before issue and the documents signed or initialled to indicate that the check has taken place. Similarly all documents issued by him, to Brookfield, must be approved for issue and the documents signed or initialled to indicate that the approval has taken place. The checking signature shall mean that the document is technically correct in all respects; the approval for issue signature shall mean that the document complies with the design input requirements.

5 All documents issued by him, to Brookfield, must be accompanied by a document transmittal sheet indicating, as a minimum, project name, the document number, title, revision letter, size, distribution list, purpose of issue, initials of originator, initials of checker, initials of approver, and date of issue.

6 Documents received without signatures or initials identifying the checker and the approver, or without a transmittal sheet, may be returned to him without review, for re-issue. Such documents will not be considered as having been received, in terms of programmed document delivery dates.

7. As part of Brookfield Design Quality Procedure, he will be required to provide a Design Quality Plan, identifying the following activities within your organisation:

7.01 The overall management structure, responsibilities and authority.
7.02 Responsibility for each design activity and the resources allocated
7.03 The procedure for monitoring and controlling assigned activities
7.04 Qualifications and experience of personnel involved
7.05 Design Input Requirements
7.06 Design Output documentation
7.07 Minuted Design Reviews
7.08 Design Verification procedures
7.09 Design Validation procedures
7.10 Procedures for complying with the CDM Regulations 1994
**7.11** Document and data control procedures

**This is Appendix 3 referred to in the foregoing Contract Data Part One**

**CONSULTANT'S COLLATERAL WARRANTY**

This Agreement is among

(1) **GREATER GLASGOW HEALTH BOARD** of Dalian House, 350 St Vincent Street Glasgow, G3 8YZ ("the Beneficiary" which expression shall include its successors in title or permitted assignees under this Agreement)

(2) [ ] (Registered number [ ]) of [ ] (" Main Contractor" which term shall include any successor including any parties taking over the obligations of Main Contractor. under the Project Agreement)

(3) [ ], (registered number [ ]) whose registered office is at [ ] ("the Consultant")

WHEREAS:

A The Beneficiary has entered or is about to enter into an agreement with the Main Contractor ("the Building Contract") in connection with the design and construction of the New South Glasgow Hospital, Govan, Glasgow ("the Project").

B The Main Contractor has engaged or is about to engage the Consultant under an appointment ("the Appointment"), which expression shall include all documents incorporated therein and any agreed amendment thereto, to carry out [ ] services as more particularly described in the Appointment ("the Services"), which expression shall include any additional services performed by the Consultant under the Appointment including in connection with any modifications or variations made thereunder.

C It is a condition precedent of the Building Contract that the Consultant, the Main Contractor and the Beneficiary enter into this agreement ("this Agreement").

NOW IT IS AGREED:

1 The Consultant warrants and undertakes to the Beneficiary that it has complied and will continue to comply with all the terms and obligations under the

Appointment on the Consultant's part to be performed and observed and shall complete the Services in accordance with the Appointment.

2. Without prejudice to Clause 1 of this Agreement, the Consultant further warrants and undertakes to the Beneficiary that:

2.1 it has exercised and will continue to exercise all the reasonable skill, care and diligence to be expected from a competent and qualified professional designer experienced in carrying out services similar in nature, size and complexity to the Services including in the selection of goods and materials for the Project; and

2.2 it has not and will not specify for use in relation to the Project any products or materials not in conformity with relevant British or European standards or Codes of Practice or which are at the time of specification generally known within the United Kingdom to an experienced professional designer of works such as the Project to be deleterious to health and safety or to the durability of buildings and/or other structures and/or finishes and/or plant and machinery in the particular circumstances in which they are used;

Provided that:

2.3.1 the obligations of the Consultant under this Agreement shall be no greater in extent or quantity than if the Beneficiary had been named as joint employer with Main Contractor under the Appointment; and

2.3.3 the Consultant shall be entitled in any action or proceedings brought by the Beneficiary to rely on any limitation in the Appointment and to raise the equivalent rights in defence of liability (excluding counterclaim and set-off in respect of amounts due to the Consultant under the Appointment) as it would have if the Beneficiary had been named as joint employer with the Main Contractor under the Appointment;

3. The Beneficiary has no authority to issue any direction or instruction to the Consultant in relation to the Appointment unless and until the Beneficiary has given notice under Clauses 4 or 5, below. The Beneficiary or its appointee has no liability to the Consultant in relation to amounts due under the Appointment unless and until the Beneficiary has given notice under Clauses 4 or 5.

4. The Consultant agrees that it will, if so required by notice in writing given by the Beneficiary, subject to Clause 6, below, accept the instructions of the Beneficiary or its appointee, as the case may be, (which for the avoidance of doubt and without limitation may include a third party appointed by the Beneficiary to act as "the Employer" under the Appointment) to the exclusion of the Main Contractor in respect of the Project upon the terms and conditions of the Appointment. The Main Contractor acknowledges that the Consultant shall be entitled to rely on a notice given to the Consultant by the Beneficiary under this Clause 4 and further acknowledges that such acceptance of the instructions of the Beneficiary or its appointee, as the case may be, to the exclusion of the Main Contractor shall not constitute any breach of the Consultant's obligations to the Main Contractor under the Appointment.

5. The Consultant further agrees that it will not without first giving the Beneficiary not less than 35 days notice in writing exercise any right or purported right it may have to determine its employment under the Appointment, treat the same as having been repudiated by the Main Contractor, or discontinue the performance of any duties or obligations thereunder. Further, the Consultant shall within 14 days of giving the said notice, provide statements to the Beneficiary containing the following:

5.1 all amounts properly due and payable to the Consultant under the Appointment on or before the date of issue of the said notice which remain unpaid;

5.2 in the reasonable estimation of the Consultant, the amount of any monetary claim (if any) asserted by the Consultant against the Main Contractor under the Appointment arising out of or in connection with the breach for which the said notice was served; and

5.3 where the Consultant intends to terminate the Appointment due to some default or breach of contract of a non-financial nature:

5.3.1 the provision of the Appointment alleged to have been breached or not fulfilled;

5.3.2 supporting information in reasonable detail to enable the Beneficiary to identify the material facts;

5.3.3 the steps reasonably required to remedy the specified breaches or conditions not fulfilled;

5.3.4 the time within which the specified steps can reasonably be expected to be taken;

5.3.5 (if applicable) the amount of damages claimed and the basis of their calculation; and

5.3.6 (if applicable) the relief to be sought.

The Consultant warrants to the Beneficiary that to the best of the Consultant's knowledge and belief, having made all proper and appropriate enquiries, the statements submitted under this Clause 5 shall be true, complete and accurate statements of the amounts to which the Consultant considers itself entitled. In the event that the Consultant shall delay in giving such notice and information within the said 14 days, the period of 35 days shall be extended to correspond with the period of any such delay. The Consultant's right to determine its employment under the Appointment or to treat the same as having been repudiated or to discontinue performance shall cease if, within the said 35 day period (extended as appropriate) and subject to Clause 6 the Beneficiary shall give notice in writing to the Consultant requiring the Consultant to accept the instructions of the Beneficiary or its appointee to the exclusion of the Main Contractor in respect of the Project upon the terms and conditions of the Appointment.

6. It shall be a condition of any notice given by the Beneficiary under Clauses 4 or 5 above, that the Beneficiary or its appointee, as the case may be, accepts liability for payment of the sums due under the Appointment and detailed in the statements provided under Clause 5 (and makes payment within a period of 28 days of such notice from the Beneficiary), and for subsequent performance of the Main Contractor's obligations. Upon the issue of any notice by the Beneficiary under clauses 4 or 5, the Appointment shall remain in full force and effect as if no right of determination of its employment under the Appointment, or any right of the Consultant to treat the Appointment as having been repudiated by the Main Contractor. had arisen and the Consultant shall be liable to the Beneficiary and/or its appointee, as the case may be, under the Appointment in lieu of its liability to the Main Contractor.

7. The Beneficiary may at any time following the issue of any notice by the Beneficiary under Clauses 4 or 5, serve a further notice that following the expiry of

28 days from the giving of such notice the Beneficiary will have no liability (save in respect of the Beneficiary's antecedent breach) for any sums due or to become due to the Consultant in respect of the period following expiry of the last mentioned 28 day period. The Beneficiary may exercise any of its rights pursuant to Clauses 4 or 5 on more than one occasion.

8. The Consultant shall maintain for the period expiring 12 years after completion of the Services or until termination of the Consultant's employment under the Appointment, Professional Indemnity Insurance in an amount of not less than £[10]m [(ten million pounds)] sterling for any one claim or series of claims arising out of one single incident during any period of insurance which shall not be more than 12 months with insurers of good repute carrying on business in the European Union provided always that such insurance is available at rates and terms which are commercially reasonable to consultants of a similar size and standing in the UK. In determining whether or not insurance is available as aforesaid, the financial characteristics and claims' record of the Consultant shall be ignored. The Consultant shall immediately inform the Beneficiary if such insurance ceases to be available at rates and terms which are commercially reasonable in order that the Consultant and the Beneficiary can consider alternative means of best protecting their respective positions in respect of the Project in the absence of such insurance provided that the Beneficiary shall be entitled to require the Consultant to maintain such lesser amount of Professional Indemnity Insurance as is available to the Consultant at rates and terms which are commercially reasonable. As and when it is reasonably requested to do so by the Beneficiary (but not more than once in any period of insurance) the Consultant shall produce for inspection documentary evidence satisfactory to the Beneficiary (acting reasonably) that its Professional Indemnity Insurance is being maintained.

9. The Consultant hereby grants to the Beneficiary or its appointee and all those authorised by the Beneficiary an irrevocable, non-exclusive and royalty-free licence (which shall be capable of assignation) to use and reproduce all technical information (whether or not stored in computer systems), drawings, models, calculations, specifications, schedules, details, plans, programs, budgets, reports or other documents, work or other things whatsoever provided or to be provided by the Sub-Contractor in connection with the Project (the **"Documents"**) for any purpose relating to the Project including (but without limitation) the construction, completion, maintenance, promotion, advertisement, reinstatement, repair and any extension of the Project and for dissemination within the NHS as part of the feedback of information to better or enable the NHS to realise improvements in its methods and practice of construction and in the design and procurement of its

construction. Such licence shall carry the right to grant sub-licenses and shall subsist notwithstanding that the Appointment is terminated or the obligations and duties thereunder have been completed. For the avoidance of doubt, the grant of such licence or sub-licences shall not impose any additional liability on the Consultant. The Consultant will not assign or agree to assign the copyright in any of the documents without the prior written consent of the Beneficiary. The Consultant shall on reasonable demand provide to the Beneficiary or its appointee and those authorised by the Beneficiary additional copies of any documents on receipt of reasonable copying costs. The Consultant shall not be liable for any use by the Beneficiary of any of the documents for any purpose other than those authorised by this clause.

10. This Agreement may be assigned on a maximum of two occasions in whole or in part by the Beneficiary to any party to whom the Beneficiary's interest in the Main Contract or any part thereof is assigned or disposed to without the consent of the Main Contractor or the Consultant being required and any such assignation shall be effective upon written notice thereof being given to the Main Contractor and to the Consultant. No other or further assignation of this Agreement, other than permitted by this clause, by the Beneficiary or any other party shall be permitted. The Consultant shall not be entitled to assign or transfer any rights or obligations hereunder without the consent of the Beneficiary.

11. The Consultant undertakes that it will not raise as a defence to any action by the Beneficiary for alleged breach of this Agreement the fact that the obligations of the Main Contractor to the Beneficiary in respect of the Services have been released as a result of the termination of the Building Contract.

12. No failure, approval, act or forbearance on the part of the Beneficiary in respect of any right of the Beneficiary pursuant to this Agreement shall constitute any waiver of any right of the Beneficiary under or arising out of this Agreement nor relieve the Consultant of any of its duties or obligations under or arising out of this Agreement.

13. Any notice, consent or demand to be given or made by any party under this Agreement (hereinafter called a **"Notice"**) shall only be validly served if in writing and delivered personally or sent by pre-paid first class recorded delivery post to the following address and marked for the attention of the following person in the case of each party:

| Party: | Address: | Person: |
|---|---|---|

| | | |
|---|---|---|
| Beneficiary | Dalian House, 350 St Vincent Street Glasgow, G3 8YZ | Head of Board Administration |
| Main Contractor | | |
| Consultant | | |

Any party may by Notice to the other party/parties change its address or the title of the person for whose attention Notices are to be given or made pursuant to this Clause. Any such Notice shall be deemed to have been received:

13.1 if delivered personally, at the time of delivery;

13.2 in the case of pre-paid first class recorded delivery post, on the first Business Day after the date of posting.

If any Notice is delivered after 5 p.m. on a Business Day, or at any time during a day which is not a Business Day, that Notice shall be deemed to have been received at 9 a.m. on the next Business Day. For the purposes of this Clause, "Business Day" means any day which is not a Saturday, a Sunday or a public holiday in Scotland. In proving service it shall be sufficient to prove that the envelope containing such Notice was properly addressed to the relevant party and either delivered personally to that address or delivered into the custody of the postal authorities as a pre-paid first class recorded delivery letter. For the avoidance of doubt, Notices shall not be validly served if sent by e-mail or fax

14 No action or proceedings for any breach of this Agreement shall be commenced against the Consultant after the expiry of twelve years from Completion or earlier termination of the Consultant's employment under the Appointment.

15. The definitions of words and phrases used in this Agreement shall be those set out in the Appointment except where expressly defined in this Agreement.

16. This Agreement shall be governed by and construed in accordance with Scots Law and the parties hereto submit to the exclusive jurisdiction of the Scottish Courts.

IN WITNESS WHEREOF these presents consisting of this and the preceding 8 pages have been executed as follows:

**SUBSCRIBED** for and on behalf of the said **GREATER GLASGOW HEALTH BOARD** at

on the day of 2009:

..... AUTHORISED SIGNATORY

..... FULL NAME

.....AUTHORISED SIGNATORY

..... FULL NAME

**SUBSCRIBED** for and on behalf of the said [ ] at

on the day of [ ]

2009 by:

..... DIRECTOR

..... FULL NAME

BEFORE THIS WITNESS

..... WITNESS

..... FULL NAME

..... ADDRESS

**SUBSCRIBED** for and on behalf of the said [ ] at

on the day of [ ] 2009:

under a Power of Attorney dated.....

BEFORE THIS WITNESS

..... WITNESS

..... FULL NAME

..... ADDRESS

..... ADDRESS

**CONTRACT DATA PART TWO —**

**DATA PROVIDED BY *THE CONSULTANT***

- The *Consultant* is.....

  Name...Boswell Mitchell Johnston Ltd (Company Number SC258273)

  Address 2 Central Quay, 89 Hydepark Street, Glasgow, G3 8BW

  The *key persons* are (name, job, responsibilities, qualifications, experience):

  .....Graham Stuart.....

  .....Rajib Deb.....

  .....Stephanie Gan.....

- The *staff rates* are:

| Name/Designation | Rate/Hour |
|---|---|
| Graham Stuart (Director) | [redacted] |
| Rajib Deb (Associate Director) | |
| Stephanie Gan (Architect) | |
| George Gibson (Senior Technolgist) | |
| Ross Irwin (Technologist) | |

- The following matters will be included in the Risk Register:

  Not Applicable

**If Option A is used**

- The *activity schedule* is.....As set out in Appendix 4 to this Agreement
- The tendered total of the Prices is...£700,000.00 (Seven Hundred Thousand Pounds)

**This is Appendix 4 referred to in the foregoing Contract Data Part Two**

# Fee Drawdown Schedule
## (Post Novation Fee)

bmj architects
Boswell Mitchell & Johnston

**BROOKFIELD CONSTRUCTION (UK) LIMITED**
**NEW SOUTH GLASGOW HOSPITALS PROJECT**
**NEW LABORATORY FACILITY AT SOUTHERN GENER**

**Issue No.** : 01
**Issue Date** : 21 December 2009
: 2475/GS/NBO

**Post Novation Fee** £ 700,000.00

**Fee Drawdown of Post-Novation Fees**

| | Month | Fee £ | Cumulative Total |
|---|---|---|---|
| 1 | Jan-10 | £70,000 | £70,000 |
| 2 | Mar-10 | £70,000 | £140,000 |
| 3 | May-10 | £70,000 | £210,000 |
| 4 | Jul-10 | £70,000 | £280,000 |
| 5 | Sep-10 | £70,000 | £350,000 |
| 6 | Nov-10 | £70,000 | £420,000 |
| 7 | Jan-11 | £70,000 | £490,000 |
| 8 | Mar-11 | £35,000 | £525,000 |
| 9 | May-11 | £35,000 | £560,000 |
| 10 | Jul-11 | £30,000 | £590,000 |
| 11 | Sep-11 | £30,000 | £620,000 |
| 12 | Nov-11 | £30,000 | £650,000 |
| 13 | Jan-12 | £30,000 | £680,000 |
| 14 | Mar-12 | £20,000 | £700,000 |
| | TOTAL | £700,000 | |

**Appendix 4 to Contract Data part one: Parent Company Guarantee**

# Building Contractor's parent company guarantee

Brookfield Europe LP

Brookfield

Greater Glasgow Health Board

Principal

## Building Contractor parent company guarantee

## Between

**Brookfield Europe LP**, a limited partnership formed under the Limited Partnerships Act 1907 with registered number LP013183 and having its place of business at 23 Hanover Square, London, W1S 1JB (**"Brookfield"**), acting through its general partner Brookfield Europe GP Limited, a company registered in Ontario, Canada with registered number 1775491 and having its registered office at [ ] (the "General Partner")

**and**

**GREATER GLASGOW HEALTH BOARD** of Dalian House, 350 St Vincent Street, Glasgow G3 8YZ (**"Principal"**)

## Recitals

A. The Building Contractor has, or will enter into, a Building Contract with the Principal.

B. At the request of the Principal, Brookfield has agreed to provide a guarantee in favour of the Principal in relation to the due and punctual performance of the Obligations by the Building Contractor on the terms and conditions of this Guarantee.

## Operative provisions

---

## 1.

### 1.1 Definitions

In this Guarantee:

**"Building Contract"** means the building contract to be entered into between the Principal and the Building Contractor on or about the date of this Guarantee in relation to the Project under which the Building Contractor is appointed as the building contractor to design, build and commission certain facilities.

**"Building Contractor"** means Brookfield Construction (UK) Limited, Registered Company Number 03808946.

**"Obligations"** means all the obligations, liabilities, warranties, duties and undertakings of the Building Contractor to the Principal arising pursuant to the Building Contract.

**"Project"** means the New South Glasgow Hospital project

### 1.2 Interpretation

In this Guarantee:

(a) headings are for convenience only and do not affect the interpretation of this document;

(b) a reference to a party includes that party's executors, administrators, successors and permitted assigns, including persons taking by way of novation;

(c) a reference to any statute or to any statutory provision includes any statutory modification or re-enactment of it or any statutory provision substituted for it, and

all ordinances, by-laws, regulations, rules and statutory instruments (however described) issued under it;

(d) a word importing the singular includes the plural (and vice versa), and a word indicating a gender includes every other gender;

(e) where the day on which or by which any act, matter or thing is to be done under this document is not a Business Day, that act, matter or thing will be done on the next following Business Day; and

(f) **"includes"** and cognate expressions indicate what is included without limiting what may be included.

### 1.3 Brookfield warranty as to capacity

Brookfield warrants that it enters this Guarantee in its own right and not as a trustee or in any other representative capacity.

### 1.4 General Partner Warranty as to capacity

The General Partner warrants that it has power and capacity to contract on behalf of and bind Brookfield in this Guarantee.

### 1.5 Consideration

Each party acknowledges to each other party that it enters into this Guarantee and incurs obligations and gives rights under it for valuable consideration from the other party.

## 2.

### 2.1 Guarantee

Brookfield irrevocably and unconditionally guarantees to the Principal the due and punctual performance by the Building Contractor of all the Obligations and if there is a default in respect thereof or the Building Contractor is affected by one or more of the events set out in Clause 91.1 of the Building Contract, Brookfield shall perform or cause to be performed the Obligations.

### 2.2 Payment by Brookfield

The Principal will give to the Contractor, with a copy to Brookfield, 10 Business Days notice of its intention to make a claim against Brookfield under this Guarantee. Provided such notice has been given, Brookfield must, within 2 Business Days of receipt of a written demand from the Principal, properly served hereunder, pay to the Principal the amount properly claimed by it under this Guarantee.

## 3.

### 3.1 Building Contract

Brookfield acknowledges that the guarantee set out in this Guarantee will apply to the Building Contract as amended or varied by agreement in writing between the Principal and the Building Contractor.

Notwithstanding any other provision of this Guarantee, Brookfield shall have no greater liability under this Guarantee than that of the Building Contractor under the Building Contract.

**4.**

Each party represents and warrants for the benefit of the other party that:

(a) (**Legally binding obligation**): this Guarantee constitutes a valid and legally binding obligation of it in accordance with its terms;

(b) (**No violation**): the execution, delivery and performance of this Guarantee does not violate its constitution or any law applying to it; and

(c) (**Due authority**): it has the power, and has taken all corporate and other action required, to enter into this Guarantee and to authorise its execution and delivery and the performance of its obligations under it.

**5.**

In the event of the Principal exercising its rights under this Guarantee, the Guarantor reserves the right to utilise all defences, set-offs and counterclaims that would be available to the Building Contractor and have disputes arising in respect of these defences, set-offs and counterclaims resolved in accordance with the terms of the Building Contract.

**6.**

No proceedings may be commenced by the Principal in connection with this Guarantee against Brookfield more than twelve (12) years after the earlier of (i) Completion of the whole of the *works* (as defined in the Building Contract) and (ii) the earlier termination of the Building Contract.

**7.**

## 7.1 Severance

Any provision of this Guarantee, which is illegal, void or unenforceable, will be ineffective to the extent only of that illegality, voidness or unenforceability without invalidating the remaining provisions of this Guarantee.

## 7.2 Notices

All notices and other communications to a party in connection with this Guarantee shall be deemed to be duly given if it is delivered by hand or sent by registered post or recorded delivery to the address of the party, as notified to the other party from time to time. Such notice shall, if sent by registered post or recorded delivery, be deemed to have been received 48 hours after being posted:

(a) within two (2) hours after sending, if sent on a Business Day between the hours of 9am and 5pm; or

(b) by 11am on the next following Business Day, if sent after 5pm, on a Business Day but before 9am on that next following Business Day.

## 8.

### 8.1 Governing law

This Guarantee is governed by and will be construed according to the laws of Scotland.

### 8.2 Jurisdiction

Each party irrevocably submits to the exclusive jurisdiction of the courts of Scotland, with respect to any proceedings, which may be brought at any time relating in any way to this Guarantee.

## 9.

This Guarantee may be executed in any number of counterparts and by the parties on separate counterparts. Each counterpart constitutes an original of this Guarantee, all of which together constitute one agreement.

## 10.

This guarantee may only be assigned or transferred by the Principal to any person to whom the Contract is assigned or transferred. No other or further assignation shall be permitted.

**11.**

No person may enforce any term of this Guarantee by virtue of the Jus Quaesitum Tertio.

IN WITNESS WHEREOF these presents consisting of this, the preceding 5 pages are executed as follows: -

By the Guarantor at on the day of December 2009

.....Signature of Director/Authorised signatory

.....Full name

By the Principal at on the day of December 2009

.....Signature of Director/Authorised signatory

.....Full name

.....Signature of Director/Authorised signatory

.....Full name

**Appendix 5 to Contract Data part one: Works Information agreed relationship and hierarchy**

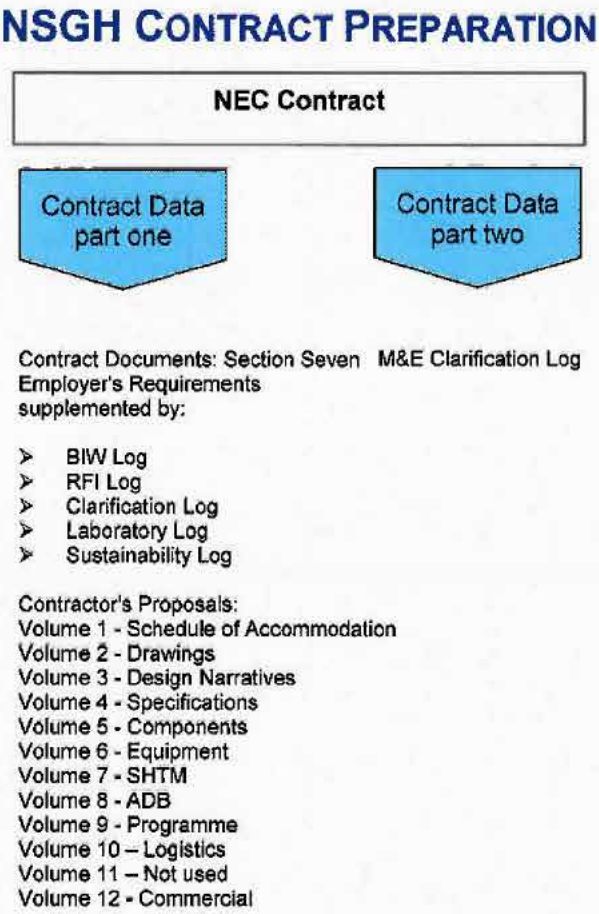


A49342285

**NSGH Contract Data Part One and Part Two: Works Information**
**Agreed relationship and hierarchy**

The contract is arranged such that the contract includes Contract Data part one and Contract Data part two. The Works Information will be wholly contained in Contract Data part one with the exception of the M&E items contained in the M&E Clarifications Log. The Works Information therefore will be in two parts and contained in Contract Data part one and Contract Data part two.

The output requirements of the Employer in relation to the M&E Clarifications Log will be contained in the Employer's Requirements with the proposals of the Contractor in relation to the M&E Clarifications Log contained in the Contractor's Proposals Volume 1 to Volume 10 set out in Contract Data part one. The contents of Works Information is illustrated below.




It is agreed that the Employer's Requirements takes precedence over the Contractor's Proposals, with the requirements of the Employer's Requirements to be met by the Contractor as a minimum requirement. The exception to this stated hierarchy is in relation to the items contained in the M&E Clarifications Log (found in Volume 3 of the Employers Requirements), which identifies the agreement between the parties in relation to the requirement for certain M&E items. All other aspect of M&E design require to achieve the standards and other requirements stated in Contract Data Part One.

In order to maintain an audit trail of the status of the documents to be included in the Employer's Requirements throughout the procurement process, the Employer's Requirements in Contract Data part one is supported by a Building Information Warehouse ("BIW") Log, Request for Information ("RFI"), Additional Log and Clarifications Log (collectively known as "the Logs") which track and identify the agreed position between the parties in relation to certain technical matters and documents and identifies the documents included in the Works

Information. In the event of a discrepancy between any item in the Employer's Requirements in the Employer's Requirements and that item in the Logs, the information contained in the Log takes precedence and the standard set out in the Logs is to be achieved by the Contractor. Further, the BIW Log identifies aspects of the original technical information which set out the Employer's Requirements (issued with the Invitation to Participate in Competitive Dialogue) which are included or omitted from the Employer's Requirements as well as providing similar clarity in respect of the other documents and information that was uploaded to Building Information Warehouse during the period up to the issue of the Invitation to Submit Final Bids.

The process for review of design to be submitted by the Contractor in relation to Contractor's Proposals to ensure that it meets the Employer's Requirements is appended to this document as Appendix A. The Works Information contained in both Contract Data Part One and Contract Data Part Two have been signed by the parties to identify their acknowledgement that such documentation is included in the Contract. The drawings referred to in the drawing register included in the Works Information which is signed by the parties, are deemed to be incorporated in and form part of the Contract by reference without having to be signed individually.

Appendix 1.



**Reviewable Design Data**

Within the Design Development process all information will be subject to review in three categories:

- For approval
- For acceptance
- For comment

The procedure to be adopted will be used to review and approve/accept/comment, as appropriate, a range of deliverables such as clinical functionality at department and room level, specifications including finishes, colour schemes, and materials and components.

Pro-formas, based upon the attached example will be provided for each category and these will be utilised to record the design development process.

Clinical functionality* both at department level and for individual room layouts will typically follow a staged process of review and sign-off, in line with the Stage 2 Design Development Programme.

Items such as finishes, colour scheme and materials will similarly follow a staged process, however, it is envisaged, that they could be concluded in less iterations.

Components and specifications for acceptance will typically follow a two stage process of submission/comment/re-submission/acceptance.

The pro-formas will be set-out to record the history of the Design Review Process and it is envisaged that each drawing, specification or schedule will have its own sheet to record and sign-off where appropriate the contractor's design.

At each review the Board will consider the design information provided by the contractor, against the Works Information, and will respond within the Stage 2 programme timescales, confirming the level of approval/acceptance/comment and providing supporting narrative or marked up drawings with status coded as follows:

A - no comment proceed to construction
B - comments but proceed to construction taking comments on board and
C - comments resubmit with amendments.
D - rejected

The Board will ensure that all responses are signed off by the appropriate staff, to record user and managerial acceptance of the design element under review.

The data set out in the attached table 1 indicates the proposed extent for Approval and Acceptance with all other data being for comment. The list is not however exhaustive and a final agreed list will be prepared jointly within 2 calendar months of contract execution, on the understanding that table 1 is a minimum requirement.

* Clinical Functionality

a) the following matters as shown on the 1:500 scale adjacency layouts
   I. the points of access to and within the Sites and the buildings:
   II. the relationship between one or more buildings that comprise the development:
   III. the adjacencies between different Hospital departments:

b) The following matters as shown on 1:200 scale departmental layouts
   I. The points of access to and within the Site and the buildings
   II. The relationship between one or more buildings
   III. The adjacencies between different Hospital departments
   IV. The adjacencies between rooms within the Hospital departments

c) The quantity, description and areas (in square metres) of those rooms and spaces shown on the agreed schedules of accommodation.

d) The location and relationship of equipment, furniture, fittings and user terminals as shown on the 1:50 loaded room plans in respect of:
   I. All bed and trolley positions
   II. Internal room elevations
   III. Actual ceiling layouts

e) The location of and the inter-relationships between rooms within a department as shown on the 1:200 departmental layouts

f) The fire strategy

g) Infection control

But only insofar as each of the matters listed in (a) to (g) above relate to or affect clinical use.

**NEW SOUTH GLASGOW HOSPITALS**

**List of Data for Review**

TABLE 1

**Drawn Information**

| Scale | Content | Aspect of review |
|---|---|---|
| 1:500 | Block plans noting | Site and whole hospital operation relationship to existing site operations. |
| | 1. The point of access to and within the Site and the buildings; | |
| | 2. The relationship between one or more buildings that comprise the development; | |
| | 3. The location of and adjancencies between different hospital departments and corridors | |
| 1:200 | Departmental layouts and floor plans noting | Clinical functionality, room relationships within departments |
| | 1. The adjacencies between different hospital departments and corridors; | |
| | 2. The quantity, description and areas (in square metres) of these rooms and spaces shown on the Accommodation Schedule; | |
| | 3. The location of the inter-relationships between rooms within a department | |
| 1:50 | Room layout drawings including | Clinical functionality, location of equipment |
| | 1. The location and relationship of equipment, | |
| | (i) Group 1 and group 2 equipment | |
| | (ii) Internal room elevations | |
| | (iii) actual ceiling layouts | |
| | (iv) all bed and trolley positive | |
| | Departmental plans to show building systems | |
| | Equipment | |
| | 1. Items of equipment as shown on the Equipment Schedule incorporated into the Room data Sheets and the operational temperature tolerance. | |

**Description of Item**

| Item | Aspects (specification including) |
|---|---|
| External Finishes | Lifecycle, maintenance, H&S |
| Hard Landscaping | Colour, layout, maintenance, lifecycle, H&S. |
| Soft Landscaping | Colour, layout, maintenance, lifecycle, H&S. |
| External furniture | Colour, maintenance, lifecycle, H&S. |
| Interior design public space | Colour schemes, layout, wayfinding, maintenance, lifecycle. |
| Interior design public corridors | Colour schemes, layout, wayfinding, maintenance, lifecycle. |
| Wall finishes | Colour, maintenance, lifecycle, H&S. |
| Wall protection, handrails balustrades | Colour, maintenance, lifecycle, H&S. |
| Floor finishes | Colour, maintenance, lifecycle, H&S. |
| Plumbing fittings/tapware | Colour, maintenance, lifecycle, H&S. |
| Sanitaryware/IPS panels | Colour, maintenance, lifecycle, H&S. |
| WC cubicles and prefab partitions | Colour, maintenance, lifecycle, H&S. |
| External and internal doors, door furniture and ironmongery including schedules | Colour, maintenance, lifecycle, H&S. Glazing, door protection, door configuration. |
| Light fittings all areas | Colour, maintenance, lifecycle, H&S. |
| Ceiling layouts | Colour, maintenance, lifecycle, H&S. |
| Nurses stations | Colour, layout, maintenance, lifecycle, H&S. |
| Reception desks | Colour, layout, maintenance, lifecycle, H&S. |
| Blinds and curtains | Colour, maintenance, lifecycle, H&S. |
| Lifts | Colour, maintenance, lifecycle, H&S. |
| Group 1 fitted furniture | design, materials for construction, colour, maintenance |
| Schedules of components for M&E systems | Colour, maintenance, lifecycle, H&S. |
| Bedhead layouts | Colour, service layout maintenance, lifecycle, H&S. |
| Public lighting design | Colour, layout, maintenance, lifecycle, H&S. |
| Public art | Art strategy |
| External and internal signage | Colour, maintenance, lifecycle, H&S. |
| Electrical fittings | Colour, maintenance, lifecycle, H&S. |
| Mechanical & Electrical drawings To reflect architects 1:50's for rooms and departments | Review against Room Data Sheets, project specification and architects 1:50 drawings |

The above are in addition to key design requirements as set out in SHTM's and advisory documentation as included in Volume 7.

| NEW SOUTH GLASGOW HOSPITALS & LABORATORY PROJECT<br>DESIGN ACCEPTANCE PROCEDURE | | |

## NEW SOUTH GLASGOW HOSPITALS & LABORATORY PROJECT
## DESIGN ACCEPTANCE PROCEDURE

| | | | |
|---|---|---|---|
| **Building:** | Children's Hospital | **Issued by:** | Brookfield |
| **Subject:** | Theatres, Endoscopy & Recovery | **Date Issued:** | 30.03.2010 |
| **Aspect for Review:** | Clinical Functionality | **Date return:** | 11.04.2010 |

### DESIGN REVIEW HISTORY

| | Level of Approval | Approval Date | Remarks |
|---|---|---|---|
| Design Review 1 | C | 24.02.2010 | |
| Design Review 2 | B | 10.04.2010 | |
| Design Review 3 | | | |

### BOARD RESPONSE

| | |
|---|---|
| **Level of Approval** | **B** |
| **Information referred to:** | Drg NA XX 01 PL 252 301 Rev 4 reviewed at meeting on 4th March 2010 |

**Detailed comment:**

Blah blah blah.....

**Approval Levels:** **A**= No comment. **B**= Proceed subject to comments. **C**= Resubmit with amendments. **D**=Rejecte

### BOARD ACCEPTANCE SIGN OFF

| | |
|---|---|
| User Group Lead: | Date: |
| Design Manager: | Date: |
| Project Manager: | Date: |

**Appendix 6 to Contract Data part one: Guarantee Bond**

This **GUARANTEE BOND** is made BETWEEN the following parties whose names and registered office addresses are set out in the Schedule to this Bond (the "Schedule")

BETWEEN

(1) The "Contractor" as principal,

(2) The "Guarantor" as guarantor, and

(3) The 'Employer"

WHEREAS

(1) By a contract (the "Contract") entered into or to be entered into between the Employer and the Contractor particulars of which are set out in the Schedule the Contractor has agreed with the Employer to execute works comprising Stage 1 (Detailed design and construction of the laboratories and FM hub) (the "Works') upon and subject to the terms and conditions therein set out

(2) The Guarantor has agreed with the Employer at the request of the Contractor to guarantee the performance of the obligations of the Contractor under the Contract in respect of the Works upon the terms and conditions of this Guarantee Bond subject to the limitation set out in clause 2

NOW IT IS AGREED as follows:-

1. The Guarantor guarantees to the Employer that in the event of a breach by the Contractor of its obligations under and/or arising out of the Contract in respect of the Works or in the event of termination of the Contractor's obligation to Provide the Works (as defined in the Contract) by reason of the Contractor being affected by one or more of the events set out in Clause 91.1 of the Contract, the Guarantor shall subject to the provisions of this Guarantee Bond pay all losses, damages, expenses claims and costs of proceedings sustained by the Employer and due from the Contractor as a result of such breach or termination as aforesaid. Subject to Clause 1E, such losses, damages, claims and costs shall be as agreed between the parties or determined by an adjudicator in accordance with the provisions of Clause 1A or a court

provided that any payment made under this Guarantee pursuant to an award of an adjudicator ("Award") shall not prejudice the right of the Contractor or, following the occurrence of one or more of the events set out in Clause 91.1 of the Contract affecting the Contractor, the Guarantor, to refer any such Award, or any of the matters giving rise to such a Award, for further or final determination by any court having competent jurisdiction (a "Referral") and the period of four weeks from the date of the Award referred to in the Contract for the making of any Referral shall not apply to the Guarantor until such time as it has received a copy of such Award.

1A (i) Prior to the occurrence in relation to the Contractor of any of the events (each an "Insolvency Event") set out at Clause 91.1 of the Contract the sum due from the Contractor to the Employer pursuant to Clause 1 may be established for the purposes of this Guarantee Bond by an Award made in an adjudication between the Employer and the Contractor pursuant to which an amount not less than that claimed by the Employer hereunder shall be presently due and payable to it by the Contractor and

(ii) following the occurrence of an Insolvency Event in relation to the Contractor the sums due and payable under this Guarantee Bond may be agreed between the Guarantor and the Employer and in default of such agreement within [ ] days either the Guarantor or the Employer shall be entitled to refer the determination of the sums due and payable hereunder to an Adjudicator upon the terms and conditions applicable to an adjudication between the Employer and the Contractor under the Contractor which shall apply mutatis mutandis to this Guarantee Bond but so that all references therein

to the Contractor shall for the purposes of an adjudication conducted pursuant to this Clause 1A be construed as references to the Guarantor.

1B In the event that it is subsequently determined whether or not prior to Expiry as a result of any Referral either:

(i) that the Contractor and/or the Guarantor is not liable to pay the Employer where a previous Award found it was liable to pay the Employer; or

(ii) that the Guarantor made an over payment as a consequence of an Award

then the amount so paid or the excess (as the case may be) (the "Over Payment") shall be refunded to the Guarantor by the Employer together with interest from the date of the Over Payment at a rate equal to [align with contract rate] or, if greater, any interest in relation to such Over Payment awarded in accordance with such Referral.

1C If it is subsequently determined whether or not prior to Expiry as a result of any Referral either:

(i) that the Contractor and/or the Guarantor is liable where the previous Award to which the Referral relates has determined that the Contractor or the Guarantor was not liable and therefore the Guarantor made no payment; or

(ii) that the Guarantor made an underpayment as a consequence of the previous Award to which the Referral relates,

then upon receipt of a claim in respect thereof an amount equal to the amount so determined (together with interest at a rate equal to [specify rate] as determined in accordance with such Referral) shall be paid to the Employer by the Guarantor subject always to clause 2.

1D In the event that the Contractor or the Guarantor make a Referral which is determined by a court to be vexatious or have no bona fide foundation in law or fact, the Contractor or the Guarantor (as the case may be) shall indemnify the Employer in respect of all reasonable costs, losses, and expenses (including legal expenses) incurred by the Employer in respect of such Referral, which reasonable costs, losses and expenses are agreed in the case of such a determination in respect of the Guarantor not to be included in the Bond Amount.

1E. For the purposes of this Guarantee Bond:-

(1) no estimate forecast or assessment of the *Project Manager* (as defined in the Contract) shall be binding and conclusive against the Guarantor; and

(2) the damages due and payable under clause 1 of this Guarantee Bond to the Employer following termination of the Contractor's employment under condition Clause 91.1 of the Contract shall be such amounts as shall represent the difference between:-

(i) the amounts actually paid by the Employer to complete the whole of the works' together with all direct loss and expense caused to the Employer by reason of such termination; and

(ii) the amount that would have been payable to the Contractor in respect thereof but for such termination

and so that the Employer shall be placed in the same position (no better and no worse) that would have been obtained if the Contractor had duly performed and discharged its obligations under the Contract.

2. Subject to Clause 1C, the maximum aggregate liability of the Guarantor and the Contractor under this Guarantee Bond shall not exceed the sum set out in the Schedule (the "Bond Amount") but subject to such limitation and to clause 4 the liability of the Guarantor shall be co-extensive with the liability of the Contractor under the Contract.

3. The Guarantor's obligation to make payment under this Guarantee Bond shall be an independent and absolute obligation and the Guarantor shall not be entitled to delay or withhold payment for any reason. The Guarantor's obligation hereunder shall not be affected by any act, omission, matter or thing which, but for this provision, might operate to release or otherwise exonerate the Guarantor from the obligations hereunder in whole or in part, including without limitation and whether or not known to the Guarantor or to the Employer:

1. any time or waiver granted to the Guarantor or to the Contractor;
2. any variation, compromise or neglect to enforce any rights or remedies against the Guarantor or the Contractor;
3. any legal limitation, disability or incapacity relating to the Guarantor or the Contractor;

4. any variation of or amendment to the terms, conditions and provisions of the Contract, the Contract price or the extent or nature of the Works;
5. any unenforceability, invalidity or frustration of any rights or obligations of the Employer or the Contractor under the Contract or any other document or security;
6. any other fact, circumstance, provision of statute or rule of law which might entitle the Guarantor to be released or discharged in whole or in part from its undertaking.

4. Whether or not this Guarantee Bond shall be returned to the Guarantor the obligations of the Guarantor under this Guarantee Bond shall be released and discharged absolutely upon Expiry (as defined in the Schedule) save in respect of any Referral or any breach of the Contract which has occurred and in respect of which a claim in writing containing particulars of such breach has been made upon the Guarantor before Expiry.

5. The Contractor having requested the execution of this Guarantee Bond by the Guarantor undertakes with the Guarantor (without limitation of any other rights and remedies of the Employer or the Guarantor against the Contractor) to perform and discharge the obligations on its part set out in the Contract.

6. This Guarantee Bond and the benefit thereof shall not be assigned by the Guarantor without the prior written consent of the Employer. Subject to any assignee accepting the repayment obligation of the Employer in clause 1B the Employer may assign its interest in this Guarantee Bond to any party to whom it may assign its interest under the Contract.

7. No party who is not a party to this Guarantee Bond shall be entitled to enforce any of its terms for his own benefit and the application of the *ius quaesitum* tertio to the terms of this Guarantee Bond are hereby expressly excluded.

8. This Guarantee Bond shall be governed by and construed in accordance with the laws of Scotland and only the courts of Scotland shall have jurisdiction hereunder.

IN WITNESS WHEREOF these presents consisting of this, the preceding page and the Schedule are executed as follows:-

By the Guarantor at [ ] on the [ ] day of [ ] 200[ ]

.....Signature of Director/Authorised signatory

.....Full name

.....Signature of Director/Authorised signatory

.....Full name

By the Contractor at [ ] on the [ ] day of [ ] 200[ ]

.....Signature of Director/Authorised signatory

.....Full name

.....Signature of Director/Authorised signatory

.....Full name

By the Employer at [ ] on the [ ] day of [ ] 200[ ]

.....Signature of Director/Authorised signatory

.....Full name

.....Signature of Director/Authorised signatory

.....Full name

This is the Schedule referred to in the foregoing Guarantee Bond between [Guarantor], [Contractor] and Greater Glasgow and Clyde Health Board

**The Contractor:** **Brookfield Europe LP**

whose registered office is at [ ]

**The Guarantor:** _____

whose [address registered office is at [ ]

**The Employer:** **GREATER GLASGOW AND CLYDE HEALTH BOARD**

Dalian House, 350 St Vincent Street, Glasgow G3 8YZ

**The Contract:** A contract [dated the _____ day of _____] between the Employer and the Contractor for the design and construction of the New South Glasgow Hospital Project

**The Bond Amount:** The sum of £ _____ ( _____Pounds)

**Expiry:** Completion of the Works which shall be conclusive for the purposes of this Guarantee Bond save in respect of any breach of the Contract which has occurred and in respect of which a claim in writing containing particulars of such breach has been made upon the Guarantor before Expiry.

**CONTRACT DATA PART TWO – DATA PROVIDED BY THE CONTRACTOR**

**CONTRACT DATA PART TWO - DATA PROVIDED BY THE CONTRACTOR**

1. **General**

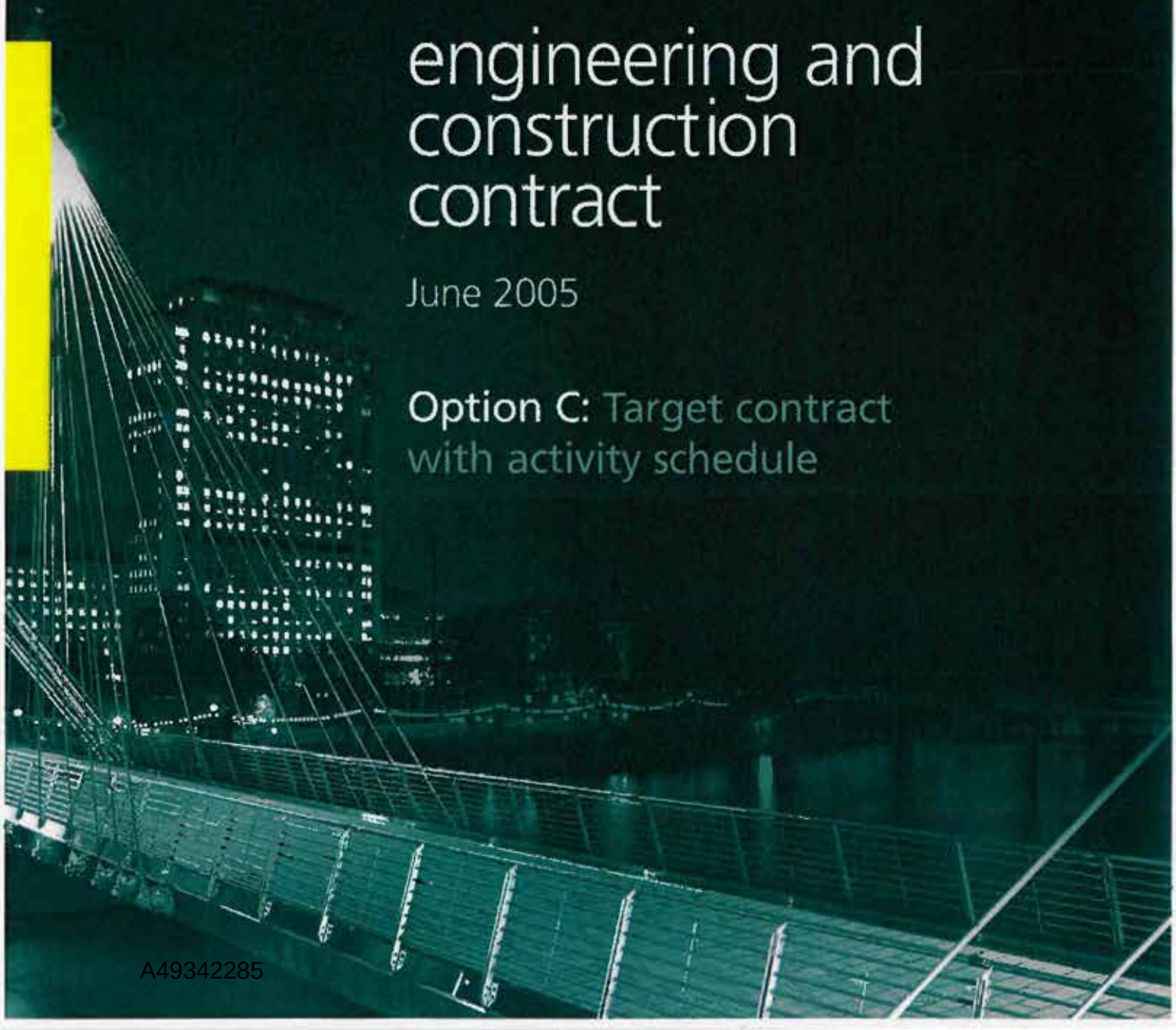
- The M&E Clarification Log is set out in Volume 3 of the Employer's Requirement.
- The Maximum Price Target Costs are set out in the Contract Documents:- Part Three (Maximum Price Target Costs)
- The Cashflow and Activity Schedules are set out in the Contract documents: Part Four (Cashflow and Activity Schedules).

# nec3

## engineering and construction contract

June 2005

**Option C:** Target contract with activity schedule



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nec3

# Engineering and Construction Contract

This contract should be used for the appointment of a contractor for engineering and construction work, including any level of design responsibility

## Option C: Target contract with activity schedule

An NEC document

June 2005
(with amendments June 2006)

OGC endorsement of NEC3

OGC advises public sector procurers that the form of contract used has to be selected according to the objectives of the project, aiming to satisfy the *Achieving Excellence in Construction* (AEC) principles.

This edition of the NEC (NEC3) complies fully with the AEC principles. OGC recommends the use of NEC3 by public sector construction procurers on their construction projects.

OGC
Office of Government Commerce

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- Its use stimulates good management of the relationship between the two parties to the contract and, hence, of the work included in the contract.
- It can be used in a wide variety of commercial situations, for a wide variety of types of work and in any location.
- It is a clear and simple document – using language and a structure which are straightforward and easily understood.

NEC3 Engineering and Construction Contract is one of the NEC family and is consistent with all other NEC3 documents. Also available are the Engineering and Construction Contract Guidance Notes, Flow Charts and Options A, B, C, D, E and F.

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A49342285

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In this contract the core clauses are the ECC core clauses and the clauses set out in the ECC as main Option clauses; Option C. The latter are included in sequence and are printed in **bold type** in this contract.


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## SCHEDULE OF OPTIONS

| | |
|---|---|
| | One of the following dispute resolution Options must be selected to complete the chosen main Option. |
| Option W1 | Dispute resolution procedure (used unless the United Kingdom Housing Grants, Construction and Regeneration Act 1996 applies). |
| Option W2 | Dispute resolution procedure (used in the United Kingdom when the Housing Grants, Construction and Regeneration Act 1996 applies). |
| | The following secondary Options should then be considered. It is not necessary to use any of them. Any combination other than those stated may be used. |
| Option X1 | Price adjustment for inflation |
| Option X2 | Changes in the law |
| Option X4 | Parent company guarantee |
| Option X5 | Sectional Completion |
| Option X6 | Bonus for early Completion |
| Option X7 | Delay damages |
| Option X12 | Partnering |
| Option X13 | Performance bond |
| Option X14 | Advanced payment to the *Contractor* |
| Option X15 | Limitation of the *Contractor*'s liability for his design to reasonable skill and care |
| Option X16 | Retention |
| Option X17 | Low performance damages |
| Option X18 | Limitation of liability |
| Option X20 | Key Performance Indicators (not used with Option X12) |
| | The following Options dealing with national legislation should be included if required. |
| Option Y(UK)2 | The Housing Grants, Construction and Regeneration Act 1996 |
| Option Y(UK)3 | The Contracts (Rights of Third Parties) Act 1999 |
| Option Z | *Additional conditions of contract* |
| Note | Options X3, X8 to X11, X19 and Y(UK)1 are not used. |


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## AMENDMENTS JUNE 2006

The following amendments have been made to the June 2005 edition.

| Page | Clause | Line | |
|---|---|---|---|
| 11 | 32.1 | 4 | deleted: 'and of notified early warning matters' |
| 46 | Contract Data Part one, 1. | 3 | added, '(with amendments June 2006)' |
| 49 | Contract Data Part one, 1. | 23 | deleted: 'If there are additional compensation events' and following 4 lines |


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## CORE CLAUSES

## 1 General



**Actions** **10**

10.1 The *Employer*, the *Contractor*, the *Project Manager* and the *Supervisor* shall act as stated in this contract and in a spirit of mutual trust and co-operation.

**Identified and defined terms** **11**

11.1 In these conditions of contract, terms identified in the Contract Data are in italics and defined terms have capital initials.

11.2 (1) The Accepted Programme is the programme identified in the Contract Data or is the latest programme accepted by the *Project Manager*. The latest programme accepted by the *Project Manager* supersedes previous Accepted Programmes.

(2) Completion is when the *Contractor* has

- done all the work which the Works Information states he is to do by the Completion Date and
- corrected notified Defects which would have prevented the *Employer* from using the *works* and Others from doing their work.

If the work which the *Contractor* is to do by the Completion Date is not stated in the Works Information, Completion is when the *Contractor* has done all the work necessary for the *Employer* to use the *works* and for Others to do their work.

(3) The Completion Date is the *completion date* unless later changed in accordance with this contract.

(4) The Contract Date is the date when this contract came into existence.

(5) A Defect is

- a part of the *works* which is not in accordance with the Works Information or
- a part of the *works* designed by the *Contractor* which is not in accordance with the applicable law or the *Contractor's* design which the *Project Manager* has accepted.

(6) The Defects Certificate is either a list of Defects that the *Supervisor* has notified before the *defects date* which the *Contractor* has not corrected or, if there are no such Defects, a statement that there are none.

(7) Equipment is items provided by the *Contractor* and used by him to Provide the Works and which the Works Information does not require him to include in the *works*.

(8) The Fee is the sum of the amounts calculated by applying the *subcontracted fee percentage* to the Defined Cost of subcontracted work and the *direct fee percentage* to the Defined Cost of other work.



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(9) A Key Date is the date by which work is to meet the Condition stated. The Key Date is the *key date* stated in the Contract Data and the Condition is the *condition* stated in the Contract Data unless later changed in accordance with this contract.

(10) Others are people or organisations who are not the *Employer*, the *Project Manager*, the *Supervisor*, the *Adjudicator*, the *Contractor* or any employee, Subcontractor or supplier of the *Contractor*.

(11) The Parties are the *Employer* and the *Contractor*.

(12) Plant and Materials are items intended to be included in the *works*.

(13) To Provide the Works means to do the work necessary to complete the *works* in accordance with this contract and all incidental work, services and actions which this contract requires.

(14) The Risk Register is a register of the risks which are listed in the Contract Data and the risks which the *Project Manager* or the *Contractor* has notified as an early warning matter. It includes a description of the risk and a description of the actions which are to be taken to avoid or reduce the risk.

(15) The Site is the area within the *boundaries of the site* and the volumes above and below it which are affected by work included in this contract.

(16) Site Information is information which

- describes the Site and its surroundings and
- is in the documents which the Contract Data states it is in.

(17) A Subcontractor is a person or organisation who has a contract with the *Contractor* to

- construct or install part of the *works*,
- provide a service necessary to Provide the Works or
- supply Plant and Materials which the person or organisation has wholly or partly designed specifically for the *works*.

(18) The Working Areas are those parts of the *working areas* which are

- necessary for Providing the Works and
- used only for work in this contract

unless later changed in accordance with this contract.

(19) Works Information is information which either

- specifies and describes the *works* or
- states any constraints on how the *Contractor* Provides the Works

and is either

- in the documents which the Contract Data states it is in or
- in an instruction given in accordance with this contract.

**(20) The Activity Schedule is the *activity schedule* unless later changed in accordance with this contract.**

**(23) Defined Cost is**

- **the amount of payments due to Subcontractors for work which is subcontracted without taking account of amounts deducted for**
  - **retention,**
  - **payment to the *Employer* as a result of the Subcontractor failing to meet a Key Date,**
  - **the correction of Defects after Completion,**
  - **payments to Others and**
  - **the supply of equipment, supplies and services included in the charge for overhead cost within the Working Areas in this contract**

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**and**

- **the cost of components in the Schedule of Cost Components for other work**

**less Disallowed Cost.**

**(25) Disallowed Cost is cost which the *Project Manager* decides**

- **is not justified by the *Contractor*'s accounts and records,**
- **should not have been paid to a Subcontractor or supplier in accordance with his contract,**
- **was incurred only because the *Contractor* did not**
  - **follow an acceptance or procurement procedure stated in the Works Information or**
  - **give an early warning which this contract required him to give**

**and the cost of**

- **correcting Defects after Completion,**
- **correcting Defects caused by the *Contractor* not complying with a constraint on how he is to Provide the Works stated in the Works Information,**
- **Plant and Materials not used to Provide the Works (after allowing for reasonable wastage) unless resulting from a change to the Works Information,**
- **resources not used to Provide the Works (after allowing for reasonable availability and utilisation) or not taken away from the Working Areas when the *Project Manager* requested and**
- **preparation for and conduct of an adjudication or proceedings of the *tribunal*.**

**(29) The Price for Work Done to Date is the total Defined Cost which the *Project Manager* forecasts will have been paid by the *Contractor* before the next assessment date plus the Fee.**

**(30) The Prices are the lump sum prices for each of the activities on the Activity Schedule unless later changed in accordance with this contract.**

**Interpretation and the law** **12**

12.1 In this contract, except where the context shows otherwise, words in the singular also mean in the plural and the other way round and words in the masculine also mean in the feminine and neuter.

12.2 This contract is governed by the *law of the contract*.

12.3 No change to this contract, unless provided for by the *conditions of contract*, has effect unless it has been agreed, confirmed in writing and signed by the Parties.

12.4 This contract is the entire agreement between the Parties.

**Communications** **13**

13.1 Each instruction, certificate, submission, proposal, record, acceptance, notification, reply and other communication which this contract requires is communicated in a form which can be read, copied and recorded. Writing is in the *language of this contract*.

13.2 A communication has effect when it is received at the last address notified by the recipient for receiving communications or, if none is notified, at the address of the recipient stated in the Contract Data.

13.3 If this contract requires the *Project Manager*, the *Supervisor* or the *Contractor* to reply to a communication, unless otherwise stated in this contract, he replies within the *period for reply*.





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13.4 The *Project Manager* replies to a communication submitted or resubmitted to him by the *Contractor* for acceptance. If his reply is not acceptance, the *Project Manager* states his reasons and the *Contractor* resubmits the communication within the *period for reply* taking account of these reasons. A reason for withholding acceptance is that more information is needed in order to assess the *Contractor*'s submission fully.

13.5 The *Project Manager* may extend the *period for reply* to a communication if the *Project Manager* and the *Contractor* agree to the extension before the reply is due. The *Project Manager* notifies the *Contractor* of the extension which has been agreed.

13.6 The *Project Manager* issues his certificates to the *Employer* and the *Contractor*. The *Supervisor* issues his certificates to the *Project Manager* and the *Contractor*.

13.7 A notification which this contract requires is communicated separately from other communications.

13.8 The *Project Manager* may withhold acceptance of a submission by the *Contractor*. Withholding acceptance for a reason stated in this contract is not a compensation event.

**The *Project Manager* and the *Supervisor***

**14**

14.1 The *Project Manager*'s or the *Supervisor*'s acceptance of a communication from the *Contractor* or of his work does not change the *Contractor*'s responsibility to Provide the Works or his liability for his design.

14.2 The *Project Manager* and the *Supervisor*, after notifying the *Contractor*, may delegate any of their actions and may cancel any delegation. A reference to an action of the *Project Manager* or the *Supervisor* in this contract includes an action by his delegate.

14.3 The *Project Manager* may give an instruction to the *Contractor* which changes the Works Information or a Key Date.

14.4 The *Employer* may replace the *Project Manager* or the *Supervisor* after he has notified the *Contractor* of the name of the replacement.

**Adding to the Working Areas**

**15**

15.1 The *Contractor* may submit a proposal for adding an area to the Working Areas to the *Project Manager* for acceptance. A reason for not accepting is that the proposed area is either not necessary for Providing the Works or used for work not in this contract.

**Early warning**

**16**

16.1 The *Contractor* and the *Project Manager* give an early warning by notifying the other as soon as either becomes aware of any matter which could

- increase the total of the Prices,
- delay Completion,
- delay meeting a Key Date or
- impair the performance of the *works* in use.

The *Contractor* may give an early warning by notifying the *Project Manager* of any other matter which could increase his total cost. The *Project Manager* enters early warning matters in the Risk Register. Early warning of a matter for which a compensation event has previously been notified is not required.

16.2 Either the *Project Manager* or the *Contractor* may instruct the other to attend a risk reduction meeting. Each may instruct other people to attend if the other agrees.



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16.3 At a risk reduction meeting, those who attend co-operate in

- making and considering proposals for how the effect of the registered risks can be avoided or reduced,
- seeking solutions that will bring advantage to all those who will be affected,
- deciding on the actions which will be taken and who, in accordance with this contract, will take them and
- deciding which risks have now been avoided or have passed and can be removed from the Risk Register.

16.4 The *Project Manager* revises the Risk Register to record the decisions made at each risk reduction meeting and issues the revised Risk Register to the *Contractor*. If a decision needs a change to the Works Information, the *Project Manager* instructs the change at the same time as he issues the revised Risk Register.

**Ambiguities and inconsistencies** **17**

17.1 The *Project Manager* or the *Contractor* notifies the other as soon as either becomes aware of an ambiguity or inconsistency in or between the documents which are part of this contract. The *Project Manager* gives an instruction resolving the ambiguity or inconsistency.

**Illegal and impossible requirements** **18**

18.1 The *Contractor* notifies the *Project Manager* as soon as he considers that the Works Information requires him to do anything which is illegal or impossible. If the *Project Manager* agrees, he gives an instruction to change the Works Information appropriately.

**Prevention** **19**

19.1 If an event occurs which

- stops the *Contractor* completing the *works* or
- stops the *Contractor* completing the *works* by the date shown on the Accepted Programme,

and which

- neither Party could prevent and
- an experienced contractor would have judged at the Contract Date to have such a small chance of occurring that it would have been unreasonable for him to have allowed for it,

the *Project Manager* gives an instruction to the *Contractor* stating how he is to deal with the event.





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## 2 The *Contractor*'s main responsibilities

**Providing the Works** **20**

20.1 The *Contractor* Provides the Works in accordance with the Works Information.

**20.3 The *Contractor* advises the *Project Manager* on the practical implications of the design of the *works* and on subcontracting arrangements.**

**20.4 The *Contractor* prepares forecasts of the total Defined Cost for the whole of the *works* in consultation with the *Project Manager* and submits them to the *Project Manager*. Forecasts are prepared at the intervals stated in the Contract Data from the *starting date* until Completion of the whole of the *works*. An explanation of the changes made since the previous forecast is submitted with each forecast.**

**The *Contractor*'s design** **21**

21.1 The *Contractor* designs the parts of the *works* which the Works Information states he is to design.

21.2 The *Contractor* submits the particulars of his design as the Works Information requires to the *Project Manager* for acceptance. A reason for not accepting the *Contractor*'s design is that it does not comply with either the Works Information or the applicable law.

The *Contractor* does not proceed with the relevant work until the *Project Manager* has accepted his design.

21.3 The *Contractor* may submit his design for acceptance in parts if the design of each part can be assessed fully.

**Using the *Contractor*'s design** **22**

22.1 The *Employer* may use and copy the *Contractor*'s design for any purpose connected with construction, use, alteration or demolition of the *works* unless otherwise stated in the Works Information and for other purposes as stated in the Works Information.

**Design of Equipment** **23**

23.1 The *Contractor* submits particulars of the design of an item of Equipment to the *Project Manager* for acceptance if the *Project Manager* instructs him to. A reason for not accepting is that the design of the item will not allow the *Contractor* to Provide the Works in accordance with

- the Works Information,
- the *Contractor*'s design which the *Project Manager* has accepted or
- the applicable law.

**People** **24**

24.1 The *Contractor* either employs each key person named to do the job stated in the Contract Data or employs a replacement person who has been accepted by the *Project Manager*. The *Contractor* submits the name, relevant qualifications and experience of a proposed replacement person to the *Project Manager* for acceptance. A reason for not accepting the person is that his relevant qualifications and experience are not as good as those of the person who is to be replaced.

24.2 The *Project Manager* may, having stated his reasons, instruct the *Contractor* to remove an employee. The *Contractor* then arranges that, after one day, the employee has no further connection with the work included in this contract.



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**Working with the *Employer* and Others** **25**

25.1 The *Contractor* co-operates with Others in obtaining and providing information which they need in connection with the *works*. He co-operates with Others and shares the Working Areas with them as stated in the Works Information.

25.2 The *Employer* and the *Contractor* provide services and other things as stated in the Works Information. Any cost incurred by the *Employer* as a result of the *Contractor* not providing the services and other things which he is to provide is assessed by the *Project Manager* and paid by the *Contractor*.

25.3 If the *Project Manager* decides that the work does not meet the Condition stated for a Key Date by the date stated and, as a result, the *Employer* incurs additional cost either

- in carrying out work or
- by paying an additional amount to Others in carrying out work

on the same project, the additional cost which the *Employer* has paid or will incur is paid by the *Contractor*. The *Project Manager* assesses the additional cost within four weeks of the date when the Condition for the Key Date is met. The *Employer*'s right to recover the additional cost is his only right in these circumstances.

**Subcontracting** **26**

26.1 If the *Contractor* subcontracts work, he is responsible for Providing the Works as if he had not subcontracted. This contract applies as if a Subcontractor's employees and equipment were the *Contractor*'s.

26.2 The *Contractor* submits the name of each proposed Subcontractor to the *Project Manager* for acceptance. A reason for not accepting the Subcontractor is that his appointment will not allow the *Contractor* to Provide the Works. The *Contractor* does not appoint a proposed Subcontractor until the *Project Manager* has accepted him.

26.3 The *Contractor* submits the proposed conditions of contract for each subcontract to the *Project Manager* for acceptance unless

- an NEC contract is proposed or
- the *Project Manager* has agreed that no submission is required.

The *Contractor* does not appoint a Subcontractor on the proposed subcontract conditions submitted until the *Project Manager* has accepted them. A reason for not accepting them is that

- they will not allow the *Contractor* to Provide the Works or
- they do not include a statement that the parties to the subcontract shall act in a spirit of mutual trust and co-operation.

**26.4 The *Contractor* submits the proposed contract data for each subcontract for acceptance to the *Project Manager* if**

- **an NEC contract is proposed and**
- **the *Project Manager* instructs the *Contractor* to make the submission.**

**A reason for not accepting the proposed contract data is that its use will not allow the *Contractor* to Provide the Works.**

**Other responsibilities** **27**

27.1 The *Contractor* obtains approval of his design from Others where necessary.

27.2 The *Contractor* provides access to work being done and to Plant and Materials being stored for this contract for

- the *Project Manager*,
- the *Supervisor* and
- Others notified to him by the *Project Manager*.

27.3 The *Contractor* obeys an instruction which is in accordance with this contract and is given to him by the *Project Manager* or the *Supervisor*.

27.4 The *Contractor* acts in accordance with the health and safety requirements stated in the Works Information.




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## 3 Time

**Starting, Completion and Key Dates**

**30**

30.1 The *Contractor* does not start work on the Site until the first *access date* and does the work so that Completion is on or before the Completion Date.

30.2 The *Project Manager* decides the date of Completion. The *Project Manager* certifies Completion within one week of Completion.

30.3 The *Contractor* does the work so that the Condition stated for each Key Date is met by the Key Date.

**The programme**

**31**

31.1 If a programme is not identified in the Contract Data, the *Contractor* submits a first programme to the *Project Manager* for acceptance within the period stated in the Contract Data.

31.2 The *Contractor* shows on each programme which he submits for acceptance

- the *starting date*, *access dates*, Key Dates and Completion Date,
- planned Completion,
- the order and timing of the operations which the *Contractor* plans to do in order to Provide the Works,
- the order and timing of the work of the *Employer* and Others as last agreed with them by the *Contractor* or, if not so agreed, as stated in the Works Information,
- the dates when the *Contractor* plans to meet each Condition stated for the Key Dates and to complete other work needed to allow the *Employer* and Others to do their work,
- provisions for
  - float,
  - time risk allowances,
  - health and safety requirements and
  - the procedures set out in this contract,
- the dates when, in order to Provide the Works in accordance with his programme, the *Contractor* will need
  - access to a part of the Site if later than its *access date*,
  - acceptances,
  - Plant and Materials and other things to be provided by the *Employer* and
  - information from Others,
- for each operation, a statement of how the *Contractor* plans to do the work identifying the principal Equipment and other resources which he plans to use and
- other information which the Works Information requires the *Contractor* to show on a programme submitted for acceptance.

31.3 Within two weeks of the *Contractor* submitting a programme to him for acceptance, the *Project Manager* either accepts the programme or notifies the *Contractor* of his reasons for not accepting it. A reason for not accepting a programme is that

- the *Contractor*'s plans which it shows are not practicable,
- it does not show the information which this contract requires,
- it does not represent the *Contractor*'s plans realistically or
- it does not comply with the Works Information.

**31.4 The *Contractor* provides information which shows how each activity on the Activity Schedule relates to the operations on each programme which he submits for acceptance.**



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**Revising the programme** **32**

32.1 The *Contractor* shows on each revised programme

- the actual progress achieved on each operation and its effect upon the timing of the remaining work,
- the effects of implemented compensation events,
- how the *Contractor* plans to deal with any delays and to correct notified Defects and
- any other changes which the *Contractor* proposes to make to the Accepted Programme.

32.2 The *Contractor* submits a revised programme to the *Project Manager* for acceptance

- within the *period for reply* after the *Project Manager* has instructed him to,
- when the *Contractor* chooses to and, in any case,
- at no longer interval than the interval stated in the Contract Data from the *starting date* until Completion of the whole of the *works*.

**Access to and use of the Site** **33**

33.1 The *Employer* allows access to and use of each part of the Site to the *Contractor* which is necessary for the work included in this contract. Access and use is allowed on or before the later of its *access date* and the date for access shown on the Accepted Programme.

**Instructions to stop or not to start work** **34**

34.1 The *Project Manager* may instruct the *Contractor* to stop or not to start any work and may later instruct him that he may re-start or start it.

**Take over** **35**

35.1 The *Employer* need not take over the *works* before the Completion Date if it is stated in the Contract Data that he is not willing to do so. Otherwise the *Employer* takes over the *works* not later than two weeks after Completion.

35.2 The *Employer* may use any part of the *works* before Completion has been certified. If he does so, he takes over the part of the *works* when he begins to use it except if the use is

- for a reason stated in the Works Information or
- to suit the *Contractor*'s method of working.

35.3 The *Project Manager* certifies the date upon which the *Employer* takes over any part of the *works* and its extent within one week of the date.

**Acceleration** **36**

36.1 The *Project Manager* may instruct the *Contractor* to submit a quotation for an acceleration to achieve Completion before the Completion Date. The *Project Manager* states changes to the Key Dates to be included in the quotation. A quotation for an acceleration comprises proposed changes to the Prices and a revised programme showing the earlier Completion Date and the changed Key Dates. The *Contractor* submits details of his assessment with each quotation.

36.2 The *Contractor* submits a quotation or gives his reasons for not doing so within the *period for reply*.

**36.3 When the *Project Manager* accepts a quotation for an acceleration, he changes the Prices, the Completion Date and the Key Dates accordingly and accepts the revised programme.**




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## 4 Testing and Defects

**Tests and Inspections** **40**

40.1 The subclauses in this clause only apply to tests and inspections required by the Works Information or the applicable law.

40.2 The *Contractor* and the *Employer* provide materials, facilities and samples for tests and inspections as stated in the Works Information.

40.3 The *Contractor* and the *Supervisor* each notifies the other of each of his tests and inspections before it starts and afterwards notifies the other of its results. The *Contractor* notifies the *Supervisor* in time for a test or inspection to be arranged and done before doing work which would obstruct the test or inspection. The *Supervisor* may watch any test done by the *Contractor*.

40.4 If a test or inspection shows that any work has a Defect, the *Contractor* corrects the Defect and the test or inspection is repeated.

40.5 The *Supervisor* does his tests and inspections without causing unnecessary delay to the work or to a payment which is conditional upon a test or inspection being successful. A payment which is conditional upon a *Supervisor*'s test or inspection being successful becomes due at the later of the *defects date* and the end of the last *defect correction period* if

- the *Supervisor* has not done the test or inspection and
- the delay to the test or inspection is not the *Contractor*'s fault.

40.6 The *Project Manager* assesses the cost incurred by the *Employer* in repeating a test or inspection after a Defect is found. The *Contractor* pays the amount assessed.

**40.7 When the *Project Manager* assesses the cost incurred by the *Employer* in repeating a test or inspection after a Defect is found, the *Project Manager* does not include the *Contractor*'s cost of carrying out the repeat test or inspection.**

**Testing and inspection before delivery** **41**

41.1 The *Contractor* does not bring to the Working Areas those Plant and Materials which the Works Information states are to be tested or inspected before delivery until the *Supervisor* has notified the *Contractor* that they have passed the test or inspection.

**Searching for and notifying Defects** **42**

42.1 Until the *defects date*, the *Supervisor* may instruct the *Contractor* to search for a Defect. He gives his reason for the search with his instruction. Searching may include

- uncovering, dismantling, re-covering and re-erecting work,
- providing facilities, materials and samples for tests and inspections done by the *Supervisor* and
- doing tests and inspections which the Works Information does not require.

42.2 Until the *defects date*, the *Supervisor* notifies the *Contractor* of each Defect as soon as he finds it and the *Contractor* notifies the *Supervisor* of each Defect as soon as he finds it.

**Correcting Defects** **43**

43.1 The *Contractor* corrects a Defect whether or not the *Supervisor* notifies him of it.

43.2 The *Contractor* corrects a notified Defect before the end of the *defect correction period*. The *defect correction period* begins at Completion for Defects notified before Completion and when the Defect is notified for other Defects.



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43.3 The *Supervisor* issues the Defects Certificate at the later of the *defects date* and the end of the last *defect correction period*. The *Employer*'s rights in respect of a Defect which the *Supervisor* has not found or notified are not affected by the issue of the Defects Certificate.

43.4 The *Project Manager* arranges for the *Employer* to allow the *Contractor* access to and use of a part of the *works* which he has taken over if they are needed for correcting a Defect. In this case the *defect correction period* begins when the necessary access and use have been provided.

**Accepting Defects** **44**

44.1 The *Contractor* and the *Project Manager* may each propose to the other that the Works Information should be changed so that a Defect does not have to be corrected.

44.2 If the *Contractor* and the *Project Manager* are prepared to consider the change, the *Contractor* submits a quotation for reduced Prices or an earlier Completion Date or both to the *Project Manager* for acceptance. If the *Project Manager* accepts the quotation, he gives an instruction to change the Works Information, the Prices and the Completion Date accordingly.

**Uncorrected Defects** **45**

45.1 If the *Contractor* is given access in order to correct a notified Defect but he has not corrected it within its *defect correction period*, the *Project Manager* assesses the cost to the *Employer* of having the Defect corrected by other people and the *Contractor* pays this amount. The Works Information is treated as having been changed to accept the Defect.

45.2 If the *Contractor* is not given access in order to correct a notified Defect before the *defects date*, the *Project Manager* assesses the cost to the *Contractor* of correcting the Defect and the *Contractor* pays this amount. The Works Information is treated as having been changed to accept the Defect.




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## 5 Payment

**Assessing the amount due** **50**

50.1 The *Project Manager* assesses the amount due at each assessment date. The first assessment date is decided by the *Project Manager* to suit the procedures of the Parties and is not later than the *assessment interval* after the *starting date*. Later assessment dates occur

- at the end of each *assessment interval* until four weeks after the *Supervisor* issues the Defects Certificate and
- at Completion of the whole of the *works*.

50.2 The amount due is

- the Price for Work Done to Date,
- plus other amounts to be paid to the *Contractor*,
- less amounts to be paid by or retained from the *Contractor*.

Any tax which the law requires the *Employer* to pay to the *Contractor* is included in the amount due.

50.3 If no programme is identified in the Contract Data, one quarter of the Price for Work Done to Date is retained in assessments of the amount due until the *Contractor* has submitted a first programme to the *Project Manager* for acceptance showing the information which this contract requires.

50.4 In assessing the amount due, the *Project Manager* considers any application for payment the *Contractor* has submitted on or before the assessment date. The *Project Manager* gives the *Contractor* details of how the amount due has been assessed.

50.5 The *Project Manager* corrects any wrongly assessed amount due in a later payment certificate.

**50.6 Payments of Defined Cost made by the *Contractor* in a currency other than the *currency of this contract* are included in the amount due as payments to be made to him in the same currency. Such payments are converted to the *currency of this contract* in order to calculate the Fee and any *Contractor's* share using the *exchange rates*.**

**Payment** **51**

51.1 The *Project Manager* certifies a payment within one week of each assessment date. The first payment is the amount due. Other payments are the change in the amount due since the last payment certificate. A payment is made by the *Contractor* to the *Employer* if the change reduces the amount due. Other payments are made by the *Employer* to the *Contractor*. Payments are in the *currency of this contract* unless otherwise stated in this contract.

51.2 Each certified payment is made within three weeks of the assessment date or, if a different period is stated in the Contract Data, within the period stated. If a certified payment is late, or if a payment is late because the *Project Manager* does not issue a certificate which he should issue, interest is paid on the late payment. Interest is assessed from the date by which the late payment should have been made until the date when the late payment is made, and is included in the first assessment after the late payment is made.

51.3 If an amount due is corrected in a later certificate either

- by the *Project Manager* in relation to a mistake or a compensation event or
- following a decision of the *Adjudicator* or the *tribunal*,



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interest on the correcting amount is paid. Interest is assessed from the date when the incorrect amount was certified until the date when the correcting amount is certified and is included in the assessment which includes the correcting amount.

51.4 Interest is calculated on a daily basis at the *interest rate* and is compounded annually.

**Defined Cost** 52

52.1 All the *Contractor*'s costs which are not included in the Defined Cost are treated as included in the Fee. Defined Cost includes only amounts calculated using rates and percentages stated in the Contract Data and other amounts at open market or competitively tendered prices with deductions for all discounts, rebates and taxes which can be recovered.

**52.2 The *Contractor* keeps these records**

- **accounts of payments of Defined Cost,**
- **proof that the payments have been made,**
- **communications about and assessments of compensation events for Subcontractors and**
- **other records as stated in the Works Information.**

**52.3 The *Contractor* allows the *Project Manager* to inspect at any time within working hours the accounts and records which he is required to keep.**

**The *Contractor*'s share** 53

**53.1 The *Project Manager* assesses the *Contractor*'s share of the difference between the total of the Prices and the Price for Work Done to Date. The difference is divided into increments falling within each of the *share ranges*. The limits of a *share range* are the Price for Work Done to Date divided by the total of the Prices, expressed as a percentage. The *Contractor*'s share equals the sum of the products of the increment within each *share range* and the corresponding *Contractor's share percentage*.**

**53.2 If the Price for Work Done to Date is less than the total of the Prices, the *Contractor* is paid his share of the saving. If the Price for Work Done to Date is greater than the total of the Prices, the *Contractor* pays his share of the excess.**

**53.3 The *Project Manager* makes a preliminary assessment of the *Contractor*'s share at Completion of the whole of the *works* using his forecasts of the final Price for Work Done to Date and the final total of the Prices. This share is included in the amount due following Completion of the whole of the *works*.**

**53.4 The *Project Manager* makes a final assessment of the *Contractor*'s share using the final Price for Work Done to Date and the final total of the Prices. This share is included in the final amount due.**

**The Activity Schedule** 54

**54.1 Information in the Activity Schedule is not Works Information or Site Information.**

**54.2 If the *Contractor* changes a planned method of working at his discretion so that the activities on the Activity Schedule do not relate to the operations on the Accepted Programme, he submits a revision of the Activity Schedule to the *Project Manager* for acceptance.**

**54.3 A reason for not accepting a revision of the Activity Schedule is that**

- **it does not comply with the Accepted Programme,**
- **any changed Prices are not reasonably distributed between the activities or**
- **the total of the Prices is changed.**




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## 6 Compensation events

**Compensation events** **60**

60.1 The following are compensation events.

(1) The *Project Manager* gives an instruction changing the Works Information except

- a change made in order to accept a Defect or
- a change to the Works Information provided by the *Contractor* for his design which is made either at his request or to comply with other Works Information provided by the *Employer*.

(2) The *Employer* does not allow access to and use of a part of the Site by the later of its *access date* and the date shown on the Accepted Programme.

(3) The *Employer* does not provide something which he is to provide by the date for providing it shown on the Accepted Programme.

(4) The *Project Manager* gives an instruction to stop or not to start any work or to change a Key Date.

(5) The *Employer* or Others

- do not work within the times shown on the Accepted Programme,
- do not work within the conditions stated in the Works Information or
- carry out work on the Site that is not stated in the Works Information.

(6) The *Project Manager* or the *Supervisor* does not reply to a communication from the *Contractor* within the period required by this contract.

(7) The *Project Manager* gives an instruction for dealing with an object of value or of historical or other interest found within the Site.

(8) The *Project Manager* or the *Supervisor* changes a decision which he has previously communicated to the *Contractor*.

(9) The *Project Manager* withholds an acceptance (other than acceptance of a quotation for acceleration or for not correcting a Defect) for a reason not stated in this contract.

(10) The *Supervisor* instructs the *Contractor* to search for a Defect and no Defect is found unless the search is needed only because the *Contractor* gave insufficient notice of doing work obstructing a required test or inspection.

(11) A test or inspection done by the *Supervisor* causes unnecessary delay.

(12) The *Contractor* encounters physical conditions which

- are within the Site,
- are not weather conditions and
- an experienced contractor would have judged at the Contract Date to have such a small chance of occurring that it would have been unreasonable for him to have allowed for them.

Only the difference between the physical conditions encountered and those for which it would have been reasonable to have allowed is taken into account in assessing a compensation event.

(13) A *weather measurement* is recorded

- within a calendar month,
- before the Completion Date for the whole of the *works* and
- at the place stated in the Contract Data

the value of which, by comparison with the *weather data*, is shown to occur on average less frequently than once in ten years.



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Only the difference between the *weather measurement* and the weather which the *weather data* show to occur on average less frequently than once in ten years is taken into account in assessing a compensation event.

(14) An event which is an *Employer*'s risk stated in this contract.

(15) The *Project Manager* certifies take over of a part of the *works* before both Completion and the Completion Date.

(16) The *Employer* does not provide materials, facilities and samples for tests and inspections as stated in the Works Information.

(17) The *Project Manager* notifies a correction to an assumption which he has stated about a compensation event.

(18) A breach of contract by the *Employer* which is not one of the other compensation events in this contract.

(19) An event which

- stops the *Contractor* completing the *works* or
- stops the *Contractor* completing the *works* by the date shown on the Accepted Programme,

and which

- neither Party could prevent,
- an experienced contractor would have judged at the Contract Date to have such a small chance of occurring that it would have been unreasonable for him to have allowed for it and
- is not one of the other compensation events stated in this contract.

60.2 In judging the physical conditions for the purpose of assessing a compensation event, the *Contractor* is assumed to have taken into account

- the Site Information,
- publicly available information referred to in the Site Information,
- information obtainable from a visual inspection of the Site and
- other information which an experienced contractor could reasonably be expected to have or to obtain.

60.3 If there is an ambiguity or inconsistency within the Site Information (including the information referred to in it), the *Contractor* is assumed to have taken into account the physical conditions more favourable to doing the work.

**Notifying compensation events**

**61**

61.1 For compensation events which arise from the *Project Manager* or the *Supervisor* giving an instruction or changing an earlier decision, the *Project Manager* notifies the *Contractor* of the compensation event at the time of giving the instruction or changing the earlier decision. He also instructs the *Contractor* to submit quotations, unless the event arises from a fault of the *Contractor* or quotations have already been submitted. The *Contractor* puts the instruction or changed decision into effect.

61.2 The *Project Manager* may instruct the *Contractor* to submit quotations for a proposed instruction or a proposed changed decision. The *Contractor* does not put a proposed instruction or a proposed changed decision into effect.

61.3 The *Contractor* notifies the *Project Manager* of an event which has happened or which he expects to happen as a compensation event if

- the *Contractor* believes that the event is a compensation event and
- the *Project Manager* has not notified the event to the *Contractor*.

If the *Contractor* does not notify a compensation event within eight weeks of becoming aware of the event, he is not entitled to a change in the Prices, the Completion Date or a Key Date unless the *Project Manager* should have notified the event to the *Contractor* but did not.





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61.4 If the *Project Manager* decides that an event notified by the *Contractor*

- arises from a fault of the *Contractor*,
- has not happened and is not expected to happen,
- has no effect upon Defined Cost, Completion or meeting a Key Date or
- is not one of the compensation events stated in this contract

he notifies the *Contractor* of his decision that the Prices, the Completion Date and the Key Dates are not to be changed.

If the *Project Manager* decides otherwise, he notifies the *Contractor* accordingly and instructs him to submit quotations.

If the *Project Manager* does not notify his decision to the *Contractor* within either

- one week of the *Contractor*'s notification or
- a longer period to which the *Contractor* has agreed,

the *Contractor* may notify the *Project Manager* to this effect. A failure by the *Project Manager* to reply within two weeks of this notification is treated as acceptance by the *Project Manager* that the event is a compensation event and an instruction to submit quotations.

61.5 If the *Project Manager* decides that the *Contractor* did not give an early warning of the event which an experienced contractor could have given, he notifies this decision to the *Contractor* when he instructs him to submit quotations.

61.6 If the *Project Manager* decides that the effects of a compensation event are too uncertain to be forecast reasonably, he states assumptions about the event in his instruction to the *Contractor* to submit quotations. Assessment of the event is based on these assumptions. If any of them is later found to have been wrong, the *Project Manager* notifies a correction.

61.7 A compensation event is not notified after the *defects date*.

**Quotations for compensation events**

62

62.1 After discussing with the *Contractor* different ways of dealing with the compensation event which are practicable, the *Project Manager* may instruct the *Contractor* to submit alternative quotations. The *Contractor* submits the required quotations to the *Project Manager* and may submit quotations for other methods of dealing with the compensation event which he considers practicable.

62.2 Quotations for compensation events comprise proposed changes to the Prices and any delay to the Completion Date and Key Dates assessed by the *Contractor*. The *Contractor* submits details of his assessment with each quotation. If the programme for remaining work is altered by the compensation event, the *Contractor* includes the alterations to the Accepted Programme in his quotation.

62.3 The *Contractor* submits quotations within three weeks of being instructed to do so by the *Project Manager*. The *Project Manager* replies within two weeks of the submission. His reply is

- an instruction to submit a revised quotation,
- an acceptance of a quotation,
- a notification that a proposed instruction will not be given or a proposed changed decision will not be made or
- a notification that he will be making his own assessment.

62.4 The *Project Manager* instructs the *Contractor* to submit a revised quotation only after explaining his reasons for doing so to the *Contractor*. The *Contractor* submits the revised quotation within three weeks of being instructed to do so.



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62.5 The *Project Manager* extends the time allowed for

- the *Contractor* to submit quotations for a compensation event and
- the *Project Manager* to reply to a quotation

if the *Project Manager* and the *Contractor* agree to the extension before the submission or reply is due. The *Project Manager* notifies the extension that has been agreed to the *Contractor*.

62.6 If the *Project Manager* does not reply to a quotation within the time allowed, the *Contractor* may notify the *Project Manager* to this effect. If the *Contractor* submitted more than one quotation for the compensation event, he states in his notification which quotation he proposes is to be accepted. If the *Project Manager* does not reply to the notification within two weeks, and unless the quotation is for a proposed instruction or a proposed changed decision, the *Contractor*'s notification is treated as acceptance of the quotation by the *Project Manager*.

**Assessing compensation events**

63

63.1 The changes to the Prices are assessed as the effect of the compensation event upon

- the actual Defined Cost of the work already done,
- the forecast Defined Cost of the work not yet done and
- the resulting Fee.

The date when the *Project Manager* instructed or should have instructed the *Contractor* to submit quotations divides the work already done from the work not yet done.

63.2 If the effect of a compensation event is to reduce the total Defined Cost, the Prices are not reduced except as stated in this contract.

63.3 A delay to the Completion Date is assessed as the length of time that, due to the compensation event, planned Completion is later than planned Completion as shown on the Accepted Programme. A delay to a Key Date is assessed as the length of time that, due to the compensation event, the planned date when the Condition stated for a Key Date will be met is later than the date shown on the Accepted Programme.

63.4 The rights of the *Employer* and the *Contractor* to changes to the Prices, the Completion Date and the Key Dates are their only rights in respect of a compensation event.

63.5 If the *Project Manager* has notified the *Contractor* of his decision that the *Contractor* did not give an early warning of a compensation event which an experienced contractor could have given, the event is assessed as if the *Contractor* had given early warning.

63.6 Assessment of the effect of a compensation event includes risk allowances for cost and time for matters which have a significant chance of occurring and are at the *Contractor*'s risk under this contract.

63.7 Assessments are based upon the assumptions that the *Contractor* reacts competently and promptly to the compensation event, that any Defined Cost and time due to the event are reasonably incurred and that the Accepted Programme can be changed.

63.8 A compensation event which is an instruction to change the Works Information in order to resolve an ambiguity or inconsistency is assessed as if the Prices, the Completion Date and the Key Dates were for the interpretation most favourable to the Party which did not provide the Works Information.

63.9 If a change to the Works Information makes the description of the Condition for a Key Date incorrect, the *Project Manager* corrects the description. This correction is taken into account in assessing the compensation event for the change to the Works Information.




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**63.11** **If the effect of a compensation event is to reduce the total Defined Cost and the event is**

- **a change to the Works Information, other than a change to the Works Information provided by the *Employer* which the *Contractor* proposed and the *Project Manager* has accepted or**
- **a correction of an assumption stated by the *Project Manager* for assessing an earlier compensation event,**

**the Prices are reduced.**

**63.12** **Assessments for changed Prices for compensation events are in the form of changes to the Activity Schedule.**

**63.15** **If the *Project Manager* and the *Contractor* agree, the *Contractor* assesses a compensation event using the Shorter Schedule of Cost Components. The *Project Manager* may make his own assessments using the Shorter Schedule of Cost Components.**

**The *Project Manager's* assessments**

64

64.1 The *Project Manager* assesses a compensation event

- if the *Contractor* has not submitted a quotation and details of his assessment within the time allowed,
- if the *Project Manager* decides that the *Contractor* has not assessed the compensation event correctly in a quotation and he does not instruct the *Contractor* to submit a revised quotation,
- if, when the *Contractor* submits quotations for a compensation event, he has not submitted a programme or alterations to a programme which this contract requires him to submit or
- if, when the *Contractor* submits quotations for a compensation event, the *Project Manager* has not accepted the *Contractor's* latest programme for one of the reasons stated in this contract.

64.2 The *Project Manager* assesses a compensation event using his own assessment of the programme for the remaining work if

- there is no Accepted Programme or
- the *Contractor* has not submitted a programme or alterations to a programme for acceptance as required by this contract.

64.3 The *Project Manager* notifies the *Contractor* of his assessment of a compensation event and gives him details of it within the period allowed for the *Contractor's* submission of his quotation for the same event. This period starts when the need for the *Project Manager's* assessment becomes apparent.

64.4 If the *Project Manager* does not assess a compensation event within the time allowed, the *Contractor* may notify the *Project Manager* to this effect. If the *Contractor* submitted more than one quotation for the compensation event, he states in his notification which quotation he proposes is to be accepted. If the *Project Manager* does not reply within two weeks of this notification the notification is treated as acceptance of the *Contractor's* quotation by the *Project Manager*.

**Implementing compensation events**

65

65.1 A compensation event is implemented when

- the *Project Manager* notifies his acceptance of the *Contractor's* quotation,
- the *Project Manager* notifies the *Contractor* of his own assessment or
- a *Contractor's* quotation is treated as having been accepted by the *Project Manager*.

65.2 The assessment of a compensation event is not revised if a forecast upon which it is based is shown by later recorded information to have been wrong.

**65.4** **The changes to the Prices, the Completion Date and the Key Dates are included in the notification implementing a compensation event.**



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# 7 Title

**The *Employer*'s title to Plant and Materials**

70
70.1 Whatever title the *Contractor* has to Plant and Materials which is outside the Working Areas passes to the *Employer* if the *Supervisor* has marked it as for this contract.

70.2 Whatever title the *Contractor* has to Plant and Materials passes to the *Employer* if it has been brought within the Working Areas. The title to Plant and Materials passes back to the *Contractor* if it is removed from the Working Areas with the *Project Manager*'s permission.

**Marking Equipment, Plant and Materials outside the Working Areas**

71
71.1 The *Supervisor* marks Equipment, Plant and Materials which are outside the Working Areas if

- this contract identifies them for payment and
- the *Contractor* has prepared them for marking as the Works Information requires.

**Removing Equipment**

72
72.1 The *Contractor* removes Equipment from the Site when it is no longer needed unless the *Project Manager* allows it to be left in the works.

**Objects and materials within the Site**

73
73.1 The *Contractor* has no title to an object of value or of historical or other interest within the Site. The *Contractor* notifies the *Project Manager* when such an object is found and the *Project Manager* instructs the *Contractor* how to deal with it. The *Contractor* does not move the object without instructions.

73.2 The *Contractor* has title to materials from excavation and demolition only as stated in the Works Information.




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## 8 Risks and Insurance

**Employer's risks** **80**

80.1 The following are *Employer*'s risks.

- Claims, proceedings, compensation and costs payable which are due to
  - use or occupation of the Site by the *works* or for the purpose of the *works* which is the unavoidable result of the *works*,
  - negligence, breach of statutory duty or interference with any legal right by the *Employer* or by any person employed by or contracted to him except the *Contractor* or
  - a fault of the *Employer* or a fault in his design.
- Loss of or damage to Plant and Materials supplied to the *Contractor* by the *Employer*, or by Others on the *Employer*'s behalf, until the *Contractor* has received and accepted them.
- Loss of or damage to the *works*, Plant and Materials due to
  - war, civil war, rebellion, revolution, insurrection, military or usurped power,
  - strikes, riots and civil commotion not confined to the *Contractor*'s employees or
  - radioactive contamination.
- Loss of or wear or damage to the parts of the *works* taken over by the *Employer*, except loss, wear or damage occurring before the issue of the Defects Certificate which is due to
  - a Defect which existed at take over,
  - an event occurring before take over which was not itself an *Employer*'s risk or
  - the activities of the *Contractor* on the Site after take over.
- Loss of or wear or damage to the *works* and any Equipment, Plant and Materials retained on the Site by the *Employer* after a termination, except loss, wear or damage due to the activities of the *Contractor* on the Site after the termination.
- Additional *Employer*'s risks stated in the Contract Data.

**The *Contractor*'s risks** **81**

81.1 From the *starting date* until the Defects Certificate has been issued, the risks which are not carried by the *Employer* are carried by the *Contractor*.

**Repairs** **82**

82.1 Until the Defects Certificate has been issued and unless otherwise instructed by the *Project Manager*, the *Contractor* promptly replaces loss of and repairs damage to the *works*, Plant and Materials.

**Indemnity** **83**

83.1 Each Party indemnifies the other against claims, proceedings, compensation and costs due to an event which is at his risk.

83.2 The liability of each Party to indemnify the other is reduced if events at the other Party's risk contributed to the claims, proceedings, compensation and costs. The reduction is in proportion to the extent that events which were at the other Party's risk contributed, taking into account each Party's responsibilities under this contract.



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**Insurance cover** **84**

84.1 The *Contractor* provides the insurances stated in the Insurance Table except any insurance which the *Employer* is to provide as stated in the Contract Data. The *Contractor* provides additional insurances as stated in the Contract Data.

84.2 The insurances are in the joint names of the Parties and provide cover for events which are at the *Contractor*'s risk from the *starting date* until the Defects Certificate or a termination certificate has been issued.

**INSURANCE TABLE**

| **Insurance against** | **Minimum amount of cover or minimum limit of indemnity** |
|---|---|
| Loss of or damage to the *works*, Plant and Materials | The replacement cost, including the amount stated in the Contract Data for the replacement of any Plant and Materials provided by the *Employer* |
| Loss of or damage to Equipment | The replacement cost |
| Liability for loss of or damage to property (except the *works*, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the *Contractor*) caused by activity in connection with this contract | The amount stated in the Contract Data for any one event with cross liability so that the insurance applies to the Parties separately |
| Liability for death of or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with this contract | The greater of the amount required by the applicable law and the amount stated in the Contract Data for any one event |

**Insurance policies** **85**

85.1 Before the *starting date* and on each renewal of the insurance policy until the *defects date*, the *Contractor* submits to the *Project Manager* for acceptance certificates which state that the insurance required by this contract is in force. The certificates are signed by the *Contractor*'s insurer or insurance broker. A reason for not accepting the certificates is that they do not comply with this contract.

85.2 Insurance policies include a waiver by the insurers of their subrogation rights against directors and other employees of every insured except where there is fraud.

85.3 The Parties comply with the terms and conditions of the insurance policies.

85.4 Any amount not recovered from an insurer is borne by the *Employer* for events which are at his risk and by the *Contractor* for events which are at his risk.

**If the *Contractor* does not insure** **86**

86.1 The *Employer* may insure a risk which this contract requires the *Contractor* to insure if the *Contractor* does not submit a required certificate. The cost of this insurance to the *Employer* is paid by the *Contractor*.

**Insurance by the *Employer*** **87**

87.1 The *Project Manager* submits policies and certificates for insurances provided by the *Employer* to the *Contractor* for acceptance before the *starting date* and afterwards as the *Contractor* instructs. The *Contractor* accepts the policies and certificates if they comply with this contract.




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87.2 The *Contractor*'s acceptance of an insurance policy or certificate provided by the *Employer* does not change the responsibility of the *Employer* to provide the insurances stated in the Contract Data.

87.3 The *Contractor* may insure a risk which this contract requires the *Employer* to insure if the *Employer* does not submit a required policy or certificate. The cost of this insurance to the *Contractor* is paid by the *Employer*.



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# 9 Termination

**Termination 90**

90.1 If either Party wishes to terminate the *Contractor*'s obligation to Provide the Works he notifies the *Project Manager* and the other Party giving details of his reason for terminating. The *Project Manager* issues a termination certificate to both Parties promptly if the reason complies with this contract.

90.2 The *Contractor* may terminate only for a reason identified in the Termination Table. The *Employer* may terminate for any reason. The procedures followed and the amounts due on termination are in accordance with the Termination Table.

**TERMINATION TABLE**

| Terminating Party | Reason | Procedure | Amount due |
|---|---|---|---|
| The *Employer* | A reason other than R1–R21 | P1 and P2 | A1, A2 and A4 |
| | R1–R15 or R18 | P1, P2 and P3 | A1 and A3 |
| | R17 or R20 | P1 and P3 | A1 and A2 |
| | R21 | P1 and P4 | A1 and A2 |
| The *Contractor* | R1–R10, R16 or R19 | P1 and P4 | A1, A2 and A4 |
| | R17 or R20 | P1 and P4 | A1 and A2 |

90.3 The procedures for termination are implemented immediately after the *Project Manager* has issued a termination certificate.

90.4 Within thirteen weeks of termination, the *Project Manager* certifies a final payment to or from the *Contractor* which is the *Project Manager*'s assessment of the amount due on termination less the total of previous payments. Payment is made within three weeks of the *Project Manager*'s certificate.

90.5 After a termination certificate has been issued, the *Contractor* does no further work necessary to Provide the Works.

**Reasons for termination 91**

91.1 Either Party may terminate if the other Party has done one of the following or its equivalent.

- If the other Party is an individual and has
  - presented his petition for bankruptcy (R1),
  - had a bankruptcy order made against him (R2),
  - had a receiver appointed over his assets (R3) or
  - made an arrangement with his creditors (R4).
- If the other Party is a company or partnership and has
  - had a winding-up order made against it (R5),
  - had a provisional liquidator appointed to it (R6),
  - passed a resolution for winding-up (other than in order to amalgamate or reconstruct) (R7),
  - had an administration order made against it (R8),
  - had a receiver, receiver and manager, or administrative receiver appointed over the whole or a substantial part of its undertaking or assets (R9) or
  - made an arrangement with its creditors (R10).





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91.2 The *Employer* may terminate if the *Project Manager* has notified that the *Contractor* has defaulted in one of the following ways and not put the default right within four weeks of the notification.

- Substantially failed to comply with his obligations (R11).
- Not provided a bond or guarantee which this contract requires (R12).
- Appointed a Subcontractor for substantial work before the *Project Manager* has accepted the Subcontractor (R13).

91.3 The *Employer* may terminate if the *Project Manager* has notified that the *Contractor* has defaulted in one of the following ways and not stopped defaulting within four weeks of the notification.

- Substantially hindered the *Employer* or Others (R14).
- Substantially broken a health or safety regulation (R15).

91.4 The *Contractor* may terminate if the *Employer* has not paid an amount certified by the *Project Manager* within thirteen weeks of the date of the certificate (R16).

91.5 Either Party may terminate if the Parties have been released under the law from further performance of the whole of this contract (R17).

91.6 If the *Project Manager* has instructed the *Contractor* to stop or not to start any substantial work or all work and an instruction allowing the work to re-start or start has not been given within thirteen weeks,

- the *Employer* may terminate if the instruction was due to a default by the *Contractor* (R18),
- the *Contractor* may terminate if the instruction was due to a default by the *Employer* (R19) and
- either Party may terminate if the instruction was due to any other reason (R20).

91.7 The *Employer* may terminate if an event occurs which

- stops the *Contractor* completing the *works* or
- stops the *Contractor* completing the *works* by the date shown on the Accepted Programme and is forecast to delay Completion by more than 13 weeks,

and which

- neither Party could prevent and
- an experienced contractor would have judged at the Contract Date to have such a small chance of occurring that it would have been unreasonable for him to have allowed for it (R21).

**Procedures on termination** **92**

92.1 On termination, the *Employer* may complete the *works* and may use any Plant and Materials to which he has title (P1).

92.2 The procedure on termination also includes one or more of the following as set out in the Termination Table.

P2 The *Employer* may instruct the *Contractor* to leave the Site, remove any Equipment, Plant and Materials from the Site and assign the benefit of any subcontract or other contract related to performance of this contract to the *Employer*.

P3 The *Employer* may use any Equipment to which the *Contractor* has title to complete the *works*. The *Contractor* promptly removes the Equipment from Site when the *Project Manager* notifies him that the *Employer* no longer requires it to complete the *works*.

P4 The *Contractor* leaves the Working Areas and removes the Equipment.



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**Payment on termination** **93**

93.1 The amount due on termination includes (A1)

- an amount due assessed as for normal payments,
- the Defined Cost for Plant and Materials
  - within the Working Areas or
  - to which the *Employer* has title and of which the *Contractor* has to accept delivery,
- other Defined Cost reasonably incurred in expectation of completing the whole of the *works*,
- any amounts retained by the *Employer* and
- a deduction of any un-repaid balance of an advanced payment.

93.2 The amount due on termination also includes one or more of the following as set out in the Termination Table.

A2 The forecast Defined Cost of removing the Equipment.

A3 A deduction of the forecast of the additional cost to the *Employer* of completing the whole of the *works*.

A4 The *direct fee percentage* applied to any excess of the total of the Prices at the Contract Date over the Price for Work Done to Date.

**93.4 If there is a termination, the *Project Manager* assesses the *Contractor*'s share after he has certified termination. His assessment uses, as the Price for Work Done to Date, the total of the Defined Cost which the *Contractor* has paid and which he is committed to pay for work done before termination. The assessment uses as the total of the Prices**

- **the lump sum price for each activity which has been completed and**
- **a proportion of the lump sum price for each incomplete activity which is the proportion of the work in the activity which has been completed.**

**93.6 The *Project Manager*'s assessment of the *Contractor*'s share is added to the amount due to the *Contractor* on termination if there has been a saving or deducted if there has been an excess.**





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# DISPUTE RESOLUTION

## Option W1

**Dispute resolution procedure (used unless the United Kingdom Housing Grants, Construction and Regeneration Act 1996 applies).**



**Dispute resolution** **W1**

W1.1 A dispute arising under or in connection with this contract is referred to and decided by the *Adjudicator*.

**The *Adjudicator*** W1.2 (1) The Parties appoint the *Adjudicator* under the NEC Adjudicator's Contract current at the *starting date*.

(2) The *Adjudicator* acts impartially and decides the dispute as an independent adjudicator and not as an arbitrator.

(3) If the *Adjudicator* is not identified in the Contract Data or if the *Adjudicator* resigns or is unable to act, the Parties choose a new adjudicator jointly. If the Parties have not chosen an adjudicator, either Party may ask the *Adjudicator nominating body* to choose one. The *Adjudicator nominating body* chooses an adjudicator within four days of the request. The chosen adjudicator becomes the *Adjudicator*.

(4) A replacement *Adjudicator* has the power to decide a dispute referred to his predecessor but not decided at the time when the predecessor resigned or became unable to act. He deals with an undecided dispute as if it had been referred to him on the date he was appointed.

(5) The *Adjudicator*, his employees and agents are not liable to the Parties for any action or failure to take action in an adjudication unless the action or failure to take action was in bad faith.

**The adjudication** W1.3 (1) Disputes are notified and referred to the *Adjudicator* in accordance with the Adjudication Table.

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**ADJUDICATION TABLE**

| Dispute about | Which Party may refer it to the *Adjudicator*? | When may it be referred to the *Adjudicator*? |
|---|---|---|
| An action of the *Project Manager* or the *Supervisor* | The *Contractor* | Between two and four weeks after the *Contractor*'s notification of the dispute to the *Employer* and the *Project Manager*, the notification itself being made not more than four weeks after the *Contractor* becomes aware of the action |
| The *Project Manager* or *Supervisor* not having taken an action | The *Contractor* | Between two and four weeks after the *Contractor*'s notification of the dispute to the *Employer* and the *Project Manager*, the notification itself being made not more than four weeks after the *Contractor* becomes aware that the action was not taken |
| A quotation for a compensation event which is treated as having been accepted | The *Employer* | Between two and four weeks after the *Project Manager*'s notification of the dispute to the *Employer* and the *Contractor*, the notification itself being made not more than four weeks after the quotation was treated as accepted |
| Any other matter | Either Party | Between two and four weeks after notification of the dispute to the other Party and the *Project Manager* |

(2) The times for notifying and referring a dispute may be extended by the *Project Manager* if the *Contractor* and the *Project Manager* agree to the extension before the notice or referral is due. The *Project Manager* notifies the extension that has been agreed to the *Contractor*. If a disputed matter is not notified and referred within the times set out in this contract, neither Party may subsequently refer it to the *Adjudicator* or the *tribunal*.

(3) The Party referring the dispute to the *Adjudicator* includes with his referral information to be considered by the *Adjudicator*. Any more information from a Party to be considered by the *Adjudicator* is provided within four weeks of the referral. This period may be extended if the *Adjudicator* and the Parties agree.

(4) If a matter disputed by the *Contractor* under or in connection with a subcontract is also a matter disputed under or in connection with this contract and if the subcontract allows, the *Contractor* may refer the subcontract dispute to the *Adjudicator* at the same time as the main contract referral. The *Adjudicator* then decides the disputes together and references to the Parties for the purposes of the dispute are interpreted as including the Subcontractor.




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(5) The *Adjudicator* may

- review and revise any action or inaction of the *Project Manager* or *Supervisor* related to the dispute and alter a quotation which has been treated as having been accepted,
- take the initiative in ascertaining the facts and the law related to the dispute,
- instruct a Party to provide further information related to the dispute within a stated time and
- instruct a Party to take any other action which he considers necessary to reach his decision and to do so within a stated time.

(6) A communication between a Party and the *Adjudicator* is communicated to the other Party at the same time.

(7) If the *Adjudicator*'s decision includes assessment of additional cost or delay caused to the *Contractor*, he makes his assessment in the same way as a compensation event is assessed.

(8) The *Adjudicator* decides the dispute and notifies the Parties and the *Project Manager* of his decision and his reasons within four weeks of the end of the period for receiving information. This four week period may be extended if the Parties agree.

(9) Unless and until the *Adjudicator* has notified the Parties of his decision, the Parties, the *Project Manager* and the *Supervisor* proceed as if the matter disputed was not disputed.

(10) The *Adjudicator*'s decision is binding on the Parties unless and until revised by the *tribunal* and is enforceable as a matter of contractual obligation between the Parties and not as an arbitral award. The *Adjudicator*'s decision is final and binding if neither Party has notified the other within the times required by this contract that he is dissatisfied with a decision of the *Adjudicator* and intends to refer the matter to the *tribunal*.

(11) The *Adjudicator* may, within two weeks of giving his decision to the Parties, correct any clerical mistake or ambiguity.

**Review by the *tribunal*** W1.4

(1) A Party does not refer any dispute under or in connection with this contract to the *tribunal* unless it has first been referred to the *Adjudicator* in accordance with this contract.

(2) If, after the *Adjudicator* notifies his decision a Party is dissatisfied, he may notify the other Party that he intends to refer it to the *tribunal*. A Party may not refer a dispute to the *tribunal* unless this notification is given within four weeks of notification of the *Adjudicator*'s decision.

(3) If the *Adjudicator* does not notify his decision within the time provided by this contract, a Party may notify the other Party that he intends to refer the dispute to the *tribunal*. A Party may not refer a dispute to the *tribunal* unless this notification is given within four weeks of the date by which the *Adjudicator* should have notified his decision.

(4) The *tribunal* settles the dispute referred to it. The *tribunal* has the powers to reconsider any decision of the *Adjudicator* and review and revise any action or inaction of the *Project Manager* or the *Supervisor* related to the dispute. A Party is not limited in the *tribunal* proceedings to the information, evidence or arguments put to the *Adjudicator*.

(5) If the *tribunal* is arbitration, the *arbitration procedure*, the place where the arbitration is to be held and the method of choosing the arbitrator are those stated in the Contract Data.

(6) A Party does not call the *Adjudicator* as a witness in *tribunal* proceedings.



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# Option W2

**Dispute resolution procedure (used in the United Kingdom when the Housing Grants, Construction and Regeneration Act 1996 applies).**

**Dispute resolution** **W2**

W2.1 (1) A dispute arising under or in connection with this contract is referred to and decided by the *Adjudicator*. A Party may refer a dispute to the *Adjudicator* at any time.

(2) In this Option, time periods stated in days exclude Christmas Day, Good Friday and bank holidays.

**The *Adjudicator*** W2.2 (1) The Parties appoint the *Adjudicator* under the NEC Adjudicator's Contract current at the *starting date*.

(2) The *Adjudicator* acts impartially and decides the dispute as an independent adjudicator and not as an arbitrator.

(3) If the *Adjudicator* is not identified in the Contract Data or if the *Adjudicator* resigns or becomes unable to act

- the Parties may choose an adjudicator jointly or
- a Party may ask the *Adjudicator nominating body* to choose an adjudicator.

The *Adjudicator nominating body* chooses an adjudicator within four days of the request. The chosen adjudicator becomes the *Adjudicator*.

(4) A replacement *Adjudicator* has the power to decide a dispute referred to his predecessor but not decided at the time when his predecessor resigned or became unable to act. He deals with an undecided dispute as if it had been referred to him on the date he was appointed.

(5) The *Adjudicator*, his employees and agents are not liable to the Parties for any action or failure to take action in an adjudication unless the action or failure to take action was in bad faith.

**The adjudication** W2.3 (1) Before a Party refers a dispute to the *Adjudicator*, he gives a notice of adjudication to the other Party with a brief description of the dispute and the decision which he wishes the *Adjudicator* to make. If the *Adjudicator* is named in the Contract Data, the Party sends a copy of the notice of adjudication to the *Adjudicator* when it is issued. Within three days of the receipt of the notice of adjudication, the *Adjudicator* notifies the Parties

- that he is able to decide the dispute in accordance with the contract or
- that he is unable to decide the dispute and has resigned.

If the *Adjudicator* does not so notify within three days of the issue of the notice of adjudication, either Party may act as if he has resigned.

(2) Within seven days of a Party giving a notice of adjudication he

- refers the dispute to the *Adjudicator*,
- provides the *Adjudicator* with the information on which he relies, including any supporting documents and
- provides a copy of the information and supporting documents he has provided to the *Adjudicator* to the other Party.

Any further information from a Party to be considered by the *Adjudicator* is provided within fourteen days of the referral. This period may be extended if the *Adjudicator* and the Parties agree.




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(3) If a matter disputed by the *Contractor* under or in connection with a subcontract is also a matter disputed under or in connection with this contract, the *Contractor* may, with the consent of the Subcontractor, refer the subcontract dispute to the *Adjudicator* at the same time as the main contract referral. The *Adjudicator* then decides the disputes together and references to the Parties for the purposes of the dispute are interpreted as including the Subcontractor.

(4) The *Adjudicator* may

- review and revise any action or inaction of the *Project Manager* or *Supervisor* related to the dispute and alter a quotation which has been treated as having been accepted,
- take the initiative in ascertaining the facts and the law related to the dispute,
- instruct a Party to provide further information related to the dispute within a stated time and
- instruct a Party to take any other action which he considers necessary to reach his decision and to do so within a stated time.

(5) If a Party does not comply with any instruction within the time stated by the *Adjudicator*, the *Adjudicator* may continue the adjudication and make his decision based upon the information and evidence he has received.

(6) A communication between a Party and the *Adjudicator* is communicated to the other Party at the same time.

(7) If the *Adjudicator's* decision includes assessment of additional cost or delay caused to the *Contractor*, he makes his assessment in the same way as a compensation event is assessed.

(8) The *Adjudicator* decides the dispute and notifies the Parties and the *Project Manager* of his decision and his reasons within twenty-eight days of the dispute being referred to him. This period may be extended by up to fourteen days with the consent of the referring Party or by any other period agreed by the Parties.

(9) Unless and until the *Adjudicator* has notified the Parties of his decision, the Parties, the *Project Manager* and the *Supervisor* proceed as if the matter disputed was not disputed.

(10) If the *Adjudicator* does not make his decision and notify it to the Parties within the time provided by this contract, the Parties and the *Adjudicator* may agree to extend the period for making his decision. If they do not agree to an extension, either Party may act as if the *Adjudicator* has resigned.

(11) The *Adjudicator's* decision is binding on the Parties unless and until revised by the *tribunal* and is enforceable as a matter of contractual obligation between the Parties and not as an arbitral award. The *Adjudicator's* decision is final and binding if neither Party has notified the other within the times required by this contract that he is dissatisfied with a matter decided by the *Adjudicator* and intends to refer the matter to the *tribunal*.

(12) The *Adjudicator* may, within fourteen days of giving his decision to the Parties, correct a clerical mistake or ambiguity.

**Review by the *tribunal*** W2.4

(1) A Party does not refer any dispute under or in connection with this contract to the *tribunal* unless it has first been decided by the *Adjudicator* in accordance with this contract.

(2) If, after the *Adjudicator* notifies his decision a Party is dissatisfied, that Party may notify the other Party of the matter which he disputes and state that he intends to refer it to the *tribunal*. The dispute may not be referred to the *tribunal* unless this notification is given within four weeks of the notification of the *Adjudicator's* decision.



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(3) The *tribunal* settles the dispute referred to it. The *tribunal* has the powers to reconsider any decision of the *Adjudicator* and to review and revise any action or inaction of the *Project Manager* or the *Supervisor* related to the dispute. A Party is not limited in *tribunal* proceedings to the information or evidence put to the *Adjudicator*.

(4) If the *tribunal* is arbitration, the *arbitration procedure*, the place where the arbitration is to be held and the method of choosing the arbitrator are those stated in the Contract Data.

(5) A Party does not call the *Adjudicator* as a witness in *tribunal* proceedings.




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## Option X1: Price adjustment for inflation

**Defined terms** **X1**

X1.1 (a) The Base Date Index (B) is the latest available index before the *base date*.

(b) The Latest Index (L) is the latest available index before the date of assessment of an amount due.

(c) The Price Adjustment Factor is the total of the products of each of the proportions stated in the Contract Data multiplied by (L – B)/B for the index linked to it.

**Price Adjustment Factor** X1.2 If an index is changed after it has been used in calculating a Price Adjustment Factor, the calculation is repeated and a correction included in the next assessment of the amount due.

The Price Adjustment Factor calculated at the Completion Date for the whole of the *works* is used for calculating price adjustment after this date.

**Compensation events** X1.3 The Defined Cost for compensation events is assessed using the

- Defined Cost current at the time of assessing the compensation event adjusted to *base date* by dividing by one plus the Price Adjustment Factor for the last assessment of the amount due and
- Defined Cost at *base date* levels for amounts calculated from rates stated in the Contract Data for employees and Equipment.

**Price adjustment** X1.5 Each time the amount due is assessed, an amount for price adjustment is added to the total of the Prices which is the sum of

- the change in the Price for Work Done to Date since the last assessment of the amount due multiplied by (PAF/(1 + PAF)) where PAF is the Price Adjustment Factor for the date of the current assessment and
- correcting amounts, not included elsewhere, which arise from changes to indices used for assessing previous amounts for price adjustment.



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## Option X2: Changes in the law

**Changes in the law** **X2**

X2.1 A change in the law of the country in which the Site is located is a compensation event if it occurs after the Contract Date. The *Project Manager* may notify the *Contractor* of a compensation event for a change in the law and instruct him to submit quotations. If the effect of a compensation event which is a change in the law is to reduce the total Defined Cost, the Prices are reduced.

## Option X4: Parent company guarantee

**Parent company guarantee** **X4**

X4.1 If a parent company owns the *Contractor*, the *Contractor* gives to the *Employer* a guarantee by the parent company of the *Contractor*'s performance in the form set out in the Works Information. If the guarantee was not given by the Contract Date, it is given to the *Employer* within four weeks of the Contract Date.

## Option X5: Sectional Completion

**Sectional Completion** **X5**

X5.1 In these *conditions of contract*, unless stated as the whole of the *works*, each reference and clause relevant to

- the *works*,
- Completion and
- Completion Date

applies, as the case may be, to either the whole of the *works* or any *section* of the *works*.

## Option X6: Bonus for early Completion

**Bonus for early Completion** **X6**

X6.1 The *Contractor* is paid a bonus calculated at the rate stated in the Contract Data for each day from the earlier of

- Completion and
- the date on which the *Employer* takes over the *works*

until the Completion Date.




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## Option X7: Delay damages

**Delay damages** **X7**

X7.1 The *Contractor* pays delay damages at the rate stated in the Contract Data from the Completion Date for each day until the earlier of

- Completion and
- the date on which the *Employer* takes over the *works*.

X7.2 If the Completion Date is changed to a later date after delay damages have been paid, the *Employer* repays the overpayment of damages with interest. Interest is assessed from the date of payment to the date of repayment and the date of repayment is an assessment date.

X7.3 If the *Employer* takes over a part of the *works* before Completion, the delay damages are reduced from the date on which the part is taken over. The *Project Manager* assesses the benefit to the *Employer* of taking over the part of the *works* as a proportion of the benefit to the *Employer* of taking over the whole of the *works* not previously taken over. The delay damages are reduced in this proportion.

## Option X12: Partnering

**Identified and defined terms** **X12**

X12.1 (1) The Partners are those named in the Schedule of Partners. The *Client* is a Partner.

(2) An Own Contract is a contract between two Partners which includes this Option.

(3) The Core Group comprises the Partners listed in the Schedule of Core Group Members.

(4) Partnering Information is information which specifies how the Partners work together and is either in the documents which the Contract Data states it is in or in an instruction given in accordance with this contract.

(5) A Key Performance Indicator is an aspect of performance for which a target is stated in the Schedule of Partners.

**Actions** X12.2 (1) Each Partner works with the other Partners to achieve the *Client's objective* stated in the Contract Data and the objectives of every other Partner stated in the Schedule of Partners.

(2) Each Partner nominates a representative to act for it in dealings with other Partners.

(3) The Core Group acts and takes decisions on behalf of the Partners on those matters stated in the Partnering Information.

(4) The Partners select the members of the Core Group. The Core Group decides how they will work and decides the dates when each member joins and leaves the Core Group. The *Client's* representative leads the Core Group unless stated otherwise in the Partnering Information.

(5) The Core Group keeps the Schedule of Core Group Members and the Schedule of Partners up to date and issues copies of them to the Partners each time either is revised.

(6) This Option does not create a legal partnership between Partners who are not one of the Parties in this contract.



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**Working together** X12.3 (1) The Partners work together as stated in the Partnering Information and in a spirit of mutual trust and co-operation.

(2) A Partner may ask another Partner to provide information which he needs to carry out the work in his Own Contract and the other Partner provides it.

(3) Each Partner gives an early warning to the other Partners when he becomes aware of any matter that could affect the achievement of another Partner's objectives stated in the Schedule of Partners.

(4) The Partners use common information systems as set out in the Partnering Information.

(5) A Partner implements a decision of the Core Group by issuing instructions in accordance with its Own Contracts.

(6) The Core Group may give an instruction to the Partners to change the Partnering Information. Each such change to the Partnering Information is a compensation event which may lead to reduced Prices.

(7) The Core Group prepares and maintains a timetable showing the proposed timing of the contributions of the Partners. The Core Group issues a copy of the timetable to the Partners each time it is revised. The *Contractor* changes his programme if it is necessary to do so in order to comply with the revised timetable. Each such change is a compensation event which may lead to reduced Prices.

(8) A Partner gives advice, information and opinion to the Core Group and to other Partners when asked to do so by the Core Group. This advice, information and opinion relates to work that another Partner is to carry out under its Own Contract and is given fully, openly and objectively. The Partners show contingency and risk allowances in information about costs, prices and timing for future work.

(9) A Partner notifies the Core Group before subcontracting any work.

**Incentives** X12.4 (1) A Partner is paid the amount stated in the Schedule of Partners if the target stated for a Key Performance Indicator is improved upon or achieved. Payment of the amount is due when the target has been improved upon or achieved and is made as part of the amount due in the Partner's Own Contract.

(2) The *Client* may add a Key Performance Indicator and associated payment to the Schedule of Partners but may not delete or reduce a payment stated in the Schedule of Partners.

## Option X13: Performance bond

**Performance bond** X13

X13.1 The *Contractor* gives the *Employer* a performance bond, provided by a bank or insurer which the *Project Manager* has accepted, for the amount stated in the Contract Data and in the form set out in the Works Information. A reason for not accepting the bank or insurer is that its commercial position is not strong enough to carry the bond. If the bond was not given by the Contract Date, it is given to the *Employer* within four weeks of the Contract Date.





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## Option X14: Advanced payment to the *Contractor*

**Advanced payment** **X14**

X14.1 The *Employer* makes an advanced payment to the *Contractor* of the amount stated in the Contract Data.

X14.2 The advanced payment is made either within four weeks of the Contract Date or, if an advanced payment bond is required, within four weeks of the later of

- the Contract Date and
- the date when the *Employer* receives the advanced payment bond.

The advanced payment bond is issued by a bank or insurer which the *Project Manager* has accepted. A reason for not accepting the proposed bank or insurer is that its commercial position is not strong enough to carry the bond. The bond is for the amount of the advanced payment which the *Contractor* has not repaid and is in the form set out in the Works Information. Delay in making the advanced payment is a compensation event.

X14.3 The advanced payment is repaid to the *Employer* by the *Contractor* in instalments of the amount stated in the Contract Data. An instalment is included in each amount due assessed after the period stated in the Contract Data has passed until the advanced payment has been repaid.

## Option X15: Limitation of the *Contractor*'s liability for his design to reasonable skill and care

**The *Contractor*'s design** **X15**

X15.1 The *Contractor* is not liable for Defects in the *works* due to his design so far as he proves that he used reasonable skill and care to ensure that his design complied with the Works Information.

X15.2 If the *Contractor* corrects a Defect for which he is not liable under this contract it is a compensation event.

## Option X16: Retention

**Retention** **X16**

X16.1 After the Price for Work Done to Date has reached the *retention free amount*, an amount is retained in each amount due. Until the earlier of

- Completion of the whole of the *works* and
- the date on which the *Employer* takes over the whole of the *works*

the amount retained is the *retention percentage* applied to the excess of the Price for Work Done to Date above the *retention free amount*.

X16.2 The amount retained is halved

- in the assessment made at Completion of the whole of the *works* or
- in the next assessment after the *Employer* has taken over the whole of the *works* if this is before Completion of the whole of the *works*.

The amount retained remains at this amount until the Defects Certificate is issued. No amount is retained in the assessments made after the Defects Certificate has been issued.



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## Option X17: Low performance damages

**Low performance damages** **X17**

X17.1 If a Defect included in the Defects Certificate shows low performance with respect to a performance level stated in the Contract Data, the *Contractor* pays the amount of low performance damages stated in the Contract Data.

## Option X18: Limitation of liability

**Limitation of liability** **X18**

X18.1 The *Contractor*'s liability to the *Employer* for the *Employer*'s indirect or consequential loss is limited to the amount stated in the Contract Data.

X18.2 For any one event, the liability of the *Contractor* to the *Employer* for loss of or damage to the *Employer*'s property is limited to the amount stated in the Contract Data.

X18.3 The *Contractor*'s liability to the *Employer* for Defects due to his design which are not listed on the Defects Certificate is limited to the amount stated in the Contract Data.

X18.4 The *Contractor*'s total liability to the *Employer* for all matters arising under or in connection with this contract, other than the excluded matters, is limited to the amount stated in the Contract Data and applies in contract, tort or delict and otherwise to the extent allowed under the *law of the contract*.

The excluded matters are amounts payable by the *Contractor* as stated in this contract for

- loss of or damage to the *Employer*'s property,
- delay damages if Option X7 applies,
- low performance damages if Option X17 applies and
- *Contractor*'s share.

X18.5 The *Contractor* is not liable to the *Employer* for a matter unless it is notified to the *Contractor* before the *end of liability date*.

## Option X20: Key Performance Indicators (not used with Option X12)

**Incentives** X20.1 A Key Performance Indicator is an aspect of performance by the *Contractor* for which a target is stated in the Incentive Schedule. The Incentive Schedule is the *incentive schedule* unless later changed in accordance with this contract.

X20.2 From the *starting date* until the Defects Certificate has been issued, the *Contractor* reports to the *Project Manager* his performance against each of the Key Performance Indicators. Reports are provided at the intervals stated in the Contract Data and include the forecast final measurement against each indicator.

X20.3 If the *Contractor*'s forecast final measurement against a Key Performance Indicator will not achieve the target stated in the Incentive Schedule, he submits to the *Project Manager* his proposals for improving performance.

X20.4 The *Contractor* is paid the amount stated in the Incentive Schedule if the target stated for a Key Performance Indicator is improved upon or achieved. Payment of the amount is due when the target has been improved upon or achieved.

X20.5 The *Employer* may add a Key Performance Indicator and associated payment to the Incentive Schedule but may not delete or reduce a payment stated in the Incentive Schedule.




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# OPTION Y

## Option Y(UK)2: The Housing Grants, Construction and Regeneration Act 1996

**Definitions** Y(UK)2
Y2.1 (1) The Act is The Housing Grants, Construction and Regeneration Act 1996.

(2) A period of time stated in days is a period calculated in accordance with Section 116 of the Act.

**Dates for payment** Y2.2 The date on which a payment becomes due is seven days after the assessment date.

The final date for payment is fourteen days or a different period for payment if stated in the Contract Data after the date on which payment becomes due.

The *Project Manager*'s certificate is the notice of payment from the *Employer* to the *Contractor* specifying the amount of the payment made or proposed to be made and stating how the amount was calculated.

**Notice of intention to withhold payment** Y2.3 If either Party intends to withhold payment of an amount due under this contract, he notifies the other Party not later than seven days (the prescribed period) before the final date for payment by stating the amount proposed to be withheld and the reason for withholding payment. If there is more than one reason, the amount for each reason is stated.

A Party does not withhold payment of an amount due under this contract unless he has notified his intention to withhold payment as required by this contract.

**Suspension of performance** Y2.4 If the *Contractor* exercises his right under the Act to suspend performance, it is a compensation event.

## Option Y(UK)3: The Contracts (Rights of Third Parties) Act 1999

**Third party rights** Y(UK)3
Y3.1 A person or organisation who is not one of the Parties may enforce a term of this contract under the Contracts (Rights of Third Parties) Act 1999 only if the term and the person or organisation are stated in the Contract Data.

## Option Z: *Additional conditions of contract*

***Additional conditions of contract*** Z1
Z1.1 The *additional conditions of contract* stated in the Contract Data are part of this contract.

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# SCHEDULE OF COST COMPONENTS

In this schedule the *Contractor* means the *Contractor* and not his Subcontractors. An amount is included only in one cost component and only if it is incurred in order to Provide the Works.

**People** **1** The following components of the cost of

- people who are directly employed by the *Contractor* and whose normal place of working is within the Working Areas and
- people who are directly employed by the *Contractor* and whose normal place of working is not within the Working Areas but who are working in the Working Areas.

**11** Wages, salaries and amounts paid by the *Contractor* for people paid according to the time worked while they are within the Working Areas.

**12** Payments to people for

(a) bonuses and incentives
(b) overtime
(c) working in special circumstances
(d) special allowances
(e) absence due to sickness and holidays
(f) severance related to work on this contract.

**13** Payments made in relation to people for

(a) travel
(b) subsistence and lodging
(c) relocation
(d) medical examinations
(e) passports and visas
(f) travel insurance
(g) items (a) to (f) for dependants
(h) protective clothing
(i) meeting the requirements of the law
(j) pensions and life assurance
(k) death benefit
(l) occupational accident benefits
(m) medical aid
(n) a vehicle
(o) safety training.

**14** The following components of the cost of people who are not directly employed by the *Contractor* but are paid for by him according to the time worked while they are within the Working Areas.

Amounts paid by the *Contractor*.

**Equipment** **2** The following components of the cost of Equipment which is used within the Working Areas (including the cost of accommodation but excluding Equipment cost covered by the percentage for Working Areas overheads).

**21** Payments for the hire or rent of Equipment not owned by

- the *Contractor*,
- his parent company or
- by a company with the same parent company

at the hire or rental rate multiplied by the time for which the Equipment is required.




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22 Payments for Equipment which is not listed in the Contract Data but is

- owned by the *Contractor*,
- purchased by the *Contractor* under a hire purchase or lease agreement or
- hired by the *Contractor* from the *Contractor*'s parent company or from a company with the same parent company

at open market rates, multiplied by the time for which the Equipment is required.

23 Payments for Equipment purchased for work included in this contract listed with a time-related on cost charge, in the Contract Data, of

- the change in value over the period for which the Equipment is required and
- the time-related on cost charge stated in the Contract Data for the period for which the Equipment is required.

The change in value is the difference between the purchase price and either the sale price or the open market sale price at the end of the period for which the Equipment is required. Interim payments of the change in value are made at each assessment date. A final payment is made in the next assessment after the change in value has been determined.

If the *Project Manager* agrees, an additional item of Equipment may be assessed as if it had been listed in the Contract Data.

24 Payments for special Equipment listed in the Contract Data. These amounts are the rates stated in the Contract Data multiplied by the time for which the Equipment is required.

If the *Project Manager* agrees, an additional item of special Equipment may be assessed as if it had been listed in the Contract Data.

25 Payments for the purchase price of Equipment which is consumed.

26 Unless included in the hire or rental rates, payments for

- transporting Equipment to and from the Working Areas other than for repair and maintenance,
- erecting and dismantling Equipment and
- constructing, fabricating or modifying Equipment as a result of a compensation event.

27 Payments for purchase of materials used to construct or fabricate Equipment.

28 Unless included in the hire rates, the cost of operatives is included in the cost of people.

**Plant and Materials** **3** The following components of the cost of Plant and Materials.

31 Payments for

- purchasing Plant and Materials,
- delivery to and removal from the Working Areas,
- providing and removing packaging and
- samples and tests.

32 Cost is credited with payments received for disposal of Plant and Materials unless the cost is disallowed.

**Charges** **4** The following components of the cost of charges paid by the *Contractor*.

41 Payments for provision and use in the Working Areas of

- water,
- gas and
- electricity.



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42 Payments to public authorities and other properly constituted authorities of charges which they are authorised to make in respect of the *works*.

43 Payments for

(a) cancellation charges arising from a compensation event
(b) buying or leasing land
(c) compensation for loss of crops or buildings
(d) royalties
(e) inspection certificates
(f) charges for access to the Working Areas
(g) facilities for visits to the Working Areas by Others
(h) specialist services
(i) consumables and equipment provided by the *Contractor* for the *Project Manager*'s and *Supervisor*'s offices.

44 A charge for overhead costs incurred within the Working Areas calculated by applying the percentage for Working Areas overheads stated in the Contract Data to the total of people items 11, 12, 13 and 14. The charge includes provision and use of equipment, supplies and services, but excludes accommodation, for

(a) catering
(b) medical facilities and first aid
(c) recreation
(d) sanitation
(e) security
(f) copying
(g) telephone, telex, fax, radio and CCTV
(h) surveying and setting out
(i) computing
(j) hand tools not powered by compressed air.

**Manufacture and fabrication**

5 The following components of the cost of manufacture and fabrication of Plant and Materials which are

- wholly or partly designed specifically for the *works* and
- manufactured or fabricated outside the Working Areas.

51 The total of the hours worked by employees multiplied by the hourly rates stated in the Contract Data for the categories of employees listed.

52 An amount for overheads calculated by multiplying this total by the percentage for manufacturing and fabrication overheads stated in the Contract Data.

**Design**

6 The following components of the cost of design of the *works* and Equipment done outside the Working Areas.

61 The total of the hours worked by employees multiplied by the hourly rates stated in the Contract Data for the categories of employees listed.

62 An amount for overheads calculated by multiplying this total by the percentage for design overheads stated in the Contract Data.

63 The cost of travel to and from the Working Areas for the categories of design employees listed in the Contract Data.

**Insurance**

7 The following are deducted from cost

- the cost of events for which this contract requires the *Contractor* to insure and
- other costs paid to the *Contractor* by insurers.




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# SHORTER SCHEDULE OF COST COMPONENTS

An amount is included only in one cost component and only if it is incurred in order to Provide the Works.

**People** **1** The following components of the cost of

- people who are directly employed by the *Contractor* and whose normal place of working is within the Working Areas,
- people who are directly employed by the *Contractor* and whose normal place of working is not within the Working Areas but who are working in the Working Areas and
- people who are not directly employed by the *Contractor* but are paid for by him according to the time worked while they are within the Working Areas.

**11** Amounts paid by the *Contractor* including those for meeting the requirements of the law and for pension provision.

**Equipment** **2** The following components of the cost of Equipment which is used within the Working Areas (including the cost of accommodation but excluding Equipment cost covered by the percentage for people overheads).

**21** Amounts for Equipment which is in the published list stated in the Contract Data. These amounts are calculated by applying the percentage adjustment for listed Equipment stated in the Contract Data to the rates in the published list and by multiplying the resulting rate by the time for which the Equipment is required.

**22** Amounts for Equipment listed in the Contract Data which is not in the published list stated in the Contract Data. These amounts are the rates stated in the Contract Data multiplied by the time for which the Equipment is required.

**23** The time required is expressed in hours, days, weeks or months consistently with the list of items of Equipment in the Contract Data or with the published list stated in the Contract Data.

**24** Unless the item is in the published list and the rate includes the cost component, payments for

- transporting Equipment to and from the Working Areas other than for repair and maintenance,
- erecting and dismantling Equipment and
- constructing, fabricating or modifying Equipment as a result of a compensation event.

**25** Unless the item is in the published list and the rate includes the cost component, the purchase price of Equipment which is consumed.

**26** Unless included in the rate in the published list, the cost of operatives is included in the cost of people.

**27** Amounts for Equipment which is neither in the published list stated in the Contract Data nor listed in the Contract Data, at competitively tendered or open market rates, multiplied by the time for which the Equipment is required.



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**Plant and Materials** 3 The following components of the cost of Plant and Materials.

31 Payments for

- purchasing Plant and Materials,
- delivery to and removal from the Working Areas,
- providing and removing packaging and
- samples and tests.

32 Cost is credited with payments received for disposal of Plant and Materials unless the cost is disallowed.

**Charges** 4 The following components of the cost of charges paid by the *Contractor*.

41 A charge calculated by applying the percentage for people overheads stated in the Contract Data to people item 11 to cover the costs of

- payments for the provision and use in the Working Areas of water, gas and electricity,
- payments for buying or leasing land, compensation for loss of crops or buildings, royalties, inspection certificates, charges for access to the Working Areas, facilities for visits to the Working Areas by Others and
- payments for equipment, supplies and services for offices, drawing office, laboratories, workshops, stores and compounds, labour camps, cabins, catering, medical facilities and first aid, recreation, sanitation, security, copying, telephone, telex, fax, radio, CCTV, surveying and setting out, computing, and hand tools not powered by compressed air.

42 Payments for cancellation charges arising from a compensation event.

43 Payments to public authorities and other properly constituted authorities of charges which they are authorised to make in respect of the *works*.

44 Consumables and equipment provided by the *Contractor* for the *Project Manager*'s and *Supervisor*'s office.

45 Specialist services.

**Manufacture and fabrication** 5 The following components of the cost of manufacture and fabrication of Plant and Materials, which are

- wholly or partly designed specifically for the *works* and
- manufactured or fabricated outside the Working Areas.

51 Amounts paid by the *Contractor*.

**Design** 6 The following components of the cost of design of the *works* and Equipment done outside the Working Areas.

61 The total of the hours worked by employees multiplied by the hourly rates stated in the Contract Data for the categories of employees listed.

62 An amount for overheads calculated by multiplying this total by the percentage for design overheads stated in the Contract Data.

63 The cost of travel to and from the Working Areas for the categories of design employees listed in the Contract Data.

**Insurance** 7 The following are deducted from cost

- costs against which this contract required the *Contractor* to insure and
- other costs paid to the *Contractor* by insurers.




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# CONTRACT DATA

## Part one – Data provided by the *Employer*

Completion of the data in full, according to the Options chosen, is essential to create a complete contract.

**Statements given in all contracts**

1 General

- The *conditions of contract* are the core clauses and the clauses for main Option C, dispute resolution Option ..... and secondary Options ..... of the NEC3 Engineering and Construction Contract June 2005 (with amendments June 2006).
- The *works* are

  .....
- The *Employer* is

  Name .....

  Address .....

  .....
- The *Project Manager* is

  Name .....

  Address .....

  .....
- The *Supervisor* is

  Name .....

  Address .....

  .....
- The *Adjudicator* is

  Name .....

  Address .....

  .....
- The Works Information is in

  .....

  .....

  .....
- The Site Information is in

  .....

  .....

  .....



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- The *boundaries of the site* are .....
- The *language of this contract* is .....
- The *law of the contract* is the law of .....
- The *period for reply* is ..... weeks.
- The *Adjudicator nominating body* is .....
- The *tribunal* is .....

.....

- The following matters will be included in the Risk Register

.....

.....

.....

3 Time

- The *starting date* is .....
- The *access dates* are

| Part of the Site | Date |
|---|---|
| 1 ..... | ..... |
| 2 ..... | ..... |
| 3 ..... | ..... |

- The *Contractor* submits revised programmes at intervals no longer than ..... weeks.

4 Testing and Defects

- The *defects date* is ..... weeks after Completion of the whole of the *works*.
- The *defect correction period* is ..... weeks except that
  - The *defect correction period* for ..... is ..... weeks
  - The *defect correction period* for ..... is ..... weeks.

5 Payment

- The *currency of this contract* is the .....
- The *assessment interval* is ..... weeks (not more than five).
- The *interest rate* is ..... % per annum (not less than 2) above the ..... rate of the ..... bank.




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6 Compensation events

- The place where weather is to be recorded is

  .....

- The *weather measurements* to be recorded for each calendar month are
  - the cumulative rainfall (mm)
  - the number of days with rainfall more than 5 mm
  - the number of days with minimum air temperature less than 0 degrees Celsius
  - the number of days with snow lying at ..... hours GMT
  - and these measurements:

    .....

    .....

    .....

- The *weather measurements* are supplied by .....
- The *weather data* are the records of past *weather measurements* for each calendar month which were recorded at .....

  and which are available from .....

  .....

**Where no recorded data are available**

- Assumed values for the ten year return *weather data* for each *weather measurement* for each calendar month are

  .....

  .....

  .....

  .....

8 Risks and insurance

- The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the *works*, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the *Contractor*) caused by activity in connection with this contract for any one event is

  .....

- The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with this contract for any one event is

  .....

**Optional statements**

**If the *tribunal* is arbitration**

- The *arbitration procedure* is .....
- The place where arbitration is to be held is

  .....

- The person or organisation who will choose an arbitrator
  - if the Parties cannot agree a choice or
  - if the *arbitration procedure* does not state who selects an arbitrator is

  .....



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**If the *Employer* has decided the *completion date* for the whole of the *works***

- The *completion date* for the whole of the *works* is .....

**If the *Employer* is not willing to take over the *works* before the Completion Date**

- The *Employer* is not willing to take over the *works* before the Completion Date.

**If no programme is identified in part two of the Contract Data**

- The *Contractor* is to submit a first programme for acceptance within ..... weeks of the Contract Date.

**If the *Employer* has identified work which is to meet a stated *condition* by a *key date***

- The *key dates* and *conditions* to be met are

| *condition* to be met | *key date* |
|---|---|
| 1 ..... | ..... |
| 2 ..... | ..... |
| 3 ..... | ..... |

**If the period in which payments are made is not three weeks and Y(UK)2 is not used**

- The period within which payments are made is .....

**If Y(UK)2 is used and the final date for payment is not 14 days after the date when payment is due**

- The period for payment is .....

**If there are additional *Employer*'s risks**

- These are additional *Employer*'s risks

1 .....

2 .....

3 .....

**If the *Employer* is to provide Plant and Materials**

- The insurance against loss of or damage to the *works*, Plant and Materials is to include cover for Plant and Materials provided by the *Employer* for an amount of

.....




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**If the *Employer* is to provide any of the insurances stated in the Insurance Table**

- The *Employer* provides these insurances from the Insurance Table

1. Insurance against .....
Cover/indemnity is .....
The deductibles are .....
2. Insurance against .....
Cover/indemnity is .....
The deductibles are .....
3. Insurance against .....
Cover/indemnity is .....
The deductibles are .....

**If additional insurances are to be provided**

- The *Employer* provides these additional insurances

1. Insurance against .....
Cover/indemnity is .....
The deductibles are .....
2. Insurance against .....
Cover/indemnity is .....
The deductibles are .....
3. Insurance against .....
Cover/indemnity is .....
The deductibles are .....

- The *Contractor* provides these additional insurances

1. Insurance against .....
Cover/indemnity is .....
2. Insurance against .....
Cover/indemnity is .....
3. Insurance against .....
Cover/indemnity is .....

---

- **The *Contractor's share percentages* and the *share ranges* are**

| ***share range*** | ***Contractor's share percentage*** |
|---|---|
| **less than** .....**%** | .....**%** |
| **from** ..... **% to** .....**%** | .....**%** |
| **from** ..... **% to** .....**%** | .....**%** |
| **greater than**.....**%** | ..... **%.** |

- **The *Contractor* prepares forecasts of Defined Cost for the *works* at intervals no longer than** ..... **weeks.**
- **The *exchange rates* are those published in** .....
**on** ..... **(date).**

---

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**If Option X1 is used**

- The proportions used to calculate the Price Adjustment Factor are

0. ..... linked to the index for .....
0. ..... .....
0. ..... .....
0. ..... .....
0. ..... .....
0. ..... .....
0. ..... non-adjustable

1.00

- The *base date* for indices is .....
- The indices are those prepared by.....

**If Option X5 is used**

- The *completion date* for each *section* of the *works* is

| *section* | description | *completion date* |
|---|---|---|
| 1 | ..... | ..... |
| 2 | ..... | ..... |
| 3 | ..... | ..... |
| 4 | ..... | ..... |

**If Options X5 and X6 are used together**

- The bonus for each *section* of the *works* is

| *section* | description | amount per day |
|---|---|---|
| 1 | ..... | ..... |
| 2 | ..... | ..... |
| 3 | ..... | ..... |
| 4 | ..... | ..... |

Remainder of the *works* .....

**If Options X5 and X7 are used together**

- Delay damages for each *section* of the *works* are

| *section* | description | amount per day |
|---|---|---|
| 1 | ..... | ..... |
| 2 | ..... | ..... |
| 3 | ..... | ..... |
| 4 | ..... | ..... |

Remainder of the *works* .....

**If Option X6 is used (but not if Option X5 is also used)**

- The bonus for the whole of the *works* is ..... per day.

**If Option X7 is used (but not if Option X5 is also used)**

- Delay damages for Completion of the whole of the *works* are..... per day.




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**If Option X12 is used**

- The *Client* is

  Name .....

  Address .....

  .....

- The *Client's objective* is

  .....

  .....

  .....

  .....

  .....

  .....

- The Partnering Information is in

  .....

  .....

  .....

  .....

**If Option X13 is used**

- The amount of the performance bond is .....

**If Option X14 is used**

- The amount of the advanced payment is .....
- The *Contractor* repays the instalments in assessments starting not less than ..... weeks after the Contract Date
- The instalments are. .....

  .....

  (either an amount or a percentage of the payment otherwise due)
- An advanced payment bond is/<u>is not</u> required.

**If Option X16 is used**

- The *retention free amount* is .....
- The *retention percentage* is .....%

**If Option X17 is used**

- The amounts for low performance damages are

| amount | performance level |
|---|---|
| ..... | for ..... |
| ..... | for ..... |
| ..... | for ..... |
| ..... | for ..... |

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**If Option X18 is used**

- The *Contractor*'s liability to the *Employer* for indirect or consequential loss is limited to .....
- For any one event, the *Contractor*'s liability to the *Employer* for loss of or damage to the *Employer*'s property is limited to.....
- The *Contractor*'s liability for Defects due to his design which are not listed on the Defects Certificate is limited to .....
- The *Contractor*'s total liability to the *Employer* for all matters arising under or in connection with this contract, other than excluded matters, is limited to.....
- The *end of liability date* is.....years after the Completion of the whole of the *works*.

**If Option X20 is used (but not if Option X12 is also used)**

- The *incentive schedule* for Key Performance Indicators is in .....
- A report of performance against each Key Performance Indicator is provided at intervals of ..... months.

**If Option Y(UK)3 is used**

| • term | person or organisation |
|---|---|
| ..... | ..... |
| ..... | ..... |
| ..... | ..... |
| ..... | ..... |

**If Option Z is used**

- The *additional conditions of contract* are .....

.....




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# Part two – Data provided by the *Contractor*

Completion of the data in full, according to the Options chosen, is essential to create a complete contract.

**Statements given in all contracts**

- The *Contractor* is

  Name .....

  Address .....

  .....
- The *direct fee percentage* is .....%.
- The *subcontracted fee percentage* is .....%.
- The *working areas* are the Site and .....
- The key people are

  (1) Name.....

  Job.....

  Responsibilities.....

  .....

  Qualifications .....

  Experience.....

  .....

  (2) Name.....

  Job.....

  Responsibilities.....

  .....

  Qualifications.....

  Experience.....

  .....
- The following matters will be included in the Risk Register

  .....

  .....

  .....

  .....

**Optional statements**

**If the *Contractor* is to provide Works Information for his design**

- The Works Information for the *Contractor*'s design is in

  .....

  .....

  .....

  .....

  .....

  .....

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**If a programme is to be identified in the Contract Data**

- The programme identified in the Contract Data is .....

**If the *Contractor* is to decide the *completion date* for the whole of the *works***

- The *completion date* for the whole of the *works* is .....

---

- **The *activity schedule* is** .....
- **The tendered total of the Prices is** .....

**Data for Schedule of Cost Components**

- **The listed items of Equipment purchased for work on this contract, with an on cost charge, are**

| Equipment | time-related charge | per time period |
|---|---|---|
| ..... | ..... | per ..... |
| ..... | ..... | per ..... |
| ..... | ..... | per ..... |
| ..... | ..... | per ..... |

- **The rates for special Equipment are**

| Equipment | size or capacity | rate |
|---|---|---|
| ..... | ..... | ..... |
| ..... | ..... | ..... |
| ..... | ..... | ..... |
| ..... | ..... | ..... |

- **The percentage for Working Areas overheads is** .....%.
- **The hourly rates for Defined Cost of manufacture and fabrication outside the Working Areas are**

| category of employee | hourly rate |
|---|---|
| ..... | ..... |
| ..... | ..... |
| ..... | ..... |
| ..... | ..... |

- **The percentage for manufacture and fabrication overheads is** .....%.

**Data for both schedules of cost components**

- **The hourly rates for Defined Cost of design outside the Working Areas are**

| category of employee | hourly rate |
|---|---|
| ..... | ..... |
| ..... | ..... |
| ..... | ..... |
| ..... | ..... |

- **The percentage for design overheads is** .....%.





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- The categories of design employees whose travelling expenses to and from the Working Areas are included as a cost of design of the *works* and Equipment done outside of the Working Areas are

  .....

  .....

  .....

  .....

**Data for the Shorter Schedule of Cost Components**

- The percentage for people overheads is .....%.
- The published list of Equipment is the last edition of the list published by

  .....
- The percentage for adjustment for Equipment in the published list is

  .....% (state plus or minus).
- The rates for other Equipment are

| Equipment | size or capacity | rate |
|---|---|---|
| ..... | ..... | ..... |
| ..... | ..... | ..... |
| ..... | ..... | ..... |
| ..... | ..... | ..... |



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# nec3 Engineering and Construction Contract Option C

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| | | | | | | | Where the 'Agreed Position' box is shaded grey the relevant agreement is that in the next box to the left which has text included. |
|---|---|---|---|---|---|---|---|
| **Item** | **Add** | **Omit** | **Board Comment** | **Status** | **Brookfield Comment** | **Board Comment 2** | **Agreed Position** |
| **ER 2/1** | | | | | | | |
| Text | - | - | Volume 2/1 of the ERs remains as the output requirements of the Board to be achieved as a minimum standard by the Contractor. Including M&E appendices 1, 2, 3, 4, 5, 6 & 7. | **Agreed** | Needs to be replaced by Brookfield contractor's proposal drawings in so far as these drawings are in conflict to the ER`s or the Works Information 2 should take precedence over Works Information 1 if this is ultimately how the Board wish to encompass the final contract documents. A schedule of derogations is to be produced. | Volume 2/1 of the ERs remains as the output requirements of the Board to be achieved as a minimum standard by the Contractor. Including M&E appendices 1, 2, 3, 4, 5, 6 & 7. except as described in this design summary which reflects the agreed position on the items therein. | **Agreed** |
| Drawings | - | - | The ER drawings remain as the output requirements of the Board. The submitted bid drawings of BC supplement the ER drawings and the following system comments are provided to assist in resolving certain anomalies within BC proposals. | **Agreed** | Needs to be replaced by Brookfield contractor's proposal drawings in so far as these drawings are in conflict to the ER`s or the Works Information 2 should take precedence over Works Information 1 if this is ultimately how the Board wish to encompass the final contract documents. A schedule of derogations is to be produced. | The ER drawings remain as the output requirements of the Board except as descr bed in this design summary which reflects the agreed position on the items therein. | **Agreed** |
| **Bid Submission – Vol 2 Drawings** | | | | | | | |
| Chilled Water | - | - | The chillers to incorporate free cooling coil sections or equivalent provision. | **Agreed** | We have centralised the chillers to a single energy | Based upon examples of previous installation | **Agreed** |

| | | | | | | | |
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| | | | | | centre to optimise resilience and benefit from absorption cooling.<br>Free cooling' chillers are not appropriate, however, high efficiency 'turbo core' chillers using magnetic free field bearings are proposed to maximise energy efficiency | locations, the Board accept the use of 'turbo core' chillers | |
| | - | - | Plate heat exchangers to be fully independent duty/standby including wiring and control panels etc. | Ag ed | | | |
| | - | - | Chillers to have screw compressors, "Rated as residentially quiet". | Ag ed | Chillers will use oil free 'turbo core' compressors (magnetic free field bearings) Noise levels will be within site boundary constraints. | | |
| | - | - | Chillers to have variable speed head pressure control with load and efficiency optimized head pressure and chilled water flow temperature control to improve seasonal efficiency will be incorporated. | Ag ed | Typically one manufacturer of Turbo core chillers offers a product that "utilizes EC fan technology" coupled with floating head pressure to enhance part load chiller efficiency. The PLC control system integrates fan speed, head pressure and compressor control to optimize chiller efficiency during periods of low ambient temperature and reduced cooling load." | | |
| | - | - | Full system details and drawings to be provided for specialist areas (Plant required to ensure max feed water temp of 5 to 12 deg C to specialist areas noted in correspondence during CD) | Ag ed<br>Agreed | Chillers selected already have high Co-efficient of Performance<br>Brookfield is currently unclear as what this refers to. System configurations and operating temperatures will be applicable | Stage 2 design development to demonstrate compliance. | |

| | | | | | | | |
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| | | | Reduction in Chiller Plant resilience where (N+1) N=8 is not agreed, provision of additional unit together with associated distribution pipework and controls required to comply with ER's. | | to the application.<br><br>N+1 resilience is provided and includes the absorption unit. All as identified within Brookfield Contractors Proposal Volume 3 Cooling Design Strategy 3.33. | N+1 resilience accepted by the Board | See attached email identifying extent |
| Ventilation | - | - | Typical Isolation Room Supply. All air system heater battery +5°C to 21°C – supply temperature will require to be higher for provision of room heating. | **Agreed** | | | **Agreed** |
| | - | - | Pressure stabiliser to be located in the wall above the bedroom door to the lobby. Currently indicated within ductwork in the ceiling void, no access in this location due to ceiling construction. | **Ag ed** | A review will be undertaken so that jetting draughts through Pressure Stabiliser does not cause discomfort to bedded patient. | | |
| | - | - | Conventional Theatre Supply System Schematic. Air on temp to cooling coil to be +30°C ER's, not 28°C as shown on BE drawing (Also main heater battery within AHU to be rated at +6°C to 35°C). | **Ag ed** | | | |
| | - | - | Typical Ultra Clean Theatre Supply air on temp to cooling coil to be +30°C ER's, not 28°C as shown on BE Drawing (Also main heater battery to be rated at +6°C to 35°C). | **Ag ed** | | | |
| | - | - | Typical Isolation Room Extract Schematic. All air system heater battery +5°C to 21°C – Supply temperature will require to be higher for provision of room heating. | **Ag ed** | | | |
| | | | Typical Conventional Theatre Extract | **Agreed** | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | - | - | System Schematic Air on temp to cooling coil to be +30°C ER's, not 28°C as shown on BE drawing (Also main heater battery within AHU to be rated at +6°C to 35°C). | | | | |
| | - | - | Typical Ultra Clean Theatre Extract System Schematic Air on temp to cooling coil to be +30°C ER's, not 28°C as shown on BE drawing (Also main heater battery within AHU to be rated at +6°C to 35°C). | Ag ed | | | |
| | | | Ward Air change to be 6AC/HR, currently shown as 2.5AC/HR which is not in compliance with SHTM 03-01. | Ag ed | Brookfield proposal as outlined within the bid submission is to incorporate chilled beams as a low energy solution to control the environment which do not rely on large volumes of treated air or variable natural ventilation. All accommodation is single bedrooms and therefore the need for dilution of airborne microbiological contamination should be reduced (rooms could also be at slightly negative pressure to corridor).<br>Providing 6 air changes is energy intensive and not necessary. | | The proposal is accepted on the basis of 40 litres per second per single (8 litres per second per second) for one patient and four others. |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Hot & Cold Water Services | - | - | Renal Water Schematic to be reviewed by SGH Renal Water Advisory Group and comments incorporated within the scheme. | **Agreed** | | | **Agreed** |
| | - | - | Renal Acid Circulation Schematic to be reviewed by SGH Renal Water Advisory Group | **Ag ed** | | | |
| | - | - | Renal Water System response to Volume<br>2/1 , Appendix M&E 6<br>Renal Water is to be completed and approved by NSGH Renal Water Advisory Group | **Ag ed** | | | |
| | - | - | Concentrate Bulk Delivery to site Strategy is to be completed and approved by NSGH Renal Water Advisory Group | **Ag ed** | | | |
| | - | - | Stainless Steel pipework to be provided as per ER's in lieu of ABS plastic for the larger sizes. | **Ag ed** | 63mm dia and above will use Stainless Steel pipe.<br>50mm dia below will use ABS plastic pipe. | Stainless Steel pipework to be provided for all sizes. | |
| | - | - | 24 Hour water storage to be provided in lieu of 12 hours as proposed and modularity of tanks to be as per the ER's.<br>(if we change to 12 hours, change to 4 tanks) | **Ag ed** | However this requires further discussion since the project has two diverse incoming water supplies and thus Brookfield consider our proposal to be the most economic solution. | Board considering ZBP calculations for 24 hour capacity, dated 08 December 2009 | 700m³ water storage to be provided |

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|---|---|---|---|---|---|---|---|
| Heating Systems | - | - | 3 no. off flow pipes to be provided between the Energy Centre and the Hospitals capable of passing 50% flow through each, where one fails and the other two can carry the total load. Current proposal is to reduce to 2 no. off pipes each capable of carrying 66% should one fail. | **Not Agreed** | Brookfield proposal is based on capacity for each A and B service rated at 66% each. | Brookfield considering how to provide 100% resilience most efficiently. Proposals to be provided. | Agreed that 3 sets all running at 50% to be provided.<br><br>These are to be design and installed to provide a resilient system, such that a failure/burst in one set will not affect another set, with each set able to be accessed (excavated) for repair or maintenance without affecting or impeding the other sets. In this regard, should a 'single trench' system be proposed, clear separation of sets within separate compartments in the trench to be provided. |
| | - | - | Plate heat exchangers to be fully independent duty/standby including wiring and control panels etc. | **Ag ed** | | | |
| Medical Gases | - | - | Medical gas schematic to be amended to reflect ER requirements together with the BC plant room services layout drawing and design dialogue. | **Agreed** | Medical gas schematic is in compliance with SHTM02.01 | | **Agreed** |
| | - | - | All references to BOC should be Air Products Ltd. | **Ag ed** | | | |
| | - | - | Details of the plant resilience for Medical Air, Oxygen, Vacuum, Surgical Air, Nitrous Oxide and Nitrous Oxide to be in accordance with the ER's. | **Ag ed** | Medical gas is in compliance with SHTM02.01 | Medical Gas resilience also to comply with ER's including for example Board's specific requirement for two VIE installations | |
| Wet Riser Schematic | - | - | Water storage tank capacity to be with local authority. | **Agreed** | | | **Agreed** |
| | - | - | BC drawings to be developed. | **Ag ed** | Part of stage 2 design activities. | | |
| Sprinkler Schematic | - | - | Note on BC drawing states ' Tank by Others ' to be clarified as included. | **Agreed** | | | **Agreed** |
| | - | - | Note on BC drawing states ' Others to | **Agreed** | | | |

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| | | | include tank immersion heater, trace heating, lighting etc. to be clarified as included. | | | | |
| | - | - | Note on BC drawing states Pump House by others to be clarified as included. | Ag ed | | | |
| Energy Centre | - | - | Man access to be provided to the chimney stack to allow full access to flues over its total height as ER's. | Agreed | | | |
| | - | - | Chimney stack enclosure to be provided. | Ag ed | Brookfield proposal includes an open frame structure | | |
| | | | Boiler layout to be configured to simplify flue routes. | Ag ed | Part of Stage 2 detailed design activities if practical. | | |
| | - | - | External oil transfer point to be provided on the wall of the Energy Centre to serve the retained estate. | Ag ed | | | |
| | - | - | Minimum requirement is accessible diverse twin trench solution to be provided in accordance with the ER's to provide required resilience. Pipe material selection will be critical | Ag ed | Part of Stage 2 detailed design activities if practical | Minimum requirement is to provide physical separation of resilient services route, ie separate primary from back-up | This may be achieved by separation within a single trench (see response in relation to Heating Systems, above, for clarity of separation requirement). |
| Plant Replacement Strategy | - | - | Scaffold platform to be capable of supporting the plant weights of the larger items of equipment or other strategy adopted to minimise plant replacement time. | Agreed | Part of Stage 2 detailed design activities | | **Agreed** |
| | - | - | Ground finishes to be capable of taking the scaffolding weight with plant added adjacent to plantrooms. | Ag ed | Part of Stage 2 detailed design activities | | |

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| UPS | - | - | UPS autonomy to be amended in line with the ER's. | **Agreed** | Superseded by agreed RFI log. | Board to review Theatre UPS requirements. | 1 hour in Theatres, 30 minutes elsewhere. **Agreed** |
| Lighting | - | - | Lighting control to be amended inline with ER's. | **Agreed** | Superseded by agreed RFI log. Refer to contractors proposal. | | **Agreed** |
| | - | - | Full luminaire details to be provided including LED's and feature lighting. | **Ag ed** | | | |
| | - | - | Bedside lights to be low energy type. | **Ag ed** | | | |
| | - | - | Feature lighting LED's to be provided inline with the ER's. | **Ag ed** | | | |
| | - | - | BE lighting design strategy to be applied to the Internal Lighting scheme which shall be developed in line ER's to provide full CIBSE compliance. | **Ag ed** | | | |
| | - | - | Lamp colour strategy to be developed in line with HSE & CIBSE guidance | **Ag ed** | | | |
| | - | - | External Lighting scheme to be developed in line ER's with full CIBSE compliance. | **Ag ed** | | | |
| Comms Room Racks | - | - | Reduction in racks is not agreed, ie. 10 indicated by BE in each main Comms Room to be amended inline with the ER's drawing. | **Agreed** | Rack number will be as the ER's | Number of racks to be as ER drawing | **Agreed** |
| | - | - | Comms room cooling strategy to be detailed to minimise energy use. | **Ag ed** | Part of Stage 2 detailed design activities. | | |
| Fire Alarm | - | - | Graphic user interface system details to be provided during detailed design | **Agreed** | Part of Stage 2 detailed design activities. | | **Agreed** |
| | - | - | BE to provide full details of the proposed voice alarm system and | **Ag ed** | Part of Stage 2 detailed design activities. | | |

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| | - | - | indicate areas to be covered by conventional sounders<br><br>Atrium protection system details to be provided | Ag ed | Brookfield confirm that a Double knock fire detection only will be provided.<br>Atrium is provided with ETFE roof covering which includes a hot wire system and therefore no other protection systems should be required. | Confirm all systems will be provided to meet the building control and fire engineering solution. | |
| | - | - | Comms room VESDA system details to be provided | Agreed | Part of Stage 2 detailed design activities | | |
| Structured Data Wiring | - | - | Comms room and rack layouts to be provided for early discussion with GG&C Technology to verify equipment space allocation. | Agreed | Part of Stage 2 detailed design activities | | Agreed |
| Metering | - | - | All metering to be provided in accordance with ER's to allow active energy management together with associated BREEAM credits. | Agreed | Metering has been included to CIBSE TM39 with provision for fitting future metering to individual department as required (i.e. stool sections in pipe and a BMS connection point). | BE to provide proposal to meet ER requirement including potential use of portable active monitoring. | BE proposal agreed, supported by identification of areas of metering (see attached) |
| Energy Management | - | - | Energy Management software to be fully compliant with ER's complete with BMS management and interactive link to GG&C system | Agreed | Part of Stage 2 detailed design activities | | Agreed |
| Standby Power | - | - | BE to provide early proposals for system management, CHP and Utility Company interface details to progress agreement of all parties | Agreed | | | Agreed |
| Bio fuels | - | - | BE to advise outcome of their proposed feasibility study and provide | Agreed | Brookfield advised that a further investigation would be | Please provide details of the review in report format for | Post Contract |

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| | | | detailed proposals | | made into the use of biogas if supply was made available to Board from the sewage water treatment operator. Biofuel was investigated and found not feas ble. | overview. | |
| Utiliities | - | - | BE to provide design estimates for water, gas and electricity to verify and update Utility company info . | **Agreed** | | | **Agreed** |
| Service reserve capacity<br><br>Electrical Utilities Estimated Loads | -<br><br>- | -<br><br>- | BE to ensure that service reserve capacity is maintained during detailed design<br><br>MVA Requirement varies from ER | **Agreed**<br><br>**Agreed** | | <br><br>Quotation is for 24 MVA and this is acceptable | **Agreed** |
| As fitted drawings, asset register and O&M's | - | - | BE to ensure that all systems shall be linked to the As Fitted drawings via MiCAD drawing mapping, the MiCAD should also integrate with the LMS to provide a fully integrated system complete with interfaces to the PPM and Board's labour resource software systems (Apollo or Eclipse). | **Agreed** | Agreed as detailed in Brookfield Contractors Proposal Vol 3 Completion Strategy 3.24 | Confirm that a full operating system will be provided with all of the requested operational activities and working links | Confirmed that ER requirement will be met. |
| PPM | - | - | BE to provide, as part of the contract, a full PPM manual and system (computer based software package) for all the buildings and for all building and building services elements of the project. This system will incorporate the As Fitted drawings (MiCAD format) and specifications. This schedule shall have a full planned maintenance programme of works that the FM & Estates managers can review to plan and establish their annual maintenance schedules and annual budgets. BE will be responsible for the purchase and installation of the full PPM system, | **Agreed** | Agreed as detailed in Brookfield Contractors Proposal Vol 3 Completion Strategy 3.24 | Confirm that a full operating system will be provided with all of the requested operational activities and working links. | Confirmed that ER requirement will be met. |

**Commented [a1]:** Need confirmation that we can achieve this

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| | | | including pc work stations, barcode readers and tablets. | | | | |
| General Items | - | - | BE drawings will require further development to meet ER requirements. | Agreed | Part of Stage 2 detailed design activities | | Agreed |
| | - | - | V bration and noise solutions to be included on drawings. | Ag ed | Part of Stage 2 detailed design activities | | |
| | - | - | Weather proofing to be in accordance with ER's. | Ag ed | Part of Stage 2 detailed design activities | | |
| | - | - | All plant sound attenuation measures to be shown. | Ag ed | Part of Stage 2 detailed design activities | | |
| | - | - | All plant tagging to be in compliance with ER's. | Ag ed | Part of Stage 2 detailed design activities | | |
| | - | - | Compliance with ER's to be demonstrated for all plant and systems maintainability and area isolation. | Ag ed | Part of Stage 2 detailed design activities which will comply with CDM regulations. | | |
| | - | - | Leak detection to be incompliance with ER's. | Ag ed | | | |
| | - | - | All clinical areas with special emphasis on Operating Theatres, Radiology, MRI and Critical Care to be configured to miminise risk of water damage from plant and equipment. All plantrooms to be treated for mitigation of water leaks in accordance with the ER's. | Ag ed | | | |
| | - | - | Environmental proving of all rooms to be provided in accordance with the ER's. Samples and reliance on BMS only for test results is not acceptable. | Ag ed | Part of commissioning and handover | | |
| | - | - | All services elements to be included to | Agreed | | | |

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| | | | meet the buildings Fire Engineering solution, eg. Stair Pressurisation, Smoke Control etc. all in accordance with the ER's and to the requirements of building Control. | | | | |
| | - | - | Dual path distribution resilience to be provided for all services in accordance with the ER's. | Ag ed | For agreed extent of dual paths for electrical services refer to RFI log. (RFIs 031 & 068). | Not agreed. Heating, Chilled water, controls and BMS must have dual path distribution resilience. All piped services including CWS & HWS must be configured to ensure minimum disturbance to services. Refer to paragraphs in section 8.1.3 and 8.1.5 etc. | Agreed that dual path distr bution relates to electricity and all water systems (e.g. distribution, heating, chillers) |
| | - | - | BMS IP network to be fully stand alone with all active equipment will be included.<br>BMS to be fully compliant with ER appendix M&E5. | Ag ed | | | |
| | - | - | All Mechanical, Electrical, Public Health and Specialist System plant to be designed and installed in modular arrangements incorporating plant N+1 redundancy to minimize disruption during planned maintenance in accordance with the ER's. | Ag ed | Not possible in all cases to do this. (S)HTMs in some cases will not allow for example: HWS systems. | Not accepted. All plant to be N+1.<br>In respect of the specific item the BE bid has 2+1 service units for the HWS which is acceptable | Generally all plant will come N+1. On HWS we proposed that an extra pump be provided for quick change if required |
| | - | - | BE to provide detailed backup to justify plant selection e.g.<br>Capital Costs<br>Lifecycle & Maintenance Costs<br>Additional Electrical etc loadings<br>Projected Energy costs etc | Ag ed | Part of Stage 2 detailed design activities | | |
| | - | - | BE shall develop the sustainability brief in conjunction with the Local Authority to ensure compliance with: | Ag ed | As detailed in contractors proposal and Part of Stage 2 detailed design activities | | |

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| | | | Building Regulations,<br>BREEAM Healthcare Excellent requirements,<br>Building Control, Glasgow City Council requirements<br>Scottish Government Planning Policies including SPP6<br>Advice Notes including PAN84<br>NHS/Board objectives. | | | | |
| **Bid Submission – Vol 3 Strategy** | | | | | | | |
| Text [ref] | | | Comments Incorporated within drawing and ER items above. | | | | |
| **Bid Submission – Vol 4 Specifications** | | | | | | | |
| Spec [ref] | | | Detailed construction specification to be provided as part of the design review process | **Agreed** | | | |
| **Bid Submission – Vol 5 Components** | | | | | | | |
| Component [ref] | | | Capacities, rating, spare capacity all to be confirmed to reflect accurate building geometry and dimensions during detailed design.<br>List to be expanded to include all ancillary plant e.g. pressurisation units, water filtration plant, fuel systems, wet risers, sprinklers, controls, data wiring, data wiring accessories, racks, power distribution, lighting controls, Structured cabling, nurse call, fire | **Agreed** | | | Agreed list included in Volume 5 of Contract Data Part 2 |

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| | | | alarms, transformers, luminaire details and BMS etc.<br><br>Three manufacturers for each plant type to be agreed for all Mechanical, Electrical and Public Health equipment prior to contract execution. | **Agreed** | | | |
| **Bid Submission – Vol 6 Equipment** | | | | | | | |
| Generally | | | as part of the design review process | | | | |
| **Bid Submission – Vol 7 SHTM** | | | | | | | |
| Generally | | | Compliance to be demonstrated during the detailed design | **Agreed** | | | |
| | | | | | | | |
| **Bid Submission – Vol 8 ADB** | | | | | | | |
| Generally | | | Refer to exchange of correspondence during CD | | | | |
| | | | | | | | |

**VOLUME 1**

| File Name | Iss. | Rev. | Title | Issue Date | Add | Info/Omit | Board Comment | Status | Brookfield Comment |
|---|---|---|---|---|---|---|---|---|---|
| NSGACL ITPD Volume 1 | 1 | 1 | Project Scope & Commercial Doc | 01/05/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | |
| NSGACL Contract Bond ITSFB Issue - Vol 1 | 1 | 1 | NSGACL Contract Bond ITSFB Issue - Vol 1.pdf | 14/08/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | |
| NSGACL Contract Form of Agreement | 1 | | The Contract : Form of Agreement | 04/06/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | |
| NSGACL Form of Consultant Collateral Warranty | 1 | | The Contract : Consultant's Collateral Warranty | 04/06/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | |
| NSGACL Form of Novation Agreement | 1 | | The Contract : Novation Agreement | 04/06/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | |
| NSGACL Form of novation agreement ITSFB Issue - Vol 1 | 1 | 1 | NSGACL Form of novation agreement ITSFB Issue - Vol 1.pdf | 14/08/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | |
| NSGACL Form of sub-consultant warranty ITSFB Issue - Vol 1 | 1 | 1 | NSGACL Form of sub-consultant warranty ITSFB Issue - Vol 1.pdf | 14/08/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | |
| NSGACL Form of Sub-Contractor Collateral Warranty | 1 | | The Contract : Sub-Contractor's Collateral Warranty | 04/06/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | |
| NSGACL Form of subcontractor warranty ITSFB Issue - Vol 1 | 1 | 1 | NSGACL Form of subcontractor warranty ITSFB Issue - Vol 1.pdf | 14/08/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | |
| NSGACL NEC Contract Document ITSFB Issue - Vol 1 | 1 | 1 | NSGACL NEC Contract Document ITSFB Issue - Vol 1.pdf | 14/08/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | |
| NSGACL Vol 1 - Appendix C Rev 3 | 1 | 3 | NSGACL Vol 1 - Appendix C Rev 3.pdf | 14/08/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | |
| 0401 | 1 | . | PROPOSED SHEAR WALL LAYOUT | 30/06/2009 | | | | | |
| 0404 | 1 | . | PROPOSED SUPERSTRUCTURE | 03/07/2009 | | | | | |
| 0406 | 1 | . | PROPOSED ROOF STRUCTURE | 30/06/2009 | | | | | |
| SK-0010 | 1 | . | DETAIL OF 2 PILE PILECAP | 19/06/2009 | | | | | |
| SK-0011 | 1 | . | DETAIL OF 3 PILE PILECAP | 19/06/2009 | | | | | |
| SK-0012 | 1 | . | SECTION INDICATING PILECAP LOCATION BELOW PLANT SLAB / BASEMENT | 19/06/2009 | | | | | |
| SK-0013 | 1 | . | SECTION INDICATING PILECAP LOCATION BELOW LABRATORY / OFFICES | 19/06/2009 | | | | | |
| SK-0014 | 1 | . | DETAIL OF 1 PILE PILECAP | 19/06/2009 | | | | | |
| SK-0015 | 1 | . | DETAIL OF 4 PILE PILECAP | 19/06/2009 | | | | | |
| SK-0017 | 1 | . | SECTION X-X | 19/06/2009 | | | | | |
| SK-0018 | 1 | . | SECTION Y-Y | 19/06/2009 | | | | | |
| SK-0019 | 1 | . | SECTION Z-Z | 19/06/2009 | | | | | |
| SK-0020 | 1 | . | PROPOSED PILE AND GROUND BEAM LAYOUT | 19/06/2009 | | | | | |
| SK-0030 | 1 | . | PART PLAN SHOWING TRANSFER STRUCTURE OVER SERVICE YARD ACCESS ROAD | 30/06/2009 | | | | | |
| SK-016 | 1 | . | DETAILS OF TEMPORARY RETENTION | 19/06/2009 | | | | | |

**VOLUME 2.1**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| NSGACL PD-HLM-L(00)X-XX-001 - Existing Site Plan | - | Omit | Superseded by Issue2 | Agreed | | Agreed |
| NSGACL PD-HLM-L(00)X-XX-001 - Existing Site Plan | Y | - | To remain as relevant baseline detail. | Agreed | | Agreed |
| NSGACL-PD-HLM-S(00)X-XX-005 - Phased Construction Site Plan | - | Omit | To be superseded by outcome/agreement from Logistics meeting 26 November 2009 | Agreed | | Agreed |
| NSGAC OPD Activity NCH | Y | - | Remains output for Ers. | Agreed* | *Brookfield agree with Board position that Clinical Output Specs should remain as being the core ER on the basis that the Board confirm that they accept the Acommodation Shcedules included within the Bid Submission Volume 1 can satisfy the Clinical Output Specifications. | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL AAU NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Adult and Childrens Hospital Combined Bioengineering NSG NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL ADULT AND CHILDRENS HOSPITAL Med illus NSG NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL ADULT AND CHILDRENS PHARMACY NSG NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Anticoagulation NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Audiology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Cardiac Rehab NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Cardiac Services NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Cardiology NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Care of Elderly NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |

**VOLUME 2.1**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| NSGACL Chaplaincy NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Chaplaincy Spiritual Care NSG | Y | - | Remains output for Ers. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Child Protection NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Clinical Psychology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Community paediatrics NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Continence Service NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Critical Care NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Day Medical NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Dental NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Departmental Adjacency Matrix NCH | - | Omit | Adjacency matrix remains output, clinical functionality sign-off will create agreed settlement of adjacencies | Agreed | To be replaced by Brookfield 1:500 plans | To be replaced by Brookfield 1:500 plans |
| NSGACL Departmental Adjacnecy Matrix NSG | - | Omit | Adjacency matrix remains output, clinical functionality sign-off will create agreed settlement of adjacencies | Agreed | To be replaced by Brookfield 1:500 plans | To be replaced by Brookfield 1:500 plans |
| NSGACL Dermatology NCH | Y | - | CoS remains core ER output. | Agreed* | *Brookfield agree with Board position that Clinical Output Specs should remain as being the core ER on the basis that the Board confirm that they accept the Acommodation Shcedules included within the Bid Submission Volume 1 can satisfy the Clinical Output Specifications. | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Dermatology NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Diabetes Endocrinology NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |

**VOLUME 2.1**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| NSGACL Diabetes NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Dietetic NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Dietetic NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Discharge Lounge NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL ECLS NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL EMERGENCY DEPARTMENT NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Emergency Department NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Endocrinology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Endoscopy NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL ENT Audiology NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL ENT NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Entrance Hall NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Gastro NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |

**VOLUME 2.1**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| NSGACL Gastroenterology NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Gen Outpatients NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Gen Surg NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL General Surgery NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL General Surgery NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Generic Ward Matrix NCH | - | Omit | Superseded by Vol4 document | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL GENERIC WARD NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL GENERIC WARD NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Generic Wards NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Haemato Oncology NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Haemat-Oncology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL HaN NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Health Records NSG | Y | - | Remains output for Ers. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |

**VOLUME 2.1**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| NSGACL Imaging NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL IMMUNOLOGY NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Laboratory Medicine NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Liaison Psychiatry NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Mat_Neonate Psychology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Medical Day Unit NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Medical Paediatric NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL METABOLIC MEDICINE NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Neurology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Neurology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Neurophysiology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Neurophysiology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL NEUROSURGRY NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |

**VOLUME 2.1**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| NSGACL Nuclear Medicine NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL OCCUPATIONAL THERAPY NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Operational Procedure Domestic Services NSG | Y | - | Remains output for Ers. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Operational Procedure Linen NSG | Y | - | Remains output for Ers. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Operational Procedure Portering NSG | Y | - | Remains output for Ers. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Operational Procedure Waste NSG | Y | - | Remains output for Ers. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Ophthalmology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Ophthalmology NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Orthopaedic NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Orthopaedics NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |

**VOLUME 2.1**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| NSGACL Orthotics NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Orthotics NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL OT Orthotics NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Out of Hours NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL OUTPATIENTS DEPARTMENT NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Pain NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Pain NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Physiotherapy NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Physiotherapy NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Physiotherapy NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL PICU NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL PICU NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL PLASTICS NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |

**VOLUME 2.1**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| NSGACL Play Service NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Play Service NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Psychiatric Inpatients NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Psychiatric Inpatients NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Radiology NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Renal Dialysis NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Renal NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Renal NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Renal NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL RESPIRATORY NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Respiratory NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Rheumatology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Rheumatology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |

**VOLUME 2.1**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| NSGACL Rheumatology NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL SPEECH AND LANGUAGE THERAPY NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Speech Language Therapy NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Stroke NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL THEATRES NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Theatres NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL TRANSPORT NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Urology NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Vascular NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |
| NSGACL Schedule of Accommodation - Excel format - NCH | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL Schedule of Accommodation - Excel format - NSG | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL Schedule of Accommodation NCH | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL Schedule of Accommodation NSG | - | Omit | Superseded version | Agreed* | | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |

**VOLUME 2.1**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| NSGACL D.1 Outline Planning Conditions | Y | - | Remains output for ERs. | Agreed* | *Planning risk is allowed within Brookfield submission although timing of response to Planning Submissions is a Board risk. | Timing of response from GCC outwith the statutory period in relation to the planning submission is a Board risk, this is dependant, however, upon the submission being correctly compiled and served by Brookfield. That is, should a delay or cost arise due to an incorrectly compiled or served planning submission by Brookfield that risk remains with Brookfield. |
| NSGACL D.2 Planning Matrix | Y | - | Remains output for ERs. | Agreed* | *Planning risk is allowed within Brookfield submission although timing of response to Planning Submissions is a Board risk. | Per above with regard to planning risk. |
| NSGACL-Generic ADB Room Data Sheets | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL-Generic ADB Room Data Sheets | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 1149-03A | | Omit | | Agreed | Exemplar Masterplan to be replaced with drawing log of Brookfield Masterplan drawings | Agreed |
| NSGACL - 3D Image 1 - View from new entrance boulevard | - | Omit | Superseded by bidder proposals. | Agreed | 3Ds to be replaced by the following drawings; | Agreed |
| NSGACL - 3D Image 2 - View of childrens entrance | - | Omit | Superseded by bidder proposals. | Agreed | NA-XX-XX-3D-251-001 | Agreed |
| NSGACL - 3D Image 3 - View of emergency entrances | - | Omit | Superseded by bidder proposals. | Agreed | NA-XX-XX-3D-251-002 | Agreed |
| NSGACL - 3D Image 4 - View of new tower across parkland | - | Omit | Superseded by bidder proposals. | Agreed | NA-XX-XX-3D-251-003 | Brookfield 'fly through' to be included also. Agreed as long as read in conjunction with all other specifications etc. Fly throughs are generally not measurable in terms of output |
| | | | | | NA-XX-XX-3D-251-004 | Agreed |
| | | | | | NA-XX-XX-3D-251-005 | Agreed |
| | | | | | NA-XX-XX-3D-251-006 | Agreed |
| | | | | | NA-XX-XX-3D-251-007 | Agreed |
| | | | | | NA-XX-XX-3D-251-008 | Agreed |
| | | | | | NA-XX-XX-3D-251-009 | Agreed |
| | | | | | NA-XX-XX-3D-252-001 | Agreed |
| | | | | | NA-XX-XX-3D-252-002 | Agreed |
| | | | | | NA-XX-XX-3D-252-003 | Agreed |
| NSGACL PD-HLM-L(00)X-XX-002 - Proposed Site Plan | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL PD-HLM-L(00)X-XX-002 - Proposed Site Plan | - | Omit | | Agreed | Exemplar Site Plan to be replaced with Brookfield Proposed Site Plan | Agreed |
| NSGACL App H -Board Exemplar Layouts 1 to 500 _Cover_ | - | Omit | | Agreed | | Agreed |
| NSGACL PD-HLM-L(00)00-x-XX-001-Dept Adj Level 0 | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL PD-HLM-L(00)00-x-XX-001-Dept Adj Level 0 | - | Omit | | Agreed | To be replaced by Brookfield 1:500 plans | Agreed |
| | | | | | Replace with NA-XX-00-PL-252-010 | Agreed |
| NSGACL PD-HLM-L(00)-01-X-XX-001-Dept Adj Level -1 | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL PD-HLM-L(00)-01-X-XX-001-Dept Adj Level -1 | - | Omit | | Agreed | To be replaced by Brookfield 1:500 plans | Agreed |
| | | | | | Replace with NA-XX-B1-PL-252-010 | Agreed |
| NSGACL PD-HLM-L(00)01-X-XX-001-Dept Adj Level 1 | - | Omit | Superseded version | Agreed | | Agreed |

**VOLUME 2.1**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| NSGACL PD-HLM-L(00)01-X-XX-001-Dept Adj Level 1 | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL PD-HLM-L(00)01-X-XX-001-Dept Adj Level 1 | - | Omit | | Agreed | To be replaced by Brookfield 1:500 plans | Agreed |
| | | | | | Replace with NA-XX-01-PL-252-010 | Agreed |
| NSGACL PD-HLM-L(00)02-X-XX-001-Dept Adj Level 2 | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL PD-HLM-L(00)02-X-XX-001-Dept Adj Level 2 | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL PD-HLM-L(00)02-X-XX-001-Dept Adj Level 2 | - | Omit | | Agreed | To be replaced by Brookfield 1:500 plans | Agreed |
| | | | | | Replace with NA-XX-02-PL-252-010 | Agreed |
| NSGACL PD-HLM-L(00)03-x-XX-001-Dept Adj Level 3 | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL PD-HLM-L(00)03-x-XX-001-Dept Adj Level 3 | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL PD-HLM-L(00)03-x-XX-001-Dept Adj Level 3 | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL PD-HLM-L(00)03-x-XX-001-Dept Adj Level 3 | - | Omit | | Agreed | To be replaced by Brookfield 1:500 plans | Agreed |
| | | | | | Replace with NA-XX-03-PL-252-010 | Agreed |
| NSGACL PD-HLM-L(00)04-X-XX-001-Dept Adj Level 4 | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL PD-HLM-L(00)04-X-XX-001-Dept Adj Level 4 | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL PD-HLM-L(00)04-X-XX-001-Dept Adj Level 4 | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL PD-HLM-L(00)04-X-XX-001-Dept Adj Level 4 | - | Omit | | Agreed | To be replaced by Brookfield 1:500 plans | Agreed |
| | | | | | Replace with NA-XX-04-PL-252-010 | Agreed |
| | | | | | Include NA-XX-05-PL-252-010 | Agreed |
| | | | | | Include NA-XX-06-PL-252-010 | Agreed |
| | | | | | Include NA-XX-07-PL-252-010 | Agreed |
| | | | | | Include NA-XX-08-PL-252-010 | Agreed |
| | | | | | Include NA-XX-09-PL-252-010 | Agreed |
| | | | | | Include NA-XX-10-PL-252-010 | Agreed |
| | | | | | Include NA-XX-11-PL-252-010 | Agreed |
| | | | | | Include NA-XX-12-PL-252-010 | Agreed |
| | | | | | Include NA-XX-13-PL-252-010 | Agreed |
| | | | | | Include NA-XX-14-PL-252-010 | Agreed |
| NSGACL-PD-HLM-L(00)00-X-OP-001 - Outpatient Adults Clinic Adj Level 0 | - | Omit | | Agreed | | Agreed |
| | | | | | To be replaced by Brookfield 1:500 plans | |
| | | | | | Replace with NA-XX-00-PL-252-010 | Agreed |
| NSGACL-PD-HLM-L(00)01-X-OP-001 - Outpatient Adults Clinic Adj Level 1 | - | Omit | | Agreed | | Agreed |
| | | | | | To be replaced by Brookfield 1:500 plans | |
| | | | | | Replace with NA-XX-01-PL-252-010 | Agreed |
| NSGACL-PD-HLM-L(00)02-X-OP-001 - Outpatient Adults Clinic Adj Level 2 | - | Omit | | Agreed | | Agreed |
| | | | | | To be replaced by Brookfield 1:500 plans | |
| | | | | | Replace with NA-XX-02-PL-252-010 | Agreed |
| 2447 AL (00)22 Emergency Department flow diagram | - | Omit | | Agreed | | Agreed |
| | | | | | Replace with NA-XX-00-PL-252-304 | |
| 2447 AL(00)20P - Theatre flow diagram | - | Omt | | Agreed | | Replace with NA-XX-02-SKPL-252-200 subject to the attached commentary "4 Departments Drawing Note" |
| 2447 AL(00)23 Radiology flow diagram | - | Omit | | Agreed | | Agreed |
| | | | | | Replace with NA-XX-00-PL-252-308 | |

**VOLUME 2.1**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| | | | | Agreed | Replace with NA-XX-01-PL-252-308 | Agreed |
| NSGACL - PD-HLM-L(00)00-X-AA-001 - Acute Assessment Adults | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL - PD-HLM-L(00)00-X-AA-001 - Acute Assessment Adults | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL - PD-HLM-L(00)00-X-AA-001 - Acute Assessment Adults | - | Omt | | Agreed | | Replace with NA-XX-00-SKPL-252-106 subject to the attached commentary "4 Departments Drawing Note" |
| NSGACL - PD-HLM-L(00)00-X-ED-001 - Emergency Department Adults | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL - PD-HLM-L(00)00-X-ED-001 - Emergency Department Adults | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL - PD-HLM-L(00)00-X-ED-001 - Emergency Department Adults | - | Omit | | Agreed | Replace with NA-XX-00-PL-252-205 | Agreed |
| NSGACL - PD-HLM-L(00)00-X-RA-001 - Radiology Adults | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL - PD-HLM-L(00)00-X-RA-001 - Radiology Adults | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL - PD-HLM-L(00)00-X-RA-001 - Radiology Adults | - | Omit | | Agreed | Replace with NA-XX-00-PL-252-207 | Agreed |
| NSGACL - PD-HLM-L(00)01-X-CC-001 - Critical Care Facility Adults | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL - PD-HLM-L(00)01-X-CC-001 - Critical Care Facility Adults | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL - PD-HLM-L(00)01-X-CC-001 - Critical Care Facility Adults | - | Omt | | Agreed | | Replace with NA-XX-01-SKPL-252-104&105 subject to the attached commentary "4 Departments Drawing Note" |
| NSGACL - PD-HLM-L(00)01-X-RA-001 - Radiology Adults | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL - PD-HLM-L(00)01-X-RA-001 - Radiology Adults | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL - PD-HLM-L(00)01-X-RA-001 - Radiology Adults | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL - PD-HLM-L(00)01-X-RA-001 - Radiology Adults | - | Omit | | Agreed | Replace with NA-XX-01-PL-252-207 | Agreed |
| NSGACL - PD-HLM-L(00)04-X-WA-001 Generic Ward Floor (Adults) | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL - PD-HLM-L(00)04-X-WA-001 Generic Ward Floor (Adults) | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL - PD-HLM-L(00)04-X-WA-001 Generic Ward Floor (Adults) | - | Omit | | Agreed | Replace with NA-XX-05-PL-252-201 | Agreed |
| NSGACL-PD-BMJ-L(00)00-X-ED-001 - Emergency Department Childrens | - | Omit | | Agreed | Replace with NA-XX-00-PL-252-204 | Agreed |
| NSGACL-PD-BMJ-L(00)00-X-OW-001 - Observation Ward Childrens | - | Omit | | Agreed | Replace with NA-XX-00-PL-252-203 | Agreed |
| NSGACL-PD-HLM-L(00)00-X-AA-002 - Acute Assessment (adult) Flow | - | Omt | | Agreed | | Replace with NA-XX-00-SKPL-252-106 subject to the attached commentary "4 Departments Drawing Note" |
| NSGACL-PD-HLM-L(00)00-X-ED-002 - Emergency Department Adult Flow Diagram | - | Omit | | Agreed | Replace with NA-XX-00-PL-252-305 | Agreed |
| NSGACL-PD-HLM-L(00)00-X-OP-002 - Outpatient (adults) Flow | - | Omit | | Agreed | | Agreed |
| NSGACL-PD-HLM-L(00)00-X-RA-002 - Radiology (adult) Flow | - | Omit | | Agreed | Replace with NA-XX-00-PL-252-307 | Agreed |
| NSGACL-PD-HLM-L(00)01-X-CC-002 - Critical Care Facility (adult) Flow | - | Omt | | Agreed | | Replace with NA-XX-01-SKPL-252-104&105 subject to the attached commentary "4 Departments Drawing Note" |
| NSGACL-PD-HLM-L(00)01-X-OP-002 - Outpatients (Adults) Flow | - | Omit | | Agreed | | Replace with NA-XX-00-PL-252-A309 and A309(2) |

**VOLUME 2.1**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| NSGACL-PD-HLM-L(00)01-X-RA-002 - Radiology (adult) Flow | - | Omit | | Agreed | Replace with NA-XX-01-PL-252-307 | Agreed |
| NSGACL-PD-HLM-L(00)02-X-OP-002 - Outpatient (adults) Flow | - | Omit | | Agreed | | Agreed |
| NSGACL-PD-HLM-L(00)02-X-OT-002 - Operating Theatres (adult) Flow | - | Omit | | Agreed | Omit - superseded by rev 2 below | Agreed |
| NSGACL-PD-HLM-L(00)02-X-OT-002 - Operating Theatres (adult) Flow | - | Omt | | Agreed | | Replace with NA-XX-02-SKPL-252-200 subject to the attached commentary "4 Departments Drawing Note" |
| NSGACL-PD-HLM-L(00)04-X-WA-002 - Generic Ward (adult) Flow | - | Omit | | Agreed | Replace with NA-XX-05-PL-252-301 | Agreed |
| NSGACL - PD-HLM-L(00)02-X-OT-001 - Operating Theatres Adults | - | Omt | | Agreed | | Replace with NA-XX-02-SKPL-252-200 subject to the attached commentary "4 Departments Drawing Note" |
| NSGACL-Generic ADB Room Layouts | - | Omit | Tbc - addressed under drawings listing to be issued to Brookfield | Agreed | Replace with the following: | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-000 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-001 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-002 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-003 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-004 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-005 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-006 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-007 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-008 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-009 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-010 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-011 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-012 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-013 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-014 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-016 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-017 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-018 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-019.1 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-019.2 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-019.3 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-019.4 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-020 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-021 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-022 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-023 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-024 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-025 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-026 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-027 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-028 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-029 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-030 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-031 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-032 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-033 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-034 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-035 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-036 | Agreed |

**VOLUME 2.1**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| | | | | | Refer to NA-XX-XX-AS-400-037 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-038 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-039 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-040 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-041 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-042 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-043 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-044 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-045 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-046 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-047 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-048 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-049 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-050 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-051 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-052 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-053 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-054 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-055 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-056 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-057 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-058 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-059 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-060 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-061 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-062 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-063 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-064 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-065 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-066 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-067 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-068 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-069 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-070 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-071 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-072.1 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-072.2 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-072.3 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-073 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-074 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-075 | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-076 | Agreed |
| NSGACL Appendix K - Design Development | - | Omit | Superseded by updated version (see Volume 4 tab) | Agreed | | Agreed |
| NSGACL 5001 | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL 5001 | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL 5001 | - | Omit | Tbc - addressed under drawings listing to be issued to Brookfield | Agreed | Replaced with WSP drawing CD-WS-00-PL-711-01 | Agreed |
| NSGACL 5001 PDF | - | Omit | Tbc - addressed under drawings listing to be issued to Brookfield | Agreed | Replaced with WSP drawing CD-WS-00-PL-711-01 | Agreed |
| NSGACL 5002 | - | Omit | Superseded version | Agreed | | Agreed |

**VOLUME 2.1**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| NSGACL 5002 | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL 5002 | - | Omit | | Agreed | Replaced with WSP drawing CD-WS-00-PL-711-01 | Agreed |
| NSGACL 5002 PDF | - | Omit | | Agreed | Repeat of above | Agreed |
| NSGACL GLRP0012 Substructure Options Report | - | Omit | Tbc - addressed under drawings listing to be issued to Brookfield | Agreed | Omit | Agreed |
| NSGACL NHS Greater Glasgow & Clyde - NSGH Drainage Strategy Report | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL NHS Greater Glasgow & Clyde - NSGH Drainage Strategy Report | Y | - | | Agreed* | Report still relevant and should be read in conjunction with WSP drainage drawings - CD-P1-00-PL-140-01 to 013 | Agreed |
| Scottish Water DIA Response Letter 090609 | Y | - | Tbc - addressed under drawings listing to be issued to Brookfield | Agreed* | *Correspondence still relevant and should be read in conjunction with WSP draiange drawings - CD-P1-00-PL-140-01 to 013 | Agreed |
| sk-0200 | - | Omit | | Agreed | | Agreed |
| sk-0201 | - | Omit | | Agreed | | Agreed |
| NSGACL Adult Isolation Rooms | - | Omit | Superseded version | Agreed | | Agreed |
| NSGACL Update - Infection Control Feedback NSG | Y | - | Remains output for Ers. | Agreed | | Agreed |
| NSGACL G1274_E(60)01-A1 | Y | - | | Agreed | To be reviewed at M&E meeting to be arranged | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL G1274_E(60)02-A1 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL G1274_E(67)01-A1 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL G1274_E(68)01-A0 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL G1274_E(68)02-A1 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL G1274_E(68)03-A1 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL G1274_M(54)01-A1 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL G1274_M(54)02-A3 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL G1274_M(55)01-A1 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |

**VOLUME 2.1**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| NSGACL-Appendix M&E1 | Y | - | Remains output for ERs. | Agreed | Derogations to be agreed against these | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL-Appendix M&E2 | Y | - | Remains output for ERs. | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL-Appendix M&E3 | Y | - | Remains output for ERs. | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL-Appendix M&E4 | Y | - | Remains output for ERs. | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL-Appendix M&E5 | Y | - | Remains output for ERs. | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL-Appendix M&E6 | Y | - | Remains output for ERs. | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL-Appendix M&E7 | Y | - | Remains output for ERs. | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL-G1274_M(56)01-A1 | Y | - | | Agreed | To be reviewed at M&E meeting to be arranged | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL-G1274_M(56)02-A0 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL-G1274_M(56)03-A0 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL-G1274_M(57)01-A3 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL-G1274_M(57)02-A4 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL-G1274_M(57)03-A1 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL-G1274_M(57)04-A1 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL-G1274_ME(60)01-A1 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL-G1274_ME(60)02-A3 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL-G1274_ME(60)03-A3 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL-G1274_P(53)01-A0 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |

**VOLUME 2.1**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| NSGACL-G1274_P(67)01-A1 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL-G1274_P(67)02-A1 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL-G1274_U(96)01-A0 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 2. |
| NSGACL GLRP0010 ASR2 Southern General Geo-env Report Draft | - | Omit | Note: updated version issued (uplifted from C&B offices) is ER requirement (was too large for BIW) | Agreed | | Final SI (June 2009) included in Contract as ER document (baseline SI document). |
| NSGACL 6834 Chapter 01_Introduction | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Chapter 02_Approach and Methodology | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Chapter 03_Need for the Project | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Chapter 04 Consideration of Alternatives | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Chapter 05_Proposed Development | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Chapter 06_Land Use | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Chapter 07_Ground Conditions | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Chapter 08 Policies and Plans | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Chapter 09_Community, Pedestrians and Cyclists | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Chapter 10_Townscape and Visual | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Chapter 11_Water Quality and Drainage | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Chapter 12_Noise | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Chapter 13_Air Quality | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Chapter 14_Cultural Heritage | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Chapter 15_Ecology, Nature Conservn and Biodivy | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Chapter 16_Sustainable Development | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Chapter 17_Disruption Due to Construction | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Chapter 18_Cumulative Impacts | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Chapter 19_Schedule of Environmental Commitments | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Contents Pages | Y | - | Remains output for ERs. | Agreed* | | Agreed |
| NSGACL 6834 Front Page | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Info Sheet | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Part 1 | Y | - | Remains output for ERs. | Agreed | | Agreed |

**VOLUME 2.1**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| NSGACL 6834 Part 2 | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Part 3 | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Part 4 | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL 6834 Part 5 | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL Appendix O - Environmental Assessment _Cover_ | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL - P.3 Draft Operational Procedure - Domestic Services | - | Omit | | Agreed | Omitted as copy of earlier document. | Agreed |
| NSGACL - P.3 Draft Operational Procedure - Linen | - | Omit | | Agreed | Omitted as copy of earlier document. | Agreed |
| NSGACL - P.3 Draft Operational Procedure - Waste | - | Omit | | Agreed | Omitted as copy of earlier document. | Agreed |
| NSGACL P.1 Lists of Board Policies | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL P.2 Board Carbon Management Plan | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL A Policy on Design Quality for NHSScotland | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL Appendix Q - Related Design Information _cover_ | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL NHSGG&C Design Action Plan | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL NHSGG&C Design Action Plan (Supp Guidance Handbook) | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL Planning Advice Note 84 - Reducing Carbon | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL Scottish Planning Policy SPP6 - Renewable Energy | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL Appendix R - Fire Strategy | - | Omit | superseded document | Agreed | Brookfield responsible for fully fire engineered solution that meets relevant regulatory requirements and Firecode. | Agreed |
| NSGACL Appendix S - Acoustic Requirements | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL Southern General PCI Issue 1 | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL Appendix U - BREEAM Design Guide | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL BREEAM Initial Score Potential Main Development | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL Whole Site and Planning Issues related to BREEAM June 2009 | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL Appendix V -Community Benefits | Y | - | Remains output for ERs. | Agreed | | Agreed |

**VOLUME 2.1**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| NSGACL Appendix W - Travel Plan | Y | - | Remains output for ERs. | Agreed* | | Agreed |
| NSGACL Appendix X - Critical Failures | Y | - | Remains output for ERs. | Agreed | | Agreed |
| NSGACL - ITPD Volume 2 | Y | - | Remains output for ERs. | Agreed* | Remains as output of Board to be met by Contractor design. M&E Clarifications identify the agreed positoin between the Board and Brookfield with regard to certain aspects of M&E. | Agreed |
| NSGACL-PD-HLM-SK(00)X-XX-001 - Illustration Of 10 Bed Unit HDU | Y | - | Remains output for Ers. | Agreed | Brookfield to demonstrate glazed wall (bay to bay) requirement through design development process. | Agreed |
| NSGACL-PD-HLM-SK(00)X-XX-002 - Illustration Of 10 Bed Unit ICU | Y | - | Remains output for Ers. | Agreed | Brookfield to demonstrate glazed wall (bay to bay) requirement through design development process. | Agreed |
| NSGACL-PD-HLM-SK(00)X-XX-003 - Illustration Of Ward Circulation | - | Omit | | Agreed | Replaced by NA-XX-05-PL-252-301 | Agreed |
| NSGACL-PD-HLM-SK(00)X-XX-004 - Illustration Of Ward Nurse Station | - | Omit | | Agreed | | Agreed |

**VOLUME 2.2**

| File Name | Iss. | Rev. | Title | Issue Date | Add | Info/Omit | Board Comment | Status | Brookfield Comment |
|---|---|---|---|---|---|---|---|---|---|
| NSGACL Appendix A1 | 1 | 1 | V2.2 Appendix A Part 1 | 29/04/2009 | | | | Agreed | |
| NSGACL Appendix A2.1 | 1 | 1 | V2.2 Appenix A Pt 2 Arch Location Drwgs (1 of 2) | 29/04/2009 | | | | Agreed | |
| NSGACL Appendix A2.2 | 1 | 1 | V2.2 Appendix A Pt 2 Arch Location Drwgs (2 of 2) | 29/04/2009 | | | | Agreed | |
| 2475 AL(05)20 | 1 | - | South Elevation | 22/06/2009 | | | | Agreed | |
| 2475 AL(05)21 | 1 | - | East Elevation | 22/06/2009 | | | | Agreed | |
| 2475 AL(05)22 | 1 | - | View Throgh Service Courtyard | 22/06/2009 | | | | Agreed | |
| 2475 AL(05)23 | 1 | - | View Through Service Courtyard 2 | 22/06/2009 | | | | Agreed | |
| 2475 AL(05)24 | 1 | - | North Elevation | 22/06/2009 | | | | Agreed | |
| 2475 AL(05)25 | 1 | - | West Elevation | 22/06/2009 | | | | Agreed | |
| 2475 AL(05)26 | 1 | - | View Through Service Courtyard 3 | 22/06/2009 | | | | Agreed | |
| NSGACL Appendix A3.1 | 1 | 1 | Outline Design Layouts (1 of 6) | 29/04/2009 | | | | Agreed | |
| NSGACL Appendix A3.2 | 1 | 1 | Outline Design layouts (2 of 6) | 29/04/2009 | | | | Agreed | |
| NSGACL Appendix A3.3 | 1 | 1 | Outline Design Layouts (3 of 6) | 29/04/2009 | | | | Agreed | |
| NSGACL Appendix A3.4 | 1 | 1 | Outline Design layouts (4 of 6) | 29/04/2009 | | | | Agreed | |
| NSGACL Appendix A3.5 | 1 | 1 | Outline Design Layouts (5 of 6) | 29/04/2009 | | | | Agreed | |
| NSGACL Appendix A3.6 | 1 | 1 | Outline Design Layouts (6 of 6) | 29/04/2009 | | | | Agreed | |
| NSGACL Appendix A4 | 1 | 1 | Typical Rm Data Sheets | 29/04/2009 | | | | Agreed | |
| NSGACL Appendix A5 | 1 | 1 | Outline Design Elevations | 29/04/2009 | | | | Agreed | |
| NSGACL Appendix A6.1 | 1 | 1 | Outline Description M&E Services (1 of 2) | 29/04/2009 | | | | Agreed | |
| NSGACL Appendix A6.2 | 1 | 1 | Outline Description of M&E Services (2 of 2) | 29/04/2009 | | | | Agreed | |
| NSGACL Appendix A7 | 1 | 1 | Outline Structural Proposals | 29/04/2009 | | | | Agreed | |
| NSGACL Appendix A8 | 1 | 1 | Glasgow City Mortuary | 29/04/2009 | | | | Agreed | |
| NSGACL Appendix A9 | 1 | 1 | Massing 3D Views | 29/04/2009 | | | | Agreed | |
| NSGACL Appendix B1 | 1 | 1 | Outline Brief Facilities Management | 29/04/2009 | | | | Agreed | |
| NSGACL Appendix B2 | 1 | 1 | Outline Brief Mortuary | 29/04/2009 | | | | Agreed | |
| NSGACL Appendix B3 | 1 | 1 | Outline Brief Blood Sciences | 29/04/2009 | | | | Agreed | |
| NSGACL Appendix B4 | 1 | 1 | Outline Brief Genetics | 29/04/2009 | | | | Agreed | |

**VOLUME 2.2**

| | | | | | | |
|---|---|---|---|---|---|---|
| NSGACL Appendix B5 | 1 | 1 | Outline Brief Pathology | 29/04/2009 | | Agreed |
| NSGACL Appendix B6 | 1 | 1 | Outline Brief Microbiology | 29/04/2009 | | Agreed |
| NSGACL Appendix C1 | 1 | 1 | Outline Architectural Specs | 29/04/2009 | | Agreed |
| NSGACL Appendix C2 | 1 | 1 | Outline Structural Specs | 29/04/2009 | | Agreed |
| NSGACL Employers Requirements | 1 | 1 | V2.2 Employers Requirments Main Doc (Labs) | 29/04/2009 | | Agreed |

**VOLUME 3**

| File Name | Iss. | Rev. | Title | Issue Date | Add | Info/Omit | Board Comment | Status | Brookfield Comment |
|---|---|---|---|---|---|---|---|---|---|
| NSGACL Cashflow | 1 | 1 | NSGACL Cashflow Template (Appendix to Vol 3) | 07/05/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | |
| NSGACL MPTC Calculator Blank | 1 | 1 | MPTC Calculator Template (Appendix to Vol 3) | 07/05/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | |
| NSGACL SCM Standard Fee Workbook | 1 | 1 | SCM Standard Fee Workbook Template (Appendix to Vol 3) | 07/05/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | |
| NSGACL SCM Standard Fee Workbook | 2 | 2 | SCM Standard Fee Workbook Template (Appendix to Vol 3) | 22/06/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | |
| NSGACL SCP_Workbook_Issue | 1 | 1 | SCP Workbook Issue Template (Appendix to Vol 3) | 07/05/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | |
| NSGACL SCP_Workbook_Issue | 2 | 2 | SCP Workbook Issue Template (Appendix to Vol 3) | 22/06/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | |
| NSGH - ITPD Vol3 | 1 | | NSGACL ITPD Volume 3 Bid Deliverables & Evaluation | 01/05/2009 | - | Omit | Bid period document, not forming part of the Contract | Agreed | |
| NSGACL - ITPD Vol3 - Contractor Issue Rev 1 | 1 | 1 | NSGACL - ITPD Vol3 - Contractor Issue Rev 1.pdf | 14/08/2009 | - | Omit | Bid period document, not forming part of the Contract | Agreed | |
| NSGACL Commercial CD Session Nr 1 | 1 | | PRESENTATION | 22/05/2009 | - | Omit | Bid period document, not forming part of the Contract | Agreed | |
| NSGACL Labs Bidders Presentation 2 | 1 | | PRESENTATION | 22/05/2009 | - | Omit | Bid period document, not forming part of the Contract | Agreed | |
| NSGACL Labs CD Session Nr 1 | 1 | | PRESENTATION | 22/05/2009 | - | Omit | Bid period document, not forming part of the Contract | Agreed | |
| NSGACL Presentation  Logistics CD no 1 | 1 | | PRESENTATION | 22/05/2009 | - | Omit | Bid period document, not forming part of the Contract | Agreed | |
| NSGACL SCM_Eng Workbook_Issue | 1 | | Engineering and Construction SCM Workbook | 14/08/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | |

**VOLUME 4**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| NSGACL PD-HLM-SK(00)X-XX-005 - General Section Illustrating Bridge Links To Exisitng Buildings | - | Omit | Superseded by later revision. | Agreed | | Agreed |
| NSGACL PD-HLM-SK(00)X-XX-005 - General Section Illustrating Bridge Links To Exisitng Buildings | Y | - | Remains ER output, aspect to be signed off under design development. | Agreed | | Agreed |
| (AL0) Ground floor | Y | - | Remains ER output as identifies area for demolition. | Agreed | | Agreed |
| (AL1) First floor | Y | - | Remains ER output as identifies area for demolition. | Agreed | | Agreed |
| (AL2) Second floor | Y | - | Remains ER output as identifies area for demolition. | Agreed | | Agreed |
| (AN) Biochemistry | Y | - | Remains ER output as identifies area for demolition. | Agreed | | Agreed |
| (DC) HDU & SITU | Y | - | Remains ER output as identifies area for demolition. | Agreed | | Agreed |
| (DG) Orthopaedic Theatres | Y | - | Remains ER output as identifies area for demolition. | Agreed | | Agreed |
| 2291 AL(00) | Y | - | Remains ER output as identifies area for demolition. | Agreed | | Agreed |
| A&E Orthopaedics - type 2 summary | Y | - | Remains ER output as identifies area for demolition. | Agreed | | Agreed |
| A&E-Therapy-General OPD PH3A | Y | - | Remains ER output as identifies area for demolition. | Agreed | | Agreed |
| Biochemistry - type 2 summary | Y | - | Remains ER output as identifies area for demolition. | Agreed | | Agreed |
| DRAFT - Southern General Hospital Travel Plan 3Comp121207 | - | Omit | Replaced by Vol2.1 document. | Agreed | | Agreed |
| HDU SITU - type 2 summary | Y | - | Remains ER output as identifies area for demolition. | Agreed | | Agreed |
| NSGACL - Agreed Contract Changes 20090611 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | | Agreed |
| NSGACL - Appendix K - updateRev 1 - Vol 4 | Y | - | Remains ER output to be met by design development and deliverables planning and implementation. | Agreed | | Agreed |
| NSGACL - Detailed Employers Requirements & Procedures for Radiation Protection Advisors (Health Physics) Input into Project V3 | Y | - | Relevant ER output/requirement. | Agreed | | Agreed |
| NSGACL - Indicative Demolition Dates | - | Omit | Superseded by discussions with the Board and outcome package for demolitons. | Agreed | | Agreed |
| NSGACL - Labs - L0 | | | | Agreed | | Agreed |
| NSGACL - Labs - L1 | | | | Agreed | | Agreed |
| NSGACL - Labs - L-1 | | | | Agreed | | Agreed |
| NSGACL - Labs - L2 | | | | Agreed | | Agreed |
| NSGACL - Labs - L3 | | | | Agreed | | Agreed |
| NSGACL - Labs - L4 | | | | Agreed | | Agreed |
| NSGACL - NSGH Existing Site Services | Y | - | Relevant ER document. | Agreed | | Agreed |
| NSGACL - Supersede of Radiation Protection MRI References - Vol2 1 ITPD Section | Y | - | Relevant ER output/requirement. | Agreed | | Agreed |
| NSGacl - Vol 4 - Lift Analysis Information | - | Omit | Background bid information to bidders. | Agreed | | Agreed |
| NSGACL - Vol4 - Energy Guidance | Y | - | Relevant ER document. | Agreed | | Agreed |
| NSGACL - Vol4 - Technical _various_ 19nr | Y | - | All are relevant ER requirements, with the exception of items 2,6, 7, 8, 11, 13, 14, 16 and 17 which can be discarded (provided information relevant to bid period only). | Agreed | | Agreed |

**VOLUME 4**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| NSGACL 090330 AGREED List of Key Rooms NCH Rev1 | - | Omit | Information relevant to bid period only. | Agreed | | Agreed |
| NSGACL 090330 AGREED List of Key Rooms NSGH Rev1 | - | Omit | Information relevant to bid period only. | Agreed | | Agreed |
| NSGACL 20090330 AGREED List of Key Rooms NCH | - | Omit | Superseded by updated list. | Agreed | | Agreed |
| NSGACL 20090330 AGREED List of Key Rooms NSGH | - | Omit | Superseded by updated list. | Agreed | | Agreed |
| NSGACL 20090615 Equipment List | - | Omit | Bid Submission Equipment List (amended) included. | Agreed | | Agreed |
| NSGACL 3T MRI REQUIREMENTS | Y | - | Relevant ER output/requirement. | Agreed | | Agreed |
| NSGACL AitkenLaboratoriesSiteInvestigation | - | Omit | Background bid information to bidders. | Agreed | | Agreed |
| NSGACL ARUPBoreholes | - | Omit | Background bid information to bidders. | Agreed | | Agreed |
| NSGACL Clarification Wireless LAN Density Vol 2 1 Sect 8 3 8 | Y | - | Remains ER output | Agreed | | Agreed |
| NSGACL Commercial CD Session Nr 1 | - | Omit | Background bid information to bidders. | Agreed | | Agreed |
| NSGACL Cover Note re Drawing 2291 AL | Y | - | Relevant ER document. | Agreed | | Agreed |
| NSGACL December1989SiteInvestigationReport | - | Omit | Background bid information to bidders. | Agreed | | Agreed |
| NSGACL Design Report Final Version | - | Omt | Background bid information to bidders. | Agreed | | Agreed |
| NSGACL Draft Labs Fire Strategy | | | | Agreed | | Agreed |
| NSGACL Draft Section 75 | Y | - | Remains ER output | Agreed | To be replaced with Actual S75 Agreement. Brookfield agree with Board comment but would note for clarity that risk of complying with Section 75 Agreements remains with the Board as per Board accepted Risk Register | On-site and junction requirements are a Brookfield responsibility (risk), with off site a Board issue. |
| NSGACL Drainage and Sewerage Impact Assessment Report 2007 | - | Omit | Background bid information to bidders. | Agreed | | Agreed |
| NSGACL FUGROSoilsInvestigationReport | - | Omit | Background bid information to bidders. | Agreed | | Agreed |
| NSGACL Generic Ward Matrix NCH | Y | - | Remains ER output. | Agreed | | Agreed |
| NSGACL Geotechnical&ContaminationReport | - | Omit | Background bid information to bidders. | Agreed | | Agreed |
| NSGACL Halcrow Flood Risk 2005 | - | Omit | Background bid information to bidders. | Agreed | | Agreed |
| NSGACL Hoists | Y | - | Remains ER output | Agreed | | Agreed |
| NSGACL ITPCD Clarification - Decontamination Equipment Services | Y | - | Remains ER output | Agreed | | Agreed |
| NSGACL ITPCD Clarification - Vol2.1 ME7 Food Waste Systems | Y | - | Remains ER output | Agreed | | Agreed |
| NSGACL Labs Area Schedules | | | | Agreed | | Agreed |
| NSGACL Labs Bidders Presentation 2 | - | Omit | Background bid information to bidders. | Agreed | | Agreed |
| NSGACL Labs CD Session Nr 1 | - | Omit | Background bid information to bidders. | Agreed | | Agreed |
| NSGACL Lev 0 compartmentation | | | | Agreed | | Agreed |

**VOLUME 4**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| NSGACL Lev 1 compartmentation | | | | Agreed | | Agreed |
| NSGACL Lev -1 compartmentation | | | | Agreed | | Agreed |
| NSGACL Lev 2 compartmentation | | | | Agreed | | Agreed |
| NSGACL Lev 3 compartmentation | | | | Agreed | | Agreed |
| NSGACL Lev 4 compartmentation | | | | Agreed | | Agreed |
| NSGACL low carbon design trackerER version rev A inc CA comments | Y | - | ER document subject to development and use during design development process | Agreed | | Agreed |
| NSGACL main tender scoring matrix | - | Omit | Bid submission information/clarification | Agreed | | Agreed |
| NSGACL Masterplan Final 240709 small | - | Omit | Replaced by drawing [NA reference] | Agreed | | Agreed |
| NSGACL Outline Planning Consent Certificate - 07-01158-DC | Y | - | Remains ER output for achievement by the Contractor. | Agreed* | Planning risk is allowed within Brookfield submission although timing of response to Planning Submissions is a Board risk. | Timing of response from GCC outwith the statutory period in relation to the planning submission is a Board risk, this is dependant, however, upon the submission being correctly compiled and served by Brookfield. That is, should a delay or cost arise due to an incorrectly compiled or served planning submission by Brookfield that risk remains with Brookfield. |
| NSGACL Patient Catering - Vol 4 | Y | - | Remains ER output | Agreed* | Remains ER output, previous document did not upload. | Agreed |
| NSGACL Presentation Logistics CD no 1 | - | Omit | Background bid information to bidders. | Agreed | | Agreed |
| NSGACL Removal of Maximum Temperature Variant | Y | - | Remains ER output for achievement by the Contractor. | Agreed | | Agreed |
| NSGACL Report Demand Analysis 2007 | - | Omit | Background bid information to bidders. | Agreed | | Agreed |
| NSGACL RocksoilSiteInvestigation1998 | - | Omit | Background bid information to bidders. | Agreed | | Agreed |
| NSGACL Schedule of Accommodation - ERrev1 -Vol 4 | - | Omit | Replaced by updated SoA to be agreed between the Board and the Contractor before contract signature. | Agreed | | Agreed |
| NSGACL SHTM 02-01 | Y | - | Remains ER output | Agreed* | | Agreed |
| NSGACL SHTM 03-01 Part A | Y | - | Remains ER output | Agreed | | Agreed |
| NSGACL SHTM 03-01 Part B | Y | - | Remains ER output | Agreed | | Agreed |
| NSGACL SHTM 04-01 Part A | Y | - | Remains ER output | Agreed | | Agreed |
| NSGACL SHTM 04-01 Part B | Y | - | Remains ER output | Agreed | | Agreed |
| NSGACL SHTM 06-01 Part A | Y | - | Remains ER output | Agreed | | Agreed |
| NSGACL Southern General Hospital Ecology Report | Y | - | Remains ER output | Agreed | | Agreed |
| NSGACL Staff and Hospitality Catering - Vol 4 | Y | - | Relevant ER output/requirement. | Agreed* | | Agreed |

**VOLUME 4**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | Agreed Position |
|---|---|---|---|---|---|---|
| NSGACL Technical Clarification (various) | Y | - | All are relevant ER requirements, with the exception of item 3, 19 which can be discarded (provided information relevant to bid period only). | Agreed | [check RB note of 17 December 2009] | Agreed |
| NSGACL Thorburn&PartnersGeotechnicalStudy | - | Omit | Background bid information to bidders. | Agreed | | Agreed |
| NSGACL Updated Appendix R - Fire Strategy | - | Omit | | Agreed | Brookfield responsible for fully fire engineered solution that meets relevant regulatory requirements and Firecode. | Agreed |
| NSGACL WimpeyHealthCareSeptember1994 | - | Omit | Background bid information to bidders. | Agreed | | Agreed |
| NSGH Construction and Title Boundaries | - | Omit | Replace by updated boundary, phasing and logistics drawing to be agreed between the Board and the Contractor before contract signature. | Agreed | | Agreed |
| NSGH SGH Topographical Survey 2D | Y | - | Relevant ER information | Agreed | | Agreed |
| NSGH SGH Topographical Survey 3D | Y | - | Relevant ER information | Agreed | | Agreed |
| Scottish Power Southern General Connection agreement | Y | - | Relevant to ER until updated quote and work to be carried out is developed and taken forwards. | Agreed | | To remain inlcuded in order that the baseline is clear when updated quotes are received in order that change control to accept updated quotations can be effected. |
| Scottish Power Southern General quotation | Y | - | Relevant to ER until updated quote and work to be carried out is developed and taken forwards. | Agreed | | To remain inlcuded in order that the baseline is clear when updated quotes are received in order that change control to accept updated quotations can be effected. |
| SGH Block BC 2nd Floor Ward 62 | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. |
| SGH Block BC 4th Floor | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. |
| SGH Block BC 6th Floor | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. |
| SGH Block BC elevations 1 | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. |
| SGH Block BC elevations 2 | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. |
| SGH Block BC Ground Floor | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. |
| SGH Neurology 1st Floor | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. |
| Surgical Block- type 2 summary | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. |
| Surgical Link Bridge - type 2 summary | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. |
| Type 2 sheet- Biochemistry | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. |
| Type 2 sheets - Surgical | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. |
| Type 2 sheets A&E | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. |
| Type 2 Table Report - AE-Ortho | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. |
| Type 2 Table Report - Biochemistry | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. |
| Type 2 Table Report - situ | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. |
| Type 2 Table Report - Surg link | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. |
| Type 2 Table Report - Surgical | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. |
| 2007 04 05 TA Figures Document Final | Y | - | Relevant ER information | Agreed | | Agreed |
| 2007 04 05 TA Final | Y | - | Relevant ER information | Agreed | | Agreed |

**VOLUME 5**

| File Name | Iss. | Rev. | Title | Issue Date | Add | Info/Omit | Board Comment | Status | Brookfield Comment |
|---|---|---|---|---|---|---|---|---|---|
| 01 Employers Requirements Stage D | 1 | - | 01 Employers Requirements Stage D | 02/07/2009 | | | | Agreed | |
| A1 Master Plan | 1 | - | A1 Master Plan | 02/07/2009 | | | | Agreed | |
| A10 BREEAM | 1 | - | A10 BREEAM | 02/07/2009 | | | | Agreed | |
| A13 Risk | 1 | - | A13 Risk | 02/07/2009 | | | | Agreed | |
| A2 Architectural Location | 1 | | A2 Architectural Location | 02/07/2009 | | | | Agreed | |
| A3 Stage D Plans 1 | 1 | - | A3 Stage D Plans 1 | 02/07/2009 | | | | Agreed | |
| A3 Stage D Plans 1 | 2 | A | A3 Stage D Plans 1 | 09/07/2009 | | | | Agreed | |
| A3 Stage D Plans 2 | 1 | - | A3 Stage D Plans 2 | 02/07/2009 | | | | Agreed | |
| A4 Elevations | 1 | - | A4 Elevations | 02/07/2009 | | | | Agreed | |
| A4 Elevations | 2 | A | A4 Elevations | 08/07/2009 | | | | Agreed | |
| A5 Builderswork Plans 1 | 1 | - | A5 Builderswork Plans 1 | 02/07/2009 | | | | Agreed | |
| A5 Builderswork Plans 2 | 1 | - | A5 Builderswork Plans 2 | 02/07/2009 | | | | Agreed | |
| A6 Fitment Plans 1 | 1 | - | A6 Fitment Plans 1 | 02/07/2009 | | | | Agreed | |
| A6 Fitment Plans 2 | 1 | - | A6 Fitment Plans 2 | 02/07/2009 | | | | Agreed | |
| A6 Fitment Plans 3 | 1 | - | A6 Fitment Plans 3 | 02/07/2009 | | | | Agreed | |
| A6 Fitment Plans 4 | 1 | - | A6 Fitment Plans 4 | 02/07/2009 | | | | Agreed | |
| A7 Fire Strategy | 1 | - | Fire Compartmentation Plans | 03/07/2009 | | | | Agreed | |
| A7.2 Fire Strategy Report | 1 | | Fire Strategy Report | 03/07/2009 | | | | Agreed | |
| A8 Visuals 1 | 1 | - | A8 Visuals 1 | 02/07/2009 | | | | Agreed | |
| A8 Visuals 2 | 1 | - | A8 Visuals 2 | 02/07/2009 | | | | Agreed | |
| A8 Visuals 3 | 1 | - | A8 Visuals 3 | 02/07/2009 | | | | Agreed | |
| A9 Planning Application 1 | 1 | - | A9 Planning Application 1 | 02/07/2009 | | | | Agreed | |
| A9 Planning Application 1 | 2 | A | A9 Planning Application 1 | 21/07/2009 | | | | Agreed | |
| A9 Planning Application 2 | 1 | - | A9 Planning Application 2 | 02/07/2009 | | | | Agreed | |
| A9 Planning Application 2 | 2 | A | A9 Planning Application 2 | 21/07/2009 | | | | Agreed | |
| A9 Planning Application 3 | 1 | - | A9 Planning Application 3 | 02/07/2009 | | | | Agreed | |
| A9 Planning Application 3 | 2 | A | A9 Planning Application 3 | 21/07/2009 | | | | Agreed | |
| A9 Planning Application 4 | 1 | - | A9 Planning Application 4 | 21/07/2009 | | | | Agreed | |
| A9 Planning Application 5 | 1 | - | A9 Planning Application 5 | 21/07/2009 | | | | Agreed | |
| A9 Planning Application 6 | 1 | - | A9 Planning Application 6 | 21/07/2009 | | | | Agreed | |
| A9 Planning Application 7 | 1 | - | A9 Planning Application 7 | 21/07/2009 | | | | Agreed | |

**VOLUME 5**

| File Name | Iss. | Rev. | Title | Issue Date | Add | Info/Omit | Board Comment | Status | Brookfield Comment |
|---|---|---|---|---|---|---|---|---|---|
| AL(00)01 | 1 | - | Level -1 | 02/07/2009 | | | | Agreed | |
| AL(00)02 | 1 | - | Level 0 | 02/07/2009 | | | | Agreed | |
| AL(00)03 | 1 | - | Level 1 | 02/07/2009 | | | | Agreed | |
| AL(00)04 | 1 | - | Level 2 | 02/07/2009 | | | | Agreed | |
| AL(00)05 | 1 | - | Level 3 | 02/07/2009 | | | | Agreed | |
| AL(00)06 | 1 | - | Level 4 | 02/07/2009 | | | | Agreed | |
| AL(00)07 | 1 | - | Level 5 | 02/07/2009 | | | | Agreed | |
| AL(05)01 | 1 | - | Elevation 1 | 02/07/2009 | | | | Agreed | |
| AL(05)02 | 1 | - | Elevation 2 | 02/07/2009 | | | | Agreed | |
| AL(05)03 | 1 | - | Elevation 3 | 02/07/2009 | | | | Agreed | |
| AL(05)04 | 1 | - | Elevation 4 | 02/07/2009 | | | | Agreed | |
| AL(05)05 | 1 | - | Elevation 5 | 02/07/2009 | | | | Agreed | |
| AL(05)06 | 1 | - | Elevation 6 | 02/07/2009 | | | | Agreed | |
| AL(05)07 | 1 | - | Elevation 7 | 02/07/2009 | | | | Agreed | |
| AL(20)01 | 1 | - | Section AA | 28/07/2009 | | | | Agreed | |
| AL(20)02 | 1 | - | Section BB | 28/07/2009 | | | | Agreed | |
| AL(20)03 | 1 | - | Section CC | 28/07/2009 | | | | Agreed | |
| B2A Mortuary | 1 | - | Outline Brief Mortuary | 03/07/2009 | | | | Agreed | |
| B3A Blood Sciences | 1 | - | Outline Brief Blood Sciences | 03/07/2009 | | | | Agreed | |
| B4A Genetics | 1 | - | Outline Brief Genetics | 03/07/2009 | | | | Agreed | |
| B5A Pathology | 1 | - | Outline Brief Pathology | 03/07/2009 | | | | Agreed | |
| B6A Micro-Biology | 1 | - | Outline Brief Micro Biology | 03/07/2009 | | | | Agreed | |
| C Outline Specification rev A | 1 | - | Outline Specifications | 03/07/2009 | | | | Agreed | |
| C Outline Specification rev A | 2 | B | Outline Specifications | 08/07/2009 | | | | Agreed | |
| Site & Setting Out | 1 | - | A9 Site & Setting Out DWG | 21/07/2009 | | | | Agreed | |
| NSGACL B of approx Q | 1 | 1 | Labs BW B of Approx Quants | 22/07/2009 | | | | Agreed | |
| NSGACL Labs M&E Pricing Sch | 1 | 1 | M&E Pricing Sch for Labs | 22/07/2009 | | | | Agreed | |
| NSGACL 17-07m-16 mes stage d rev 01 | 1 | | Update - Appendix A11, Outline Description of Mechanical & Electrical Engineering Services & Outline | 22/07/2009 | | | | Agreed | |
| NSGACL 2475 Letter | 1 | | Glasgow City Council Letter to BMJ re Labs Planning Submission 09/01676/DC | 31/07/2009 | | | | Agreed | |
| NSGACL G1313_ M(54)SK01-A3 | 1 | | Natural Gas Schematic | 11/08/2009 | | | | Agreed | |

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| File Name | Iss. | Rev. | Title | Issue Date | Add | Info/Omit | Board Comment | Status | Brookfield Comment |
|---|---|---|---|---|---|---|---|---|---|
| NSGACL G1313_ U(96)SK01 Z (A1) | 1 | | Site Utility Routes | 11/08/2009 | | | | Agreed | |
| NSGACL Laboratories BREEAM | 1 | | Labs initial workshop template write up | 02/07/2009 | | | | Agreed | |
| NSGACL Laboratory Block Con App Docs Final Draft | 1 | | Laboratory block - Draft Consultants Appointment Document - 26 June 2009 | 17/07/2009 | | | | Agreed | |
| NSGACL Labs M&E Spec | 1 | | Laboratory Development, Stage D Appendix 2, Mechanical & Electrical Services Specification 12th July | 14/07/2009 | | | | Agreed | |
| NSGACL Lift Schedule Revision 3 07 08 09 Stage D | 1 | | New Laboratory Facility, Lift Schedule Rev 03, 7 Aug '09 : Stage D | 10/08/2009 | | | | Agreed | |
| NSGACL Main M&E Plant Schedule - Labs | 1 | | Labs Building - Main M&E Plant Schedule, 14/7/09 | 16/07/2009 | | | | Agreed | |
| NSGACL-G1313_ E(61)SK03 | 1 | | LEVEL 0 PLAN - MAIN ELECTRICAL CONTAINMENT ROUTES | 17/07/2009 | | | | Agreed | |
| NSGACL-G1313_ E(61)(-)SK01 | 1 | | Power Connections Prior to Energy Centre | 03/07/2009 | | | | Agreed | |
| NSGACL-G1313_ E(61)SK02 | 1 | | LEVEL -1 PLAN - MAIN ELECTRICAL CONTAINMENT ROUTES | 16/07/2009 | | | | Agreed | |
| NSGACL-G1313_ E(63)(-)SK01 | 1 | | Schematic Layout of Emergency Lighting Installation | 03/07/2009 | | | | Agreed | |
| NSGACL-G1313_ E(64)(-)SK01 | 1 | | Schematic Layout of CCTV & Intruder Alarm Installation | 03/07/2009 | | | | Agreed | |
| NSGACL-G1313_ E(65)(-)SK01 | 1 | | Schematic Layout of Data/Comms Installation | 03/07/2009 | | | | Agreed | |
| NSGACL-G1313_ E(67)(-)SK01 | 1 | | Schematic Layout of Fire Detection and Alarm System | 03/07/2009 | | | | Agreed | |
| NSGACL-G1313_ E(68)(-)SK01 | 1 | | Data/Comms Schematic Site Distribution | 03/07/2009 | | | | Agreed | |
| NSGACL-G1313_ M(50)(-)SK01 | 1 | | Schematic Layout of Domestic Water Services | 03/07/2009 | | | | Agreed | |
| NSGACL-G1313_ M(50)(-)SK02 | 1 | | Schematic Layout of Main Cooling Services | 03/07/2009 | | | | Agreed | |
| NSGACL-G1313_ M(50)(-)SK03 | 1 | | Schematic Layout of Main Heating Services | 03/07/2009 | | | | Agreed | |
| NSGACL-G1313_E(62)(1)SK01 | 1 | | LEVEL 1 - INDICATIVE LAYOUT OF POWER SERVICES | 16/07/2009 | | | | Agreed | |
| NSGACL-G1313_E(62)(1)SK01 | 2 | | LEVEL 1 - INDICATIVE LAYOUT OF POWER SERVICES | 17/07/2009 | | | | Agreed | |
| NSGACL-G1313_E(63)(1)SK02 | 1 | | LEVEL 1 - INDICATIVE LAYOUT OF LIGHTING & EMERGENCY LIGHTING | 16/07/2009 | | | | Agreed | |
| NSGACL-G1313_E(63)(1)SK02 | 2 | | LEVEL 1 - INDICATIVE LAYOUT OF LIGHTING & EMERGENCY LIGHTING | 17/07/2009 | | | | Agreed | |
| NSGACL-G1313_E(67)(1)SK02 | 1 | | LEVEL 1 - INDICATIVE LAYOUT OF FIRE DETECTION & ALARM SYSTEM | 16/07/2009 | | | | Agreed | |
| NSGACL-G1313_E(67)(1)SK02 | 2 | | LEVEL 1 - INDICATIVE LAYOUT OF FIRE DETECTION & ALARM SYSTEM | 17/07/2009 | | | | Agreed | |
| NSGACL-G1313_M(50)SK04 | 1 | | LEVEL -1 PLAN - MORTUARY - TYPICAL MECHANICAL SERVICES | 16/07/2009 | | | | Agreed | |
| NSGACL-G1313_M(50)SK04 | 2 | | LEVEL -1 PLAN - MORTUARY - TYPICAL MECHANICAL SERVICES | 17/07/2009 | | | | Agreed | |
| NSGACL-G1313_M(50)SK05 | 1 | | LEVEL 0 PLAN - SHEET 1 of 3 - TYPICAL MECHANICAL SERVICES | 16/07/2009 | | | | Agreed | |
| NSGACL-G1313_M(50)SK05 | 2 | | LEVEL 0 PLAN - SHEET 1 of 3 - TYPICAL MECHANICAL SERVICES | 17/07/2009 | | | | Agreed | |
| NSGACL-G1313_M(50)SK06 | 1 | | LEVEL 0 PLAN - SHEET 2 of 3 - TYPICAL MECHANICAL SERVICES | 16/07/2009 | | | | Agreed | |
| NSGACL-G1313_M(50)SK06 | 2 | | LEVEL 0 PLAN - SHEET 2 of 3 - TYPICAL MECHANICAL SERVICES | 17/07/2009 | | | | Agreed | |
| NSGACL-G1313_M(50)SK07 | 1 | | LEVEL 0 PLAN - SHEET 3 of 3 - TYPICAL MECHANICAL SERVICES | 16/07/2009 | | | | Agreed | |

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| File Name | Iss. | Rev. | Title | Issue Date | Add | Info/Omit | Board Comment | Status | Brookfield Comment |
|---|---|---|---|---|---|---|---|---|---|
| NSGACL-G1313_M(50)SK07 | 2 | | LEVEL 0 PLAN - SHEET 3 of 3 - TYPICAL MECHANICAL SERVICES | 17/07/2009 | | | | Agreed | |
| NSGACL-G1313_M(56)(1)SK01 | 1 | | LEVEL 1 - INDICATIVE LAYOUT OF SPACE HEATING SERVICES | 16/07/2009 | | | | Agreed | |
| NSGACL-G1313_M(56)(1)SK01 | 2 | | LEVEL 1 - INDICATIVE LAYOUT OF SPACE HEATING SERVICES | 17/07/2009 | | | | Agreed | |
| NSGACL-G1313_M(57)(1)SK01 | 1 | | LEVEL 1 - INDICATIVE LAYOUT OF VENTILATION SERVICES | 16/07/2009 | | | | Agreed | |
| NSGACL-G1313_M(57)(1)SK01 | 2 | | LEVEL 1 - INDICATIVE LAYOUT OF VENTILATION SERVICES | 17/07/2009 | | | | Agreed | |
| NSGACL-G1313_ME(50)SK01 | 1 | | FRONT OFFICE BLOCK - FIRST, SECOND, THIRD & ROOF PLANS - TYPICAL M&E SERVICES | 16/07/2009 | | | | Agreed | |
| NSGACL-G1313_ME(50)SK01 | 2 | | FRONT OFFICE BLOCK - FIRST, SECOND, THIRD & ROOF PLANS - TYPICAL M&E SERVICES | 17/07/2009 | | | | Agreed | |

**This document is the RFI Log**

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
|---|---|---|---|---|---|---|---|---|---|
| 001 | Drawings to be uploaded in dwg format<br><br>**RESPONSE: THESE HAVE BEEN UPLOADED** | - | Info | Drawings addressed under the Drawing Log to be issued to Brookfield under separate cover. | Agreed | Brookfield Drawings to be included as Works Information 2 should take precedence over Works Information 1 (Employer Requirements) in the event of conflict. | Exceptions to be highlighted by the Board (i.e. out put CD1 drawings that require to remain, to be met by the developed BE CD2 drawing). | **Agreed that BIW log to be amended as relevant to replace Board drawings with Brookfield drawings. Refer BIW Log. | The Contractor drawing list is agreed and has been inserted into the contract: this can be located in the Contents Page of Volume 2 of the Contractors Proposals in Contract Data Part 1.<br><br>The Board M&E drawings that remain which remain as the output requirement of the Board, and require to be met by the Contractor design, are contained in the Employer's Requirements.<br><br>It is confirmed that the items agreed in the M&E Clarifications Log take precedence over the M&E drawings where relevant.<br><br>The Contractor is required to present their design proposals (drawings and narrative) through the design development (Stage 2) process for review by the Board, with such development by the Contractor to demonstrate achievement by the design of the above mentioned output requirement(s) of the Board through the iterative process of the developing design. |
| 002 | **Bedrooms – Clinical Risk Category.** Page 184 of the ERs states that wards are to be classed as Clinical Risk Category 3. Page 27 of Appendix M&E3 lists bedrooms as IEE GN7 Group 1, which would normally be viewed as Clinical Risk Category 4. We believe that the latter statement is correct.<br><br>**RESPONSE: IEE GN7 GROUP 1 TAKES PRECEDENCE** | - | NC | Information is included in ERs and therefore need not be added. | Agreed | BCL offer based on Wards being Clinical Risk Category 4 which we do not believe is reflected within ER`s. | It is agreed that wards are clinical risk 4 as SHTM | Agreed | |
| 003 | **Crash Call** The ERs refer to "crash" call. Is this "staff to staff" call or an additional layer of call?<br><br>i.e.:<br><br>Patient to Staff /<br>staff to staff /<br>and Crash call<br><br>or | Y | - | Statement that Crash Call is staff to staff with automatic paging to time scheduled list to be included ERs for clarity. | Agreed | * Subject to confirmation that as per Board intention the ER`s are updated such that this is clearly defined in the Works Information 1 (Employer Requirements). | This document to be included as an addendum to Works Information Part 1. The ER's will not be updated (track changed) rather the RFI log, BIW log etc sit as addendum to ERs. | **Noted but then there will be a discrepancy between the actual original ER`s and the subsequent addendum documents. In this situation how would the Board address this discrepancy? | Agreed that addendum Logs take precedence over original ERs where a discrepancy occurs. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
|---|---|---|---|---|---|---|---|---|---|
| | Patient to Staff /<br>and Staff to Staff (aka Crash).<br><br>**RESPONSE: CRASH CALL IS STAFF TO STAFF WITH AUTOMATIC PAGING TO TIME SCHEDULED LIST** | | | | | | | | |
| 004 | HTM06-01 states that electrical loads in hospitals are growing by 3% to 6% per year. At 6% growth the spare capacity would be used within 5 years, at 3% within 9 years.<br><br>Based on current experience at SGH, does the Board have a view on whether the allowance of 25% for future growth is adequate?<br><br>**RESPONSE: THE 25% IS OVER THE COMPLETE FOOTPRINT, THIS IS IN LINE WITH THE FINANCIAL MODEL** | Y | - | Statement that 25% is over the complete footprint to be included in ERs for clarity. | Agreed | * Subject to confirmation that as per Board intention the ER`s are updated such that this is clearly defined in the Works Information 1 (Employer Requirements). | See response to Item 003, above. | Agreed | See agreed position in relation to Item 003, above. |
| 005 | HTM 06-01 states that it is preferable for large healthcare premises that dual public electrical supplies should be provided from diverse sources originating from separate distribution network operator substations and fed from different parts of the National Grid with independent cable routes to and across the site to the main substation.<br><br>Can you advise if the negotiations carried out to date with the Utilities have indicated the extent to which this would be possible?<br><br>**RESPONSE: ONGOING NEGOTIATIONS INCLUDE THE PROVISION OF A TERTIARY 11KV CONNECTION (THIS WILL BE PRESENTED AT THE BREAKER IDENTIFIED FOR THE TEMPORARILY LAB SUPPLY)** | - | NC | Compliance with the HTM (now SHTM) requirement is included in the ERs and is to be met by the Contractor – the specific issue requires to be addressed by the Contractor (with support by the Board) as an aspect of the 33kV discussions and agreement with the utility provider. | Agreed | *Contractor, in discussion with Scottish Power, will endeavour to satisfy this requirement subject to availability of diverse sources from the grid. | No further action | **As discussed at the utilities meeting held on 2nd Dec 09 Brookfield understand that the Board accept that dual supplies from the grid may not be available. | The Board accept twin supplies from the Govan Road grid connection point. |
| 006 | **High Voltage Generators.**<br>We note from drawing G1274E/(60)01 that Low Voltage generators are proposed each with a step up transformer for site ring connection. Would there be any objection, in principle, to High Voltage generators? We note that the CHP is shown as an HV unit.<br><br>**RESPONSE: THIS CONCEPT HAS BEEN INDICATED TO ALLOW THE USE OF EASY TO OBTAIN 400V HIRE SETS TO COVER MACHINE OUTAGES. ANY SOLUTION MUST INCLUDE THE USE OF EASY TO OBTAIN 400V HIRE SETS TO COVER MACHINE OUTAGES** | Y | - | The statement that any design solution must include the provision for use of easy to obtain 400V hire sets to cover machine outages to be included in ERs for clarity. | Agreed | * Subject to confirmation that as per Board intention the ER`s are updated such that this is clearly defined in the Works Information 1 (Employer Requirements). | See response to Item 003, above. | **Refer to Brookfield response to 003 above | See agreed position in relation to Item 003, above |
| 007 | The ERs, page 143, require the services to be configured to ensure that isolation can be achieved in each room without taking other rooms out of use. As written this requirement could be taken to mean that, for example, each electrical circuit must serve no more than one room, which we are sure is not intended. We seek further guidance on the intention of this clause.<br><br>**RESPONSE: A ROOM MAY BE "IN USE" AS LONG AS A PROPORTION (SAY 50%) OF THE OUTLETS ARE RETAINED AVAILABLE DURING MAINTENANCE OF A FINAL CIRCUIT OR LOCAL DB** | Y | - | The statement that a room may be "in use" as long as a proportion (50%) of the outlets are retained available during maintenance of a final circuit or local DB to be included in the ERs for clarity. | Agreed | * Subject to confirmation that as per Board intention the ER`s are updated such that this is clearly defined in the Works Information 1 (Employer Requirements). | See response to Item 003, above. | **Refer to Brookfield response to 003 above | See agreed position in relation to Item 003, above |

<table>
<tr><th>Ref</th><th>Information Requested</th><th>Add</th><th>No Change / Info</th><th>Board Comment 1</th><th>Status</th><th>Brookfield Comment</th><th>Board Comment 2</th><th>Brookfield Comment 2</th><th>Agreed Position</th></tr>
<tr><td>008</td><td><u>Standby Lighting</u><br>We seek clarification of Appendix M&E3, page 27, clause 3.5, Standby Lighting.<br><br>The ERs appear to require Grade A standby lighting to be UPS supported. We believe that this is not always necessary and that compliance with applicable standards can be achieved in a more cost effective manner.<br><br>Standby lighting grades signify the percentage of normal lighting to be maintained on mains failure. The grade of standby lighting required is not related to the permitted duration of interruption to the power supply.<br><br>For example, CIBSE LG2 requires bedrooms to be provided with Grade A standby lighting. Bedrooms are classed as group 1 by IEE GN7 and MEIGaN which implies that they would fall into Clinical Risk Category 4. The table below which is based on Appendix 1 of HTM 06-01 (we do not believe that SHTM 06-01 has been published yet) would indicate that this type of room would normally require the interruption to general lighting to be not more than 15 seconds. Thus it would not be usual to support all lighting to all bedrooms by UPS.<br><br><table><tr><th>Clinical risk category</th><th>IEE GN7 /MEIGaN group</th><th>Standby Grade / % provision</th><th>Interruption to general lighting</th><th>Interruption to fixed medical lighting and escape lighting</th></tr><tr><td>3</td><td>0</td><td>B / 30-50%</td><td><15s to 3hours></td><td><0.5s</td></tr><tr><td>4</td><td>1</td><td>A / 95%+</td><td><15s</td><td><0.5s</td></tr><tr><td>5</td><td>2</td><td>A / 95%+</td><td><15s</td><td><0.5s</td></tr></table><br>The above implies that only ‘fixed medical lighting and escape lighting’ is required to be supported by battery or UPS. This is often interpreted to include the lighting around an operating table.<br><br>We appreciate that there may be special circumstances and therefore would welcome to opportunity to discuss this further at a workshop with the Board to arrive at a solution acceptable to the Board.<br><br>RESPONSE: PLEASE ADD TO SUB-GROUP AGENDA AT NEXT DESIGN DIALOGUE SESSION IF REQUIRED</td><td>-</td><td>NC</td><td>Overall treatment of lighting on Board ‘Watchlist’ for development and compliance to be demonstrated by the Contractor.</td><td>Agreed</td><td>Brookfield design will be compliant with SHTM06-01, CIBSE LG2, IEE GN7 and MEIGaN. Brookfield design proposal does not include for UPS support to all Grade A lighting as a blanket provision, as the grade of standby lighting is unrelated to the permitted duration of interruption to the power supply.</td><td>This can only be accepted if BE guarantee that the lights will be reinstated (by the generators) within 15 seconds. This will be challenging and will require full load management<br><br>OR<br><br>Provide inverter cover to grade A lighting with for example 5 minute battery autonomy.</td><td>**Load estimate of lighting is such that 1 generator on “A” side and one on “B” side will accept the lighting load within 15 seconds. Generators will be selected and configured and controlled to achieve this. The remainder of the load will be supported when remaining generators are synchronised</td><td>Brookfield to demonstrate via Design Development (Reviewable Design Data) that this can be achieved.<br><br>Should this not be the case (i.e. cannot demonstrate) Brookfield to revert to and include inverters at no additional cost to the Board.</td></tr>
<tr><td>009</td><td><u>Treatment Room Lighting</u><br><br>P186 of the ERs implies that luminaires in Treatment Rooms are to be fed from 2 circuits – does this mean 2 circuits to each luminaire? We request guidance on the reason for this.<br><br>RESPONSE: SINGLE SUPPLY TO LUMINARIES. LUMINAIRES TO BE SPLIT EVENLY OVER TWO CIRCUITS FROM ALTERNATIVE DISTRIBUTION BOARDS.</td><td>-</td><td>NC</td><td>ERs address this item.</td><td>Agreed</td><td>BCL bid submission Volume 4 section 4.35 provides for LV distribution split between two distribution boards.</td><td>Light fittings shall be on one circuit generally. Patient treatment areas, where procedures will take place, to have minimum of two lighting circuits.</td><td>Agreed</td><td>Light fittings shall be on one circuit generally. Patient treatment areas, where procedures will take place, to have minimum of two lighting circuits.</td></tr>
<tr><td>010</td><td>Could you please provide the final version of the Geo-Environmental Report as the current version is in draft form only.</td><td>-</td><td>Info</td><td>This information was issued to bidders for background/informati</td><td>Agreed</td><td>Please note that we have not received the final SI report. Brookfield</td><td>BE to check records as disc was uplifted from the offices of Currie & Brown</td><td>Still checking!!Memory loss at BE</td><td>Copy of SI Report provided to Brookfield at meeting of 08 December 2009.</td></tr>
</table>

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| | | | | on purposes. | | submission allows for risk. Further SI to be undertaken. | | | No further action in relation to this item, with the BIW Log to include the SI Report as Contract Data Part 1. |
| 011 | The Drainage Strategy Report makes reference to a Drainage Impact Assessment being undertaken by Scottish Water in 2007. Could a copy of this report be provided?<br><br>**RESPONSE: THIS HAS BEEN UPLOADED TO BIW** | - | Info | This information is addressed under the BIW Log. | Agreed | | n/c | | This information is addressed under the BIW Log. |
| 012 | The Drainage Strategy Report is in Outline Form only – can you confirm:<br><br>Whether a Hydraulic model of the Linthouse Burn has been undertaken and provide the information?<br><br>**RESPONSE: A HYDRAULIC MODEL OF THE LINTHOUSE BURN HAS NOT BEEN UNDERTAKEN**<br><br>What discussions have taken place to date with Scottish Water regards drainage capacity at the nearby treatment works?<br><br>**RESPONSE: A DEDVELOPMENT IMPACT ASSESSMENT HAS BEEN SUBMITTED TO CONFRIM CAPACTIY – WILL BE UPLOADED TO BIW.**<br><br>What discussions have taken place to date with SEPA regards surface water drainage to the existing culverted watercourses that run through the site?<br>**RESPONSE: THE DRAINAGE STRATEGY REPORT REFLECTS THE NATURE OF THE DISCUSSIONS WHICH HAVE TAKEN PLACE WITH SEPA** | - | Info | Development Impact Assessment is addressed under the BIW Log. | Agreed | See comment on Labs below. | n/c | | |
| 013 | Although the Car Parks and future works are not included in the current scope, can you clarify whether the Drainage Impact Assessment and design of the future works needs to account of any changes to the surface runoff and/or foul drainage i.e. is it a site-wide scheme with input from others?<br><br>**RESPONSE: THE DRAINAGE IMPACT ASSESSMENT CONSIDERS THE SITE AS A WHOLE. THE DESIGN OF FUTURE/OTHER WORKS WILL BE REQUIRED TO FIT IN TO THE FRAMEWORK OF THE DRAINAGE STRATEGY REPORT** | - | Info | No action required with regard to this RFI. | Agreed | Brookfield bid submission includes for the new drainage system required for the Works, and the currently identified Car Parks and requires timely input from Board and Third Parties in regard to information re Car Parks. | n/c | **Just to clarify that Brookfield will make allowance for the carpark drainage in its design of the overall site drainage. Brookfield have not allowed for installing any drainage specifically associated with the carparks constructed by others. | Agreed |
| 014 | Notwithstanding Volume 2/1 section 2.3 can you please clarify the extent of the demolition and site clearance that will be undertaken by others and the status of the ground at the time of handover to the successful contractor?<br><br>**RESPONSE: IT IS THE BOARD'S INTENTION TO PROVIDE A CLEAR SITE (WITH THE EXCEPTION OF THE ACTIVITIES TO BE CARRIED OUT BY THE CONTRACTOR PER THE ER's – INCLUDING THE CULVERT DIVERSION AND HV DIVERSION), WITH FURTHER CLARIFICATION TO BE MADE BY THE BOARD WITH REGARD TO THE POTENTIAL FOR RE-USE OF DEMOLITION MATERIALS IN THE CONSTRUCTION PHASE (E.G. PILING MATS)** | - | NC | ERs address this item. | Agreed | Site levels still to be confirmed by the Board. Brookfield proposals based on working from existing levels. | Assume existing levels are retained at completion of demolition | Agreed | Agreed existing levels are retained at completion of the demolition. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| | | | | | | | | | |
| 015 | Could you please provide a list of available archive information in relation to the site, and clarify when this will be available:<br><br>Buried Services, drainage, LV, HV,<br>Existing Structures incl foundations and buried structures<br>Topographic Survey<br><br>**RESPONSE: ALL AVAILABLE INFORMATIN HAS BEEN UPLOADED AND HEALTH AND SAFETY INFORMATION FROM THE DEMOLITIONS WILL BE HANDED OVER AT THE RELEVANT TIME** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | Brookfield submission allows for any impact in risk register. | BE Risk item. | Not all BE risks. Refer to risk allocation in risk register. Brookfield note that pursuant to item 15 of the Board Risk Register (Appendix E of ITSFB) unidentified below ground services is a Board risk. | Agreed. |
| 016 | We note that there is Japanese Knotweed present on the site, can you clarify whether this affects the construction areas and if this will be dealt with in the site clearance contract or main contract?<br><br>**RESPONSE: JAPANESE KNOTWEEK IS CURRENTLY GROWING WITHIN GHE NEW HOSPITALS DEVELOPMENT SITE. JK PLAND MATERIAL HAS BEEN TREATED BY A LICENSED CONTRACTOR FOR THE LAST TWO CALENDAR YEARS. THE TREATMENT HAS KILLED OFF SIGNIFICANT AREA OF JK, EVIDENCED BY DRY DEAD CANES AND MINIMAL RE-GROWTH. THE BOARD HAVE SURVEYED THE FULL NEW BUILD SITE AND IDENTIFIED 4 POCKETS OF JK THAT HAS COMMENCED GROWTH IN MAY 2009. THE OBARD HAVE COMMISSIONIED THE LICENSED CONTRACTOR TO REVISIT THE SITE WITHIN THE NEXT TWO WEEKS TO SPRAY AREAS, AND RETURN IN MID SUMMER AND AGAIN IN LATE AUGUST 2009 TO UNDERTAKE A FULL SEASONS TREATMENT. THE BOARD INTEND TO CLEAN UP AREAS OF THE SITE FROM BUILDING MATERIALS AS PART OF THE DEMOLITION WORKS AND WILL AS PART OF THIS CONTRACT EXCAVATE, BUND AND FENCE OFF ANY POCKETS OF JK REMAININ, WITH CONCENTRATED TREATMENT UNTIL TOTALLY KILLED OFF.<br><br>THE BOARD WILL ACTIVELY MONITOR THE BUILD SITE DURING THE CONSTRUCTION PHASE 2010-2016 AND TAKE ACTION TO REMOVE, BUND AND TREAT ANY NEW GROWTH.<br><br>SEE ALSO SECTION 6.2.2 (d) OF VOLUME 2/1 OF THE ITPD WITH REGARD TO JK.** | - | NC | ERs address this item (topic is on Board Watchlist). | Agreed | Brookfield would note that this is a Board Risk item. | n/c | | Agreed that this is a Board risk item. |
| 017 | Could you please provide copies of the existing fire strategy documentation relating to adjacent buildings, or alternatively confirm that it is acceptable to contact the Fire Officer direct?<br><br>**RESPONSE: ADJACENT BUILDINGS FOLLOW A HORIZONTAL EVACUATION STRATEGY. PLEASE CLARIFY YOUR QUERY AND YOUR SPECIFIC INFORMATIN REQUIREMENTS**. | - | Info | No action required in respect of this RFI. | Agreed | Brookfield have an obligation to liaise with the Fire Officer and not to detrimentally affect fire strategies of other adjacent facilities. The design has been developed to meet the requirements of SHTM 86 insofar as supporting a reasonable and ordinary fire risk assessment by the Board and no adverse fire safety issues will be created to the existing | Board to provide copies of existing Fire Risk Assessments/Fire Action Plans. These will be uploaded to BIW Volume 6. | **Brookfield to check upon receipt to ensure that compliance can be maintained. | Data has been reviewed by BE and physical logistics viewed on site (incl fire path and hammer-head at neo-natal building).<br><br>Any logistics requirements (hoarding line adjustments etc) on site to prevent negative impact on fire routes, escapes etc will be addressed and carried out by Brookfield at no additional cost. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| | | | | | | hospital by the proposed design.<br>However in order to develop the fire strategy we will need to review the existing fire strategy documentation relating to adjacent / proposed adjoining buildings. | | | |
| 018 | Please can you confirm if it is possible to bring the Blue Light A&E access from the back of the site off the A739/Hardgate Road?<br><br>**RESPONSE: THE BLUE-LIGHT ROUTE PRESENTLY FOLLOWS THIS ROUTE (AT THE SOUTH-WEST END OF THE SITE) AND THIS REQUIES TO BE MAINTAINED AT ALL TIMES AS WELL AS THE GOVAN ROAD ENTRANCE TO THE SITE – I.E. THE 'THROUGH ROUTE' MUST BE MAINTAINED.** | - | NC | ERs address this item. | Agreed | | n/c | | ERs address this item. |
| 019 | In order for our Design Team to progress the 1:50 Room Layouts we would be pleased to receive the ADB Brief in electronic **.mdb** format.<br><br>**RESPONSE: THE ADB WILL BE ISSUED IN EXCEL** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI |
| 020 | Could you please provide copies of the drainage requirements for the Laboratory Facility relating to:<br><br>Surface Water Runoff<br>Foul Water Flows<br><br>**RESPONSE: SURFACE IS NOT SPECIFICALLY DETAILED FOR THE LABS PRESENTLY (TO BE ADVISED DURING DESIGN DEVELOPMENT BY THE BOARD), HOWEVER FOUL WATER FLOWS ARE CONTAINED IN THE DRAINAGE STRATEGY REPORT.** | - | Info | This is a Laboratory Design Development issue and is addressed through the developing package of design information for that aspect of the Works. | Agreed | | n/c | | This is a Laboratory Design Development issue and is addressed through the developing package of design information for that aspect of the Works |
| 021 | Further to the Commercial Competitive Dialogue meeting no 1 we would be pleased to receive a copy of the following in relation to the **Laboratories/FM facility only** :<br><br>Draft Design Consultant Appointment for BMJ (incorporating other consultants of the Labs/FM design)<br>Schedule of Scope of Services for each discipline<br>Schedule of Total Fees for each discipline for each Design Stage together with details of fees paid/accrued to date.<br>Design programme and schedule of deliverables<br><br>**RESPONSE: THE RELEVANT DOCUMENTATION WILL BE AVAILABLE IN DUE COURSE.** | - | Info | This is addressed through the Contract/Commercial area of the Contract preparation being undertaken. | Agreed | | n/c | | This is addressed through the Contract/Commercial area of the Contract/Contract Data Part 1 and 2. |
| 022 | With reference to ITPD Document Volume Three 'Bid Deliverables and Evaluation', Section 2.3 '1:200 Department Layouts' please confirm whether this is a minimum of 11 nr ***including***:<br>Section 2.4 – Accident & Emergency Department<br>Section 2.5 – Adult Theatres Department<br>Section 2.6 – Adult Ward<br>Section 2.7 – Childrens Ward<br>Section 2.8 – Childrens Accident & Emergency Department? | - | Info | ERs and ITPD/ITSFB updates address this RFI. | Agreed | | n/c | | ERs and ITPD/ITSFB updates address this RFI. |

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| | **RESPONSE: THE ELEVEN REQUIRED LAYOUTS ARE AS FOLLOWS:**<br><br>**ADULT A&E**<br>**ADULT ACUTE ASSESSMENT UNIT**<br>**ADULT RADIOLOGY (2 FLOORS)**<br>**ADULT WARD**<br>**ADULT THEATRES**<br>**ADULT CRITICAL CARE**<br>**CHILDREN'S A&E**<br>**CHILDREN'S OBSERVATION WARD**<br>**CHILDREN'S RADIOLOGY (2 FLOORS)**<br>**CHILDREN'S THEATRES**<br>**CHILDREN'S WARD**<br><br>In addition, please confirm if there is any preference for the other departmental layouts you wish our Team to develop at 1:200 scale?<br><br>**RESPONSE: ELEVEN AS ABOVE** | | | | | | | | |
| 023 | With reference to ITPD Document Volume Three 'Bid Deliverables and Evaluation', Section 2.9 '1:50 Room Layout and Wall Elevations' please provide a list of the 1:50 Room Layouts required. If this is to match the Generic ADB Room Data Sheets already provided, please provide an Index of these to allow us to ensure we prepare the correct number/room types.<br><br>**RESPONSE: ADB CODES ARE BEING ADDED TO THE SOA, THE 1:50 REQUIREMENT ROOMS WILL BE HIGHLIGHTED BY A COLOURING/SHADING.** | - | Info | ERs and ITPD/ITSFB updates address this RFI. | Agreed | | n/c | | ERs and ITPD/ITSFB updates address this RFI. |
| 024 | With reference to ITPD Document Volume Three 'Bid Deliverables and Evaluation', Section 1.0 Accommodation Schedule (items 1.1 to 1.4) please can you confirm if these areas are required for the 'whole hospital scheme' or only the 11 number of Departments required to meet the Project Deliverables?<br><br>**RESPONSE: WHOLE SCHEME** | - | Info | ERs and ITPD/ITSFB updates address this RFI. | Agreed | | n/c | | ERs and ITPD/ITSFB updates address this RFI. |
| 025 | Could the Board please arrange a meeting between BCL and WRAP to review the following:<br><br>WRAP commentary upon BCL Waste Management Plan<br>BCL understanding of WRAP KPI's<br>Alignment of BCL and WRAP benchmarking<br><br>**RESPONSE: THE BOARD PROPOSE TO MAKE THE WRAP ADVISOR AVAILABLE AT THE NEXT LOGISTICS MEETING. CONFIRMATION TO BE PROVIDED.** | - | Info | Addressed during Competitive Dialogue sessions/meetings. | Agreed | Wrap proposals included in BCL submission. | n/c | | Wrap proposals included in Brookfield submission |
| 026 | Can the board confirm that the currently vacant area of "green zone" land can be made available for use by BCL during the construction of the laboratories.<br><br>**RESPONSE: BIDDER TO SUBMIT A MARK-UP OF THE SITE IDENTIFYING THE AREA FOR CONSIDERATION TO ALLOW THE BOARD TO CONFIRM** | - | Info | RFI closed as more specific information relation to this query was subsequently issued by the bidder. | Agreed | | n/c | | RFI closed as more specific information relation to this query was subsequently issued by the bidder |

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| 027 | Can the Board provide a rough quantity of crushed material that could be left on site following the demolition of the existing buildings. It is likely that this material can be reused for a piling mat and subbase offering some commercial benefit.<br><br>**RESPONSE: QUANTITIES NOT AVAILABLE AT THIS TIME** | - | Info | No action required in respect of this RFI. | Agreed | The board did not advise a quantity of crushed demolition material they stated "quantities not available at this time". Brookfield assumed crushed materials would not be removed from site. | Material can be used by Brookfield if required. Piling is Brookfield issue and risk of need to import pile mats if demolitions arising are not usable rests with Brookfield. | BE made an assessment of 8,875m3 of suitable crushed material being available from the demolition. | Board will crush relevant demolition material and leave on site. Brookfield risk on volume arising from this. |
| 028 | The nature of pathology and microbiology in particular, requires that departments take into consideration statutory requirements and recommendations made under the following:<br><br>Home Office, Anti Terrorism Crime and Security Act 2001, part 7<br>Home Office, Personnel Security Measures for Laboratories, 2005<br>London First and National Counter Terrorism Security Office, Secure in the Knowledge, 2005<br><br>With this in mind, please can you provide us with the measures proposed, to ensure the safety and security of all staff, equipment and controlled substances including micro-organisms that have a bearing on the design and specification of the architectural elements of the project. e.g. provision of a robust controlled access system, cladding design, internal partition design, door specification, CCTV. | - | Info | Any specific requirements have been included in the Laboratories design. | Agreed | | n/c | | Any specific requirements have been included in the Laboratories design. |
| 029 | **CLINICAL SPACE DEFINITION**<br><br>At the M&E break out session at Design Dialogue Meeting 2 we were advised that a list of spaces defined as "Clinical" as referred to in to ERs was available.<br><br>Please could the Board forward a copy of this.<br><br>Response required by 9th June 2009<br><br>**RESPONSE: THERE IS NO SUCH LISTING PRESENTLY, HOWEVER THE BOARD WILL CLARIFY THE AREAS TO BE CONSIDERED IF A SPECIFIC QUERY CAN BE ESTABLISHED BY THE BIDDER** | - | Info | No action required in respect of this RFI. | Agreed | Board to forward the information as requested? | From a services perspective, it is understood that query relates to sealed luminaires and not using clinical spaces to access services. Sealed fittings will not be required unless procedures take place in the area. Access to services should not be via high utilisation areas | Agreed | From a services perspective, it is understood that query relates to sealed luminaires and not using clinical spaces to access services. Sealed fittings will not be required unless procedures take place in the area. Access to services should not be via high utilisation areas |
| 030 | **Existing Infrastructure**<br><br>Please provide records of existing site wide services infrastructure.<br><br>We request a response by 9th June 2009.<br><br>**RESPONSE: THE UPDATED DRAWING WILL BE UPLOADED TO BIW BY CLOSE OF BUSINESS 11 JUNE 2009** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | Brookfield submission allows for any impact in risk register. | n/c | | Brookfield submission allows for any impact in risk register. |
| 031 | **Dual electrical distribution**<br><br>We query the required extent of dual unified distribution paths for **all** electrical systems, i.e.: departments fed from two boards, side A and side B, and interleaving of final circuits.<br>We assume that this requirement applies to Risk Category 3 and 4 departments only.<br><br>We propose that lower risk category departments will be provided | Y | - | Statement that dual unified distribution paths to be provided for all departments to be included ERs for clarity. | Agreed * | * Subject to confirmation that this is clearly defined in line with Brookfield submission within the Works Information 1 (Employer Requirements). Brookfield bid submission includes for dual unified supplies | This appears compliant (see item 68 below for further comment) | **Refer to Brookfield response to 003 above | See agreed position in relation to Item 003, above, as well as RFI # 068. |

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| | with unified supplies, i.e.: departments provided with a single distribution board fed from either side A or side B, but not both.<br><br>We request a response by 9th June 2009.<br><br>**RESPONSE: DUAL UNIFIED DISTRIBUTION PATHS TO BE PROVIDED FOR ALL DEPARTMENTS** | | | | | | | | |
| 032 | **Lighting Controls**<br><br>The ERs refer to automatic lighting controls in a number of places.<br><br>We propose the following simplified lighting control strategy for your consideration and comment:<br><br>A mixture of automatic 'absence' and 'presence' detection will be provided.<br><br>Presence detection : detector switches lighting on and off.<br>Provided to intermittently occupied areas such as WCs, en suites, corridors, ward kitchens, stores, plant rooms, services risers, hospital streets, bathrooms etc.<br><br>Absence detection : lights manually switched on, detector extinguishes lighting in unoccupied room.<br>Extent of provision to be agreed but likely to cover offices, consulting rooms etc.<br><br>In addition, in rooms benefiting from daylight, luminaires near windows will be dimmable, regulated by the amount of daylight available.<br><br>The ERs require lighting in corridors to be dimmed when unoccupied and scheduled by BMS. We do not believe that this will be necessary as the detectors will extinguish lights in unoccupied areas regardless of the time of day.<br><br>The ERs require dimmable lighting 'throughout'. Please clarify if this means each room regardless of available daylight and function.<br><br>We request a response by 9th June 2009.<br><br>**RESPONSE: PLEASE PROVIDE LIGHTING CONTROL IN ACCORDANCE WITH ER's.**<br>**PLANT ROOM OVERRIDE INTEGRATED WITH THE ACCESS CONTROLS ETC.**<br>**DIMMING TO BE PROVIDED THROUGHOUT TO PREVENT OVER LIGHTING AND TO MINIMIZE ENERGY USAGE.** | - | NC | Lighting controls on Board Watchlist. | Agreed | Brookfield included for the simplified proposal as outlined in the RFI and this is contained in our bid submission. | Generally accepted. The reason for the "watch list" is to focus the Board on monitoring compliance going forward<br><br>Brookfield to substantiate that the proposed system will function as described in relation to the automatic dimming regulated by the amount of daylight available. | Agreed | Brookfield included for the simplified proposal as outlined in the RFI and this is contained in our bid submission.<br><br>Brookfield to substantiate that the proposed system will function as described in relation to the automatic dimming regulated by the amount of daylight available. |
| 033 | **Service Capacity Reserve**<br><br>With reference to ITPD Vol 2/1 Clause 8.1.25.1 please could you clarify the extent of reserve to major items of equipment.<br><br>Whilst an expansion of 25% is common on electrical systems, when applied to mechanical plant this leads to significant oversizing and potential inefficient running in terms of energy use which could affect the proposed energy target, and also result in poor control.<br><br>Response required by 9th June 2009 | Y | - | Statement that energy matching by modular selection of plant and provision of integrated controls to be included in ERs for clarity. | Agreed | * Subject to confirmation that this is clearly defined in line with Brookfield submission within the Works Information 1 (Employer Requirements). | See response to Item 003, above. | **Refer to Brookfield response to 003 above | See agreed position in relation to Item 003, above, additionally: statement that energy matching by modular selection of plant and provision of integrated controls to be included in ERs for clarity remains correct. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| | **RESPONSE: PLEASE COMPLY WITH ER's.<br>ENSURE ENERGY MATCHING BY MODULAR SELECTION OF PLANT AND PROVIDE INTEGRATED CONTROLS.** | | | | | | | | |
| 034 | **Site Heating Loads**<br><br>The calculation of heating loads for the new hospitals are given in Appendix M&E.2 / 2.0 and broken into heating, ventilation and HWS. Please could you provide the basis of calculation for the heating and ventilation loads.<br><br>Response required by 9th June 2009<br><br>**RESPONSE: LOADS PREPARED ON SQ M BASIS TO ASSIST IN EARLY DISCUSSIONS WITH UTILITY COMPANIES. IT IS IMPERATIVE THAT THE BIDDER PROVIDES THEIR DETAILED LOAD CALCULATIONS FOR THE NEW HOSPITALS AS INDICATED IN ITEM 5 ON PAGE 12 OF APPENDIX M&E 2.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. |
| 035 | **Variable Volume Pump Systems**<br><br>The Board's exemplar schematics for heating and cooling systems indicate constant volume flow systems with 3 port valve bypass control of equipment.<br>We would wish to provide variable volume pumping (VVP) systems utilizing 2 port control valves and differential pressure control.<br>VVP systems can reduce electrical consumption for pumping significantly, and we feel that this is an essential requirement to meeting the carbon target required.<br><br>Response required by 9th June 2008.<br><br>**RESPONSE: 3 PORT VALVE ARRANGEMENTS TO BE PROVIDED AS DETAILED, BOARD REQUIREMENT** | - | NC | This item is on the Board Watchlist. | Agreed | Brookfield submission includes for VVP systems | 2 port valves introduced by bidder for energy saving. Valve selection is critical-to be selected to reflect actual duty.<br><br>This item to be retained on board watch list through design and installation. | **Workshop to be arranged for ZBP to reassure Board on variable volume control | Agreed that a 2-port solution is accepted by the Board, with valving proposals and solutions, as a specific aspect of the developing design, to be proposed and reviewed by the Board through the design development process. |
| 036 | **Re: Community Engagement**<br>Further to the Logistics meeting no 2 and as directed we would be pleased if Mark could arrange an introductory meeting with the following:<br><br>Ross Campbell: Glasgow Regeneration Agencies<br>Sharon McGrath: City Building<br>Maggie Lennon: Bridges Programme<br>Morag Keith: West of Scotland Colleges Partnership<br>Hugh McCafferty: Construction Skills<br>Jim Brown: EU Skills<br>Ian Stirrat: Summit Skills<br>Robert Andrew: Supplier Development Programme<br>Lauren McNichol: Glasgow Chamber of Commerce<br>Stewart Farmer: Federation of Small Businesses<br>Jillian Moffat: Scottish Enterprise<br>Gerry Higgins: Community Enterprises in Strathcylde (CEiS) | - | Info | Addressed during Competitive Dialogue sessions/meetings. | Agreed | | n/c | | Addressed during Competitive Dialogue sessions/meetings. |
| 037 | Within the laboratory building mention is made of animal holding facilities but no further reference found, nor area identified on drawings. Please confirm is this statement is a correct requirement or purely an oversight in document preparation.<br><br>**RESPONSE: THERE ARE NO ANIMAL HOLDING FACILITIES** | - | Info | No action required in respect of this RFI. | Agreed | Board confirmation during dialogue session that facility will not be used for any animal holding. | n/c | | Board confirmation during dialogue session that facility will not be used for any animal holding. |

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| | **BRIEFED.** | | | | | | | | |
| 038 | Please confirm the number of floors currently proposed on the laboratory building is as follows:<br><br>Level 0<br>Level 1<br>Level 2<br>Level 3<br>Level 4<br>Roof,<br><br>along with the number/size of floors to be considered as potential future accommodation.<br><br>**RESPONSE: FURTHER TO THE FLOORS THAT YOU HAVE NOTED THERE IS A LEVEL -1 (BASEMENT LEVEL). AS FUTURE EXPANSION WE ARE PROPOSING THAT THE NORTH BLOCK TO THE REAR OF THE SITE BE USED AS FUTURE EXPANSION THIS BLOCK CURRENTLY HAS A ROOF AT LEVEL 4.** | - | Info | No action required in respect of this RFI. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do Brookfield think their LABS option is being taken? | Brookfield to confirm that there have been no changes to the scheme between bid and stage E issue of information | Stage D information to form Contract Data Part 1.<br><br>Alignment and change control to be monitored through design development, this will include review and challenge if necessary of Stage E information. |
| 039 | Within the laboratory building, please advise expected pattern of usage for the office pod central conference facilities e.g. intermittent/constant etc, as this will influence potential services solutions.<br><br>Also, will main conference facility have a raked floor?<br><br>**RESPONSE: THE SEMINAR FACILITY/CAFÉ AREA IS DESIGNED AS A CENTRALLY BOOKABLE FACILITY FOR USE BY THE LABORATORY FACILITY. THIS MAY BE HEAVILY USED ON A DAY TO DAY BASIS, ALSO IT IS ENVISAGED THAT THIS AREA MAY BE USED OUT OF HOURS AS A SEMINAR FACILITY FOR THE MAIN HOSPITAL. THE FLOOR WILL BE LEVEL.** | - | Info | Any specific requirements have been included in the Laboratories design. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do Brookfield think their LABS option is being taken? | Brookfield to confirm that there have been no changes to the scheme between bid and stage E issue of information | See agreed position in relation to Item 0038, above |
| 040 | Within the laboratory building, suggestion is made that the office pod will have some public access.<br><br>Please advise whether the level of public access to the office areas will dictate that openable windows will have openings limited to 100mm (This will impact on effective natural ventilation).<br><br>**RESPONSE: THERE ARE VISITING AREAS FOR PATIENTS WITHIN MOST OF THE LEVELS WITHIN THE OFFICE POD, PUBLIC ACCESS WILL BE LINITED, HOWEVER THE FACILITY IS DESIGNED TO BE RELIANT ON THE BUILDINGS SERVICES VENTILATION STRATEGY WITH THE ADDITIONAL PROVISION OF NATURAL VENTILATION TO THE OFFICE AREAS. THE OPENING LIMITATION REQUIREMENT IS 100MM AS PER THE HOSPITAL REQUIREMENT.** | - | Info | Any specific requirements have been included in the Laboratories design. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | 100mm opening limitation is a laboratories ER requirement<br><br>But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do BE think their LABS option is being taken? | Brookfield to confirm that there have been no changes to the scheme between bid and stage E issue of information<br><br>Check 100mm compliance | See agreed position in relation to Item 0038, above |

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| 041 | Reference is made for a separate incoming electrical supply for the laboratory building due to programme issues of deriving a supply from the final site network. No mention is made of similar requirements for the other statutory services e.g. water, gas, telecoms, drainage etc.<br><br>Please confirm if our assumption of the following is correct.<br>Electricity: Board<br>Water: Bidder<br>Gas: Bidder<br>Telecoms: Bidder<br>Drainage: Bidder<br>IT Infrastructure: Bidder<br><br>**RESPONSE: UTILITY COMPANY APPLICATIONS WILL BE REQURIED BY THE BIDDER FOR THE FOLLOWING SERVICES TO FEED THE LABORATORY BUILDING: POWER/WATER/GAS. TELECOMS AND I.T. TO THE LABORATORIES WILL BE PROVIDED FROM THE RETAINED ESTATE. DUCT ROUTING DRAWING/S WILL BE INCLUDED IN THE LABORATORIES STAGE D INFORMATION.** | - | Info | No action required in respect of this RFI. | Agreed * | Brookfield submission and Commercial Clarification No 3 refers | Primary Sub station will be required for lab start up to ensure value for money on utility supplies<br>Refer to minutes of meeting 02 December | **Brookfield believe that following the utilities meeting on 2nd Dec 09 it is a Board decision to install Primary 33kVa Substation as part of Stage 1 Works and as such have allowed for this. Commercial Clarification No. 3 indicated that if the Board sort to reduce Stage 1 costs by putting substation in Stage 3 works then additional money would be required in Stage 1 but this will not now be required | Agreed |
| 042 | Several references are made to the proximity of the sewage treatment works to the laboratory building, including potential for carbon filtration of fresh air ventilation plant.<br><br>Requirements for natural ventilation are also identified wherever practical.<br><br>Please confirm whether openable windows are acceptable on all elevations especially in close proximity to the sewage works.<br><br>**RESPONSE: AS NOTED IN RFI 40 THE FACILITY IS DESIGNED TO BE RELIANT ON THE BULDINGS SERVICED VENTILATION STRATEGY WITH THE ADDITIONAL PROVISION OF NATURAL VENTILATION TO THE OFFICE AREAS. A CFD ANALYSIS WILL BE CARRIED OUT TO FULLY UNDERSTAND THE AFFECTS OF BOTH THE FACILITY ON ITS SURROUNDING ENVIRONMENT AND THE SURROUNDING ENVIRONMENT ON THE BUILDING. OPENING WINDOWS ARE TO BE PRICED TO ALL OFFICES IN THE INTERIM.** | - | Info | No action required in respect of this RFI. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do BE think their LABS option is being taken? | Brookfield to confirm that there have been no changes to the scheme between bid and stage E issue of information | See agreed position in relation to Item 0038, above. |
| 043 | On the laboratory building solar-thermal panels have been suggested to support hot water generation. The solar collectors would occupy significant areas of roof which are required to be lightly populated to allow future upward expansion.<br><br>Please confirm requirements.<br><br>**RESPONSE: THIS ELEMENT IS BEING CONSIDERED IN THE ONGOING LABORATORY DESIGN WORKS** | - | NC | The Contractor will require to address and deliver this area of the Laboratory design following issue of the Board Stage E design. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do BE think their LABS option is being taken? | Brookfield to confirm that there have been no changes to the scheme between bid and stage E issue of information | See agreed position in relation to Item 0038, above. |

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| 044 | Reference is made to potential sprinkler protection of the laboratory building, however no plant space is specifically identified for the significant quantities of water storage and associated plant.<br><br>Please confirm requirements.<br><br>**RESPONSE: THE PRESENT FIRE STRATEGY FOR THE LABORATORIES NEGATES THE REQUIREMENT FOR SPRINKLERS.** | - | NC | The Contractor will require to address and deliver this area of the Laboratory design following issue of the Board Stage E design. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do BE think their LABS option is being taken? | Brookfield to confirm that there have been no changes to the scheme between bid and stage E issue of information | See agreed position in relation to Item 0038, above. |
| 045 | Reference is made to standby generation to support the electrical services in the laboratory building, in the event of mains failure.<br><br>We have assumed that this plant/facility will be located in the energy centre and form part of the site-wide backup.<br><br>In the interim period between the laboratory block and the energy centre being online, we have assumed connections for temporary generators will be provided for the laboratory block.<br><br>Please advise albeit we note the current discussions during dialogue meetings regarding potential early delivery of the energy centre.<br><br>**RESPONSE: THE GENERATORS FOR THE LABORATORIES SHALL BE LOCATED WITHIN THE ENERGY CENTRE.**<br><br>**AN INTERIM SOLUTION REQUIRES TO BE DEVELOPED BY THE BIDDER:**<br>**A) POTENTIAL EARLY DELIVERY OF THE ENERGY CENTRE.**<br>**B) TEMPORARY LOCATION OF TWO OF THE UNITS WITHIN PART OF THE FM SHELL.**<br>**C) PURCHASE AND FUTURE SALE OF CONTAINERISED SETS COMPLETE WITH FUEL DISTRIBUTION TO BE LOCATED WITHIN THE SERVICE YARD.** | - | NC | Interim solution of the Contractor on Board Watchlist (to pass through Reviewable Design Data). | Agreed | Brookfield submission and Commercial Clarification no 3 refers. | Reference minutes of 02 December Utilities meeting. Contractor to provide 100% standby capacity for Laboratories via one of three options detailed in RFI reply. | No allowance was made for temporary generators. BE are now investigating options | Confirmed that a contingent/resilient position is required in order to cover any gap period to maintain standby generator provision.<br><br>Noted and agreed that the design includes for the physical 'hook-up' of a generator provision (e.g. distribution boards and connection points etc) as well as the necessary hard-standing/location. The actual generator, however, is not included in the Brookfield cost allowances. |
| 046 | Reference is made to local tri-generation units per floor/plantroom within the laboratory building. Would a centralised facility be considered to serve the whole building?<br><br>**RESPONSE: THE TRI-GENERATION SHALL BE INCORPORATED WITHIN THE ENERGY CENTRE.** | - | Info | No action required in respect of this RFI. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | Tri-generation to be incorporated within the energy centre<br><br>But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do BE think their LABS option is being taken? | Brookfield to confirm that there have been no changes to the scheme between bid and stage E issue of information Brookfield confirm that there is no allowance within Wallace Whittle design for Tri-generation in the Labs scheme but allowance for CHP is made within the Energy Centre (Stage 3 Works). | See agreed position in relation to Item 0038, above. |
| 047 | Halcrow Group Ltd – Flood Risk Assessment, April 2005. At the design dialogue meeting no. 2 we were advised that this report would be issued to the bidders. We have checked our records but currently do not appear to received this document. Please confirm when this report will be made available including relevant non commercial issues of the brief.<br><br>**RESPONSE: THE REPORT HAS BEEN UPLOADED TO BIW** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c | | This information is addressed under the BIW Log within Contract Data Part 1. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 048 | **Foul Water Discharge**<br>Scottish Water have advised that a DIA (Drainage Impact Assessment) will be required to establish the impact of any additional foul flow on Shieldhall Sewage Works and adjacent combined / foul flow infrastructure. Is it the Board's intention that this DIA will be commissioned by the Board during this tender period?<br>**RESPONSE: AN APPLICATION FOR DEVELOPMENT IMPACT ASSESSMENT WAS SUBMITTED ON BEHALF OF THE BOARD IN ADVANCE OF THE TEMDER PROCESS**.<br><br>The URS DIA report states that "Greater Glasgow and Clyde are committed to the reasonable upgrading of any Scottish Water Infrastructure identified through this process" The extent of works cannot be fully defined until the DIA has been undertaken therefore please advise what the Board considers would be reasonable upgrading to the off-site network in terms of a potential budget/cost.<br>**RESPONSE: THE RESPONSE TO THE DIA APPLICATION HAS BEEN RECEIVED FROM SCOTTISH WATER AND HAS BEEN UPLOADED ON TO BIW SYSTEM. THE DRAINAGE STRATEGY REPORT REFLECTS THE CONTENT OF THE DIA APPLICATION.**<br><br>Do the foul flows within table 4.3 (DIA report) include areas of hard standing discharging to foul system e.g. helipad. We would be pleased to understand the rational behind this requirement.<br>**RESPONSE: FLOWS FROM THE SE AREAS SHOULD BE CALCULATED BASED ON THE DETAILED DESIGN. THE RATIONALE WAS TO IDENTIFY PROMOTE AREAS WHICH WOULD BE DIFFICULT TO PROVIDE THE TREATMENT REQUIRED AND DISCHARGE INSTEAD TO THE FOUL SYSTEM. THE ADDITIONAL LOADS WILL BE OFFSET BY THE REMOVAL OF SUFACE FLOWS ELSEWHERE IN THE SCHEME.** | - | Info | No action required in respect of this RFI, this area of design remains the responsibility of the Contractor. | Agreed | *Risk register Stage 2 D25 refers | | | No action required in respect of this RFI, this area of design remains the responsibility of the Contractor. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 049 | **Surface Water**<br>Discharge<br>Glasgow City Council flooding department have confirmed a catchment hydraulic simulation/model will be required in order to demonstrate the hospital site (including culverted burns, Linthouse open channel (north of Govan Rd), existing surface water flows, upstream flows etc) can withstand flooding 'issues' with the 1 in 1000 year storm event. This modeling process takes circa 12wks to complete from inception to completion (advised by Scottish Water). Please advise if this modeling has been commissioned by the Board? If not please confirm it's acceptable to adopt the flood levels as detailed in section 6.2.1 of the URS DIA and Strategy Report dated 1 May 2009 i.e. worst flooding event = 5.31 m O.D. These levels will be used to set the ground floor levels for the proposed buildings.<br><br>**RESPONSE: THIS MODELLING HAS NOT BEEN COMMMISSIONED BY THE BOARD. AN INTERIM LEVEL FOR PLATFORM WILL BE ADVISED TO BIDDERS.**<br><br>Attenuation<br>Please confirm attenuation requirements for the site. Has the entire site to be attenuated to green-field run off or is it acceptable to limit the discharge to that as per exiting i.e. the proportion of surface water discharging to the culvert at present.<br>Please confirm discussion with Scottish Water/SERA/GCC flooding dept with regards to this issue.<br><br>**RESPONSE: THE DRAINAGE IMPACT ASSESSMENT AND STRATEGY REPORT REFLECT THE DISCUSSIONS WITH THE RESPECTIVE BODIES.**<br><br>Section 4.2.2. Drainage network design considerations<br>Please confirm what design storm is to be used for the joint probability assessment.<br><br>**RESPONSE: AS STATED IN SECTION 4.2.2, REFER TO APPENDIX F OF THE DRAINAGE IMPACT ASSESSMENT AND STRATEGY REPORT.**<br><br>The DIA report states that landscaped areas should be connected to the culverted watercourse – has this been agreed in principal with Scottish Water or GCC?<br><br>**RESPONSE: THE CULVERTED WATERCOURSE IS IN THE RIPARIAN OWNERSHIP OF NHS. SCOTTISH WATER AND GCC HAVE NO REMIT IN THIS RESPECT.** | - | Info | No action required in respect of this RFI, however as discussed at the meeting with the Board on 18 November 2009 URS to be instructed to commence metering and monitoring of Linthouse and Jenny's Burn.<br><br>The design requirement with regard to drainage (including attenuation) remains the responsibility of the Contractor. | Agreed | Note that a full surface water hydraulic model of the catchment is required. *Risk register Stage 2 D19 refers | | | Note that a full surface water hydraulic model of the catchment is required. *Risk register Stage 2 D19 refers |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 050 | We are investigating the surface water strategy for the site and would ask if it is feasible to move the proposed laboratory building 2-3m south east? If acceptable this would facilitate the diversion of the Jenny's Burn culverted watercourse behind the lab, FM and energy centre.<br><br>**RESPONSE: THERE IS SOME LEEWAY FOR THE LABS BUILDING TO MOVE BUT THIS WOULD NEED TO BE LOOKED AT IN THE OVERALL CONTEXT OF THE PROPOSED SITE MASTERPLAN. HOWEVER A DRASTIC RELOCATION OF THE LABS WOULD NOT BE ADVISABLE DUE TO THE PLANNING IMPLICATIONS.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. |
| 051 | **Linthouse Burn**<br>Please confirm who owns and maintains the Linthouse Burn culvert out with the site boundary. If upgrading of the culvert and open channel is required have any discussions taken place with the respective owners with regards to this issue? If so please confirm these discussions and the implications of any agreements reached.<br><br>**RESPONSE: LINTHOUSE BURN ANTICIPATED TO BE IN RIPARIAN OWNERSHIP OUTWITH THE SITE. MODELLING OF BURN SHOULD ENSURE THAT THERE IS NO IMPACT ON OTHER OWNERSHIPS.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. |
| 052 | **URS DIA Report**<br>Executive Summary – foul and surface water drainage strategy. 1st bullet point states that "the future development is to be served by a separate foul and surface water drainage infrastructure where practicable".<br><br>We would be pleased to receive your thoughts on the definition of "practicable" as this is open to interpretation and could have significant cost implications if, for example, it's the Board's requirement that the entire existing network has to be split into foul and surface water systems. Or alternatively is it deemed acceptable to undertake the minimal from an engineering and Scottish Water approval perspective.<br><br>**RESPONSE: ALL NEW DEVELOPMENT TO BE SERVED ON A SEPARATE DRAINAGE SYSTEM. OTHER AREAS OF THE CAMPUS – SUCH AS THE CAR PARKING AREAS IDENTIFIED WITHIN THE DRAINAGE IMPACT ASSESSMENT AND STRATEGY REPORT – ARE TO BE CONSIDERED TO SEPARATION FROM THE COMBINED SYSTEM TO IMPROVE THE DRAINAGE PROVISION ON THE SITE.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. |
| 053 | Please provide copies of correspondence confirming agreement of drainage strategy from stakeholders i.e. Scottish Water, SEPA and Glasgow City Council Flooding Dept.<br><br>**RESPONSE: RELEVANT CORRESPONDENCE WILL BE UPLOADED AS RECEIVED. THE DRAINAGE IMPACT ASSESSMENT AND STRATEGY REPORT REFLECT THE CONSULTATIONS WITH THESE PARTIES.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 054 | Please provide copies of correspondence with SEPA regarding consultation on CAR requirements. Please also confirm discussions with SEPA regarding CAR requirements for the front end buildings e.g. Labs and multi-story car park.<br><br>**RESPONSE: ALL DEVELOPMENTS WILL REQUIRE TO GO THROUGH THE RELEVANT CAR PROCESS AND APPLICATIONS AT THEIR RESPECTIVE DETAILED STAGES.** | - | Info | No action required in respect of this RFI, the Contractor remains responsible for the relevant CAR requirements. | Agreed | | n/c | | No action required in respect of this RFI, the Contractor remains responsible for the relevant CAR requirements. |
| 055 | SEPA published flooding maps indicate that during a 1 in 200 year storm event (0.5% probability) there is potential flooding to the north west corner of the site at building ref 'AG'. In the absence of more detailed information please confirm flooding protection to the existing buildings are excluded from this contract and that we should only consider 1:1000 year return periods for new buildings.<br><br>**RESPONSE: PROTECTION TO 1:1000 SHOULD ONLY BE CONSIDERED FOR NEW BUILDINGS. THERE SHALL BE NO INCREASE IN FLOOD RISK TO EXISTING BUILDINGS IN THE 1:200 RETURN PERIOD.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. |

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| 056 | It would appear from the Travel Plan that considerable detailed work or a Transport Assessment has been undertaken on the site. We would be pleased if you could provide us with a copy of this document to understand in more detail the discussions that have taken place.<br><br>**RESPONSE: THE RELEVANT TRAVEL INFORMATION IS INCLUDED IN APPENDIX O OF VOLUME 2/1 OF THE ITPD.**<br><br>In the absence of a Travel Assessment please confirm the following:<br><br><u>FM Building</u><br>The service access to this building is by Hardgate Road, is there a restriction on how many access ways are need to be provided?<br><br>**RESPONSE: ACCESS NEEDS TO BE VIA THE NW CORNER OF THE BUILDING AS SHOWN, THE POINT FOR CONTROL BY THE TRANSPORT MANAGER.**<br><br>As discussed in dialogue meetings we would welcome your thoughts on whether the position of the building could be moved east?<br>**RESPONSE: THIS COULD BE CONSIDERED.**<br><br><u>Transport/Parking Provision</u><br>**RESPONSE: OTHER THAN WHERE A SPECIFIC ADDITIONAL ANSWER HAS BEEN ADDED BY THE BOARD, THE UNDER NOTED WILL ALL BE DICTATED BY THE DETAILED PLANNING REQUIREMENTS TO BE MET BY THE CONTRACTOR.**<br><br>• Please confirm requirement for the number of taxi parking bays for children's and adult entrance and along the site?<br>• Please confirm requirement for the number of visitor drop off spaces for children's and adult entrance and along the site?<br>• Please confirm the maximum bus size to access the site.<br>**RESPONSE: 'BENDI-BUS' FOR LENGTH, DOUBLE DECKER FOR HEIGHT.**<br>• Please confirm requirement for the number of visitor drop off spaces near entrances?<br>• Please confirm number of disabled parking spaces required in addition to the capacity of the multi-storey car park?<br>• The "fastlink" service is to be provided by "bendy" bus or normal bus, is this access exclusive for bus service or can be used for taxis and visitor drop off? Does this service need to be able to turn around within site to enter and exit via Govan Road.<br><br>**RESPONSE: FASTLINK PROVISION IS EXCLUSIVELY FOR BUSES. PROVISION IS REQUIRED FOR SERVICES WHICH TERMINATE AT THE HOSPITAL, I.E. ENTERING AND EXITING VIA GOVAN ROAD, AND FOR THOSE SERVICES WHICH CONTINUE THEIR ROUTE TO/FROM THE WEST.**<br>From the exemplar drawings appear to include the following provisions - please confirm<br>*7 bays - Taxi*<br>*44m drop off - along the Blue Light Road*<br>*25m drop off- along the Blue Light Road by the Urology/dermatology building*<br>*2 passing bay- along the Blue Light Road by the Pharmacy building and Neurosurgical building*<br>*7 drop off bays- to the adults entry*<br>*43m drop off - to the children's entry*<br>*24m drop off- to the FM building*<br>*32m passing bay- to the FM truck entry road*<br>*32m bus bay- assumes a bendi-bus*<br>*[illegible]ting bay assumes a bendi-bus*<br>*30m drop off bay- to Hardgate Road next to the Sub-station in the car park* | Y | - | Relevant responses to be included in ERs for clarity as minimum requirements (e.g. drop offs, transport interchange) – as noted in the RFI, however, Planning will dictate specific requirements on the site. | Agreed * | * Subject to confirmation that this is clearly defined in line with Brookfield submission within the Works Information 1 (Employer Requirements). | As stated in Board Comment 1 – the drop off etc in the RFI to be met, with planning dictating actual outturn requirements. That is, Brookfield submission not being overwritten into ERs. The ERs state what is required (incl the RFI responses) with Brookfield to achieve this (as amended by planning). | **Brookfield will comply with the requirements of the Planning Authority | Brookfield will comply with the requirements of the Planning Authority |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 057 | Please find enclosed preliminary main office proposals and location mark-up on the Ogilvy Site off Hardgate Road.<br><br>These drawings will be developed to show door and workstation positions etc. and specifications will be produced, however, we request your initial comments<br><br>**RESPONSE: IT WOULD APPEAR THAT THE BOARD WOULD REQUIRE TO MOVE LEVELS TO USE THE SHARED MEETING SPACE, IT WOULD BE PREFERABLE IF THIS WAS ADJACENT TO THE BOARD ACCOMMODATION. ALSO, SPACE WILL BE REQUIRED FOR THE BOARD PRINTERS AND PLOTTER.** | - | NC | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Agreed | | n/c | | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. |
| 058 | Following logistics dialogue meeting No 2, can you please confirm when buildings AV and AW are to be demolished (existing Boiler House and Works Dept)<br><br>Information requested for our hoarding line proposals<br><br>**RESPONSE: AS PER DISCUSSIONS AT LOGISTICS DIALOGUE #3 – DEMOLITIONS TO OCCUR END JUNE 2009. BOARD TO ADVISE ROAD RE-ALIGNMENT WORKS THERAFTER.** | - | NC | On Board Watchlist for discussion with Brookfield to agree exact delineation of site hoardings prior to mobilisation. | Agreed | | n/c | | On Board Watchlist for discussion with Brookfield to agree exact delineation of site hoardings prior to mobilisation. |
| 059 | Following Logistics Dialogue meeting No 2, can you confirm the Boards intent to demolish existing buildings within the October 2010 phase during the summer of 2010.<br><br>(Drawing PD-HLM-S(00)X-XX-005 Buildings BD, BE,BF, BG, BH, BI and BJ<br><br>**RESPONSE: THAT IS CORRECT** | - | Info | No action required in respect of this RFI, however as discussed at the meeting with the Board of 18 November 2009 Currie & Brown shall issue a package for pricing the demolition works in relation to these buildings. | Agreed | | n/c | | No action required in respect of this RFI, however as discussed at the meeting with the Board of 18 November 2009 Currie & Brown shall issue a package for pricing the demolition works in relation to these buildings (post contract). |
| 060 | Our RFI's 058 and 059 request dates for some existing building demolition by the Board.<br><br>Could you please advise indicative dates for demolition of other areas not by the Bidder.<br><br>This information is requested to assist us in preparation of Vol. 3 Site Interface Appendix A – Bid Deliverable item 10.1<br><br>**RESPONSE: THE BOARD HAS BEEN PROGRESSING THE INDICATIVE PROGRAMMES FOR OTHER AREAS OF THE SITE AND THE OUTCOME INFORMATION WILL BE POSTED ON BIW FOR ALL BIDDERS.** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c | | This information is addressed under the BIW Log contained in Contract Data Part 1. |
| 061 | Reference is made in the briefing documents to exposed structural soffits in the laboratory areas. Given the extent of engineering services at high level, especially close to the plant pods, is the client team satisfied that the level of exposed services will be complimentary to the "quality" environment required for the lab areas?<br>**RESPONSE: PLEASE SEE STAGE D DESIGN DRAWINGS, THIS INCLUDES CEILING INFORMATION.** | - | Info | Any specific requirements have been included in the Laboratories design. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do Brookfield think their LABS option is being taken? | Brookfield to confirm that there have been no changes to the scheme between bid and stage E issue of information | See agreed position in relation to Item 0038, above. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 062 | Fast link<br>Please confirm if provision for fast link turning is required within the site or is the statutory minimum requirement such that only a through route for the fast link is required as a minimum.<br><br>We would note that at the architecture sub-group (bidder day #3) it was advised that provision for turning was required however, at the C&S sub-group URS confirmed that the minimum required was for a through route only.<br><br>Please clarify accordingly.<br><br>**RESPONSE: PROVISION IS REQUIRED FOR BOTH SERVICES WHICH TERMINATE AT THE HOSPITAL, AND FOR THOSE SERVICES WHICH CONTINUE THEIR ROUTE TO/FROM THE WEST.** | - | Info | The requirement and solution will be developed and provided by Brookfield in response to Planning/Transportation requirements which they are responsible for achieving. | Agreed | | n/c | | The requirement and solution will be developed and provided by Brookfield in response to Planning/Transportation requirements which they are responsible for achieving. |
| 063 | We note the information currently set out in Volume 2/1 Section 7 (7.2.26 to 7.2.29 inclusive) with regards the helipad at roof level. In order to assess more fully we would be pleased if the Board can confirm loading information of the helicopter proposed for the new hospital. In particular, please indicate maximum loads that are exerted on the roof structure.<br><br>**RESPONSE: THE HELICOPTER LANDING PAD IS TO BE DESIGNED IN ACCORDANCE WITH HBN 15-03: HOSPITAL HELIPADS. SEARCH AND RESCUE HELICOPTERS ACCESS IS TO BE ALLOWED FOR SAR HELICOPTERS CAN BE UP TO 15t MAXIMUM WEIGHT. DESIGN SHOULD CONSIDER THIS CRITERIA.** | Y | - | Reference to loads to be included in ERs for clarity. | Agreed * | *Subject to ER's being updated to reflect Brookfield bid submission. | Compliance with HBN 15-03 Hospital Helipads required. | **Being checked to ensure original assumptions correct. | 15tonne requirement confirmed. |
| 064 | Travel Plan<br>At the design briefing session #3 (10 June 09) URS advised that they are not in possession of a Traffic Assessment for the site and the only document they have is the Travel Plan compiled by JMP (Dec 07). With regards to this Travel Plan this makes specific reference to a TA page 2 point 1.15 which states the following " an outline planning application was lodged with GCC in May 07 along with a TA which identified……."<br><br>We are investigating the internal site road network and require information with regards to traffic flows, movement etc and require a copy of the TA for reference purposes. We would be pleased if the Board could provide us with a copy.<br><br>**RESPONSE: THE JMP TRANSPORT ASSESSMENT OF APRIL 2007 WILL BE UPLOADED TO BIW.** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c | | This information is addressed under the BIW Log contained in Contract Data Part 1. |
| 065 | Linthouse Culvert<br><br>We would be pleased if the Board could provide record information with regards to the Linthouse Burn Culvert including (but not limited to) depths, manhole sizes, manhole depths etc.<br><br>**RESPONSE: WE UNDERSTAND THAT THE BIDDER IS LIAISING WITH THE BOARD RE ACCESS TO THE DRAINAGE RECORDS AND FOR PERMISSION TO UNDERTAKE SUPPLEMENTARY SURVEYS.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 066 | **Re: Risk Register**<br><br>Further to the Commercial Dialogue meeting No 2 we attach a draft Risk Register as promised for your consideration. Clearly, this document will change during the bid period as other risks are identified and others mitigated.<br><br>Please note we have amended the categories with the following headings:<br>Business<br>Construction<br>Design<br>Environmental and Sustainability<br>Operational<br>Programme<br>Statutory<br><br>In addition, we have separated for ease of reference those risks we feel sit with Brookfield, those with the Board and those we believe are shared between both parties subject of course to mutual agreement. At this stage we have identified the risk and proposed the mitigation for the Brookfield and shared items. Our focus now will be to score the risk and review potential cost implications accordingly.<br><br>In the meantime, as discussed we would be pleased for the Board to review the attached and in particular propose mitigation measures for those identified as "NHS GGC" and comment on those stated as "Shared".<br><br>We look forward to receipt of your comments prior to the next Commercial Dialogue meeting. | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. |
| 067 | **Re: Areas Schedule**<br>Further to the Commercial Dialogue meeting no 2 please find attached soft copy of the areas schedule of the exemplar scheme we tabled at the meeting.<br><br>As discussed, we would ask the Board to identify where stated its view on areas schedule "life for like" so we may assess any differences or assumptions made. | - | Info | No action required in respect of this RFI. | Agreed | *Refer to Brookfield submission Volume One for SOA. | Agreed SoA to be inserted. | Agreed | Agreed SoA inserted in Volume 1 of the Contractor's Proposals in Contract Data Part 1. |

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| 068 | **Dual Electrical Supplies – Supplementary Query**<br><br>Further to our previous RFI in which we queried the required extent of dual unified distribution paths for all electrical systems we confirm our interpretation of your requirements:<br><br>As required by the ERs and as confirmed by the Board in DDM#3, all departments will have dual unified supplies i.e.: departments will be provided with two distribution boards, one fed from side A and one from side B of the network.<br><br>In general, in rooms within departments, the final circuits will be interleaved such that each room is fed partially from side A and partially side B of the distribution network.<br><br>However, Clinical Risk Category 1 and 2 rooms within departments will **not** be provided with interleaved final circuits. Determination of Risk Categories will be as defined by SHTM 06-01, 4.19 and 4.20.<br><br>**RESPONSE: ALL ROOMS SHALL BE PROVIDED WITH INTERLEAVED FINAL CIRCUITS** | Y | - | The requirement for all rooms to be provided with interleaved final circuits to be included in ERs for clarity. | Agreed | Clinical Risk Category 1 and 2 rooms within departments will **not** be provided with interleaved final circuits. Determination of Risk Categories will be as defined by SHTM 06-01, 4.19 and 4.20. | Concern is corridors and consultation rooms.<br><br>Only exception should be stores and any accommodation with a single light fitting or single socket outlet | Agreed | Clinical Risk Category 1 and 2 rooms within departments will **not** be provided with interleaved final circuits. Determination of Risk Categories will be as defined by SHTM 06-01, 4.19 and 4.20.<br><br>Concern is corridors and consultation rooms.<br><br>Only exception should be stores and any accommodation with a single light fitting or single socket outlet |
| 069 | **33kV substation**<br><br>Please advise the dimensions of the 33kV substation, LxWxH.<br><br>**RESPONSE: INDICATIVE SIZES ARE SHOWN ON DRAWING G1274/ME(60)02 APPENDIX M REFERRED TO IN ER SECTION 8.4. THE FINAL DIMENSIONS WILL BE DETERMINED BY THE CONTRACTOR AND THE UTILITY COMPANY.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. |
| 070 | As per item 2-43 of logistics competitive dialogue 2 we would attach our draft Site Waste Management Plan (SWMP) for your comment.<br><br>Please pass this document to WRAP for comment against their procedures and benchmarking protocols.<br><br>**RESPONSE: THE BOARD WILL PASS THE DOCUMENT TO THE WRAP REPRESENTATIVE IN SCOTLAND FOR ANY COMMENTS.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. |
| 071 | Further to RFI 026 please advise if the 3 areas of unoccupied land (or any part of) as highlighted on the attached sketch BE-LOG-SK/DJ/1008 could be made available as part of the Nov 2009 phased handover to facilitate New Laboratory development site offices, car parking, and haul routes.<br><br>We would confirm that occasional access to the VIE compound and turning for oil vehicles would be afforded through site haul roads and gates<br><br>**RESPONSE: THIS WAS REVIEWED AND CONSIDERED PER THE DIALOGUE AT LOGISTICS DIALOGUE #3. THE AREA OF LAND IDENTIFIED CAN BE AVAILABLE AS PART OF THE NOV 2009 PHASED HANDOVER**. | - | Info | No action required in respect of this RFI. | Agreed * | Land confirmed as available for BCL use | Logistics agreement for contract signature to confirm areas of land, shared car park etc. | **Agreed, meeting required to finalise amendments to parking etc | Updated and agreed Logistics plans inserted as Volume 10 of the Contractor's Proposals in Contract Data Part 1. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 072 | Find attached our Hoarding proposals to the South and East site boundaries for your review and comment.<br><br>We would note that we have identified 2 possible relocation options for the Bus stop which we can include in the discussions for Logistics dialogue 3 prior to your response.<br><br>We would also request demolition date associated with the works department building to allow co-ordination of hoarding road and service diversion works<br><br>**RESPONSE: THIS WAS REVIEWED AND CONSIDERED PER THE DIALOGUE AT LOGISTICS DIALOGUE #3** | - | NC | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Agreed | | n/c | | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. |
| 073 | Further to Logistics Dialogue meeting Minute 2-26, please find attached our updated site access hoarding and storage routes layout to Laboratory Development (Dwg BE-LOG-SK/DJ/1004A that includes access to VIE and for demolition works.<br><br>We would request your review and comment.<br><br>THIS WAS REVIEWED AND CONSIDERED PER THE DIALOGUE AT LOGISTICS DIALOGUE #3 | - | NC | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Agreed | | n/c | | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. |
| 074 | **Ref Laboratories Building site area**<br><br>We are aware that the relocation of the compactor will be carried out by the Board. Please confirm that the remaining concrete base and hard-standing are included in that removal package of works by the Board's demolition contractor.<br><br>**RESPONSE: THE REMOVAL WILL BE BY THE CONTRACTOR WHO IS APPOINTED BY THE BOARD TO BUILD THE LABS AND HOSPITAL PROJECT (I.E. NOT BY THE BOARD'S DEMOLITION CONTRACTOR)** | Y | - | Per discussions at the meeting with the Board on 18 November 2009 this is to be moved to the location adjacent to the CMB. | Agreed | Subject to confirmation as well that the concrete base and hardstanding will also be removed. | Technical Clarification 20nr (on BIW) and RFI confirm that base and hardstanding (as well as fencing etc) to be removed by Works Contractor (i.e. Brookfield). | Agreed | Technical Clarification 20nr (on BIW Log) and RFI confirm that base and hardstanding (as well as fencing etc) to be removed by Works Contractor (i.e. Brookfield). |
| 075 | **Re: Board Spend profile**<br>Further to the Commercial Dialogue meeting no 2 we tabled a standard cash flow model and would welcome any comments the Board has in this regard.<br><br>In addition, it was stated by the Board that your own spend profiles are year end (March). We would be pleased to receive details and parameters of the Board's cash flow for each year so that we may review accordingly against those parameters.<br><br>**RESPONSE: AS CONFIRMED AT COMMERCIAL DIALOGUE MEETING #3, THE BOARD HAVE USED CASHFLOW INFORMATION PROVIDED TO INFORM DISCUSSIONS WITH SCOTTISH GOVERNMENT ON DRAWDOWN OF FUNDING. NO ISSUES ON FUNDING PROFILE ARE ANTICIPATED AT PRESENT.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 076 | Existing Drainage<br>There is reference in the URS Drainage Impact Assessment; " NSGACL NHS Greater Glasgow & Clyde - NSGH Drainage Strategy Report_iss2_revA.pdf " (section 3.3.3) to an NHS assets survey which also included a CCTV survey carried out in 2003. We would be pleased if the Board could provide a copy of this survey.<br><br>**RESPONSE: THE CCTV SURVEY INFORMATION IS AVAILABLE FOR VIEWING AT HILLINGTON BY ARRANGEMENT WITH THE BOARD. PLEASE CONTACT FRANCES WRATH ON 0141 892 6700 FOR DETAILS.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. |
| 077 | At the last Labs/FM Dialogue, we were advised that the architectural plans and elevation drawings reviewed by BMJ Architects would be issued via BIW, in pdf. and DWG formats, however we do not yet appear to have been issued these in the addendum uploaded to date.<br><br>**RESPONSE: THE PLANS ARE ON BIW, ELEVATIONS WILL BE POSTED ON BIW BY END OF JUNE 2009** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c | | This information is addressed under the BIW Log contained in Contract Data Part 1. |
| 078 | **UPS Provision**<br><br>The ERs require all Isolated Power Supply Units in Risk Category 5 areas (group 2 locations) to be supported by UPS with 3 hour autonomy.<br><br>SHTM 06-01 recommends a typical autonomy of 60 minutes for theatres and 15-30m for non theatres.<br><br>We are concerned about size, weight and cost. To illustrate what a 3 hour autonomy means in practice we estimate that for the adult Theatres there would be 2 no. UPS rooms each approximately 12mx4m with batteries weighing approx 30 Tonnes.<br><br>Similarly, the ERs require a UPS of 2 hour autonomy for the 2 server rooms. Typically the autonomy of a server room UPS is significantly less than 2 hours, the principle being that the UPS is provided to enable seamless operating during the brief period between mains failure and generator start up. In the unlikely event of generator failure the autonomy of the UPS should be sufficient to enable a controlled shut down of the servers, say 15 minutes.<br><br>Your comments would be appreciated.<br><br>Response required by 26th June 2009<br><br>**RESPONSE: YOUR COMMENTS ARE NOTED, FOR BID RETURN WOULD YOU PLEASE PROVIDE COMPLIANCE WITH THE ER's.**<br><br>**THE ER's REPRESENT THE BOARD'S REQUIREMENTS AT DATE OF TENDER, THE TOPIC SHALL BE REVISITED DURING THE DETAILED DESIGN STAGE AND THE FINAL SOLUTION WILL BE SUBJECT TO DISCUSSION WITH THE PARTICULAR DEPARTMENTS.**<br><br>**WOULD YOU PLEASE INCLUDE LOAD AND BATTERY AUTONOMY DETAILS WITH YOUR PROPOSAL.** | - | NC | This item is on the Board Watchlist for compliance by the Contractor to be fully demonstrated. | Agreed | Brookfield proposal includes for design in compliance with SHTM 06-01. | 15 min for non Theatre UPS is not acceptable, 30min minimum to allow intervention if required<br><br>15 min for servers is not acceptable, 30min minimum to allow intervention if required | Any additional requirement in excess of 15 minutes will have a cost impact as this has not been allowed within the Brookfield submission. | Agreed that the Contractor will provide 1hr to Theatres and 30mins elsewhere at no additional cost. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 079 | Drainage & Sewers Impact Assessment compiled by Black & Veatch dated Jun 07 states the following on page 3.6<br><br>The following options have been considered for diversion of Jenny's Burn Culvert:<br>(a) Option 1<br>The new development will include landscaped areas and roads as well as the new hospital<br>buildings. It may be possible to find a gravity route through the development site which<br>follows a road or footpath and therefore minimises impact on construction of the<br>buildings. As it may follow the most direct route between upstream and downstream<br>connection points, this may be the lowest cost option for diversion of Jenny's Burn<br>Culvert.<br>However, this option would require agreement from the developer to incorporate the<br>culvert into the layout of the new hospital grounds. Following discussion with the NHS, it<br>was confirmed that routing the diverted culvert through the new site is not permitted.<br><br>Please confirm if this constrain still exists in terms of re-routing Jenny's Burn?<br><br>**RESPONSE: THE OPTIONS FROM THE BLACK & VEATCH REPORT REFER TO PREVIOUS SCHEME CONSTRAINTS, CURRENT AT THE TIME FOR REPORTING. WE WOULD SUGGEST THAT THIS HAS BEEN MADE CLEAR FROM THE COMPETITIVE DIALOGUE SESSIONS THAT ROUTING THE DIVERTED CULVERT THROUGH THE "NEW SITE" AS IT IS TERMED IS PERMISSABLE.** | Y | - | Diversion through the site permissible to be included in the ERs for clarity. | Agreed | | n/c | | Diversion through the site permissible to be included in the ERs for clarity. |
| 080 | Further to RFI 071 please advise if the 3 areas of unoccupied land (or any part of) as highlighted on the attached sketch BE-LOG-SK/DJ/1009 could be made available prior to the dates identified on the phased handover drawings.<br><br>Area 4 is requested as part of the Nov 2009 phased handover to facilitate New Laboratory development site offices, car parking, and haul routes.<br><br>Areas 5 and 6 are requested for June 2010 to provide early access to carry out road works to establish hoarding lines and commence any necessary Culvert and Foul drainage diversion activities.<br><br>**RESPONSE: AREA 4 WOULD BE AVAILABLE AS ILLUSTRATED ON THE OVERMARK OF YOUR SKETCH. AREAS 5 AND 6 CANNOT AT THIS STAGE BE CONFIRMED AVAILABLE IN THE TIMELINES YOU NOTE.** | - | NC | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Agreed | | n/c | | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. |

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| 081 | It is noted that the footprint currently identified as the Maternity Unit on the topographical and existing layouts for that building does not reflect the construction as existing. Further to the logistics dialogue meeting #2 minute 2-39 and logistics dialogue meeting #3 minute 2-33 we would be pleased if the Board can confirm by illustration the pinch points/logistics for the maternity access to be included as part of their review and response to this.<br><br>**RESPONSE: A DRAWING WILL BE UPLOADED TO BIW BY THE BOARD** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c | | This information is addressed under the BIW Log contained in Contract Data Part 1. |
| 082 | **FM Building layout and location**<br><br>We are in receipt of the latest FM DWG files. However upon review they do not appear to reference into our drawings in the correct location. We would be pleased if the Board could provide us with the latest FM floor plans in DWG format with a reference point that we can align with either the existing survey or exemplar scheme so that the building can be placed accurately.<br><br>**RESPONSE: STAGE D LABS INFORMATION HAS NOW BEEN UPLOADED TO BIW** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c | | This information is addressed under the BIW Log contained in Contract Data Part 1. |
| 083 | Re Community Benefits<br><br>Further to the Community Engagement bidder meeting on Monday 29th June we would be pleased if the Board would confirm the following:<br><br>1) The percentage split between a) Targeted Recruitment and Training and b) SME/Social Enterprise development [Volume 2/1, Appendix V, Page 3]<br><br>2) Clarification on what the actual SME supplier development objectives are. (Volume 2/1, Appendix V, page 10) | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. |
| 084 | Please confirm the maximum vehicle height requirements for headroom purposes at link bridge locations.<br><br>**RESPONSE: THE MINIMUM CLEARANCE REQUIREMENT IS 5.3M** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | Minimum height clearance to be included in ERs at 5.3m per original RFI response. | | This information is addressed under the BIW Log contained in Contract Data Part 1. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 085 | Response to RFI 12 and Scottish Water correspondence to URS dated 9 June 09 uploaded onto BIW.<br><br>The SW correspondence states ***" Sheildhall WWTW which has the capacity to accept the foul drainage, provided the foul flow is connected downstream of the terminal CSO to Shieldhall WWTW"***<br>Can URS please seek clarification from Scottish Water with regards to the location of the 'terminal CSO' as this may have a cost implication in relation to 'off site' sewerage works .<br><br>**RESPONSE: SCOTTISH WATER HAVE SINCE CONFIRMED THAT NO WORKS ARE REQUIRED TO EFFECT A CONNECTION FROM THE SITE DOWNSTREAM OF THE TERMINAL CSO TO SHIELDHALL WWTW. THE CURRENT CONNECTION POSITION IS DEEMED OK.**<br><br>**THE MEETING RECORD OF THE DISCUSSIONS WITH SCOTTISH WATER WILL BE UPLOADED TO BIW.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. |
| 086 | Please could the Board please provide the information relating to BREEAM and sustainability, which was shown at the Design Dialogue meeting on the 23rd June 2009. We understood this was going to be uploaded for distribution last week. This includes the BREEAM pre-assessment by the Board's assessor, feedback on transport, aquifer/groundwater and ecology for BREEAM credits, details of acceptable flush volumes for the hospital and feedback from the meeting with Scottish Water relating to the potential for using biogas.<br><br>**RESPONSE: THIS INFORMATION IS INCLUDED AT VOL 2/1 APPENDIX U AND IN VOLUME 5. THE ECOLOGY REPORT WILL BE ISSUED AS SOON AS POSSIBLE. THE SCOTTISH WATER AQUIFER ASSESSMENT IS ANTICIPATED AT THE END OF JULY 2009.** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover.<br><br>Additionally, the aquifer information is anticipated to be available for review w/c 23 November 2009. | Agreed * | | Aquifer information is to be available by 09 December. Board will upload this to BIW Volume 6 as soon as it is available | **Aquifer information not checked by Brookfield | Information due 09 December and will be available to Brookfield upon receipt.<br><br>Potential to make Building Warrant benefits (cost reduction) if water used for construction purposes (e.g. batching plant) – consider jointly moving forwards post-contract. |
| 087 | **<u>33 kV supply rating</u>**<br><br>We note from the Scottish Power Energy Networks Quotation issued under addendum 14 that the Maximum import Capacity will be 15, 910kVA, which is somewhat lower than the figure of 20,500kVA stated in Appendix M&E2.<br><br>Please clarify.<br><br>We would be pleased if the Board were able to provide a response to this RFI no later than 10th July 2009<br><br>**RESPONSE: THIS POINT IS NOTED, THE DIFFERENCE IS THE RETAINED ESTATE. THE INFRASTRUCTURE IS RATED TO ACCOMMODATE THE GREATER LOAD (THE SUPPLY AGREEMENT WILL BE FLEXIBLE)** | - | Info | No action required in respect of this RFI. | Agreed * | Brookfield submission has only allowed for the quotation from Scottish Power supplied by the Board which identified that maximum import capacity was only 15,910Kva. | Reference minutes of Utilities meeting of 02 December. | **Post this meeting Brookfield are reviewing quotations obtained by the Board in order to ensure that subsequent agreed supply is adequate. Any additional costs over and above that allowed for by Brookfield will be a compensation event. | Brookfield are reviewing quotations obtained by the Board in order to ensure that subsequent agreed supply is adequate. Any additional costs over and above that allowed for by Brookfield will be a compensation event. |

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| 088 | As part of the rationalisation of the area v budget constraints we seek the Board's comments/view on the possible relocation of the Facilities Management Workshops and Associated Office space for the FM Supervisors over to the new Energy Centre.<br><br>Assuming this is an acceptable solution would it be also appropriate to locate the basement mortuary area into the space vacated by the FM Workshops?<br><br>We would ask the Board to respond as soon as possible to enable us to move forward with the design and cost options.<br><br>**RESPONSE: THE ATTACHED SCHEDULE 'SGH FM TRANSFERS' IDENTIFIES THE AREAS THAT CAN BE TRANSFERRED FROM THE LABORATORY BLOCK TO THE MAIN HOSPITAL BUILDING. FURTHER, THE ATTACHED UPDATED SOA IDENTIFIES AN ADDITIONAL POTENTIAL AREA CONSIDERATINS IN RELATION TO CO-LOCATION OF AREAS.**<br><br>**CONSTRAINTS TO BE OBSERVED ARE:**<br><br>**1) THE SPLIT BETWEEN DIRTY AND CLEAN DELIVERIES IN LINE WITH INFECTION CONTROL REQUIREMENTS;**<br>**2) THE PROVISION OF AN FM YARD TO CATER FOR 150 VEHICLE MOVEMENTS DAILY (INCLUDING ARTICULATED VEHICLES); AND**<br>**3) THE FM YARD AND DELIVERY/UPLIFT OPERATIONS SHOULD NOT BE VISIBLE FROM CLINICAL AREAS OF THE CHILDREN'S HOSPITAL.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. |
| 089 | With reference to the new Lab-Building, we would be pleased for the Board to provide us with set out coordinates of the new building to allow Brookfield to prepare the correct set out of our drawings.<br><br>**RESPONSE: THIS INFORMATION FORMED AN ASPECT OF THE DOCUMENTATION AND INFORMATION SUBMITTED TO PLANNING AND WAS THERFORE UPLOADED TO BIW** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c | | This information is addressed under the BIW Log contained in Contract Data Part 1. |
| 090 | Please can we receive an indication of whether WC flush volumes of 4.5 litres are acceptable to the board (as required under BREEAM Wat 1) for all WCs? This was discussed at DD meeting #4 as potentially unacceptable. Thanks.<br><br>**RESPONSE: CONFIRMED AS NOT ACCEPTABLE** | - | Info | No action required in respect of this RFI. | Agreed * | | 4.5litres confirmed as not acceptable per original RFI response. | **Brookfield confirm that we will look to incorporate 6litres allowance as per ER`s but this will impact BREAM rating and thus careful consideration will be required. | Contractor to provide 6litres to clinical areas and 4.5litres to non-clinical areas (per agreed listing identifying these areas).<br><br>Watchlist Item – must work without double shunting and to support BREEAM approach. |

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| 091 | We would be pleased if the Board can confirm the actual number of Loaded Rooms as per the ADB sheets, as the current information available in the various documents varies from 73 to 100.<br>We would appreciate your response as soon as possible.<br><br>**RESPONSE: THE SUM OF THE TWO LISTS IS 100 ROOMS MADE UP OF 28 NCH, 42 NSGH AND 30 COMMON TO BOTH NCH & NSGH.**<br><br>**THE ADB RDS COVERING THESE LISTS ARE LOCATED IN ITPD VOLUME 2/1 APPENDIX E.**<br><br>**ALL DRAWINGS ARE AVAILABLE FROM BIW.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. |
| 092 | We have been advised (by SSE) that there has been a review of NHS Board owned land which may consider potential sites for installing wind turbines. The contact name we were given was Ian Powrie of NHS Estates. Is it possible to be given the results of this review, in order to complete a comprehensive assessment of the potential for installing an off site wind turbine, able to supply renewable energy to NSGH? Thanks.<br><br>**RESPONSE: AS PER THE ER's (2.3.1.2 OF M&E APPENDIX 4) THE OPERATIONAL ENERGY TARGETS ARE TO BE MEASURED AT THE INCOMING ENERGY METERS AND THERFORE OFF-SITE SOLUTIONS ARE NOT TO BE CONSIDERED AT THIS STAGE. THE DOCUMENT TO WHICH YOU REFER (ABOVE) WILL NOT THERFORE BE ISSUED AT THIS STAGE.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI |
| 093 | Could the Board please advise how is the Ecoteric carbon tracker and evaluation matrix are going to be integrated into the bid evaluation process? Information on how to structure our response as part of a bid deliverable as well as details of its evaluation would be appreciated. Thanks.<br><br>**RESPONSE: THE BID DELIVERABLES APPENDIX OF ITPD VOLUME 3 IS BEING UPDATED FOR ISSUE PRIOR TO CLOSE OF COMPETITIVE DIALOGUE TO CONFIRM REQUIREMENTS. IN GENERAL A COMPLIANCE STATEMENT WILL REQUIRE TO BE SUBMITTED. THIS COMPLIANCE STATEMENT WILL BE EVALUATED/SCORED IN ACCORDANCE WITH THE EVALUATION PROCESS SET OUT IN ITPD VOLUME 3.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 094 | Can the Board confirm the likely volume and mix of waste the final project is likely to generate? An indication of volume and waste streams would be appreciated as well as any specific waste management constraints already known.<br>Thanks.<br><br>**RESPONSE: HEALTHCARE WASTE (FORMERLY CLINICAL WASTE) 1700 TONNES**<br>**CYTOTOXIC WASTE 8 TONNES**<br>**ANATOMICAL WASTE 6 TONNES**<br>**PHARMACY WASTE 2.5 TONNES**<br>**DOMESTIC WASTE INC. RECYCLATES 2004 TONNES**<br><br>**THIS IS BASED ON CURRENT POSITION, AS IT IS DIFFICULT TO PREDICT FUTURE LEGISLATIVE OR CLINICAL PRACTICE CHANGES AND THE IMPACTS THIS MAY HAVE ON WASTE ARISINGS.** | Y | - | Waste details to be included in the ERs for clarity. | Agreed | | n/c | | No action required in respect of this RFI |
| 095 | The Employers' Requirements state that:<br><br>*7.17.3 The Art strategy will be developed in the context of;*<br>*a. current Board arts strategy work already being undertaken in Glasgow as part of ASRI and the new Maternity Unit at Southern General Hospital;*<br>*b. the range of cultural, regeneration, funding partnerships already established within Greater Glasgow and Clyde;*<br><br>We would be pleased if you can provide a copy of the current Board arts strategy for our review, to ensure compatibility. In addition, please provide details of the art programme for the new Maternity Unit and a short commentary to highlight the headlines of the process and to summarise the key lessons learned from this.<br>It would also be greatly appreciated if you could provide a list to confirm those funding partnerships which have already been established, for our review and to enable us to ensure appropriate continuity.<br><br>**RESPONSE: AN EXAMPLE ARTS DOCUMENT FROM THE BOARD HAS BEEN UPLOADED TO VOL 5 OF BIW.** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c | | This information is addressed under the BIW Log contained in Contract Data Part 1. |
| 096 | Could the Board confirm the number, type (medium pressure, low pressure) and available capacity of natural gas supplies that could serve the site? Thanks.<br><br>**RESPONSE: THE RELEVANT INFOMATION IS HOSTED ON BIW** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed * | Brookfield have confirmed assumptions in submission | Refer to minutes of Utilities meeting of 02 December | **Agreed. Brookfield understand medium pressure supply will be provided and as such confirm this has been allowed for within design of the installed services. | Brookfield understand medium pressure supply will be provided and as such confirm this has been allowed for within design of the installed services. |
| 097 | Further to the Boards response to RFI 057 regarding Clients Office Requirements, would the Board accept their offices being located on the second floor over the Brookfield offices, with easy access to shared meeting rooms on first floor. Disabled access for wheelchairs to second floor would not be viable. | - | NC | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Agreed | | n/c | | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. |

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| 098 | Please can you provide further details by way of a room by room SOA breakdown for the following departments:<br><br>Decontamination<br>Medical Physics<br>Medical Photography<br>Hotel Services & Domestic Portering<br>Staff Changing<br>Equipment Library/Store (non-Bio-Engineering)<br>Sterile Store<br><br>In addition, please can you confirm whether the Equipment List provided has included for the above departments.<br><br>**RESPONSE: THE INFORMATION HAS BEEN INCLUDED IN THE UPDATED SOA ON BIW, WITH THE EXCEPTION OF FM + STAFF AREAS THAT HAVE TO BE SCHEDULED OUT BY BIDDERS (PER ITEM 17 OF THE TECHNICAL CLARIFICATION LIST UPLOADED TO BIW ON 14 AUGUST 2009)** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | Please Noete that a detailed SOA was not provided, therefore we assume that the area allocation provided in the Brookfield Bid Submission, which matches the Board's SOA, is correct. In addition, we assume that all equipment required was provided in the Board's Equipment List, which has been priced for in the Brookfield Bid Submission. | Common SoA to be agreed, Brookfield were to provide ADB allowances also however (HLM to advise). | ADB allowances for what? | Brookfield confirmed (including confirmation from Nightingale Architects and Doig & Smith) that their bid includes for partitions, doors, ceilings, services etc with regard to the areas requested per the ERs and RFI – allowances being based on a pro-rata $m^2$ cost to the rest of the hospital. Noted and agreed that no allowance has been made for equipment beyond the agreed Equipment List. |
| 099 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 1 - Cleaner sockets:** OUT005 (SOCKET outlet switched 13amp single, wall mounted) to be added in all rooms, where not provided in the brief. Placed at 150mm cc from door opening. Exceptions are WC's, Shower Rooms, Bathrooms, En-suites, Changing Rooms and Parking Bays (Resus trolley, Wheelchair, mobile X-ray)<br><br>**RESPONSE: THIS RULE APPEARS REASONABLE** | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 100 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 2 - Light switches:** SWC001 (SWITCH 5amp ac single pole, 1 way, wall mounted) to be added in all rooms. Placed at 150mm cc from door opening. Exceptions are WC's, Shower and Bathrooms refer to **QUERY 003**.<br><br>**RESPONSE: THIS RULE APPEARS REASONABLE HOWEVER 5 AMP SWITCH SHOULD BE 10A RETRACTABLE SWITCH INTEGRATED WITH LIGHTING CONTROL SYSTEM** | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |

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| 101 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 3 - Wet areas:** Please confirm light switch type (i.e. pull cord SWC014 (SWITCH 5amp ac single pole, 1 way, ceiling pull cord) or SWC001 (SWITCH 5amp ac single pole, 1 way, wall mounted) and position of light switches in all wet rooms and WC's.<br><br>**RESPONSE: PULL CORD SWITCHES ARE ONLY TO BE USED WHERE ALTERNATIVES ARE NOT AVAILABLE** | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 102 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 4 - X-Ray viewers:** Electrical supply to this item be standardised as an OUT052 (CONNECTION UNIT switched 13amp, wall/trunking mounted to M&E detail) below and a cable outlet OUT002 (OUTLET cable, wall/trunking mounted) behind unit throughout the project.<br><br>**RESPONSE: THIS RULE APPEARS REASONABLE** | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 103 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 5 - Water boilers:** Electrical supply to this item to be standardised as an OUT052 (CONNECTION UNIT switched 13amp, wall/trunking mounted to M&E detail)<br><br>**RESPONSE: IF WATER BOILERS ARE PROPOSED THIS RULE APPEARS REASONABLE** | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 104 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 6 - Dishwasher, Washing Machine/Tumble Dryer:** Electrical supply to this item to be standardised as a low level OUT006 (SOCKET outlet unswitched 13amp single, wall mounted) and an OUT052 (CONNECTION UNIT switched 13amp, wall/trunking mounted to M&E detail) above the worktop throughout the project.<br><br>**RESPONSE: THIS RULE APPEARS REASONABLE, CONNECTION UNIT TO BE LABELLED WITH APPLIANCE NAME** | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |

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| 105 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 7 - Fridges under worktops:** Electrical supply to this item to be standardised as a low level OUT006 (SOCKET outlet unswitched 13amp single, wall mounted and) and an OUT054 (CONNECTION UNIT unswitched 13amp, with pilot light) above the worktop throughout the project.<br><br>**RESPONSE:** This rule appears reasonable, connection unit to be labelled fridge. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 106 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 8 - Tall appliances:** Electrical supply to these items should be standardized as an OUT006 (SOCKET outlet unswitched 13amp single, wall mounted and) behind unit and OUT054 (CONNECTION UNIT unswitched 13amp, with pilot light) accessible next to unit.<br><br>**RESPONSE:** This rule appears reasonable, connection unit to be labelled with appliance name. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 107 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 9 - High Level Controlled drug cupboard:** Electrical supply to this item to be standardised as an OUT050 (CONNECTION UNIT, to controlled drugs cupboard, wall mounted) behind and LIG081 (LUMINAIRE fitted with single fluorescent lamp with switch, below drug cupboard, 8watt, 400mm) if not included in the description of the drug cupboard, below unit throughout the project.<br><br>**RESPONSE:** This rule appears reasonable. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 108 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 10 - High Level Drug Fridge:** Electrical supply to this item will be standardised as an OUT006 (SOCKET outlet unswitched 13amp single, wall mounted) behind unit and OUT054 (CONNECTION UNIT unswitched 13amp, with pilot light) accessible next to unit.<br><br>**RESPONSE:** This rule appears reasonable, connection unit to be labelled with appliance name. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |

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| 109 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 11 - Vending Machines:** Electrical supply to this item to be standardised as a low level OUT006 (SOCKET outlet unswitched 13amp single, wall mounted) throughout the project.<br><br>**RESPONSE:** This rule appears reasonable. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 110 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 12 - Drinking Water Dispensers:** Floor standing OUT010 (SOCKET outlet switched 13amp double, wall / trunking mounted) adjacent to item throughout the project. From Mains OUT315 (OUTLET drinking water for equipment) and a low level OUT006 (SOCKET outlet unswitched 13amp single, wall mounted) throughout the project.<br><br>**RESPONSE:** Please clarify proposal. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 111 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 13 - Ovens:** Electrical supply to this item be standardised as an OUT052 (CONNECTION UNIT switched 13amp, wall/trunking mounted to M&E detail) as well as an OUT054 (CONNECTION UNIT unswitched 13amp, with pilot light) above and a cable outlet OUT002 (OUTLET cable, wall/trunking mounted) behind unit throughout the project.<br><br>**RESPONSE:** No ovens. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 112 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 14 - TV's:** Electrical supply to this item to be standardised as an OUT206 (SOCKET outlet television aerial, single, wall mounted) & an OUT010 (SOCKET outlet switched 13amp double, wall / trunking mounted).<br><br>**RESPONSE:** This rule appears reasonable. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |

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| 113 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 15 - Microwave oven, Toaster & Kettle:** Electrical supply to this item to be standardised as an OUT010 (SOCKET outlet switched 13amp double, wall / trunking mounted) adjacent to item throughout project.<br><br>**RESPONSE:** Acceptable. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 114 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 16 - Bedpan Macerator:** Electrical supply to this item will be standardised as an OUT075 (OUTLET isolator, 32 amp, TP&N, wall mounted 3 phase) and an OUT046 (CONNECTION UNIT unswitched 13amp, flex outlet, wall mounted) adjacent to item throughout project.<br><br>**RESPONSE:** Board to confirm rating and voltage. 13 amp flex outlet is mismatch with TP&N supply. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 115 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 17 - Fax Machine, Copier, Printer:** Electrical supply to these items to be standardised as an OUT010 (SOCKET outlet switched 13amp double, wall / trunking mounted) and an OUT121 (SOCKET outlet data; wall/trunking mounted) throughout the project.<br><br>**RESPONSE:** This rule appears reasonable. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 116 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 18 - Over Head Projector:** Electrical supply to this item to be standardised as an OUT010 (SOCKET outlet switched 13amp double, wall / trunking mounted) throughout the project.<br><br>**RESPONSE:** We don't envisage overhead projectors in this project as most presentations are via computer and will be done with ceiling mounted projectors. If an overhead projector (floor standing) is required a wall mounted outlet would only be suitable provided it does not cause a trip hazard when the projector cable is plugged in. If that was the case then we would expect to see a floor box with OUT009. Suggest socket outlet is located on angled plate on ceiling adjacent overhead projector. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |

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| 117 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 19 - Resus Trolley, ECG, Mobile Suction Apparatus, Electric Portable Suction Unit:** Electrical supply to these items to be standardised as an OUT010 (SOCKET outlet switched 13amp double, wall / trunking mounted) throughout the project.<br><br>**RESPONSE:** This rule appears reasonable. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 118 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 20 - Examination Lamp (wall mounted):** Electrical supply to this item to be standardised as an OUT052 (CONNECTION UNIT switched 13amp, wall/trunking mounted to M&E detail) adjacent to the unit and a cable outlet OUT002 (OUTLET cable, wall/trunking mounted) behind unit throughout the project.<br><br>**RESPONSE:** This rule appears reasonable. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 119 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 21 - Reception desks:** A generic description referring to architectural detail to be used throughout the project i.e. COU8037 - COUNTER, RECEPTION - Bespoke furniture - Details as design.<br><br>**RESPONSE:** We had provided a code (COU077) in the equipment list so agree with the principle. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 120 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 22 - Staff Base/ Nurse Base:** A generic description referring to architectural detail to be used throughout the project i.e. COU8005- COUNTER, STAFF – Bespoke<br><br>**RESPONSE:** We had provided a code (COU999) in the equipment list so agree with the principle. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 121 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 23 - Sanitary bins:** BIN9000 (BIN, sanitary) to be added in all unisex and female WC's.<br><br>**RESPONSE:** This rule appears reasonable. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 122 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 24 - Soap Dispensers:** Will be fixed on the wash hand basin panel on the left hand side and paper towel dispensers on the right with mirrors and shaver sockets as close as possible next to the wash hand basin.<br><br>**RESPONSE:** This is one of a number of standard assemblies which will be required to be agreed with the board before the full room loading process gets underway but for the purposes of the submission bidders should use their own experience. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 123 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 25 - Hand dryers -** Electrical supply to this item to be standardised as an OUT059 (CONNECTION UNIT switched 13amp, flex, indicator light).<br><br>**RESPONSE:** If hand dryers are proposed, we recommend that final connection is via concealed cable to hand dryer via conduit from outlet. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 124 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 26 - Wash hand basin- Independent wheelchair/Accessible WC's:**<br>NA Codebook cell WAS902L/R (BASIN, for accessible WC's, right/left hand, small, general pattern, vitreous china, 1 central tap hole, no overflow, exposed waste, 400x370mm, HTM64LBG/S) to be used.<br><br>**RESPONSE:** Central tap hole for accessible WCs would not be acceptable as the tap should be on the corner closest to the toilet pan as recommended in HBN 00-02 para 3.40. Both BS8300 & HBN 00-02 illustrate this. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 125 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 27 - IPS panels:** Will be added behind wash hand basins, WC's, Disposal Units & sinks. IPS8006 (IPS PANEL 125 deep; length as drawn) is used for wash hand basins and sinks generally 750mm in length and IPS8000 (IPS PANEL 300 deep, length as drawn) used for WC's and Disposal units.<br><br>**RESPONSE:** This appears reasonable. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 126 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 28 - Shelves:** A maximum of 5 shelves to be placed on top of each other (at 350mm intervals), with top shelf at 1700mm off floor level.<br><br>**RESPONSE:** In principle yes, if the shelves are over 400mm deep would expect the top shelf to be lower, also expect the shelving to be adjustable so that there is the opportunity to change the height of the shelves to suit what is being stored in the future. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 127 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 29 - Wheelchair turning circles:** SPA8013 (1500 DIAM. WHEELCHAIR TURNING CIRCLE) to be added in all Independent/Disabled as well as assisted rooms where the Room Data specifies that the patient may be in a wheelchair.<br><br>**RESPONSE:** This appears reasonable. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 128 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 31 - Computer workstation arrangements:** Will comprise of the following - 1 x COM032 (COMPUTER VDT MONITOR, (Part of COM031) or COM046 (COMPUTER MONITOR, 15 "; TFT, digital flat panel display, desk top) depending on the brief , 1 x COM031 (COMPUTER KEYBOARD, (Part of COM031), 1 x COM033 COMPUTER KEYBOARD, (Part of COM031), 2 x OUT010 (SOCKET outlet switched 13amp twin, wall/trunking mounted), and 1 x OUT121 (SOCKET outlet data; wall/trunking mounted).<br><br>**RESPONSE:** Would expect them all to be flat screen regardless of brief as ADB is not really up to date and there are very few that are the big VDT monitors these days. The rest is fine. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 129 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 32 - 300mm Opening:** An unobstructed space of at least 300mm on the pull side of the door between the leading edge of the door and any return wall will be left open to provide for wheelchair access in accordance with DDA requirements.<br><br>**RESPONSE:** Bidders are required to comply with the recommendations fo HBN 00-04 (ITPD Vol 2/1 section 5.1.2) which recommends a minimum of 450mm with a preference for 600mm. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 130 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 33 - Services:** Power outlets will be standard regardless of whether it is wall or trunking mounted. OUT012's briefed (SOCKET outlet switched 13amp twin, trunking mounted) will be replaced with item OUT010 (SOCKET outlet switched 13amp twin, wall/trunking mounted).<br><br>**RESPONSE:** Board may wish to differentiate between wall or trunking mounted outlets at 1:20 drawing. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 131 | With reference to ITPD Volume 3 appendix A Bid Deliverables we would be pleased if the Board could clarify the following deliverable requirements:<br><br>Section 2.11: Heli pad proposals: Is this limited to location on roof level or does the Board require details on structural support, fire fighting, lighting etc. **RESPONSE: Information under this item (which is now item 2.12) is limited to structural and architectural proposals**<br><br>Section 3.5: Please confirm if this is the same deliverable as 3.26 or confirm what the Board require under this deliverable if different. **RESPONSE: 3.5 and 3.26 were the same deliverable. Item 3.5 has now been replaced by a requirement for FM strategy**<br><br>Section 3.22: Heli pad M&E services design strategy. Please confirm the Board's operational strategy/protocol so we may consider this in more detail. Alternatively, is this amplification of item 2.11 above. **RESPONSE: The requirement is in relation to specific details relating to M+E (lighting, fire fighting, etc.)**<br><br>Section 3.26: See above item 3.5 clarification request. **RESPONSE: See response above**<br><br>Section 4.0 General: Please advise what level of specifications the Board require at this stage. We propose to submit outline specifications unless stated otherwise within our submission. **RESPONSE: sufficient information should be provided in order that the Board understand what forms the basis of the bid offer)**<br><br>Section 4.19 Fittings, fixtures and furniture: Could the Board please clarify what is required in this section. **RESPONSE: outline of specific inclusions in your bid offer**<br><br>Section 4.20: Soft Furnishings: Could the Board please clarify what is required in this section. **RESPONSE: outline of specific inclusions in your bid offer**<br><br>Section 4.21: Works of Art: Could the Board please clarify what is required in this section. **RESPONSE: outline of specific inclusions in your bid offer**<br><br>Section 4.22: Could the Board please clarify what is required in this section. **RESPONSE: details of Group1 specifications**<br><br>Section 4.24: Services Equipment: Could the Board please clarify what is required in this section. **RESPONSE: kitchen equipment etc**<br><br>Section 4.57: Could the Board please clarify what is required in this section. **RESPONSE: details of relevant works/specifications (e.g. bicycle stores etc)**<br><br>Section 6.10 Equipment: Could the Board please clarify what is required in this section. **RESPONSE: equipment list that was issued priced and returned**<br><br>Your earliest response would be most appreciated.<br><br>**RESPONSE:** Individual responses added in **bold** against each item. It is noted that the updated Appendix A (attached to the updated Volume 3 uploaded on 14 August 2009) is to be followed and has some changes in numbering from the above. The new numbering has been noted in the response above where relevant. | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 132 | 1. Could area 7 be made available to us for siting Phase 1 offices and Welfare on Commencement phase 1 of Construction.<br><br>2. Could area 8 be made available to us for siting Phase 2/3 offices and welfare in August 2010 assuming in our bid Car Park 2 is on Area 4.<br><br>Note: Previous land usage requests:<br>RFI 071 only covers part of Area 7<br>RFI 080 response makes available to us Area 4 but this RFI was raised prior to us moving position of car park 2 and its availability will now depend on Car Park 2 Programme.<br><br>Please can you respond as a matter of urgency: this information is required later today if possible.<br><br>**RESPONSE:** Point 1 - Yes<br><br>**RESPONSE:** Point 2 - No, available fro approval of FBC Nov 2010 and with provision that Site Accommodation must be removed from Area 8 by Dec 2013 as Board need that site back for new build car park. Board do not have sufficient detail and comfort that the required size of Car Park can be delivered on Area 4. | - | NC | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Agreed * | *Subject to availability as per Brookfield bid submission. | To be agreed pre-contract and therefore prior to mobilisation. | ** Meeting required to finalise land matters prior to contract | Agreed Logistics information included as Volume 10 of the Contractor's Proposals in Contract Data Part 1. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 133 | With reference to Tender Addendum **TAD-00023**, and the attached documents **'NSGH Suggested Drawn Rooms'** and **'NCH Suggested Drawn Rooms'**, please clarify the following discrepancies in relation to the Document Volume Three 'Bid Deliverables and Evaluation', Section 2.9 '1:50 Room Layout and Wall Elevations' ITPD List of Key Rooms :<br>(1) There are duplicate Room Types (ADB Briefing Code);<br>**X0240** – used for:<br>NSGH Renal Wards 16 Beds + Day Unit – Minor Procedures & Treatment Room and<br>NSGH Accident & Emergency – Major Procedure Room –<br>**X0253** – used for:<br>NSGH Renal Wards 16 Beds + Day Unit – 4 Station Dialysis Room and<br>NSGH Dialysis Unit (30 Stations) – 4-Bed Dialysis -<br>**V1610** – used for:<br>NSGH Generic Wards 28 Beds – Patients En-Suite Assisted Shower, WC, & Wash Double Assist<br>NCH Assessment Area 20 Beds – Shower, WC, & Wash: Accessible, Wheelchair Assisted - **N0111** – used for:<br>NSGH Radiology – Radiological/Surgical Endovascular Laboratory Theatre<br>NCH Cardiac Cath Lab & Interventional Radiology Suite – Interventional Radiology Lab<br>**E0127** – used for:<br>NSGH Radiology – General Computed Radiography Room inc Control Area<br>NCH Radiology – General Computed Radiography X-Ray Room inc Control<br>**X0240** – used for:<br>NSGH Renal Wards 16 Beds + Day Unit – Minor Procedures & Treatment Room (inc prep)<br>NSGH Accident & Emergency – Major Procedure Room<br>**X0242A** – used for:<br>NSGH Accident & Emergency – MIU Assess / Treatment Room<br>NCH Accident & Emergency – Assess & Treatment Room A&E, Multi-Functional<br>Please confirm if this is correct? If any require a different Clinical Briefing please provide this to enable us to produce the drawings as requested<br><br>**RESPONSE:** Generally this is correct. In the absence of any dialogue with end users the same level of equipment has been assumed for costing purposes hence the allocation of the same room code to potentially different room types. The development of the detailed clinical brief won't happen until after the preferred bidder has been selected. For the purpose of the submission if the same ADB room code is allocated to more than one room then the same 1:50 drawing will do for both rooms provided they are the same area on the SoA. Where the areas differ then we would expect a drawing for each room albeit with the same level of equipment. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | *Subject to Brookfield bid submission | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 133 | (2) The following Room Types (ADB Briefing Code); which were included in the Volume 2.1: Appendix E - ADB Room Data Sheets are now missing from the **'NSGH Suggested Drawn Rooms'** and **'NCH Suggested Drawn Rooms'**; **C0201**, **C0304**, **C1020**, **K0378**, **T0106**, **T0212A**, **X0206**, **X0238** and **X0255**.<br>Please confirm that these rooms are no longer required to meet the Bid Deliverable requirements?<br><br>**RESPONSE: Yes these are required and should have appeared on the room lists which have since been revised and will be uploaded on BIW**<br><br>(3) The following Room Types (ADB Briefing Code); which were not included in the Volume 2.1: Appendix E - ADB Room Data Sheets are now included in the **'NSGH Suggested Drawn Rooms'** and **'NCH Suggested Drawn Rooms'**;<br>**Z0303** – NSGH Aseptic Dispensary Model 2: CIVAS Outer Support Room (prep)<br>**Z0404** – NSGH Aseptic Dispensary Model 2: TPN Outer Support Room (prep)<br>**Z0105** – NSGH Option 3 Dispensary (Adult and Children) – Dispensary<br>**C0216** – NSGH Outpatient Department Accommodation – Consulting / Exam Room (interconnecting)<br><br>We do not have ADB Room Data Sheets for these, please can you<br>provide the brief as **.mdb** or **excel** format?<br><br>**RESPONSE: The aseptic suite rooms will be a specialist fit-out and have been removed from the revised lists of rooms to be drawn for the submission. The CO216 room code has been replaced by CO201 on the revised lists.**<br><br>In addition, please note that the department '**NSGH Aseptic Dispensary Model 2**' does not currently have an SOA breakdown, and is currently noted as 'block allowance'. Please provide the detailed SOA to enable the design of the 2xrooms requested? | | | | | | | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. |
| 133 cont | You have confirmed in addendum 22 that the Biochemistry block AN is to be demolished April 2012.<br><br>Please advise whether this space could be made available for relocation of the service yard compound beyond the new build site boundary into the cleared space as per the attached sketch.<br><br>**RESPONSE:** The Board have previously advised that the service yard will be relocated by the Contractor to an area adjacent to the helipad. From that location, at the timing noted above, the waste provision of the compound will be serviced from the laboratory building/yard which will be open from January 2012. | - | Info | No action required in respect of this RFI. | Agreed | *Subject to space being available upon Labs completion. | Waste compound now being located elsewhere, per discussions with Brookfield at recent meetings. | n/c | Waste compound now being located elsewhere, per discussions with Brookfield at recent meetings. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 134 | With reference to ITPD Volume 3 appendix A Bid Deliverables we would be pleased if the Board could clarify the following deliverable requirement:<br>Section 12.8: Whole Life Cycle Cost Estimate for 30 Year Period.<br><br>At the Commercial Dialogue meeting No 3 it was confirmed by the Board that it was actually Life Cycle Cost (LCC) that is required rather than Whole Life Cost (WLC). On this basis we propose to submit the following:<br><br>1) Published high level cost per m2<br>2) Replacement Costs and timescales<br>3) Planned & Preventative Maintenance<br>4) Energy Usage assumptions<br>5) Energy Cost assumptions<br><br>The following items shall be evidenced in relation to the above:<br><br>**Building**<br><br>Roof<br>Cladding<br>Glazing<br>Decoration<br>Flooring<br>Partitions<br>Ceilings<br>Grounds Maintenance<br><br>**(continued over)** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 135 cont | **Mechanical**<br><br>- AHU's<br>- Chillers<br>- Boilers<br>- Pumps<br>- CHP<br>- Controls<br>- Sanitary fittings/water consumption<br><br>**Electrical**<br>- Lighting lamps<br>- Lighting controls<br>- UPS<br><br>**Medical systems**<br>- Pneumatic Tube systems<br>- Medical gases<br>- Robotics<br><br>**Vertical Transportation**<br>- Escalators<br>- Lifts<br><br>We would be pleased if the Board could confirm this is acceptable or alternatively advise any other elements/systems that would be required.<br><br>Your response at the earliest would be gratefully appreciated.<br><br>**RESPONSE:** LCC not WLC is correct. Periods should be for 30 years and 60 years (BREEAM requirement).<br><br>Format of LCCP to be as stated in Vol 2/1 Section 5.3.5.3 - Table 2 Item 6.1 - this is more comprehensive than the fairly high level example proposed. If the requisite level of information is not available at this stage, then this should be highlighted/stated with reasons and assumptions given. | See above | | | | | | | |
| 136 | Re Laboratories: Equipment<br><br>We would be pleased if the Board could confirm if an Equipment List will be issued for the Laboratories for the Bidders to price or alternatively please advise what the Board require bidders to provide in the submission in relation equipment to the Laboratory facility.<br><br>**RESPONSE:** Room Data information with Group 1& 2 Equipment information will be issued by BMJ. | - | Info | This will comprise an aspect of the Stage E Laboratories Design Information | Agreed | | | | This will comprise an aspect of the Stage E Laboratories Design Information |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 137 a | Re Laboratories: Bills of Quantities/M&E Tender Addendum 022<br><br>We would be pleased if the Board could confirm if they require the bidder to complete pricing information using the Bills of Quantities and tender addendum 022 format or the pricing templates included in Volume 3.<br><br>**RESPONSE:** Volume 3 needs to be completed. The Bill of Quantities should be also priced and returned (including any additional items not included in the Bills) to give back up to Volume 3. | - | Info | No action required in respect of this RFI. | Agreed | | | | No action required in respect of this RFI. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 137 b | Re Medical Equipment on Schedule of Components<br><br>We would be pleased if the Board could confirm if they require the bidder to price for the following medical equipment items contained on the Schedule of Components.<br>IMG026 IMAGE INTENSIFIER and X-RAY TUBE FLUOROSCOPY, U-arm, floor mounted, (intensifier underneath the table, x-ray tube above)<br><br>IMG061 IMAGER, COMPUTER TOMOGRAPHY (CT) , 16 slice unit<br><br>IMG066 TABLE PATIENT - CT imager, floating top, (Part of IMG061)<br><br>IMG082 IMAGER, MAGNETIC RESONANCE IMAGING (MRI), open<br><br>IMG083 TABLE PATIENT - MRI imager, movable top, on castors, (Part of IMG082)<br><br>IMG021 IMAGE INTENSIFIER UNIT, C-arm, mobile<br><br>IMG023 IMAGE INTENSIFIER, monitor, (Part of IMG021)<br><br>IMG024 IMAGE INTENSIFIER, monitor trolley, (Part of IMG021)<br><br>IMG070 IMAGER GAMMA CAMERA, digital, single detector, with monitor<br><br>IMG072 IMAGER GAMMA CAMERA, digital, multi detector/PET, with monitor<br><br>IMG073 TABLE PATIENT - SPECT, gamma camera, variable height, 970/730H 2060W 720D, Part of gamma camera)<br><br>IMG074 IMAGER COLLIMATOR RACK, gamma camera, 1300H 770W 800D, (Included in IMG070, IMG071, IMG091)<br><br>IMG075 IMAGER COLLIMATOR RACK, gamma camera PET, (Included in IMG072 and IMG091)<br><br>IMG076 IMAGER CART exchange collimator, gamma camera, 1270H 670W 910D, (Part of IMG070 and IMG072)<br><br>IMG077 CONSOLE UNIT and COMPUTER for gamma camera/PET, 1180H 1040W 900D, (Included in IMG070, IMG071, IMG072 and IMG091)<br><br>IMG079 IMAGER DISK UNIT optical, (Part of IMG077)<br><br>IMG116 IMAGE GENERATOR/POWER DISTRIBUTION CABINET, (Part of fluoroscopy imager)<br><br>IMG041 IMAGER MAMMOGRAPHY UNIT, with rotation of swivel U-arm, floor mounted | - | Info | No action required in respect of this RFI. | Agreed * | Refer to Brookfield Bid submission Volume 6 which identifies equipment allowed for within bid. | Equipment list to be adjusted to reflect items that have been omitted in commercial adjustment (e.g. renal equipment and other medical equipment). | **Can the Board provide BE with details of the adjustments made | Agreed Equipment List (incl adjustments) included as Volume 6 of the Contractor's Proposals in Contract Data Part 1. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 137 b | MG042 IMAGER CONTROL CABINET and GENERATOR for mammography, approximate 2000H 1000W 1000D<br><br>IMG043 IMAGER POWER CABINET for mammography, with on/off and emergency off button, (Part of IMG041)<br><br>IMG044 CONTROL CONSOLE and RADIATION PROTECTION SCREEN for mammography unit, (Part of IMG041)<br><br>IMG055 IMAGER BONE DESITOMETRY UNIT, with rotating detector/X-ray tube and mowing couch, floor mounted, approximate 1500H 1500W 3000D<br><br>IMG056 IMAGER CONTROL CABINET for bone densitometry, approximate 1500H 750W 750D, (Part of IMG055)<br><br>IMG102 MONITOR viewing flat panel display for image intensifier, (Part of IMG025, IMG026, IMG028 and IMG030)<br><br>IMG104 TROLLEY for monitor image intensifier, (Part of IMG102)<br><br>IMG105 TABLE PATIENT - image intensifier, X-ray, floating top, (Part of IMG026, or IMG030)<br><br>IMG109 IMAGING CHAIR, with arms, tilt, on castors<br><br>IMG142 IMAGING, Computed Radiography Unit, low/medium-throughput, CR plate reader, o/a 1415H 730W 700D<br><br>XRA001 X-RAY UNIT TUBE, dental, mobile<br><br>XRA007 X-RAY IMAGING UNIT, adjustable arm 1840/580mm, electric, mobile, battery driven, 1840H 2240W 660W<br><br>**RESPONSE:** It has been noted that some elements of Group coding requires to be adjusted on the equipment list (this to identify adjusted coding to items which were originally listed as Group 1). An updated equipment list will therefore be issued to all bidders with the adjusted Group codings highlighted. | See above | | | | | | | |
| 138 | There is no # 138 (137a and 137b however). | | | | Agreed | | n/c | | |
| 139 | We would be pleased if you can provide any information detailing the existing Arts program within the Board and in particular any existing art strategy within the Southern General Hospital.<br><br>**RESPONSE:** An example arts document from the Board has been uploaded to Vol 14 of BIW. | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | To Check BIW log | n/c | | This information is addressed under the BIW Log in Contract Data Part 1. |
| 140 | Please advise whether the mortuary building referred to in the 1978 Thorburn report when discussing the trial shaft, is the same mortuary building that is adjacent to the Urology and Pathology units to the east of the existing heli-pad.<br><br>**RESPONSE:** Incorrect. The 1978 Thorburn report refers to a trial shaft in the location of the existing south car park and old mortuary building. | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 141 | Re Mock Ups<br><br>We would be pleased if the Board would confirm if they are happy for Brookfield to price for the provision of the following mock ups or alternatively add or delete any other rooms you wish us to include.<br><br>Single bed en suite with touch down space<br><br>4 bed bay with en suite<br><br>Dirty Utility<br><br>Clean Utility<br><br>Consultant's Exam room<br><br>**RESPONSE:** The requirements of ERs (Volume 2/1) with regard to mock-up rooms (6.6.2) and exemplar rooms (6.6.3) to be followed. Should the bidder wish to include for additional rooms/spaces they may include such in their bid. | - | Info | No action required in respect of this RFI. | Agreed * | | Discuss mock-up location, timing, extent with BE prior to contract. | **On site location required | 4-bed room to be taped out, filming and photos etc to demonstrate provision and key group taken to visit location where this can be viewed in-situ.<br><br>Other rooms to be provided on site, this could be in canteen area and will be removed from site at end of Stage 2 (As will be signed off).<br><br>Any pods/modular construction to be provided with on site demonstration of siting and location of fittings etc + off site visit to fabrication area(s) |
| 142 | Re: Laboratories/Permit to Discharge Certificate<br><br>We would be pleased if the Board would confirm if there are any substances that require special treatment prior to discharge into the drainage system.<br><br>In addition, would the Board confirm that they will procure the Permit to Discharge Certificate.<br><br>**RESPONSE:** In our recent meeting with Scottish Water, we asked Scottish Water to clarify whether they would accept the nature of discharge to the foul network. Scottish water requested that we supply details of the likely effluent - this is currently being finalised. Scottish Water will then pass onto their trade effluent department for review.<br><br>This will relate to the Permit to Discharge - the need for which will be dependant on Scottish Water's review of the list provided. They have commented that NHS may require an amendment to the current trade effluent consent.<br><br>That said, the bid team should promote any permit to discharge on the NHS's behalf. | Y | - | This is an aspect of the design that the Contractor is responsible for and requires to develop and satisfy in the Laboratory element of the scheme. | Agreed | Confirmed in dialogue that there were no requirements for special drainage. Board to procure the Permit to Discharge Certificate | | Francis W was looking into this | Acknowledged that Brookfield have made allowances per the Stage D design information in this respect. |
| 143 | Re: Laboratories Design- Home Office Requirements<br><br>We would be pleased if the Board would confirm if the design of the Labs facility or any distinct parts of the facility is/are required to meet any Home Office standards.<br><br>**RESPONSE:** Home office standards apply to Level 4 Microbiology in terms of containment and finishes for CAT 2 laboratories.<br><br>The CAT 3 Laboratories within Microbiology and Pathology will also require to conform to Home Office Standards. Home office personnel will following construction during the commissioning phase review installation for regulation compliance. | - | Info | This will comprise an aspect of the Stage E Laboratories Design Information | Agreed * | | Brookfield to comply with original RFI response as ER requirement. | **Brookfield bid submission allows for requirements to CAT 3 LABS AND Mortuary but not for CAT 2 grade to the rest of level 4. | This to form an aspect of the Stage D to Stage E Laboratory review and alignment. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position |
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| 144 | Have, and how have, the Labs team achieved the 80kgCO2/m2/annum design energy target?<br><br>**RESPONSE:** The Laboratory Design is ongoing and the model is being refined, however, the overall solution is integrated with the Energy centre. Further design information will be made available in due course. | Y | | This is an aspect of the design that the Contractor is responsible for and requires to develop and satisfy in the Laboratory element of the scheme. | Agreed | As clarified in Brookfield Bid submission, the ITSFB design does not currently meet this requirement and any fundamental change to the Labs Scheme that may be required to be implemented, if practical, to achieve this energy target will be a Change under the Contract | Compliance to be achieved upon connection to the Energy Centre. | Agreed | Compliance to be achieved upon connection to the Energy Centre. |
| 145 | Re: Cladding Materials to Labs & FM Buildings<br><br>There seems to be some discrepancy on cladding material information shown on the Planning drawings compared to information in Pricing Schedules and the Outline Architectural Specifications. We would be pleased if the Board would clarify and confirm which document takes precedent.<br><br>RESPONSE: The Planning Drawings and the Outline Specification take precedent over the pricing information. Information on the Rainscreen is located in the Outline Architectural specifications. | - | Info | This will comprise an aspect of the Stage E Laboratories Design Information | Agreed | | Planning drawings and outline specification take precedence per original RFI response. | | Compliance to be achieved upon connection to the Energy Centre. |
| 146 | Further to TAD 00025 with the Laboratories Ecological Report attached, we would be pleased if the Board would confirm if it is the intention of the Board to procure a Bat Survey on the Laboratories the Energy Centre Site and the Main Hospital Site as indicated in the URS Report dated July 2009 section 6.1.2 , Page 7.<br><br>**Response:** A bat habitat assessment is expected to be undertaken by the Board during Sept.2009 of the Laboratories,Energy Centre and Main Hospital sites. This will be passed to the main bidder on contract award.<br><br>The sites of the Laboratories or Energy Centre contain no buildings or trees /habitat which are considered suitable for roosting. Additionally there has been no reports of evidence of bats on the site. | Y | - | The bat survey is available from the Board w/c 23 November 2009. | Agreed * | *Bat survey is still awaited. | Bat survey will be uploaded to BIW Volume 6 (new volume) | | Bat survey will be uploaded to BIW Volume 6 (new volume) |
| 147 | Re Energy Centre<br><br>We would be pleased if the Board would urgently confirm the start date of the Energy Centre as there appears to confusion as to the verbal advice given at the last dialogue meeting.<br><br>Response: The Energy centre forms part of the main hospital build and should commence in Nov.2010 at outset of stage 3 | - | Info | No action required in respect of this RFI. | Agreed | Brookfield would note that all Works in this regard is currently included in Stage 3 Works. | Energy Centre will be part of Stage 3 and expectation is that the shell, as a minimum, will be completed in year 1 to coincide with completion of laboratories. | | Energy Centre will be part of Stage 3 and expectation is that the shell, as a minimum, will be completed in year 1 to coincide with completion of laboratories. |

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# This Document is the Clarification Log

| Item | Topic/Bid Reference | Board Clarification | Bidder Response | ADD | NO CHANGE / INFO | BOARD COMMENT |
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| Technical Clarification 1 | | | | | | |
| **General** | | | | | | |
| 0.0 | | | | | | |
| **Logistics** | | | | | | |
| 1.0 | Site Parking | You have options but no firm plans for site parking, please confirm that the provision for site parking (incl any delivery area/holding area/lay-down areas off site) for all phases are included in your priced bid. | Brookfield have considered a number of options with regards to temporary parking/holding areas etc during the construction period and should we be selected would wish to discuss with the Board and other interested parties these arrangements to develop a strategy for the benefit of the Project. In the meantime, we confirm our prelims identify pricing allowances for the relevant Stages and refer you to the logistics section. In addition, our procurement strategy with regards the supply chain will include for the provision of temp parking spaces and this will be identified in the cost when packages are let accordingly. I.e. the amounts in the Prelims will be supplemented by amounts in the trade cost plan. We also recognise that using local labour will enable us to encourage the use of public transport to mitigate the requirement for extensive on site/off site temporary parking. Finally whilst we identified on the risk register temporary parking as being an issue to resolve, we felt a combination of the above will be sufficient to deal temporary parking and this reduced the risk element to acceptable. | | NC | Brookfield have identified options for car parking as well as the associated cost allowance (£220,000). A decision on which option will be taken up to be made post-contract |
| 2.0 | Delivery Team | Several of your proposed delivery team appear to have commitments to another healthcare scheme (i.e. Peterborough). Please confirm how your delivery team will be deployed in line with the NSGH timescales and your programme requirements. | We reaffirm our commitment that the proposed delivery team will be deployed in accordance with the NSGH timescales and our programme requirements. Taking each stage:<br><br>- Labs Construction Team:<br>The individuals noted are available now, and no longer have commitments on Peterborough.<br><br>- FBC/Core team:<br>The individuals are available now, and have already been working on the NSGH project.<br><br>- Adult/Children's Team:<br>The individuals identified will be available before November 2010. At Peterborough, the Mental Health Unit and City Care Centre have already been completed on programme and handed over to the Trust earlier this year. This has released some of the individuals who have since being involved in the bid submission. The main Acute facility is 3 months ahead of programme and notice will be given shortly to confirm the end of September 2010 date for handover. Many departments are being closed off progressively (as some of the Board's team will have witnessed during the recent site visit). By the end of 2009, the Acute facility will be into testing and commissioning phase and we are confident that a September 2010 completion is likely and the individuals will be available as scheduled. | | NC | |
| **Design/HP** | | | | | | |
| 3.0 | Entrances | Confirm your proposals for significant entrances to the site per ER requirement in this regard. | The NSGH campus masterplan has been configured to provide clear entrances which lead directly to the primary arrival space at the heart of the campus. Entrances have been designed in plan form to provide the | | NC | |

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| | | | necessary function and capacity to respond to highway requirements associated with the various modes of transport. Significant entrances are to be delivered as features within the context of both the wayfinding and public art strategies. The entrances are important as part of the legibility and identity of the rejuvenated hospital campus. To achieve this it will be necessary for the design team to work with the Board to determine the correct balance between an innovative and unique site-specific response (informed by public art) and the guidance for standardised signage contained within the NHS Scotland guidance for signage and branding for use within NHS sites (which we have reviewed). For this reason our designs have not been developed beyond the concept stage in advance of Stage 2 engagement. The attached concept images illustrate the general potential for an entrance feature sign at the primary Govan Road entrance to<br>the site, but should not be considered a firm design proposal at this point. We can confirm that the commercial proposal includes provision for this approach.<br><br>Our drawing GIL-WS-00-PL-502 illustrates the signage hierarchy and proposed locations for the various sign types. This includes the proposed location of campus gateway signage features at the key entrances to the campus. It is intended that the main entrances should include feature lighting as part of the significant entrance features. It should be noted that the entrances need to be considered in parallel with the design and quality of the main arrival square, as this forms an important part of the entrance and arrival sequence and experience. The point of entrance and the route to the arrival square should therefore be considered as part of the entrance arrangement. | | | |
| 4.0 | Specification | Confirm your proposals for electronic information points per ER requirement (7.15.4) in this regard. | In response to the ER requirement (7.15.4) we have made provision for 1x ‘Real Time Public Transport System’ electronic Information Point externally at the Bus Drop-Off Area.<br><br>Additionally, in response to ER requirement (7.2.19), as part of our Wayfinding Strategy we have proposed electronic/interactive ‘You Are Here’ maps in the Main Entrance Foyers to both the Adult and Children’s Hospitals.<br><br>Please refer to our Wayfinding Strategy contained within **Volume 3.0; Section 3.2** for further details of our proposals and imagery. | | info | |
| 5.0 | Interstitial Blinds | Confirm your strategy for interstitial blinds to external windows/façade and internal observation screens (this to include a cross-section detail of your proposal(s)). | Interstitial Blinds have been included in our priced bid to **internal** glazed screens generally to all Bedrooms, including those within Critical Care (Adult Hospital and Children’s PICU), AAU and all Inpatient Wards (Adult and Children’s Hospitals).<br>In addition, interstitial blinds have been included to internal door vision panels as part of our Internal Door detailed proposals. Our Internal Door Strategy is contained within the Introduction to<br>Volume 2.0; Section 2.21<br>- Door & Ironmongery Schedules. Where a door is noted in the Schedule as being<br>‘obscurable’<br>, this equates to a vistamatic type vision panel with interstitial<br>blinds.<br><br>Please note that our priced bid does not currently have a provision for internal blinds or curtains which are not integral to the internal fabric of | Y | | Interstitial blinds are included for all external windows. |



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| | | | the building. In our past experience these items would be included in the Equipment List. We have priced this List accordingly as requested by the Board, and would be pleased to debate with the Board further whether these items should be included within the Equipment List.<br><br>With respect to **external** windows, we have included for interstitial blinds to all external windows in patient areas within Critical Care (Adult Hospital and Children's PICU).<br><br>Again, please note that our priced bid does not currently have a provision for internal blinds or curtains which are not integral to the internal fabric of the building.<br><br>Please refer our separate attachments for the requested detailed section drawings, our Internal Glazed Screen Strategy Document and External Windows Privacy Strategy Document. | | | |
| **M&E Services** | | | | | | |
| 6.0 | | | | | | |
| **Renewables/Sustainability/BREEAM** | | | | | | |
| 7.0 | Carbon | You noted at the presentation of 21 September you're your variant 2 for Laboratories will achieve the 80Kg CO2m2 – can you confirm that your compliant bid achieves this target also. | Achieving the 80kg CO2 m2 for both the compliant and Variant Option 1 Laboratory bid will be dependant on the construction of the Energy Centre, with which the overall solution is integrated. **RFI 144** refers and is attached for ease of reference.<br><br>As noted in **RFI 147** (attached) the Energy Centre is dependant on FBC and commencement of Stage 3.<br><br>Variant Option 2 offers an integrated M&E plant solution and the early construction of the Energy Centre shell and core to house it. This may be achieved through an advanced design and planning process and cash flow solution indicated in Volume 16 of our bid submission. | | info | Note that stand alone Labs does not achieve 80kg $CO_2/m^2$ |
| 8.0 | BREEAM | Clarify BREEAM Ene 1 score – 8 and 11 referred to in different sections. | Please note the correct score is 8 and we apologise for the confusion. | | info | |
| 9.0 | Renewables | Confirm which LZC and renewables are included in the bid. | LZC –<br>3MW Combined Heat and Power units.<br>High efficient friction less bearing chillers providing COP 9.<br>1000kW Absorption chiller unit.<br>Active chilled beams.<br>Variable speed pumps.<br>Natural daylighting.<br>Natural ventilation.<br><br>Renewables.<br>12no Vertical axis wind turbines. | Y | | |
| 10.0 | Energy Model | Confirm that the energy model is fully compatible with the servicing strategies set out in volume 3 in particular the use of a sealed building with chilled beams. | Brookfield confirm the energy model is fully compatible with the requirements as set out in Volume 3 in particular the use of sealed building with chilled beams. | Y | Info | Refer to Sustainability and Energy Issues |
| 11.0 | Energy Monitoring | Confirm that the energy monitoring system illustrated is included in the bid. | Brookfield confirm the energy monitoring system is included in the bid. | | Info | Refer to M&E Clarification Log in Contract Data Part 1for confirmation of position on building metering |
| 12.0 | Energy Management | Has active energy management been included for by BE post construction as per clarification? | Brookfield confirm we will provide active monitoring, reporting and fine tuning during the 24 months DLP period. Please refer to our Volume 3 Sec 3.24 Item 1 Building Services Commissioning Strategy, Post Occupancy DLP Period for further information. | Y | | |



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| Item | Topic/Bid Reference | Board Clarification | Bidder Response | | | |
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| Technical Clarification 2 | | | | | | |
| **General** | | | | | | |
| 1.0 | Bid Return Section 5 – Component / Product & Manufacturer Schedule | Noted that M&E related items do not appear in Section 5.<br><br>Clarification required of M&E component/product and manufacturers as well as (for all elements) that listed names will be utilised or "equal and approved" component/product manufacturers. | Full component schedule is as detailed in ***Appendix Q1*** attached<br><br>This indicates the quality of manufacturers proposed for components / products | | | Component manufacturer Schedule<br><br>Agreed Schedule Included in Volume 5 of the Contractor's Proposals contained in Contract Data Part 1. |
| 2.0 | Bid Return Section 7 – SHTM Compliance | **Mandatory Section –** clarification is required with regard to the following items:<br><br>**SHTM85 and SHTM86 –** these are relevant as the design joins the existing hospitals, what are the proposals to comply in this regard.<br><br>**Health and Safety Action Notices (HSANs) –** require to confirm will comply with rather than "with reference to".<br><br>**NHSE10 and SN(01)01 –** confirmation that anti-ligature is included in A&E as well as DFCP.<br><br>**NHSE HN04 –** confirmation that anti-ligature is included in A&E as well as DFCP.<br><br>**SFPN3 –** clarification required of how compliance with updated document will be achieved/documented.<br><br>**SHTM2010 –** confirmation required that design will comply with rather than "with reference to".<br><br>**SHTM2003 –** notes that the services follow the principles set down in the HTM – clarification of compliance with the SHTM required (and specifically compliance with the services dimensions to be provided).<br><br>**SHTM2024 Part 4 –** confirmation required that original maintenance provisions are included and priced in the bid. | Full clarifications have been provided in the attached ***Q2 Appendix*** | | | Compliance to be as per tables in Volume 7 of the Contractor's Proposals contained in Contract Data Part 1. |
| 3.0 | Bid Return Section 7 – SHTM Compliance | Where no specific options have been listed in your bid return (ref ERs 5.2.3) clarify that all options remain available to the Board with no additional costs to the Board. | We have endeavoured in our bid submission to confirm in detail the basis of our design, specifications and cost plan. To avoid uncertainty these proposals need to take priority over the various options given in the various documents scheduled in tables 2 and 3 of the ER's.<br><br>We are however conscious that within the various documents there are options that the Board may feel would enhance the scheme and assist in producing an exemplar facility. We are more than happy to review any options with the Board, within the confines of the cost plan, to ensure that the optimum solution is adopted across the project" | | | Compliance to be as tables in Volume 7 of the Contractor's Proposals contained in Contract Data Part 1. |
| **Logistics** | | | | | | |
| - | - | No items in this TC. | | | | |



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| **Design/HP** | | | | | | |
| 4.0 | H+S Landscape | Courtyards – clarify what is intended by white gravel? | The white gravel is a aesthetic material used in geographical arrangements producing dramatic patterned landscapes when viewed from above. This material can be laid loose or bound to correspond to the courtyards function. Please refer to drawings GIL-WS-00-EF-S04 Courtyard Design Intent. ***See Appendix Q4-7 attached*** | Y | | |
| 5.0 | H+S Landscape | Aside from the separately identified therapy courtyards is there any access or intended function for the remaining courtyards indicated? | The other courtyards have the potential to be accessed depending on the adjacent hospital departments, to be developed further with the board. Please refer to drawings GIL-WS-00-EF-S04 Courtyard Design Intent<br>***See Appendix Q4-7 attached*** | Y | | |
| 6.0 | H+S Landscape | External Works Layout Dwg No. CD-WS-00-PL-711-01 indicates concrete blocks to the front of the hospital. The masterplan Dwg No. GIL-WS-00-PL-100 indicates exposed aggregate concrete paving. The Outline Specification for roads, car parks, pavements and cycle paths suggests paving in these areas will be natural stone granite. Can we clarify actual proposals for these areas? | The palette of materials has been selected to provide a cost effective high quality environment. Natural granite is proposed to the entrance thresholds with concrete pavers with exposed granite aggregate proposed to the arrival square. Please refer to drawings GIL-WS-00-EF-S05 Arrival Square Pavement Design intent<br>***See Appendix Q4-7 attached*** | Y | | |
| 7.0 | H+S Landscape | The drawings indicate a limited number of bike shelter locations (2No.)? Is this correct or are other bike shelter locations intended? | The two cycle shelters shown on the master plan are key structural features place near the main entrances, other cycle stands are located throughout the site in key location. Please refer to drawings GIL-WS-00-EF-S06 Cycle Parking Strategy and GIL-WS-00-PL-115 Vehicle Movements- Cycles<br>***See Appendix Q4-7 attached*** | Y | | |
| **M&E Services** | | | | | | |
| 8.0 | M&E Services | Please indicate any deviations from M&E elements of the ER's. | The following deviations are proposed:<br>• UPS autonomies proposed are compliant with SHTM 06-01 and differ in some respects from the ERs. | | | Refer to the RFI Log in Contract Data Part 1 |
| | | | • The proposals for automatic lighting controls as described in Volume 3 Section 3.12 and Volume 4 Section 4.3.6 differs in some respect from the ERs. | | | Refer to the RFI Log in Contract Data Part 1 |
| | | | • A single energy centre is proposed split into two plant spaces with 4 hour fire separation to provide the resilience of two separate energy centres. | Y | | Agreed |
| | | | • N+1 has not been provided to all plant as noted in Volume 2/1 Clause 8.1.1.17. N+1 has been included to all energy source plant, pumps, heat exchangers and duplicate motors provided on air handling plant. | | | Refer to the M&E Clarification Log in Contract Data Part 1. |
| | | | • Dual path distribution has not been provided on all systems as this would be impractical for piped systems and specialist electrical systems, e.g fire alarms. Supplies from the energy centre have an element of duplication for resilience and electrical power distribution has A & B separation throughout using diverse routes wherever possible. | | | Refer to the M&E Clarification Log in Contract Data Part 1. |
| | | | • Bulk water storage has been based on the busiest 12 hour period rather than 24 hour as suggested in volume 2/1 clause 8.2.8.2. It is considered that with duplicate incoming water mains to the site a reduced water storage capacity will reduce the risk of legionella. | | | Refer to the M&E Clarification Log in Contract Data Part 1. |
| 9.0 | M&E Services | Please confirm that racks will be provided for Client's active equipment. | The following allowances have been made:-10 racks in each of the adult's and the children's hospital main comms rooms, and<br>2 racks in each hub room | | | Deviation from ER's not accepted<br><br>The ER's requirement noted below, is agreed as included and to be provided by the Contractor<br><br>C1-C6 External comms<br>S1-S10 Board servers<br>E1-E8 General board equipment. |

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| | | | | | | B1-B6 contractors equipment including patching BMS CCTV raid etc.<br>3 racks in each hub room |
| 10.0 | M&E Services | Please confirm that BMS IP network will be fully stand alone and that all active equipment has been included. | Yes | | NC | |
| 11.0 | M&E Services | Please confirm that asset tagging system has been included and that all services equipment shall be tagged. | Included | | NC | |
| 12.0 | M&E Services | What function does scaffolding platform have in plant replacement strategy for transformers and generators. | The scaffolding platform allows a level surface for the equipment to be withdrawn from the plant space and craned off to ground level | | info | Plant replacement strategy for large items requires to be further developed in Stage 2 |
| 13.0 | M&E Services | Confirm that reference to BOC should be "Air Products". | Yes | | info | |
| 14.0 | M&E Services | Please provide luminaire details to supplement pictorial views | Refer to separate document outlining details<br>***See Appendix Q14 attached*** | Y | | |
| 15.0 | M&E Services | Please confirm light switches will be selected to suit lighting control system. | Yes | | NC | |
| 16.0 | M&E Services | Please confirm that bedside adjustable luminaires will be a modern low energy high output units. | Yes | | NC | |
| 17.0 | M&E Services | Please confirm fire alarm PC includes incident location graphics. | Included | | NC | |
| 18.0 | M&E Services | Please confirm that 4 CHP units have been proposed as the narrative (schedule indicates 3). | Three CHP units are proposed | | info | |
| 19.0 | M&E Services | Television outlets on equipment schedule (are these back up for the CAT6A for digital distribution via the patient entertainment system? | YES, This allows flexibility and future proofing | | info | |
| 20.0 | M&E Services | Please provide details on the proposed patient entertainment systems. | Refer to supplementary schematic MER-XX-XX-SM-1400-001 outlining details<br>***See Appendix Q20 attached*** | Y | | |
| 21.0 | M&E Services | Please advise how Renal & Specialist Departments water temperature requirements will be achieved. | This system will interact with the BMS which monitors the temperature and, if required, dumps RO water from the circulating loop to maintain optimum temperature conditions. A heat sanitise cycle is also allowed for. | Y | | |
| 22.0 | M&E Services | Confirm reference to 5A Switches equipment schedule should be 20A. | Confirmed | | NC | |
| 23.0 | M&E Services | Please confirm that metering will be provided to meet BREEAM requirements. | Yes | | NC | |
| 24.0 | M&E Services | Please advise proposals for water spillage protection from fan coils in secondary comms room. | Drip drays and leak detection | Y | | Positioning of leak detection to be included in design development<br><br>See Item 34 Appendix B |
| 25.0 | M&E Services | Please confirm compliance with maintainability and area isolation requirements. | Maintainability and area isolation will be incorporated in the design to give compliance. Individual rooms will have isolation of components such as sanitary ware and terminal heating/cooling devices. It will not be possible to isolate each individual room for lighting and power. It will be possible to isolate each individual circuit, and with each room having at least two circuits the room will continue to function | | | Design to achieve ER's including 8.1.5.2 (c) and 8.1.5.4. |
| 26.0 | M&E Services | Please confirm that the renal Central Concentrate Delivery system is included (adult hospital). | Yes | | Info | |
| 27.0 | M&E Services | Please confirm that all services comply with HAI – SCRIBE. | The Services Engineer will be part of the overall SCRIBE team along with the Board's Infection Control Manager, Clinical Advisers, Facilities Manager, and | | info | |



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| | | | Departmental Representatives, plus the other members of the design team and other relevant specialists. The Services Engineer will discharge the duties as set out in HAI-SCRIBE Implementation Strategy | | | |
| 28.0 | M&E Services | Please confirm that all plant and equipment will be suitably isolated to prevent transmission of noise and vibration. | Yes | | info | |
| 29.0 | M&E Services | Please confirm that full environmental proving off all rooms will be provided. | Yes | | Info | |
| 30.0 | M&E Services | Please confirm that all metering requirements will be provided in accordance with the ER's and BREEAM requirements. | Yes | | NC | |
| 31.0 | M&E Services | Please confirm that all services elements are included to meet the fire engineering solution, e.g. stair pressurisation, smoke control etc. | Yes | | Info | |
| 32.0 | M&E Services | Please confirm that ICT cooling has been included and provide details. | Yes, this is achieved with a chilled water solution, via crac units and fan coil units, as appropriate. | | Info | |
| 33.0 | M&E Services | Please confirm that specialist drainage has been included. | Included | | Info | |
| 34.0 | M&E Services | Please confirm that leak detection has been included. | Included | | Info | |
| 35.0 | M&E Services | Please indicate percentage capacity of all water service pipework mains from the energy centre to the main buildings for resilience. | The A and B circuits are sized for 66% of the maximum operational load. The A & B circuits from the energy centre are primary circuits and totally isolated from the secondary plantroom circuits via the plate heat exchanger units. It is envisaged that any routine maintenance | Y | | Refer to the M&E Clarification Log in Contract Data Part 1. |
| **Renewables/Sustainability/BREEAM** | | | | | | |
| - | - | No items in this TC. | | | | |
| **Laboratories** | | | | | | |
| 36.0 | Laboratories | The Values on Labs Summary Page for Overhead and Profit do not correspond with % values provided on Stage 1 or Incoming Utility Costs Associated with Stage 1. | This is Correct. The figures are calculated by adding 6.2% plus an apportioned value for overhead recovery. | | | All responses will be addressed in Stage D to Stage E alignment |
| 37.0 | Laboratories | On Labs Final Summary Page (Page 4 of Submission) £281,552.00 in included for Additional Fee and Profit on Max Cost. If you apply the %'s from elsewhere on the page this value would be approx £43K less? | Unlike the way the Board have asked us to submit the MPTC Calculator Brookfield methodology for calculating Overhead and Profit is by taking this amount against Prime Cost excluding Fees which actually means that in the case of the Laboratory Building the gross margin on Prime Cost is circa 7.5% and thus provides the number given. | | | |
| 38.0 | Laboratories | Can you confirm extent of tunnels included within Stage 1 Section | The bid is based upon the URS and BMJ drawings issued under addendum 34. The basement and tunnels are reduced for the variant option and are as detailed within our Volume 13 of the bid. The extent of tunnels are as per the BMJ demarcation lines identified on the above BMJ drawings | | | Brookfield require the route of the tunnels to be reviewed to ensure that the Labs building and the Adult and Childrens Hospital align. There is currently a mismatch in propose routes that needs to be resolved |
| 39.0 | Laboratories | No evidence of anything noted as "Provisional". Please confirm or provide detail of items to be considered as Provisional. The Bills make reference to "general assumptions". Please confirm that they are not to be considered provisional. | There are no provisional items within the cost plan | | | |
| 40.0 | Laboratories | Substructure: Please confirm what exactly the £100k allowance is for fire escape and stairs includes for. | Fire strategy requirements dictate that an escape tunnel and stair will be required from the basement tunnel that is not currently indicated by BMJ or URS drawings. Cost allowance included is based on similar staircase and concrete enclosure to | | | |

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<table>
<tr><td></td><td></td><td></td><td>adult basement tunnel.</td><td></td><td></td><td></td></tr>
<tr><td>41.0</td><td>Laboratories</td><td>Substructure: Allowance has been included for 14 Nr lift pits. Please confirm Nrs. Current drawing shows 12 Nr FF, goods & staff Lifts and 4 Nr lifts in connection with Robotics.</td><td>Confirmed, all lift pits are as detailed on the drawings are covered either in this specific item or in general substructure measurement.</td><td></td><td></td><td></td></tr>
<tr><td>42.0</td><td>Laboratories</td><td>Upper Floors: Please confirm all allowances for recesses or thickening of slabs is included.</td><td>Confirmed, included in rates</td><td></td><td></td><td></td></tr>
<tr><td>43.0</td><td>Laboratories</td><td>Stairs: Number of assumptions/clarifications: Design team to appraise/comment to facilitate in the removal from pricing docs.</td><td>No assumptions made in Cost Plan</td><td></td><td></td><td></td></tr>
<tr><td>44.0</td><td>Laboratories</td><td>Ext Walls: Please identify where Spec item 1.12 (louvers to office block) appear in your bid.</td><td>Allowance taken in copper cladding section.</td><td></td><td></td><td></td></tr>
<tr><td>45.0</td><td>Laboratories</td><td>Ext Walls: Ext brise soleil system included. Not stated as being required on previous dwgs.</td><td>Builders work drawings received 24th August show indication of Brise Soleil and we have based our provision on this.</td><td></td><td></td><td></td></tr>
<tr><td>46.0</td><td>Laboratories</td><td>Windows: Window sizes do not tally with C&B's original measure</td><td>Window are measured from the latest issue drawings as opposed to original C&B measure</td><td></td><td></td><td></td></tr>
<tr><td>47.0</td><td>Laboratories</td><td>Ext Doors: Please advise where Revolving entrance doors are included.</td><td>Taken in External Walls section of Cost Plan</td><td></td><td></td><td></td></tr>
<tr><td>48.0</td><td>Laboratories</td><td>M&E: Please provide details of how M&E values arrived at and if possible provide detailed back up.</td><td>Listed below are the M&E values submitted in our Bid based on a quantity of 25,322 m2<br><br>
<table>
<tr><th>Item</th><th>Unit Rate (£)</th><th>Estimated Cost (£)</th></tr>
<tr><td>5A Sanitary Appliances</td><td>17.09</td><td>432,833.63</td></tr>
<tr><td>5C Disposal Installations</td><td>22.67</td><td>574,000.24</td></tr>
<tr><td>5D Water Installations</td><td>47.58</td><td>1,097,899.44</td></tr>
<tr><td>5E-G Mechanical Installations</td><td>332.69</td><td>8,424,257.16</td></tr>
<tr><td>5H Electrical Installations</td><td>149.68</td><td>3,790,277.99</td></tr>
<tr><td>5I Gas & other fuel installations</td><td>3.73</td><td>94,353.60</td></tr>
<tr><td>5K Protective Installations</td><td>3.13</td><td>79,580.60</td></tr>
<tr><td>5L Communication Installations</td><td>157.22</td><td>3,981,165.48</td></tr>
<tr><td>5N BWICS</td><td>39.42</td><td>998,193.24</td></tr>
<tr><td>5M Special Installations</td><td>11.96</td><td>557,040.00</td></tr>
</table>
<br>See Appendix Q48 for the Summary and details. This information is also included with our response to RFI 007</td><td></td><td></td><td>Superseded by final costings</td></tr>
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| 49.0 | Laboratories | M&E Lifts: Current drawings show 4 Nr FF Lifts, 4 Nr Goods Lifts, 3 Nr Passenger Lifts and 1 Nr Mortuary Lifts. This does not correspond with your bid. Please advise. | Drawings show 16nr lifts which we have priced. | | | |
| 50.0 | Laboratories | Siteworks: Imported fill for backfilling. Is there no potential to re-use excavated materials ? | Option to re-use excavated material is limited and will require extensive double handling and logistical issues retaining a clean site. | | | |
| 51.0 | Laboratories | Siteworks: No inclusion of barrier system to service yard. Please advise. | Included in bid | | | |
| 52.0 | Laboratories | Ext Services: £5k allowed for main water distribution. Seems low | The allowance is for the final connection between a valved connection on the site water mains and the laboratory building boundary.<br>Site water mains and pipe work within the building are covered within the energy centre section. | | | |
| 53.0 | Laboratories | Please provide statement on Inflation allowances included. | Given that this work will be primarily secured in Year 2010 no allowance has been made for any inflation of the Net Package Costs. It is assumed that all packages can be procured at 2009 prices. There is an allowance within the preliminaries for a 3% staff increase in Jan 2010 and a similar increase in 2011. | | | |
| 54.0 | Laboratories | Has audio/visual system to Mortuary been included? If so, where and how much. | An allowance of £10k has been made with the M&E section of the Tender Bid | | | |
| 55.0 | Laboratories | Please confirm that the Cat 3 Containment Facilities Spec referred to in Clause 1.0, Appendix C1.2 of Outline Architect Spec is included. Is so, please advise where and provide breakdown of value. | The wall, floor and ceiling finish items are based on Polyflor.<br>Single Leaf Doors £ 17,500.00<br>1 /12 Leaf Doors £ 5,000.00<br>Wall Finishes £ 47,900.00<br>Floor Finishes £ 17,300.00<br>Ceiling Finishes £ 8,650.00<br>Safe Change Filters £ 12,000.00<br>Cat 3 Light Fittings £ 8,500.00<br>£ 116,850.00<br>All costs above are net of Sub-Contract Prelims (The percentage additions for S/C Prelims are 10% on internal doors, floors and ceilings and 19% on walls) , B.E. Prelims and B.E. OH&P | | | |
| 56.0 | Laboratories | Has allowance been included in bid for various treatments to soffits under 1F slab in open yard or entrance areas? | Included in bid. | | | |
| 57.0 | Laboratories | Design fees included are different to the fees provided to Bidders. Please provide details of difference. | The difference in design fee for the laboratories is due to additional consultants identified as being required to advise on building control and CDM. We have also made an allowance within the risk register to cover additional fees to the design team resulting from an increase in their scope of works | | | Agreed in final costings |
| 58.0 | Laboratories | Please confirm that all temporary services connections prior to Energy Centre being completed are included | Main incoming services are included within the energy centre section.<br>Allowance has been made for local temporary service connections until Energy Centre is sufficiently progressed. | | | |
| 59.0 | Laboratories | Please confirm that all robotics costs included in Hospital element of bid. | Confirmed | | | To be reviewed in stage D to stage E comparison |
| 60.0 | Laboratories | Please identify any costs associated with pneumatics included in the Labs element of your bid. | An allowance £62,200 has been included within section 5L Communications of the bid. This includes for the distribution Pipe work and Receivers within the Labs, but does not include any of the main plant elements which are included within the main hospital buildings. See Appendix Q60 for further information | | | |



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| Technical Clarification 3 | | | | | | |
| **General** | | | | | | |
| 1.0 | LCC | n relation to any perceived LCC benefits/savings over the period, can you provide supporting details/justification of same. | Our Life Cycle Cost Analysis, contained within Volume 12.8 of our submission, provides full details of the breakdown of Life Cycle Costs for each element of the project. We believe that this provides the supporting details/justification, however, should there be any specific areas where you feel further information is required we will be happy to provide it. | | info | |
| **Logistics** | | | | | | |
| - | - | No items in this TC. | - | | | |
| **Design/HP** | | | | | | |
| 2.0 | Energy Centre | Please confirm the location in your compliant bid the Energy Centre Layout plan reflecting the retention of the Stage D Laboratories design. | We would enclose drawing NA-EC-00-PL-251-020 that shows the energy centre from our masterplan located against the stage D laboratory design.<br><br>There is some flexibility with regard to the plan location that would require BMJ input should our bid prove to be successful.<br><br>The laboratory stage D design shows all main plant within the laboratory building plant rooms, which enables the laboratory building to operate stand alone.<br><br>The compliant bid for the Energy Centre does allow for some plant in the current designs; namely Standby Generators and Boiler capacity as detailed in Volume 3 Sections 3.8 & 3.10 and Volume 4 Section 4.55. | | | Subject to Development in Stage 2 |
| **M&E Services** | | | | | | |
| - | - | | - | - | | |
| **Renewables/Sustainability/BREEAM** | | | | | | |
| 3.0 | - | Please confirm that your compliant laboratory scheme will achieve BREEAM Excellent. | Our assessment of the compliant stage D design BREEAM rating is 65 which achieves very good but falls 5 points short of an excellent rating. The main reason for this shortfall is the difficulty in achieving the energy target of 80kgCO2/m2 without linking the laboratory building to the energy centre as confirmed in the Board response to RFI144.<br>There are a number of other options that could be looked at to improve the BREEAM rating such as reduction in CO2 emissions, limiting water consumption etc. These are not currently part of the compliant scheme. | | | Statement required identifying that “excellent” will be achieved via connection to Energy Centre once completed – existing Lab plant to become resilience<br>Agreed based upon stage D design available at tender stage |
| **Laboratories** | | | | | | |
| - | - | No items in this TC. | - | | | |
| Technical Clarification 4 | | | | | | |
| - | - | No items in this TC. | - | | | |
| **Logistics** | | | | | | |
| - | - | No items in this TC. | - | | | |
| **Design/HP** | | | | | | |
| 1.0 | Schedule of Accommodation | Clarity is required with regard to your Schedule of Accommodation. The attached Appendix A identifies the area assessment presently (in column C). Please identify each actual figure in the column D ‘Confirmation’ listing to reflect the following (with item 3 provided separately): | Please find attached the completed Appendix A which has identified the actual area figures requested to be clarified in column D ‘Confirmation’.<br><br>We have assumed the ‘Y’ noted against Section Number 1 is the Board’s acceptance that this information has already been provided by Brookfield in Volume 1; Sections 1.1, 1.2, 1.3, 1.4 of our Bid Submission. | | | Refer to the agreed Schedule of Accommodation contained in Volume 1 of the Contractors Proposals in Contract Data Part 1 |



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| | | 1. **Gross departmental area** (including planning and engineering and departmental circulation) for each department and the total for each hospital<br>2. **Net departmental area** (sum of net as drawn/designed rooms only) for each department and the total for each hospital<br>3. **Net room areas** (excluding all ducts, pipe boxing and service zones) listed room by room and by department<br>4. **Circulation area** (departmental) for each department and the total for each hospital<br>5. **Communications and plant areas** (interdepartmental circulation horizontal and vertical and main plant rooms and risers) for each hospital<br>**Total gross floor area** for each hospital. | In addition, please note that the Total Gross Floor Area noted in our submission did not include the % Planning allowance. This SOA was generated by Codebook, and was an accurate 'As Drawn Area' which excluded the thickness of the internal partitions. This has now been included in the completed Appendix A. These figures represent the GIFA which has been priced and included within the Cost Plan. | | | |
| 2.0 | MRI replacement | Please confirm your proposals (methodology, routes and structural provision to support) the replacement/retro fit of MRI equipment. | In the absence of specific MRI product information, the building footprint areas identified on the plans as housing MRI installations have been checked against a 7.5 tonne magnet installation (example from a recent comparable project).<br>In each case it was noted that the floor and foundation structures as currently presented could be appropriately detailed to facilitate the incorporation of this equipment.<br>The proposed transit route for the MRI installation is not known but is expected to be either through double access doors at ground level, along corridors and possibly via a wall knock-out access panel into the proposed room. Alternatively, the MRI unit could be delivered to the FM area and transported via the service tunnel to a lift and then to the corridor etc as above. The floor and foundation structures for the possible routes noted above have been checked against the 7.5t load and noted to be able to be appropriately detailed to facilitate the incorporation of this equipment.<br>The final location of any such equipment will require to be specifically checked against the details of the actual equipment proposed. | | | This will be subject to Design Development Review<br>Allowance based upon 7.5t MRI load |
| **M&E Service** | | | | | | |
| 3.0 | M&E Services | Please confirm pipework types for DH&CW, CHW and heating. | For DH&CW pipework, Stainless Steel Mapress by Gilbert (or equivalent) is proposed up to 67mm dia. And an ABS type material will be used on sizes above this. Copper will not be used on these systems.<br>For CHW & LTHW, carbon steel galvanised Mapress by Gilbert (or equivalent), Large bore, mild steel medium grade tube, Victaulic mechanical couplings (or equivalent).<br>For MTHW mild steel heavy grade tube fully welded/flanged. | | | Agreed stainless steel throughout. |
| 4.0 | M&E Services | Please provide more clarity (detail) with regard to your proposed lighting controls. | A mixture of automatic 'absence' and 'presence' detection will be provided.<br><br>Presence detection: detector switches lighting on and off.<br>Extent of provision: intermittently occupied areas such as WCs, en suites, corridors, ward kitchens, stores, plant rooms, services risers, hospital streets, bathrooms etc.<br><br>Absence detection: lights manually switched on, detector extinguishes lighting in unoccupied room.<br>Extent of provision: offices, consulting rooms etc.<br><br>In addition, in rooms benefiting from daylight, luminaires near windows will be dimmable, regulated by the amount of daylight available.<br><br>Dimmable lighting has been included where specifically required by the ADB sheets.<br><br>Automatic control of lighting in rooms which have plenty of natural light will be regulated by means of a photocell within the space to ensure the required LUX is achieved by the combination of ambient and artificial light. | | | Refer to the RFI Log contained in Contract Data Part 1. |



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| 5.0 | M&E Services | Please confirm that duty / stand-by plate heat exchangers will be provided for Domestic hot water. | Packaged plate heat exchangers/buffer vessels will be arranged to provide run/standby as described in Volume 4 Specification 4.28 and Volume 5 Schedule 5.2. | | | |
| 6.0 | M&E Services | Please provide details of proposed thermostatic mixing valves for DHW. | Taps with integral TMV3 will be used wherever suitable (refer to attached data sheet). In situations where these are not appropriate separate TMV3 thermostatic mixing valves will be used such as Oventrop Brawa-Mix 97 (or equivalent). | | | |
| 7.0 | M&E Services | Please provide details of trench make up for main services. | Trench depths, spacings and backfill will be as NHS Model Engineering Specifications C01 for pipe services and C41 for electrical services. Buried pre-insulated heating and chilled water mains will be in accordance with the system manufacturer's recommendations but will be similar to above. | | | |
| 8.0 | M&E Services | Please confirm that twin regulating valves have been included for gas supplies. | Yes confirmed | | | |
| 9.0 | M&E Services | Please confirm that NRV will be fitted at each fire isolation valve as ER's. | Yes confirmed | | | |
| 10.0 | M&E Services | Please confirm mechanical air change rate for the ward tower. | A typical ward in the tower has the following air change rates to either meet the ADB requirements or achieve the environment conditions:<br>• Bedrooms 2.5 ACH (related to ensuite extract rate and air volume for chilled beam unit loadings)<br>• Ensuites 10 ACH<br>• Clean Utility 6ACH<br>• Disposal Hold 10 ACH<br>• Pantry 6 ACH<br>• Dirty Utility 10 ACH<br>• Equipment store<br>• Cleaner 5 ACH<br>• Nurse base Up to 12 ACH to balance extract from utility spaces, etc<br>• Office/meeting 4 ACH | | | Refer to the M&E Clarification Log in Contract Data Part 2 for typical single bed ward. |
| 11.0 | M&E Services | Please confirm type of fire Extinguishants gas proposed for the main Comms rooms. | The main comms rooms will be protected by a gaseous fire suppression system, the two gases for consideration at detailed design stage are NOVEC1230 and FM200. Both gases have attributes and issues; NOVEC1230 has a Global Warming Potential(GWP) of 1, while FM200 has a GWP of 2900. Certainly NOVEC1230 is kinder to the environment, but it is less kind to the IT assets it is protecting due to the much greater temperature drop when released, over FM200. The rapid rate of change of temperature has been shown to result in failure of the electronic components. The hope is that the suppression gas is never released and that the systems operate on a double knock strategy of operation | | | Subject to detailed review Stage 2 |
| 12.0 | M&E Services | Please indicate the plant resilience for hot and cold water services, e.g. full duplicate or is one extra unit proposed per plant area? | HWS calorifiers are provided in groups to serve zones of the building. Each group includes a standby calorifier. Refer to Volume 5 Schedule 5.2 Calorifier. | | | |
| 13.0 | M&E Services | Further to your responses to TC#2, the items listed in the attached Appendix B require further clarification/responses. | As noted on Appendix B | | | |
| **Renewables/Sustainability/BREEAM** | | | | | | |
| - | - | No items in this TC. | - | | | |
| **Laboratories** | | | | | | |
| - | - | No items in this TC. | - | | | |
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| Technical Clarification 5 | | | | | | |
| **General** | | | | | | |
| 1.0 | LCC | Please check and confirm/clarify 60 year LCC values. | We can confirm the 60 year LCC values, which are based on the same assumptions as the 30 year values. The assumptions and detail are outlined within the LC Models provided. | | | |
| 2.0 | LCC | Please resubmit LCC rates as per Volume 4 Clarification Technical 19n0 – Item 8 Table 1 Item 4.0. | The LCC rates have been derived from detailed LC models based on the Specification and Capital Cost information in the Brookfield (Doig & Smith) Capital Cost Plans ("*Stage 3 Bid Cost Plan"* and *"Stage 1 Non-Compliant Bid Cost Plan"*). These cost plans have been submitted based on the NSGH bid deliverable cost plan breakdown requirements.<br><br>In line with these the LC Models have therefore only been able to been built for:<br><br>1) The Acute Adult and Children's Hospital;<br><br>2) The Laboratory Building<br><br>3) The External Works<br><br>Refer to Appendix 1 for Hospital Benchmarks used. | | | |
| 3.0 | FM | Please provide information in connection with derivation of FM services £/m2/yr rate – e.g. Sample Range, Hospital Type, Level of Service. Ditto as against differing Facilities e.g. Hospital/Lab etc. | The £/m$^2$ /yr rate for FM Services is based on an average cost derived from the Davis Langdon FM database which includes detailed FM service costs and specifications across a suitable range of appropriate projects. The database has been adjusted to reflect the current size and location of this Project. | | | |
| 4.0 | FM | Please provide breakdown of FM rate as per requirements of Table 1 Item 6.3 (Management/Staff/Contracted/Materials/Equipment costs) | An indication of the expected split of FM costs is as follows:<br>Management / Admin: 12.5%<br>Staff: 37.5%<br>External Contracts: 25%<br>Materials: 20%<br>Equipment: 5% | | | |
| 5.0 | Software | Please confirm that your Zutec software has been included in your priced proposals (this to include access, licensing and any necessary product maintenance requirements). Further please advise of system compatibility (i.e. does this interface with 'standard' software packaging and provision such as Microsoft products). | We confirm Zutec software/service is included in our priced proposals. This includes the access, licensing and associated product maintenance requirements during the 2 year DLP. We would also highlight that Zutec have included an additional 12 months beyond the 2 year DLP as a benefit to the project.<br><br>Zutec system is compatible with Microsoft products. Besides overcoming the logistics of handling volumes of hard copies, it provides an efficient and quick means to search/locate project information/data. This facility is also available remotely (from anywhere with internet connection).<br><br>At the end of DLP, a hard drive of the project information uploaded at that time will be handed over to the Board. The information in that hard drive is readable using internet browser (ie. Only software required to read/run the data is an Internet Explorer). This information can be exported/copied into Microsoft Word or Excel.<br><br>Should the Board wish to use the Zutec website to make ongoing updates to the project database beyond DLP, Zutec is able to offer a hosting solution on a monthly or annual fee basis. | | | |
| **Logistics** | | | | | | |
| - | - | No items in this TC. | - | | | |



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| **Design/HP** | | | | | | |
| 6.0 | Fire Strategy | Can you confirm the qualified chartered fire engineer who will develop your design/strategy moving forwards. | The qualified chartered fire engineer overseeing our design development from WSP is:<br><br>Ryan McCreadie – Associate Director<br>BEng (Hons), PhD, MIFireE, Ceng<br>Chartered Engineer with the Engineering Council Division of the IFE.<br>Membership number – 00035119.<br><br>Mr McCreadie is assisted by the following WSP fire engineers:<br><br>Tom Grace – Associate Director<br>BE (Civil), ME (Fire), CPEng, MIFE, MSFPE, MIEAust<br><br>and<br><br>Kenny Hamill – Senior Fire Engineer<br>BSc (Hons) MRICS MIFireE | | | |
| 7.0 | Fire Strategy | It is noted that the smoke control proposal for the atrium relies on the decomposition of the ETFE roof based on a smoke/gas hot gas temperatures. What contingency planning would you recommend with regard to business continuity in this regard? | The ETFE roof system will be designed to ensure that the 'hot wire' activation only occurs in the highly unlikely event where a major fire occurs from adjoining areas into the atrium.<br><br>This activation sequence will be developed/14inalized in conjunction with the Fire Authority and the Board. However, we have considered the following features to limit the need for 'hot wire' activation:<br><br>• The environmental ventilation strategy for the atrium space includes for high level (side) vents to the ETFE roof and this will be used to support the smoke strategy in the early stages of fire development within the atrium (prior to any 'hot wire' activation).<br><br>• Lower volumes of buoyant smoke (at a temperature below ETFE failure) can be exhausted via the natural vent system.<br><br>• The vent sizes will be based on fire engineering calculations using BRE 368 for smoke management systems.<br><br>• Controlled fire load to atrium base by using fire load island philosophy. Fire loads will be concentrated into specific areas and separated by minimum distance to mitigate against fire spreading throughout the atrium base.<br>• The design fire size will be within the capacity for the natural vent system.<br><br>Furthermore and to reduce the threat of a major conflagration from adjoining areas into the atrium the following design features will be in place:<br><br>• Fire separation of areas opening onto atrium<br><br>• Sprinklers to areas adjoining atrium and appropriate areas in the atrium itself<br><br>• Glazing at ward levels to prevent smoke ingress from atrium to adjoining circulation areas<br><br>• Fire separation between clinical areas and circulation areas adjoining atrium<br>In developing the 'hot wire' activation sequence with the Enforcing Authorities and the Board, the aim is to filter out and avoid unnecessary occurrence by subjecting the activation to a number of "knocks/triggers". It is envisaged that this multiple layer control will firstly involve detection of a fire within the compartment adjacent to and off the atrium that may spread into the atrium. This detection is | | | |



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| | | | then subject to another knock whereby a manual override is provided to allow a suitable investigation period to establish cause of alert and validation of the size of the fire threat for 'hot wire' system to be finally activated.<br><br>In the next stage of our design development, we will assess the possibility of limiting the loss of the ETFE roof to partial sections only (ie. Sufficient to vent the fire size to be agreed with the Enforcing Authorities). We will also assess to further minimize the impact of damaged roof on the operation for the clinical side of the Hospital by for example having glazed (smoke) separation to the atrium as mentioned above.<br><br>In reference to the contingency planning with regard to the business continuity, we believe that the ETFE roof 'hot wire' system would only occur in a very significant fire incident. In this scenario, the Hospital building itself is likely to have extensive damages and will be subject to major business continuity contingency planning. | | | |
| 7.0 | **M&E Service** | | | | | |
| 8.0 | Lift Study | Please confirm that your reference to the Exemplar in the lift study is erroneous and provide bed movement time from the ground floor to the top storey ward. | The data provided was based on the population figures issued by the client in the exemplar report. The approx time taken to move a bed from Ground to top storey ward will be 42 seconds assuming no intermediate stops (door opening at ground to door opening at top floor). On average each journey will take - 60 seconds including intermediate stops. | | | Lift Analysis to be confirmed in Stage 2 |
| 9.0 | Maintenance | Please confirm that a maintenance gantry in the atrium (ventilation actuator maintenance) is included in your priced proposals. | Actuators will be located externally (IP65 rated) for ease of maintenance.<br><br>Localised access facilities will be provided as necessary. | | | |
| **Renewables/Sustainability/BREEAM** | | | | | | |
| 10.0 | U-Value | Please confirm your primary U-values for (i) Glazing, (ii) Fabric and (iii) Roof. | Glazing 1.4 $W/m^2K$ inc frame<br>External wall 0.3 $W/m^2K$<br>Roof 0.25 $W/m^2K$ | | | |
| 11.0 | Permeability | Please confirm your building permeability. | The air permeability (infiltration) will be in accordance with the ERs Volume 2/1 App M&E.4/3.3.5(1) i.e 5 $m^3/hr/m^2$ @ 50Pa | | | |
| **Laboratories** | | | | | | |
| - | - | No items in this TC. | - | | | |

**APPENDIX B**
**NSGH – Bid Evaluation – TC#4 Items from TC # 2 which require further clarification**

| Prev TC ref | Original Item | Action update required | Bidder Response | | | |
|---|---|---|---|---|---|---|
| 1 | List received of suggested suppliers | Client not aware of several e.g. Switchgear, fire alarm, Nurse call and wholesalers used for several systems please provide details and confirm that any changes will require agreement with the Board (up to three manufacturers for each M E & PH item) | The list of suggested suppliers gives an indication of the manufacture/suppliers of the components proposed. The final selection of components will be by agreement with the Board from a selection of no fewer that 3 manufacturers unless specialist equipment dictates otherwise | | | Refer Volume 5 the Contractor's Proposals in Contract Data Part 1. |
| 10 | Please confirm that BMS IP network will be fully stand alone and that all active equipment has been included. | Yes. Please provide supporting narrative for the included BMS IP network. E.g. raid storage, servers racks switches etc | The BMS kernel is built on two fault tolerant servers configured in a primary and hot standby fashion. The operating system will be Linux based with a SQL database for data management. The storage of BMS data will be on a RAID configured system and this will hold the immediate data live for 1 month. The SQL will be used for back up functionality and subsequent long terms analysis of the BMS system.<br>The system will have a primary fibre backbone with the appropriate Cisco managed switches breaking out into the copper IP networks at local system level. | | | |



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| 11 | Tagging | Included. Please provide supporting narrative. e.g. tags are electronic integrated in the WIFI systems etc | The Tagging system works on RFID technology and there are two methods of operation.<br>1. For items such as wheelchairs, the system will display graphically the location of the asset and can be polled to find the nearest required equipment, such as staff requiring a wheelchair.<br>2. Other items can be set up so that they are governed by a boundary and if the asset is brought beyond this defined boundary, an alarm is triggered. | | | |
| 12 | Scaffolding will be used to land generators and transformers | Is this practical, will the scaffolding have permanent foundations etc. | The majority of replacement and maintenance items detailed in the plant replacement strategy in Volume 3.23 of our submission are dealt with via the FM lifts.<br><br>It is anticipated that the expected frequency for the replacement of the major plant items is once every 20-25 years or so in normal circumstances, if at all, and, if required, likely to take place during a period of planned major plant renewal.<br><br>It is considered that it is a reasonable strategy to allow for the erection of a temporary scaffolding working platform to facilitate the removal and replacement of equipment. A structure of this type with sufficient height and capacity can be easily erected at reasonable cost using readily available materials and labour.<br><br>It will be possible to erect such a temporary structure using standard scaffolding details with the footings bearing onto the ground externally, but with protection applied to the surface finishes.<br>It is possible to incorporate permanent concrete foundations to facilitate this work but it is unlikely that the specific scaffolding arrangement will be available during the initial construction work to enable a specific design to be constructed, or that the scaffolding proposals will not change over time and render the installed foundations redundant.<br><br>Where the equipment is required to be transported over the flat roof to reach a loading platform, the structure has sufficient design load capacity to facilitate this but with the actual roof finishes requiring protection as noted in the bid documentation. | | | |
| 13 | Medical gases and VIE | Please provide details of the plant resilience for medical air, 02, vacuum surgical air gas scavenging and nitrous oxide | All medical gas systems and plant are designed as per the current SHTM02-01, resilience within the selected plant items being provided in the following way:<br>Medical Air; a quadruplex plant will be provided, one compressor will act as a permanent standby, the remaining three compressors will be rotated through the demand requirements, this will insure boiling off of any excess condensate.<br>O2; two VIE stores will be provided, each store will be selected to provide 100% of the calculated demand, the stores will be configured as a run and standby mode.<br>AGSS; all AGSS pumps will be selected as duplex units, each pump will be rated to 100% of the calculated load. Each duplex plant will serve only four operating theatres.<br>Nitrous Oxide; a 2 x 10 manifold system with full automatic changeover facilities will be provided complete with a 2 x 1 ESM (emergency) manifold back up, all manifolds will be fully alarmed.<br>All other Air4 and Air 7 systems will have similar manifold systems complete with alarms and automatic changeover facilities | | | |
| 14 | luminaire details | Please provide info on LED and feature lighting luminaires | Refer to attached supplementary information | | | |
| 17 | Fire alarm PC includes incident location graphics | Please confirm fire alarm PC includes incident location graphics | Confirmed as included | | | |
| 20 | Patient entertainment | Schematic representation noted. Please provide equipment details e.g. infrastructure, equipment, patient | The primary patient and staff interface within the ward spaces, is based on a unit, such as the Lincor system. These units are connected back over CAT6A | | | |



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| | systems. | interface etc. | cables to the local hub rooms to an appropriate Cisco managed switch. At this point the system is connected back to the head end, via fibre network. The head end, is a fault tolerant server solution with various interfaces to broadcast receiver equipment.<br>It is possible for this system to be integrated with medical records IT to have the local interface become part of the clinical information management at the bedside. This is not included in this proposal at this time. There is only one screen in the patient space that covers all functionality. | | | |
| 23 | Please confirm that metering | BREEAM compliance noted, please provide a narrative e.g. central monitoring and storage | Metering of engineering services will be provided in accordance with the requirements of the ERs, BREEAM and GIL 65. All metering points will be monitored, recorded and stored on the BMS. | | | |
| 24 | Water spillage protection in secondary comms room. | It is noted that fan coils will have drip trays. On the assumption that the drip tray is full please advise how fan coils can be used in secondary comms rooms while ensuring that the equipment will be protected | Subject to the final layout of the comms rooms options for the fan coil units include positioning high level detection in the drip trays linked to the FCU operation, or more preferably locating the FCU outside of the comms room and ducting the conditioned air into the room. | | | |
| 25 | Please confirm compliance with maintainability and area isolation requirements. | Compliance on Electrical services noted, please confirm compliance with maintainability and area isolation requirements. | Isolation of electrical services will be possible as follows:<br><br>It will be possible to isolate an entire HV ring by opening protective devices at each end in the energy centre.<br><br>Sections of HV ring may be isolated by selective switching of devices at substations along the length of the ring.<br><br>Transformers may be isolated at the associated ring main units.<br><br>Main LV Switchboards may be isolated by opening their main incomer.<br><br>Submains cables to sub switchboards may be isolated by opening their protective device.<br><br>Sub switchboards may be isolated by opening their main incomer.<br><br>A minimum of 2 distribution boards will be provided per department and final circuits will be interleaved so far as is practicable (see below). Thus isolation of one distribution board will affect half of the circuits in the area served by that board.<br><br>The majority of rooms will be provided with at least 2 lighting and 2 small power circuits. Exceptions will be rooms with one luminaire or one socket outlet such as toilets, cupboards, risers and so on where it would be impractical to provide duplication.<br><br>The ERs appear to require each individual room to be capable of isolation without impact upon adjoining areas. We have not interpreted this to mean that each room should be provided with dedicated electrical circuits. Strict adherence to this requirement would result in a minimum of 4 circuits dedicated to each room ie: Side A lighting, Side A power, Side B lighting, Side B power. A department with 100 rooms would require 400 circuits which equates to say 10 no. 18 way 3 phase distribution boards. There would be a considerable impact on the size of the local sub switchboards and the quantity of submains cabling as well as on the quantity of final circuit cable containment systems and space requirements to accommodate the distribution boards and large sub switchboards. | | | The specific ER requirement at 8.1.5.4 is to be achieved by the Contractor |
| 28 | Plant and equipment will be suitably isolated to prevent transmission of | Compliance noted, please provide narrative on proposals | Sound and vibration control for ventilation systems are described in Volume 4 Specification 4.33 giving proposals for plant attenuation, cross-talk attenuation and vibration control under fans etc.<br><br>Major plant such as chillers, generators, compressor etc. will be provided with spring isolation mounts as required to reduce vibration. | | | |



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| | noise and vibration. | | Vibration isolation of pumps will be assessed with the pump manufacturer to determine the most appropriate method of isolation, with spring pipe hangers provided adjacent to pump assemblies.<br><br>Plant noise breakout to site boundaries and intrusive noise into adjacent buildings will be controlled by sound attenuators in the fresh air intakes to all plant to meet the limiting noise criteria for the hospital site. | | | |
| 29 | Please confirm that full environmental proving off all rooms will be provided. | Compliance noted, please provide narrative on proposals | A full environmental check on all rooms will be provided. This will be undertaken at the commissioning stage of the project, all rooms will be put through a range of internal conditions to prove the capacity within the systems to increase and or decrease the space temperatures within a set time line. These tests will be trend logged within the BMS over a given period of time and any faults found will be addressed before final handover. | | | |
| 31 | Please confirm that all services elements are included to meet the fire engineering solution, e.g. stair pressurisation, smoke control etc | Compliance noted, please provide narrative on proposals | All service elements have been included to meet the Section 2.10 Fire Strategy report.<br>Fire engineering has been used wherever beneficial to meet, or surpass, the minimum fire safety performance standards contained within the various guidance documents. To achieve this the services strategy includes for areas such as detection / alarm systems; escape bed lift provision; smoke dispersal from stair protected zones / fire fighting shafts / lift lobbies, atrium smoke and ventilation strategy; basement smoke control / clearance strategy; fire damper actuation etc. | | | Contractor to develop a fire engineered strategy which complies with Statutory Regulations and Fire Code |
| 34 | Please confirm that leak detection has been included. | Compliance noted, please provide narrative on proposals | The leak detection systems will be developed during the detailed design phase and will utilise linear detection elements, broken into appropriate lengths. The system will form part of the BMS, with a graphic interface of the overall system. Leak detection will be logged under the BMS alarm handling and it will also be possible to configure plant shut down or other intervention, on the presence of a leak being detected. | | | |
| 35 | Please indicate percentage capacity of all water service pipework mains from the energy centre to the main buildings for resilience. | Heating response noted, please provide narrative for CWS and CHWS | The site water mains feed directly into the hospital with bulk storage in the basement. No CWS is fed from the Energy Centre.<br><br>HWS is generated locally within the plant areas to feed the various zones of the building. No HWS is fed from the Energy Centre. | | | Refer to the M&E Clarification Log in Contract Data Part 2. |



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**Sustainability and Energy Consumption**

**Requirements from Brookfield (Brookfield final response indicated in red below)**

1) Operational Energy Targets (basis)
   - Updated Energy Model to be produced within 6 weeks
   - Issue updated report prior to each key design stage (condition of approval to proceed to subsequent stages)
   - Final model to be provided 3 months in advance of Stage 3

   Brookfield will include within the detailed design programs for Laboratory and Adult / Children's hospital monthly sustainability design review hold points up to FBC as per schedule provided by WSP & Ecoteric.

2) Operational Energy Targets (areas)
   - Clarify exact area as a benchmark going forward

   80kg$CO_2m^2$ against net building area 136,490$m^2$

3) Operational Energy Targets (content)
   - State clearly in Mwh per annum and $CO_2$ for fossil and electrical energy, the building demand, gross energy supply and carbon offset by renewables
   - State assumed area in m2

   Energy model will include this information and will be developed during the design development stage as Brookfield programme

4) Operational and Design Energy Target
   - Include climate change impact within future modelling

   Future modelling could include potential effect of climate change subject to an agreed set of parameters.

5) Operational Energy Target: Energy Costs
   - Range of 15% given on Energy Cost: Confirm stated energy target includes upper value of range stated.

   80kg$CO_2m^2$ is within upper range (£2.6 million plus 15%) as stated.

6) Laboratories Board to advise energy use determined at Stage E
   - Establish likely energy usage of laboratories

   Ecoteric confirmed stage D laboratory design did not comply with target emission reduction (TER) 80kg$CO_2m^2$ and or BREEAM Rating Excellence.

   The Board has stated that the laboratory target emission reduction 80kg$CO_2m^2$ is to be achieved upon connection to the Energy Centre.

   Stage E Laboratory design will be assessed upon receipt in respect of BREEAM rating and target emission reduction.

7) Future Proofing
   - Confirm provision of a comprehensive solution for future fuel flexibility without impact on current design

Reference Clause 8.3.38 of Volume 2/1, there is no specific requirements for 'future fuel flexing' and as such the Contractor's Proposals do not include these.
However, as boilers are dual fuel oil and gas, some ability exists to run on alternative fuels although limited by current oil storage provision as Appendix M&E.2 Section 4 (7 days).

Future fuels flexibility based on fuel oil, natural gas and biogas if supplied as the same characteristics of natural gas.

8) Lighting Controls
   - Clarify extent of automatic controls

Lighting control based on Brookfield proposal and as stated in agreed RFI log.

9) Renewables
   - Clarify what has been included
   - Clarify output of proposed wind turbines

Refer to contractor's proposal section 3.20.
Brookfield will further investigate the following:

- Off site wind.
- Borehole water use.
- Ground Source.

The investigations and conclusions will consider commercial viability

10) Active Energy Management
   - Provide statement on deliverables, expertise and included scope.

Brookfield advised that the bid offer included during 24 months DLP (as per Contractors proposal Vol 3 3.24)

- Energy monitoring.
- Monthly energy report.
- Ongoing fine tuning of systems to ensure compliance with design.
- Zutec asset management system interfaced with the energy metering system
- WSP sustainability will review energy data and reports.

11) Natural Ventilation
   - Clarify extent of openable windows within bid

The Board's requirement to limit space temperatures to 26 $^{o}$C means that the use of natural ventilation is limited and that a sealed building is the only way to meet the requirement.

There may be areas that can be naturally ventilated, but this can only be determined once the whole building has been thermally modelled during the detailed design stage, and is reliant on the following being available:-

- Signed off 1-200 layouts
- Signed off envelope details
- Agreed information on occupancy and equipment gains
- Agreed room environmental conditions (also expressed on a set of Environmental Treatment drawings)

However, at this time our opinion is that all continuously occupied spaces will be sealed and use either all air or chilled beams to maintain the required conditions. Transient spaces such as street, circulation spaces and atria (subject to CFD analysis) are envisaged as being naturally ventilated, as there is unlikely to be a strict requirement for upper temperature control

12) Energy Saving Measures
    - Provide detailed list of bid inclusions.
    - System by system, zone by zone listing required stating heat recovery, motor type and controls method required in design development stage.

Refer to Volume 3 Section 3.20 of Contractor Proposals for details.
Brookfield will provide all necessary information during detailed design and technical Submissions prior to procurement.

13) Whole Site Energy
    - Confirm retained and future estates are included within the energy provision of the Energy Centre.

Agreed that this is not a Brookfield issue.
Ecoteric will discuss issue with Board.

14) Individual Room Controls
    - Confirm ability to control rooms individually.

It is envisaged that the majority of the hospital will be able to be provided with individual room temperature control on the following basis:-

- Individual occupied spaces served by chilled beams will have local control
- Heated only spaces utilising radiant panels with have local control
- Specialist 'air conditioned' areas (such as theatre suites, diagnostic imaging, etc) will have individual room control

In multiple occupancy spaces such as A&E cubicles areas, waiting areas, ancillary support rooms, etc where individual room control is impractical then temperature control will be on common return air.

**This is Appendix 2 & 3 to the foregoing Agreement between Greater Glasgow and Clyde Health Board**

**and**

**Brookfield Construction (UK) Limited**

**GREATER GLASGOW AND CLYDE HEALTH BOARD** of J B Russell House, Gartnavel Royal Hospital, 1055 Great Western Road, Glasgow G12 0XH ("the *Employer*"); and

**BROOKFIELD CONSTRUCTION (UK) LIMITED** having its principal place of business at 23 Hanover Square, London, W1S 1JB (the "*Contractor*").

WHEREAS

1. The *Employer* and the *Contractor* entered into the Agreement dated 18th December 2009 whereby the *Contractor* is to Provide the Works in connection with the New South Glasgow Hospital Project.
2. The *Employer* wishes the *Contractor* to continue to Provide the Works by commencing and carrying out:

| | | |
|---|---|---|
| Stage 3 | Design and Construct New Hospitals Building | Design and Construction of the New Adult Acute and Children Hospitals Building and Energy Centre. |
| Stage 3A | Demolition of Surgery Block | Demolition of surgical block and associated buildings and completion of soft landscaping |

NOW IT IS AGREED THAT

1. The *Employer* hereby authorises the *Contractor* to commence and carry out Stage 3 and Stage 3 A of the *works* i.e. the Design and Construction of the New Hospitals Building, and demolition of the surgical block and associated buildings and completion of soft landscaping.
2. The *Contractor* will continue to Provide the Works in accordance with the Agreement.

3. The Agreement is amended and modified to the following extent:-

i. The Base Date for monitoring the *Employer* Accepted Risk on Inflation for all Stages will be 1st January 2011.

ii. The Start on Site date for Stage 3 is amended from 28th February 2011 to 28th March 2011 at which point the *Employer* will ensure the provision of a totally clear site for access by the *Contractor*. It is accepted by the *Employer* that the *Contractor* shall be entitled to undertake enabling works prior to this date.

iii. The Start on Site Date for Stage 3A is amended from 20th July 2015 to 17th August 2015

iv. Option X5 Clause, the Completion Date for Section 2 (Stage 3 New Hospital) is amended from 31st January 2015 to 28th February 2015 and the Completion Date for Section 3 (Stage 3A Demolition) is amended from 19th July 2016 to 16th August 2016

v. Contract Data Part One and Contract Data Part Two forming part of executed Contract dated 18th December 2009, is amended and supplemented as follows:-

Employers Requirements Supplemental Information –

- BIW Log (as included within Folder B1 of the Instruction to Proceed Bible titled The BIW Log (2010 ItP) – (FINAL) )
- RFI Log (as included within Folder B1 of the Instruction to Proceed Bible titled The RFI Log (2010 ItP) – (FINAL) )
- Clarification Log (as included within Folder B1 of the Instruction to Proceed Bible titled The Clarification Log (2010 ItP) – (FINAL))
- M+E Clarification Log (as included within Folder B1 of the Instruction to Proceed Bible titled The M&E Clarification Log (2010 ItP) – (FINAL))
- Laboratory Log (as included within Folder B1 of the Instruction to Proceed Bible) (as executed Agreement 18th December 2009)
- Sustainability Log (as included within Folder B1 of the Instruction to Proceed Bible titled The Sustainability Log (2010 ItP) – (FINAL))

- Stage 3 Instruction to Proceed Log December 2010 (new) (as included within Folder S of the Instruction to Proceed Bible)

Contractors Proposals –

- Volume 1 (as included with Folder C1 of the Instruction to Proceed Bible) – Schedule of Accommodation titled SOA 1:200 Drawings. By reference to the 1:200 drawings included within Volume 13 of this agreement the areas denoted on the drawings represent the agreed position between the Parties to the Contract. The Parties agree to use reasonable endeavours to prove functionality and to maintain the overall areas as currently indicated and the *Employer* agrees that any adjustments to areas during the remaining 1:50 review process (excluding Plantrooms and Service Risers with the exception of those adjustments due to a change within the Employer's Requirements) that cannot be accommodated within the Departmental areas or within the overall building envelope that give rise to an increase in area will be an additional Employer Risk. The Parties accept that the 0.5% risk accepted by the Contractor within the Agreement of 18th December 2009 has already been absorbed by the Contractor.
- Volume 2 (as included within Folder D1 of the Instruction to Proceed Folder) – Drawings.
- Volume 3 (as included within Folder F1 of the Instruction to Proceed Bible) – Design Narratives
- Volume 4 (as included within Folder G1 of the Instruction to Proceed Bible) – Specifications
- Volume 5 (as included within Folder H1 of the Instruction to Proceed Bible) – Components titled 2010 ItP Project Bible - Folder H1 – Components (FINAL)
- Volume 6 (as included within Folder T of the Instruction to Proceed Bible) – Equipment (as amended 16th December 2010). These revised Equipment Schedules define the current position agreed between the Parties to the Contract and thus the quantities and coding identified therein take precedence over the Drawings included

within Volumes 2, 13, 14, and 15 of this Appendix 2 and 3 agreement. For purpose of clarity any change in quantity or coding will be an Employer Risk pursuant to Risk Items 25, 39 and 40 on the Stage 3 NSGH Board Risk Schedule included within the Contract.

- Volume 7 (as included within Folder I1 of the Instruction to Proceed Bible) – SHTM (as executed Agreement 18th December 2009)
- Volume 8 (as included within Folder J1 of the Instruction to Proceed Bible) – ADB titled EDS ItP Batch 1 - ZBP updates_141210" & "EDS ItP Batch 2 - ZBP updates_141210" & "2900-NSGH-Environmental matrix_comments-011210 (Final)
- Volume 9 (as included within Folder K1 of the Instruction to Proceed Bible) – Programme titled Stage 3 Summary Master Programme, BCL-GSM-CN02-0001 (FINAL)
- Volume 10 (as included within Folder L1 of the Instruction to Proceed Bible) – Logistics (as amended 16th December 2010)
- Volume 11 – Not Used
- Volume 12 – Commercial (as executed Agreement 18th December 2009 unless amended by this Appendix 2 & 3, or Compensation Event already issued, or Project Managers Instruction already issued)
- Volume 13 (as included within Folder U of the Instruction to Proceed Bible) (new) – Masterplan & Architecture Proposals (Agreed Appendix k drawing schedule)
- Volume 14 (as included within Folder V of the Instruction to Proceed Bible) (new) – M&E Engineering Proposals (Agreed Appendix k drawing schedule)
- Volume 15 (as included within Folder W of the Instruction to Proceed Bible) (new) – Civil / Structural Engineering Proposals (Agreed Appendix k drawing schedule)
- Volume 16 Critical Failures (as included within Folder X of the Instruction to Proceed Bible titled Appendix X1 (FINAL)

- Volume 17Planning Consents Pack (as included within Folder Y of the Instruction to Proceed Bible)

vi. Compensation Events and Project Managers Instructions as issued prior to execution date of this Appendix 2 & 3

EXECUTED for and on behalf of the *Employer* at 16th day of December 2010 as follows:-

[redacted]

(Authorised official)

Before this witness:- [redacted]

ALAN SEABOURNE ..... Full name
CONSTRUCTION SITE, HARDGATE ROAD,
GOVAN, GLASGOW, G51 4SX Address

[redacted] *Contractor* at 16th day of December 2010 as follows:-

(~~Director/~~Authorised Signatory)

Before this witness:-

[redacted] ..... Full name

~~BARDOHOLDCONSTRUC~~ Address
HARDGATE ROAD.
GOVAN G51 4SX.

**VOLUME 1**

| File Name | Iss. | Rev. | Title | Issue Date | Add | Info/Omit | 2009 Board Comment | 2009 Status | 2010 ItP Comments (N/C No Change from Agreed 2009 Contract) | 2010 Status |
|---|---|---|---|---|---|---|---|---|---|---|
| NSGACL ITPD Volume 1 | 1 | 1 | Project Scope & Commercial Doc | 01/05/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | Volume 1 = No change from 2009 Project Bible positic | Agreed |
| NSGACL Contract Bond ITSFB Issue - Vol 1 | 1 | 1 | NSGACL Contract Bond ITSFB Issue - Vol 1.pdf | 14/08/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | | |
| NSGACL Contract Form of Agreement | 1 | | The Contract Form of Agreement | 04/06/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | | |
| NSGACL Form of Consultant Co lateral Warranty | 1 | | The Contract Consultant's Co lateral Warranty | 04/06/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | | |
| NSGACL Form of Novation Agreement | 1 | | The Contract Novation Agreement | 04/06/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | | |
| NSGACL Form of novation agreement ITSFB Issue - Vol 1 | 1 | 1 | NSGACL Form of novation agreement ITSFB Issue - Vol 1.pdf | 14/08/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | | |
| NSGACL Form of sub-consultant warranty ITSFB Issue - Vol 1 | 1 | 1 | NSGACL Form of sub-consultant warranty ITSFB Issue - Vol 1.pdf | 14/08/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | | |
| NSGACL Form of Sub-Contractor Collateral Warranty | 1 | | The Contract Sub-Contractor's Collateral Warranty | 04/06/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | | |
| NSGACL Form of subcontractor warranty ITSFB Issue - Vol 1 | 1 | 1 | NSGACL Form of subcontractor warranty ITSFB Issue - Vol 1.pdf | 14/08/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | | |
| NSGACL NEC Contract Document ITSFB Issue - Vol 1 | 1 | 1 | NSGACL NEC Contract Document ITSFB Issue - Vol 1.pdf | 14/08/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | | |
| NSGACL Vol 1 - Appendix C Rev 3 | 1 | 3 | NSGACL Vol 1 - Appendix C Rev 3.pdf | 14/08/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | | |
| 0401 | 1 | . | PROPOSED SHEAR WALL LAYOUT | 30/06/2009 | | | | | | |
| 0404 | 1 | . | PROPOSED SUPERSTRUCTURE | 03/07/2009 | | | | | | |
| 0406 | 1 | . | PROPOSED ROOF STRUCTURE | 30/06/2009 | | | | | | |
| SK-0010 | 1 | . | DETAIL OF 2 PILE PILECAP | 19/06/2009 | | | | | | |
| SK-0011 | 1 | . | DETAIL OF 3 PILE PILECAP | 19/06/2009 | | | | | | |
| SK-0012 | 1 | . | SECTION INDICATING PILECAP LOCATION BELOW PLANT SLAB / BASEMENT | 19/06/2009 | | | | | | |
| SK-0013 | 1 | . | SECTION INDICATING PILECAP LOCATION BELOW LABRATORY / OFFICES | 19/06/2009 | | | | | | |
| SK-0014 | 1 | . | DETAIL OF 1 PILE PILECAP | 19/06/2009 | | | | | | |
| SK-0015 | 1 | . | DETAIL OF 4 PILE PILECAP | 19/06/2009 | | | | | | |
| SK-0017 | 1 | . | SECTION X-X | 19/06/2009 | | | | | | |
| SK-0018 | 1 | . | SECTION Y-Y | 19/06/2009 | | | | | | |
| SK-0019 | 1 | . | SECTION Z-Z | 19/06/2009 | | | | | | |
| SK-0020 | 1 | . | PROPOSED PILE AND GROUND BEAM LAYOUT | 19/06/2009 | | | | | | |
| SK-0030 | 1 | . | PART PLAN SHOWING TRANSFER STRUCTURE OVER SERVICE YARD ACCESS ROAD | 30/06/2009 | | | | | | |
| SK-016 | 1 | . | DETAILS OF TEMPORARY RETENTION | 19/06/2009 | | | | | | |

**VOLUME 2.1**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | 2009 Agreed Position | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | 2010 Status |
|---|---|---|---|---|---|---|---|---|
| NSGACL PD-HLM-L(00)X-XX-001 - Existing Site Plan | - | Omit | Superseded by Issue2 | Agreed | | Agreed | N/C | Agreed |
| NSGACL PD-HLM-L(00)X-XX-001 - Existing Site Plan | Y | - | To remain as relevant baseline detail. | Agreed | | Agreed | N/C | Agreed |
| NSGACL-PD-HLM-S(00)X-XX-005 - Phased Construction Site Plan | - | Omit | To be superseded by outcome/agreement from Logistics meeting 26 November 2009 | Agreed | | Agreed | N/C | Agreed |
| NSGAC OPD Activity NCH | Y | - | Remains output for Ers. | Agreed* | *Brookfield agree with Board position that Clinical Output Specs should remain as being the core ER on the basis that the Board confirm that they accept the Acommodation Shcedules included within the Bid Submission Volume 1 can satisfy the Clinical Output Specifications. | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Per Volume 1 of the Contractor's Proposals (as included within Folder C1 of the Instruction to Proceed Bible) - Schedule of Accommodation titled SOA 1:200 Drawings. By reference to the 1:200 drawings included within Volume 13 of the agreement the areas denoted on the drawings represent the agreed position between the Parties to the Contract (subject to proving functionality per the narrative in Appendix 2 & 3 of the Instruction to Proceed letter). | Agreed |
| NSGACL AAU NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | The CoS remains the ER output, with the agreed Schedule of Accommodation illustrated in the SOA 1:200 Drawings (per the narrative in relation to Volume 1 of the Contractor's Proposals in Appenedix 2 & 3 of the Instruction to Proceed letter). Additionally, the CoS requires to be read in conjunction with the agreed Employers Requirements Supplemental Information: The BIW Log (2010 ItP) - F NAL; The RFI Log (2010 ItP) - FINAL; The Clarification Log (2010 tP) - FINAL; and The M+E Clarification Log (2010 tP) - FINAL. | Agreed |
| NSGACL Adult and Childrens Hospital Combined Bioengineering NSG NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL ADULT AND CHILDRENS HOSPITAL Med illus NSG NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL ADULT AND CHILDRENS PHARMACY NSG NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Anticoagulation NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Audiology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Cardiac Rehab NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Cardiac Services NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Cardiology NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Care of Elderly NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Chaplaincy NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Chaplaincy Spiritual Care NSG | Y | - | Remains output for Ers. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Child Protection NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Clinical Psychology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Community paediatrics NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Continence Service NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |

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|---|---|---|---|---|---|---|---|---|
| NSGACL Critical Care NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Day Medical NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Dental NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Departmental Adjacency Matrix NCH | - | Omit | Adjacency matrix remains output, clinical functionality sign-off will create agreed settlement of adjacencies | Agreed | To be replaced by BE 1:500 plans | To be replaced by BE 1 500 plans | Replaced by 1 500 plans per Appendix K - identified in Folder U of the 2010 Instruction to Proceed Project Bible. | Agreed |
| NSGACL Departmental Adjacnecy Matrix NSG | - | Omit | Adjacency matrix remains output, clinical functionality sign-off will create agreed settlement of adjacencies | Agreed | To be replaced by BE 1:500 plans | To be replaced by BE 1 500 plans | Replaced by 1 500 plans per Appendix K - identified in Folder U of the 2010 Instruction to Proceed Project Bible. | Agreed |
| NSGACL Dermatology NCH | Y | - | CoS remains core ER output. | Agreed* | *Brookfield agree with Board position that Clinical Output Specs should remain as being the core ER on the basis that the Board confirm that they accept the Acommodation Shcedules included within the Bid Submission Volume 1 can satisfy the Clinical Output Specifications. | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | The CoS remains the ER output, with the agreed Schedule of Accommodation illustrated in the SOA 1:200 Drawings (per the narrative in relation to Volume 1 of the Contractor's Proposals in Appenedix 2 & 3 of the Instruction to Proceed letter). Additionally, the CoS requires to be read in conjunction with the agreed Employers Requirements Supplemental Information: The BIW Log (2010 ItP) - F NAL; The RFI Log (2010 ItP) - FINAL; The Clarification Log (2010 tP) - FINAL; and The M+E Clarification Log (2010 tP) - FINAL. | Agreed |
| NSGACL Dermatology NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Diabetes Endocrinology NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Diabetes NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Dietetic NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Dietetic NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Discharge Lounge NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL ECLS NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL EMERGENCY DEPARTMENT NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Emergency Department NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Endocrinology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Endoscopy NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL ENT Audiology NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL ENT NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Entrance Hall NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Gastro NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Gastroenterology NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |

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|---|---|---|---|---|---|---|---|---|
| NSGACL Gen Outpatients NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Gen Surg NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL General Surgery NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL General Surgery NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Generic Ward Matrix NCH | - | Omit | Superseded by Vol4 document | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL GENERIC WARD NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL GENERIC WARD NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Generic Wards NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Haemato Oncology NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Haemat-Oncology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL HaN NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Health Records NSG | Y | - | Remains output for Ers. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Imaging NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL IMMUNOLOGY NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Laboratory Medicine NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Liaison Psychiatry NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Mat_Neonate Psychology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Medical Day Unit NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Medical Paediatric NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL METABOLIC MEDICINE NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Neurology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Neurology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Neurophysiology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Neurophysiology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NSGACL NEUROSURGRY NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Nuclear Medicine NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL OCCUPATIONAL THERAPY NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Operational Procedure Domestic Services NSG | Y | - | Remains output for Ers. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Operational Procedure Linen NSG | Y | - | Remains output for Ers. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Operational Procedure Portering NSG | Y | - | Remains output for Ers. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Operational Procedure Waste NSG | Y | - | Remains output for Ers. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Ophthalmology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Ophthalmology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Ophthalmology NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Ophthalmology NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Orthopaedic NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Orthopaedic NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Orthopaedics NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Orthotics NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Orthotics NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL OT Orthotics NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Out of Hours NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL OUTPATIENTS DEPARTMENT NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Pain NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Pain NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Physiotherapy NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Physiotherapy NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Physiotherapy NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NSGACL PICU NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL PICU NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL PLASTICS NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Play Service NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Play Service NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Psychiatric Inpatients NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Psychiatric Inpatients NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Radiology NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Renal Dialysis NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Renal NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Renal NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Renal NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL RESPIRATORY NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Respiratory NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Rheumatology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Rheumatology NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Rheumatology NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL SPEECH AND LANGUAGE THERAPY NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Speech Language Therapy NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Stroke NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL THEATRES NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Theatres NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL TRANSPORT NCH | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Urology NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NSGACL Vascular NSG | Y | - | CoS remains core ER output. | Agreed | Ditto above | The SoA and associated requirements that are agreed between the Board and Brookfield are included in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Ditto above in relation to CoS | Agreed |
| NSGACL Schedule of Accommodation - Excel format - NCH | - | Omit | Superseded version | Agreed | | Agreed | N/C | Agreed |
| NSGACL Schedule of Accommodation - Excel format - NSG | - | Omit | Superseded version | Agreed | | Agreed | N/C | Agreed |
| NSGACL Schedule of Accommodation NCH | - | Omit | Superseded version | Agreed | | Agreed | N/C | Agreed |
| NSGACL Schedule of Accommodation NSG | - | Omit | Superseded version | Agreed* | | Agreed | N/C | Agreed |
| NSGACL D.1 Outline Planning Conditions | Y | - | Remains output for ERs. | Agreed* | *Planning risk is allowed within Brookfield submission although timing of response to Planning Submissions is a Board risk. | Timing of response from GCC outwith the statutory period in relation to the planning submission is a Board risk, this is dependant, however, upon the submission being correctly compiled and served by BE. That is, should a delay or cost arise due to an incorrectly compiled or served planning submission by BE that risk remains with BE. | 2009 statement remains. Planning information is contained in Folder Y of the 2010 Instruction to Proceed Project Bible. | Agreed |
| NSGACL D.2 Planning Matrix | Y | - | Remains output for ERs. | Agreed* | *Planning risk is allowed within Brookfield submission although timing of response to Planning Submissions is a Board risk. | Per above with regard to planning risk. | 2009 statement remains. Planning information is contained in Folder Y of the 2010 Instruction to Proceed Project Bible. | Agreed |
| NSGACL-Generic ADB Room Data Sheets | - | Omit | Superseded version | Agreed | | Agreed | N/C | Agreed |
| NSGACL-Generic ADB Room Data Sheets | Y | - | Remains output for ERs. | Agreed | | Agreed | ADB sheets are contained in Folder J1 of The 2010 Instruction to Proceed Project Bible. (to be read in conjunction with the Environmental Matrix plus the Environmental Matrix Report). Original 2009 ADBs to remain, to be updated and completed reflecting the Environmental Matrix + 1:50 process outcomes. | Agreed |
| NSGACL 1149-03A | | Omit | | Agreed | Exemplar Masterplan to be replaced with drawing log of BE Masterplan drawings | Agreed | N/C | Agreed |
| NSGACL - 3D Image 1 - View from new entrance boulevard | - | Omit | Superseded by bidder proposals. | Agreed | 3Ds to be replaced by the following drawings; | Agreed | N/C | Agreed |
| NSGACL - 3D Image 2 - View of childrens entrance | - | Omit | Superseded by bidder proposals. | Agreed | NA-XX-XX-3D-251-001 | Agreed | N/C | Agreed |
| NSGACL - 3D Image 3 - View of emergency entrances | - | Omit | Superseded by bidder proposals. | Agreed | NA-XX-XX-3D-251-002 | Agreed | N/C | Agreed |
| NSGACL - 3D Image 4 - View of new tower across parkland | - | Omit | Superseded by bidder proposals. | Agreed | NA-XX-XX-3D-251-003 | BE 'fly through' to be included also. Agreed as long as read in conjunction with all other specifications etc. Fly throughs are generally not measurable in terms of output | N/C | Agreed |
| | | | | | NA-XX-XX-3D-251-004 | Agreed | Replaced by BCL information contained in Appendix K which is in Folder U of The 2010 Instruction to Proceed Bible. | Agreed |
| | | | | | NA-XX-XX-3D-251-005 | Agreed | ditto | Agreed |
| | | | | | NA-XX-XX-3D-251-006 | Agreed | ditto | Agreed |
| | | | | | NA-XX-XX-3D-251-007 | Agreed | ditto | Agreed |
| | | | | | NA-XX-XX-3D-251-008 | Agreed | ditto | Agreed |
| | | | | | NA-XX-XX-3D-251-009 | Agreed | ditto | Agreed |
| | | | | | NA-XX-XX-3D-252-001 | Agreed | ditto | Agreed |
| | | | | | NA-XX-XX-3D-252-002 | Agreed | ditto | Agreed |
| | | | | | NA-XX-XX-3D-252-003 | Agreed | ditto | Agreed |
| NSGACL PD-HLM-L(00)X-XX-002 - Proposed Site Plan | - | Omit | Superseded version | Agreed | | Agreed | N/C | Agreed |
| NSGACL PD-HLM-L(00)X-XX-002 - Proposed Site Plan | - | Omit | | Agreed | Exemplar Site Plan to be replaced with BE Proposed Site Plan | Agreed | Replaced by BCL information contained in Appendix K which is in Folder U of The 2010 Instruction to Proceed Bible. | Agreed |
| NSGACL App H -Board Exemplar Layouts 1 to 500 _Cover_ | - | Omit | | Agreed | | Agreed | N/C | Agreed |
| NSGACL PD-HLM-L(00)00-x-XX-001-Dept Adj Level 0 | - | Omit | Superseded version | Agreed | | Agreed | N/C | Agreed |
| NSGACL PD-HLM-L(00)00-x-XX-001-Dept Adj Level 0 | - | Omit | | Agreed | To be replaced by BE 1:500 plans Replace with NA-XX-00-PL-252-010 | Agreed | Replaced by BCL information contained in Appendix K which is in Folder U of The 2010 Instruction to Proceed Bible. | Agreed |
| NSGACL PD-HLM-L(00)-01-X-XX-001-Dept Adj Level -1 | - | Omit | Superseded version | Agreed | | Agreed | N/C | Agreed |
| NSGACL PD-HLM-L(00)-01-X-XX-001-Dept Adj Level -1 | - | Omit | | Agreed | To be replaced by BE 1:500 plans Replace with NA-XX-B1-PL-252-010 | Agreed | Replaced by BCL information contained in Appendix K which is in Folder U of The 2010 Instruction to Proceed Bible. | Agreed |
| NSGACL PD-HLM-L(00)01-X-XX-001-Dept Adj Level 1 | - | Omit | Superseded version | Agreed | | Agreed | N/C | Agreed |
| NSGACL PD-HLM-L(00)01-X-XX-001-Dept Adj Level 1 | - | Omit | Superseded version | Agreed | | Agreed | N/C | Agreed |
| NSGACL PD-HLM-L(00)01-X-XX-001-Dept Adj Level 1 | - | Omit | | Agreed | To be replaced by BE 1:500 plans Replace with NA-XX-01-PL-252-010 | Agreed | Replaced by BCL information contained in Appendix K which is in Folder U of The 2010 Instruction to Proceed Bible. | Agreed |
| NSGACL PD-HLM-L(00)02-X-XX-001-Dept Adj Level 2 | - | Omit | Superseded version | Agreed | | Agreed | N/C | Agreed |
| NSGACL PD-HLM-L(00)02-X-XX-001-Dept Adj Level 2 | - | Omit | Superseded version | Agreed | | Agreed | N/C | Agreed |
| NSGACL PD-HLM-L(00)02-X-XX-001-Dept Adj Level 2 | - | Omit | | Agreed | To be replaced by BE 1:500 plans Replace with NA-XX-02-PL-252-010 | Agreed | Replaced by BCL information contained in Appendix K which is in Folder U of The 2010 Instruction to Proceed Bible. | Agreed |
| NSGACL PD-HLM-L(00)03-x-XX-001-Dept Adj Level 3 | - | Omit | Superseded version | Agreed | | Agreed | N/C | Agreed |
| NSGACL PD-HLM-L(00)03-x-XX-001-Dept Adj Level 3 | - | Omit | Superseded version | Agreed | | Agreed | N/C | Agreed |
| NSGACL PD-HLM-L(00)03-x-XX-001-Dept Adj Level 3 | - | Omit | | Agreed | To be replaced by BE 1:500 plans Replace with NA-XX-03-PL-252-010 | Agreed | Replaced by BCL information contained in Appendix K which is in Folder U of The 2010 Instruction to Proceed Bible. | Agreed |
| NSGACL PD-HLM-L(00)04-X-XX-001-Dept Adj Level 4 | - | Omit | Superseded version | Agreed | | Agreed | N/C | Agreed |
| NSGACL PD-HLM-L(00)04-X-XX-001-Dept Adj Level 4 | - | Omit | Superseded version | Agreed | | Agreed | N/C | Agreed |

**VOLUME 2.1**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NSGACL PD-HLM-L(00)04-X-XX-001- Dept Adj Level 4 | - | Omit | Superseded version | Agreed | | Agreed | N/C | Agreed |
| NSGACL PD-HLM-L(00)04-X-XX-001- Dept Adj Level 4 | - | Omit | | Agreed | To be replaced by BE 1:500 plans | Agreed | | |
| | | | | | Replace with NA-XX-04-PL-252-010 | Agreed | | |
| | | | | | Include NA-XX-05-PL-252-010 | Agreed | | |
| | | | | | Include NA-XX-06-PL-252-010 | Agreed | | |
| | | | | | Include NA-XX-07-PL-252-010 | Agreed | | |
| | | | | | Include NA-XX-08-PL-252-010 | Agreed | | |
| | | | | | Include NA-XX-09-PL-252-010 | Agreed | | |
| | | | | | Include NA-XX-10-PL-252-010 | Agreed | | |
| | | | | | Include NA-XX-11-PL-252-010 | Agreed | | |
| | | | | | Include NA-XX-12-PL-252-010 | Agreed | Replaced by BCL information contained in Appendix K which is in Folder U of The 2010 Instruction to Proceed Bible. | |
| | | | | | Include NA-XX-13-PL-252-010 | Agreed | | |
| | | | | | Include NA-XX-14-PL-252-010 | Agreed | | Agreed |
| NSGACL-PD-HLM-L(00)00-X-OP-001 - Outpatient Adults Clinic Adj Level 0 | - | Omit | | Agreed | | Agreed | | |
| | | | | | To be replaced by BE 1:500 plans | | | |
| | | | | | Replace with NA-XX-00-PL-252-010 | Agreed | | |
| NSGACL-PD-HLM-L(00)01-X-OP-001 - Outpatient Adults Clinic Adj Level 1 | - | Omit | | Agreed | | Agreed | | |
| | | | | | To be replaced by BE 1:500 plans | | | |
| | | | | | Replace with NA-XX-01-PL-252-010 | Agreed | | |
| NSGACL-PD-HLM-L(00)02-X-OP-001 - Outpatient Adults Clinic Adj Level 2 | - | Omit | | Agreed | | Agreed | | |
| | | | | | To be replaced by BE 1:500 plans | | Replaced by BCL information contained in Appendix K which is in Folder U of The 2010 Instruction to Proceed Bible (flow diagrams replaced by Appendix K 1:200s) | |
| | | | | | Replace with NA-XX-02-PL-252-010 | Agreed | | |
| 2447 AL (00)22 Emergency Department flow diagram | - | Omit | | Agreed | Replace with NA-XX-00-PL-252-304 | Agreed | | Agreed |
| 2447 AL(00)20P - Theatre flow diagram | - | Omt | | | | Replace with NA-XX-02-SKPL-252-200 subject to the attached commentary "4 Departments Drawing Note" | | |
| | | | | Agreed | | | | |
| 2447 AL(00)23 Radiology flow diagram | - | Omit | | Agreed | | Agreed | | |
| | | | | | Replace with NA-XX-00-PL-252-308 | | | |
| | | | | | Replace with NA-XX-01-PL-252-308 | Agreed | | |
| NSGACL - PD-HLM-L(00)00-X-AA-001 - Acute Assessment Adults | - | Omit | Superseded version | Agreed | | Agreed | | |
| NSGACL - PD-HLM-L(00)00-X-AA-001 - Acute Assessment Adults | - | Omit | Superseded version | Agreed | | Agreed | | |
| NSGACL - PD-HLM-L(00)00-X-AA-001 - Acute Assessment Adults | - | Omt | | | | Replace with NA-XX-00-SKPL-252-106 subject to the attached commentary "4 Departments Drawing Note" | | |
| | | | | Agreed | | | Replaced by BCL information contained in Appendix K which is in Folder U of The 2010 Instruction to Proceed Bible. | |
| NSGACL - PD-HLM-L(00)00-X-ED-001 - Emergency Department Adults | - | Omit | Superseded version | Agreed | | Agreed | | Agreed |
| NSGACL - PD-HLM-L(00)00-X-ED-001 - Emergency Department Adults | - | Omit | Superseded version | Agreed | | Agreed | | |
| NSGACL - PD-HLM-L(00)00-X-ED-001 - Emergency Department Adults | - | Omit | | Agreed | Replace with NA-XX-00-PL-252-205 | Agreed | | |
| NSGACL - PD-HLM-L(00)00-X-RA-001 - Radiology Adults | - | Omit | Superseded version | Agreed | | Agreed | | |
| NSGACL - PD-HLM-L(00)00-X-RA-001 - Radiology Adults | - | Omit | Superseded version | Agreed | | Agreed | | |
| NSGACL - PD-HLM-L(00)00-X-RA-001 - Radiology Adults | - | Omit | | Agreed | Replace with NA-XX-00-PL-252-207 | Agreed | | |
| NSGACL - PD-HLM-L(00)00-X-RA-001 - Radiology Adults | - | Omit | | Agreed | | Agreed | | |
| NSGACL - PD-HLM-L(00)01-X-CC-001 - Critical Care Facility Adults | - | Omit | Superseded version | Agreed | | Agreed | | |
| NSGACL - PD-HLM-L(00)01-X-CC-001 - Critical Care Facility Adults | - | Omit | Superseded version | Agreed | | Agreed | Replaced by BCL information contained in Appendix K which is in Folder U of The 2010 Instruction to Proceed Bible. | Agreed |
| NSGACL - PD-HLM-L(00)01-X-CC-001 - Critical Care Facility Adults | - | Omt | | | | Replace with NA-XX-01-SKPL-252-104&105 subject to the attached commentary "4 Departments Drawing Note" | | |
| | | | | Agreed | | | | |
| NSGACL - PD-HLM-L(00)01-X-RA-001 - Radiology Adults | - | Omit | Superseded version | Agreed | | Agreed | | |
| NSGACL - PD-HLM-L(00)01-X-RA-001 - Radiology Adults | - | Omit | Superseded version | Agreed | | Agreed | | |
| NSGACL - PD-HLM-L(00)01-X-RA-001 - Radiology Adults | - | Omit | | Agreed | Replace with NA-XX-01-PL-252-207 | Agreed | | |
| NSGACL - PD-HLM-L(00)04-X-WA-001 - Generic Ward Floor (Adults) | - | Omit | Superseded version | Agreed | | Agreed | | |
| NSGACL - PD-HLM-L(00)04-X-WA-001 - Generic Ward Floor (Adults) | - | Omit | Superseded version | Agreed | | Agreed | | |
| NSGACL - PD-HLM-L(00)04-X-WA-001 - Generic Ward Floor (Adults) | - | Omit | | Agreed | Replace with NA-XX-05-PL-252-201 | Agreed | | |
| NSGACL-PD-BMJ-L(00)00-X-ED-001 - Emergency Department Childrens | - | Omit | | Agreed | Replace with NA-XX-00-PL-252-204 | Agreed | Replaced by BCL information contained in Appendix K which is in Folder U of The 2010 Instruction to Proceed Bible. | Agreed |
| NSGACL-PD-BMJ-L(00)00-X-OW-001 - Observation Ward Childrens | - | Omit | | Agreed | Replace with NA-XX-00-PL-252-203 | Agreed | | |
| NSGACL-PD-HLM-L(00)00-X-AA-002 - Acute Assessment (adult) Flow | - | Omt | | | | Replace with NA-XX-00-SKPL-252-106 subject to the attached commentary "4 Departments Drawing Note" | | |
| | | | | Agreed | | | | |
| NSGACL-PD-HLM-L(00)00-X-ED-002 - Emergency Department Adult Flow Diagram | - | Omit | | Agreed | Replace with NA-XX-00-PL-252-305 | Agreed | | |
| NSGACL-PD-HLM-L(00)00-X-OP-002 - Outpatient (adults) Flow | - | Omit | | Agreed | | Agreed | | |
| NSGACL-PD-HLM-L(00)00-X-RA-002 - Radiology (adult) Flow | - | Omit | | Agreed | Replace with NA-XX-00-PL-252-307 | Agreed | | |
| NSGACL-PD-HLM-L(00)01-X-CC-002 - Critical Care Facility (adult) Flow | - | Omt | | | | Replace with NA-XX-01-SKPL-252-104&105 subject to the attached commentary "4 Departments Drawing Note" | | |
| | | | | Agreed | | | | |
| NSGACL-PD-HLM-L(00)01-X-OP-002 - Outpatients (Adults) Flow | - | Omit | | | | Replace with NA-XX-00-PL-252-A309 and A309(2) | Replaced by BCL information contained in Appendix K which is in Folder U of The 2010 Instruction to Proceed Bible. | |
| | | | | Agreed | | | | Agreed |
| NSGACL-PD-HLM-L(00)01-X-RA-002 - Radiology (adult) Flow | - | Omit | | Agreed | Replace with NA-XX-01-PL-252-307 | Agreed | | |
| NSGACL-PD-HLM-L(00)02-X-OP-002 - Outpatient (adults) Flow | - | Omit | | Agreed | | Agreed | | |
| NSGACL-PD-HLM-L(00)02-X-OT-002 - Operating Theatres (adult) Flow | - | Omit | | Agreed | Omit - superseded by rev 2 below | Agreed | | |
| NSGACL-PD-HLM-L(00)02-X-OT-002 - Operating Theatres (adult) Flow | - | Omt | | | | Replace with NA-XX-02-SKPL-252-200 subject to the attached commentary "4 Departments Drawing Note" | | |
| | | | | Agreed | | | | |
| NSGACL-PD-HLM-L(00)04-X-WA-002 - Generic Ward (adult) Flow | - | Omit | | Agreed | Replace with NA-XX-05-PL-252-301 | Agreed | | |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| NSGACL - PD-HLM-L(00)02-X-OT-001 - Operating Theatres Adults | - | Omt | | Agreed | | Replace with NA-XX-02-SKPL-252-200 subject to the attached commentary "4 Departments Drawing Note" | Replaced by BCL information contained in Appendix K which is in Folder U of The 2010 Instruction to Proceed Bible. | Agreed |
| NSGACL-Generic ADB Room Layouts | - | Omit | Tbc - addressed under drawings listing to be issued to Brookfield | Agreed | Replace with the following: | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-000 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-001 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-002 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-003 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-004 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-005 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-006 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-007 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-008 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-009 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-010 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-011 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-012 | Agreed | Replaced by 1 50 layouts contained in Folder J1 of The 2010 Instruction to Proceed Project Bible. | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-013 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-014 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-016 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-017 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-018 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-019.1 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-019 2 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-019 3 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-019.4 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-020 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-021 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-022 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-023 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-024 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-025 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-026 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-027 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-028 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-029 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-030 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-031 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-032 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-033 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-034 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-035 | Agreed | Replaced by 1 50 layouts contained in Folder J1 of The 2010 Instruction to Proceed Project Bible. | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-036 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-037 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-038 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-039 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-040 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-041 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-042 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-043 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-040 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-041 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-042 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-043 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-044 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-045 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-046 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-047 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-048 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-049 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-050 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-051 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-052 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-053 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-054 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-055 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-056 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-057 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-058 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-059 | Agreed | Replaced by 1 50 layouts contained in Folder J1 of The 2010 Instruction to Proceed Project Bible. | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-060 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-061 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-062 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-063 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-064 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-065 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-066 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-067 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-068 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-069 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-070 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-071 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-072.1 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-072 2 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-072 3 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-073 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-074 | Agreed | Replaced by 1 50 layouts contained in Folder J1 of The 2010 Instruction to Proceed Project Bible. | Agreed |
| | | | | | Refer to NA-XX-XX-AS-400-075 | Agreed | | |
| | | | | | Refer to NA-XX-XX-AS-400-076 | Agreed | | |
| NSGACL Appendix K - Design Development | - | Omit | Superseded by updated version (see Volume 4 tab) | Agreed | | Agreed | Appendix K is contained in Folders U, V and W of The 2010 Instruction to Proceed Project Bible. | Agreed |
| NSGACL 5001 | - | Omit | Superseded version | Agreed | | Agreed | N/C | Agreed |
| NSGACL 5001 | - | Omit | Superseded version | Agreed | | Agreed | N/C | Agreed |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NSGACL 5001 | - | Omit | Tbc - addressed under drawings listing to be issued to Brookfield | Agreed | | Agreed | 2009 information remains, except where superseded by information contained in Appendix K (found in Folder W of The 2010 Instruction to Proceed Project Bible) which demonstrates the current status of design development of the Contractor's Proposals in this regard. | Agreed |
| NSGACL 5001 PDF | - | Omit | Tbc - addressed under drawings listing to be issued to Brookfield | Agreed | Replaced with WSP drawing CD-WS-00-PL-711-01 | Agreed | 2009 information remains, except where superseded by information contained in Appendix K (found in Folder W of The 2010 Instruction to Proceed Project Bible) which demonstrates the current status of design development of the Contractor's Proposals in this regard. | Agreed |
| NSGACL 5002 | - | Omit | Superseded version | Agreed | Replaced with WSP drawing CD-WS-00-PL-711-01 | Agreed | | Agreed |
| NSGACL 5002 | - | Omit | Superseded version | Agreed | | Agreed | N/C | Agreed |
| NSGACL 5002 | - | Omit | | Agreed | | Agreed | N/C | Agreed |
| NSGACL 5002 PDF | - | Omit | | Agreed | Replaced with WSP drawing CD-WS-00-PL-711-01 | Agreed | 2009 information remains, except where superseded by information contained in Appendix K (found in Folder W of The 2010 Instruction to Proceed Project Bible) which demonstrates the current status of design development of the Contractor's Proposals in this regard. | Agreed |
| NSGACL GLRP0012 Substructure Options Report | - | Omit | Tbc - addressed under drawings listing to be issued to Brookfield | Agreed | Repeat of above | Agreed | ditto above | Agreed |
| NSGACL NHS Greater Glasgow & Clyde - NSGH Drainage Strategy Report | - | Omit | Superseded version | Agreed | Omit | Agreed | N/C | Agreed |
| NSGACL NHS Greater Glasgow & Clyde - NSGH Drainage Strategy Report | Y | - | | Agreed* | Report still relevant and should be read in conjunction with WSP drainage drawings - CD-P1-00-PL-140-01 to 013 | Agreed | N/C | Agreed |
| Scottish Water DIA Response Letter 090609 | Y | - | Tbc - addressed under drawings listing to be issued to Brookfield | Agreed* | *Correspondence still relevant and should be read in conjunction with WSP draiange drawings - CD-P1-00-PL-140-01 to 013 | Agreed | 2009 information remains, except where superseded by information contained in Appendix K (found in Folder W of The 2010 Instruction to Proceed Project Bible) which demonstrates the current status of design development of the Contractor's Proposals in this regard. | Agreed |
| sk-0200 | - | Omit | | Agreed | | Agreed | N/C | Agreed |
| sk-0201 | - | Omit | | Agreed | | Agreed | N/C | Agreed |
| NSGACL Adult Isolation Rooms | - | Omit | Superseded version | Agreed | | Agreed | N/C | Agreed |
| NSGACL Update - Infection Control Feedback NSG | Y | - | Remains output for Ers. | Agreed | | Agreed | Remains ER output unless an agreed adjustment is illustrated on 1 200 or 1:50 drawings (located in Folder U of The 2010 Instruction to Proceed Project Bible). | Agreed |
| NSGACL G1274_E(60)01-A1 | Y | - | | Agreed | To be reviewed at M&E meeting to be arranged | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | For the avoidance of doubt, the Board written and drawn M&E ERs to remain the output to be met by the BCL design, to be read with the agreed 'The M&E Clarification Log (2010 tP) - FINAL' found in folder B1 of 'The 2010 Instruction to Proceed Project Bible' and 'The 2010 Instruction to Proceed Log - F NAL' found in folder S of 'The 2010 Instruction to Proceed Project Bible'. The current status of design development of the Contractor's Proposals is contained in Folder V of 'The Instruction to Proceed Project Bible'. | Agreed |
| NSGACL G1274_E(60)02-A1 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL G1274_E(67)01-A1 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL G1274_E(68)01-A0 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL G1274_E(68)02-A1 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL G1274_E(68)03-A1 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL G1274_M(54)01-A1 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL G1274_M(54)02-A3 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL G1274_M(55)01-A1 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL-Appendix M&E1 | Y | - | Remains output for ERs. | Agreed | Derogations to be agreed against these | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NSGACL-Appendix M&E2 | Y | - | Remains output for ERs. | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL-Appendix M&E3 | Y | - | Remains output for ERs. | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL-Appendix M&E4 | Y | - | Remains output for ERs. | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL-Appendix M&E5 | Y | - | Remains output for ERs. | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL-Appendix M&E6 | Y | - | Remains output for ERs. | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL-Appendix M&E7 | Y | - | Remains output for ERs. | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL-G1274_M(56)01-A1 | Y | - | | Agreed | To be reviewed at M&E meeting to be arranged | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL-G1274_M(56)02-A0 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL-G1274_M(56)03-A0 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL-G1274_M(57)01-A3 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL-G1274_M(57)02-A4 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL-G1274_M(57)03-A1 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL-G1274_M(57)04-A1 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL-G1274_ME(60)01-A1 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL-G1274_ME(60)02-A3 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL-G1274_ME(60)03-A3 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL-G1274_P(53)01-A0 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL-G1274_P(53)01-A0 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL-G1274_P(67)01-A1 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL-G1274_P(67)02-A1 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL-G1274_U(96)01-A0 | Y | - | | Agreed | Ditto above | Board written and drawn M&E ERs to remain, to be read with agreed M&E Clarifications Log contained in Contract Data Part 1. | Ditto above | Agreed |
| NSGACL GLRP0010 ASR2 Southern General Geo-env Report Draft | - | Omit | Note: updated version issued (uplifted from C&B offices) is ER requirement (was too large for BIW) | Agreed | | Final SI (June 2009) included in Contract as ER document (baseline SI document). | N/C | Agreed |
| NSGACL 6834 Chapter 01_Introduction | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Chapter 02_Approach and Methodology | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Chapter 03_Need for the Project | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Chapter 04 Consideration of Alternatives | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Chapter 05_Proposed Development | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Chapter 06_Land Use | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Chapter 07_Ground Conditions | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Chapter 08 Policies and Plans | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Chapter 09_Community, Pedestrians and Cyclists | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Chapter 10_Townscape and Visual | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Chapter 11_Water Quality and Drainage | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Chapter 12_Noise | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Chapter 13_Air Quality | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Chapter 14_Cultural Heritage | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Chapter 15_Ecology, Nature Conservn and Biodivy | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Chapter 16_Sustainable Development | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Chapter 17_Disruption Due to Construction | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Chapter 18_Cumulative Impacts | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |

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|---|---|---|---|---|---|---|---|---|
| NSGACL 6834 Chapter 19_Schedule of Environmental Commitments | Y | - | Remains output for ERs. | Agreed | | Agreed | | |
| NSGACL 6834 Contents Pages | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Front Page | Y | - | Remains output for ERs. | Agreed* | | Agreed | N/C | Agreed |
| NSGACL 6834 Info Sheet | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Part 1 | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Part 2 | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Part 3 | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Part 4 | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 6834 Part 5 | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL Appendix O - Environmental Assessment _Cover_ | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL - P.3 Draft Operational Procedure - Domestic Services | - | Omit | | Agreed | Omitted as copy of earlier document. | Agreed | N/C | Agreed |
| NSGACL - P.3 Draft Operational Procedure - Linen | - | Omit | | Agreed | Omitted as copy of earlier document. | Agreed | N/C | Agreed |
| NSGACL - P.3 Draft Operational Procedure - Waste | - | Omit | | Agreed | Omitted as copy of earlier document. | Agreed | N/C | Agreed |
| NSGACL P.1 Lists of Board Policies | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL P.2 Board Carbon Management Plan | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL A Policy on Design Quality for NHSScotland | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL Appendix Q - Related Design Information _cover_ | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL NHSGG&C Design Action Plan | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL NHSGG&C Design Action Plan (Supp Guidance Handbook) | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL Planning Advice Note 84 - Reducing Carbon | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL Scottish Planning Policy SPP6 - Renewable Energy | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL Appendix R - Fire Strategy | - | Omit | superseded document | | | Agreed | | |
| NSGACL Appendix S - Acoustic Requirements | Y | - | Remains output for ERs. | Agreed | Brookfield responsible for fully fire engineered solution that meets relevant regulatory requirements and Firecode. | Agreed | N/C<br>The parties agree that the ER output remains, only in so far as those elements not determined and shown on the acoustic drawings in folders U V &W. t is further agreed that doors in clinical areas shall not have drop seals due to infection control concerns raised by the board and it is accepted that the element within which the door is located will, as a result be reduced | Agreed |
| NSGACL Southern General PCI Issue 1 (Appendix T) | Y | - | Remains output for ERs. | Agreed | | Agreed | Remains ER output unless superseded by current CDM-C activity and documentation. | Agreed |
| NSGACL Appendix U - BREEAM Design Guide | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL BREEAM Initial Score Potential Main Development | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL Whole Site and Planning Issues related to BREEAM June 2009 | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL Appendix V -Community Benefits | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL Appendix W - Travel Plan | Y | - | Remains output for ERs. | Agreed* | | Agreed | N/C | Agreed |
| NSGACL Appendix X - Critical Failures | Y | - | Remains output for ERs. | Agreed | | Agreed | N/C | Agreed |
| NSGACL - ITPD Volume 2 | Y | - | Remains output for ERs. | Agreed* | Remains as output of Board to be met by Contractor design. M&E Clarifications identify the agreed positoin between the Board and Brookfield with regard to certain aspects of M&E. | Agreed | For the avoidance of doubt, the Board written and drawn M&E ERs to remain the output to be met by the BCL design, to be read with the agreed 'The M&E Clarification Log (2010 tP) - FINAL' found in folder B1 of 'The 2010 Instruction to Proceed Project Bible' and 'The 2010 Instruction to Proceed Log - F NAL' found in folder S of 'The 2010 Instruction to Proceed Project Bible'. | Agreed |
| NSGACL-PD-HLM-SK(00)X-XX-001 - Illustration Of 10 Bed Unit HDU | Y | - | Remains output for Ers. | Agreed | Brookfield to demonstrate glazed wall (bay to bay) requirement through design development process. | Agreed | Replaced by information contained in Folder U of The 2010 Instruction to Proceed Project Bible. | Agreed |
| NSGACL-PD-HLM-SK(00)X-XX-002 - Illustration Of 10 Bed Unit ICU | Y | - | Remains output for Ers. | Agreed | Brookfield to demonstrate glazed wall (bay to bay) requirement through design development process. Replaced by NA-XX-05-PL-252-301 | Agreed | Replaced by information contained in Folder U of The 2010 Instruction to Proceed Project Bible. | Agreed |
| NSGACL-PD-HLM-SK(00)X-XX-003 - Illustration Of Ward Circulation | - | Omit | | Agreed | | Agreed | Replaced by information contained in Folder U of The 2010 Instruction to Proceed Project Bible. | Agreed |
| NSGACL-PD-HLM-SK(00)X-XX-004 - Illustration Of Ward Nurse Station | - | Omit | | Agreed | | Agreed | N/C | Agreed |

**VOLUME 2.2**

| File Name | Iss. | Rev. | Title | Issue Date | Add | Info/Omit | Board Comment | Status | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | 2010 Status |
|---|---|---|---|---|---|---|---|---|---|---|
| NSGACL Appendix A1 | 1 | 1 | V2.2 Appendix A Part 1 | 29/04/2009 | | | | Agreed | Volume 2.2 relates to Laboratories and as such is not a feature of the 2010 Instruction to Proceed Bible. | Noted and Agreed |
| NSGACL Appendix A2.1 | 1 | 1 | V2.2 Appenix A Pt 2 Arch Location Drwgs (1 of 2) | 29/04/2009 | | | | Agreed | | |
| NSGACL Appendix A2.2 | 1 | 1 | V2.2 Appendix A Pt 2 Arch Location Drwgs (2 of 2) | 29/04/2009 | | | | Agreed | | |
| 2475 AL(05)20 | 1 | - | South Elevation | 22/06/2009 | | | | Agreed | | |
| 2475 AL(05)21 | 1 | - | East Elevation | 22/06/2009 | | | | Agreed | | |
| 2475 AL(05)22 | 1 | - | View Throgh Service Courtyard | 22/06/2009 | | | | Agreed | | |
| 2475 AL(05)23 | 1 | - | View Through Service Courtyard 2 | 22/06/2009 | | | | Agreed | | |
| 2475 AL(05)24 | 1 | - | North Elevation | 22/06/2009 | | | | Agreed | | |
| 2475 AL(05)25 | 1 | - | West Elevation | 22/06/2009 | | | | Agreed | | |
| 2475 AL(05)26 | 1 | - | View Through Service Courtyard 3 | 22/06/2009 | | | | Agreed | | |
| NSGACL Appendix A3.1 | 1 | 1 | Outline Design Layouts (1 of 6) | 29/04/2009 | | | | Agreed | | |
| NSGACL Appendix A3.2 | 1 | 1 | Outline Design layouts (2 of 6) | 29/04/2009 | | | | Agreed | | |
| NSGACL Appendix A3.3 | 1 | 1 | Outline Design Layouts (3 of 6) | 29/04/2009 | | | | Agreed | | |
| NSGACL Appendix A3.4 | 1 | 1 | Outline Design layouts (4 of 6) | 29/04/2009 | | | | Agreed | | |
| NSGACL Appendix A3.5 | 1 | 1 | Outline Design Layouts (5 of 6) | 29/04/2009 | | | | Agreed | | |
| NSGACL Appendix A3.6 | 1 | 1 | Outline Design Layouts (6 of 6) | 29/04/2009 | | | | Agreed | | |
| NSGACL Appendix A4 | 1 | 1 | Typical Rm Data Sheets | 29/04/2009 | | | | Agreed | | |
| NSGACL Appendix A5 | 1 | 1 | Outline Design Elevations | 29/04/2009 | | | | Agreed | | |
| NSGACL Appendix A6.1 | 1 | 1 | Outline Description M&E Services (1 of 2) | 29/04/2009 | | | | Agreed | | |
| NSGACL Appendix A6.2 | 1 | 1 | Outline Description of M&E Services (2 of 2) | 29/04/2009 | | | | Agreed | | |
| NSGACL Appendix A7 | 1 | 1 | Outline Structural Proposals | 29/04/2009 | | | | Agreed | | |
| NSGACL Appendix A8 | 1 | 1 | Glasgow City Mortuary | 29/04/2009 | | | | Agreed | | |
| NSGACL Appendix A9 | 1 | 1 | Massing 3D Views | 29/04/2009 | | | | Agreed | | |
| NSGACL Appendix B1 | 1 | 1 | Outline Brief Facilities Management | 29/04/2009 | | | | Agreed | | |
| NSGACL Appendix B2 | 1 | 1 | Outline Brief Mortuary | 29/04/2009 | | | | Agreed | | |

**VOLUME 2.2**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NSGACL Appendix B3 | 1 | 1 | Outline Brief Blood Sciences | 29/04/2009 | | Agreed | | |
| NSGACL Appendix B4 | 1 | 1 | Outline Brief Genetics | 29/04/2009 | | Agreed | | |
| NSGACL Appendix B5 | 1 | 1 | Outline Brief Pathology | 29/04/2009 | | Agreed | | |
| NSGACL Appendix B6 | 1 | 1 | Outline Brief Microbiology | 29/04/2009 | | Agreed | | |
| NSGACL Appendix C1 | 1 | 1 | Outline Architectural Specs | 29/04/2009 | | Agreed | | |
| NSGACL Appendix C2 | 1 | 1 | Outline Structural Specs | 29/04/2009 | | Agreed | | |
| NSGACL Employers Requirements | 1 | 1 | V2.2 Employers Requirments Main Doc (Labs) | 29/04/2009 | | Agreed | | |

**VOLUME 3**

| File Name | Iss. | Rev. | Title | Issue Date | Add | Info/Omit | Board Comment | Status | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | 2010 Status |
|---|---|---|---|---|---|---|---|---|---|---|
| NSGACL Cashflow | 1 | 1 | NSGACL Cashflow Template (Appendix to Vol 3) | 07/05/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | Volume 3 = No change from 2009 Project Bible position. | Agreed |
| NSGACL MPTC Calculator Blank | 1 | 1 | MPTC Calculator Template (Appendix to Vol 3) | 07/05/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | | |
| NSGACL SCM Standard Fee Workbook | 1 | 1 | SCM Standard Fee Workbook Template (Appendix to Vol 3) | 07/05/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | | |
| NSGACL SCM Standard Fee Workbook | 2 | 2 | SCM Standard Fee Workbook Template (Appendix to Vol 3) | 22/06/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | | |
| NSGACL SCP_Workbook_Issue | 1 | 1 | SCP Workbook Issue Template (Appendix to Vol 3) | 07/05/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | | |
| NSGACL SCP_Workbook_Issue | 2 | 2 | SCP Workbook Issue Template (Appendix to Vol 3) | 22/06/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | | |
| NSGH - ITPD Vol3 | 1 | | NSGACL ITPD Volume 3 Bid Deliverables & Evaluation | 01/05/2009 | - | Omit | Bid period document, not forming part of the Contract | Agreed | | |
| NSGACL - ITPD Vol3 - Contractor Issue Rev 1 | 1 | 1 | NSGACL - ITPD Vol3 - Contractor Issue Rev 1.pdf | 14/08/2009 | - | Omit | Bid period document, not forming part of the Contract | Agreed | | |
| NSGACL Commercial CD Session Nr 1 | 1 | | PRESENTATION | 22/05/2009 | - | Omit | Bid period document, not forming part of the Contract | Agreed | | |
| NSGACL Labs Bidders Presentation 2 | 1 | | PRESENTATION | 22/05/2009 | - | Omit | Bid period document, not forming part of the Contract | Agreed | | |
| NSGACL Labs CD Session Nr 1 | 1 | | PRESENTATION | 22/05/2009 | - | Omit | Bid period document, not forming part of the Contract | Agreed | | |
| NSGACL Presentation Logistics CD no 1 | 1 | | PRESENTATION | 22/05/2009 | - | Omit | Bid period document, not forming part of the Contract | Agreed | | |
| NSGACL SCM_Eng Workbook_Issue | 1 | | Engineering and Construction SCM Workbook | 14/08/2009 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | | |

**VOLUME 4**

| File Name | Add | Info/Omit | Board Comment | Status | Brookfield Comment | 2009 Agreed Position | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | 2010 Status |
|---|---|---|---|---|---|---|---|---|
| NSGACL PD-HLM-SK(00)X-XX-005 - General Section Illustrating Bridge Links To Exisitng Buildings | - | Omit | Superseded by later revision. | Agreed | | Agreed | N/C | Agreed |
| NSGACL PD-HLM-SK(00)X-XX-005 - General Section Illustrating Bridge Links To Exisitng Buildings | Y | - | Remains ER output, aspect to be signed off under design development. | Agreed | | Agreed | N/C | Agreed |
| (AL0) Ground floor | Y | - | Remains ER output as identifies area for demolition. | Agreed | | Agreed | N/C | Agreed |
| (AL1) First floor | Y | - | Remains ER output as identifies area for demolition. | Agreed | | Agreed | N/C | Agreed |
| (AL2) Second floor | Y | - | Remains ER output as identifies area for demolition. | Agreed | | Agreed | N/C | Agreed |
| (AN) Biochemistry | Y | - | Remains ER output as identifies area for demolition. | Agreed | | Agreed | N/C | Agreed |
| (DC) HDU & SITU | Y | - | Remains ER output as identifies area for demolition. | Agreed | | Agreed | N/C | Agreed |
| (DG) Orthopaedic Theatres | Y | - | Remains ER output as identifies area for demolition. | Agreed | | Agreed | N/C | Agreed |
| 2291 AL(00) | Y | - | Remains ER output as identifies area for demolition. | Agreed | | Agreed | N/C | Agreed |
| A&E Orthopaedics - type 2 summary | Y | - | Remains ER output as identifies area for demolition. | Agreed | | Agreed | N/C | Agreed |
| A&E-Therapy-General OPD PH3A | Y | - | Remains ER output as identifies area for demolition. | Agreed | | Agreed | N/C | Agreed |
| Biochemistry - type 2 summary | Y | - | Remains ER output as identifies area for demolition. | Agreed | | Agreed | N/C | Agreed |
| DRAFT - Southern General Hospital Travel Plan 3Comp121207 | - | Omit | Replaced by Vol2.1 document. | Agreed | | Agreed | N/C | Agreed |
| HDU SITU - type 2 summary | Y | - | Remains ER output as identifies area for demolition. | Agreed | | Agreed | N/C | Agreed |
| NSGACL - Agreed Contract Changes 20090611 | - | Omit | Bid period document, superseded by Contract for signature to be issued by S+W | Agreed | | Agreed | N/C | Agreed |
| NSGACL - Appendix K - updateRev 1 - Vol 4 | Y | - | Remains ER output to be met by design development and deliverables planning and implementation. | Agreed | | Agreed | The status of Appendix K as at the Instruction to Proceed is contained in Folders U, V and W of 'The 2010 Instruction to Proceed Project Bible'. The overall Appendix K information requirements and review process continues through Stage 3 | Agreed |
| NSGACL - Detailed Employers Requirements & Procedures for Radiation Protection Advisors (Health Physics) Input into Project V3 | Y | - | Relevant ER output/requirement. | Agreed | | Agreed | N/C | Agreed |
| NSGACL - Indicative Demolition Dates | - | Omit | Superseded by discussions with the Board and outcome package for demolitons. | Agreed | | Agreed | N/C | Agreed |
| NSGACL - Labs - L0 | | | | Agreed | | Agreed | | |
| NSGACL - Labs - L1 | | | | Agreed | | Agreed | | |
| NSGACL - Labs - L-1 | | | | Agreed | | Agreed | | |
| NSGACL - Labs - L2 | | | | Agreed | | Agreed | These documents relate to Laboratories and as such are not a feature of the 2010 Instruction to Proceed Bible. | |
| NSGACL - Labs - L3 | | | | Agreed | | Agreed | | |
| NSGACL - Labs - L4 | | | | Agreed | | Agreed | | Agreed |
| NSGACL - NSGH Existing Site Services | Y | - | Relevant ER document. | Agreed | | Agreed | N/C | Agreed |
| NSGACL - Supersede of Radiation Protection MRI References - Vol2 1 ITPD Section | Y | - | Relevant ER output/requirement. | Agreed | | Agreed | N/C | Agreed |

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|---|---|---|---|---|---|---|---|---|
| NSGacl - Vol 4 - Lift Analysis Information | - | Omit | Background bid information to bidders. | Agreed | | Agreed | N/C | Agreed |
| NSGACL - Vol4 - Energy Guidance | Y | - | Relevant ER document. | Agreed | | Agreed | N/C | Agreed |
| NSGACL - Vol4 - Technical _various_ 19nr | Y | - | All are relevant ER requirements, with the exception of items 2,6, 7, 8, 11, 13, 14, 16 and 17 which can be discarded (provided information relevant to bid period only). | Agreed | | Agreed | 2009 statement correct, with item # 19 also now removed. | Agreed |
| NSGACL 090330 AGREED List of Key Rooms NCH Rev1 | - | Omit | Information relevant to bid period only. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 090330 AGREED List of Key Rooms NSGH Rev1 | - | Omit | Information relevant to bid period only. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 20090330 AGREED List of Key Rooms NCH | - | Omit | Superseded by updated list. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 20090330 AGREED List of Key Rooms NSGH | - | Omit | Superseded by updated list. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 20090615 Equipment List | - | Omit | Bid Submission Equipment List (amended) included. | Agreed | | Agreed | N/C | Agreed |
| NSGACL 3T MRI REQUIREMENTS | Y | - | Relevant ER output/requirement. | Agreed | | Agreed | N/C | Agreed |
| NSGACL AitkenLaboratoriesSiteInvestigation | - | Omit | Background bid information to bidders. | Agreed | | Agreed | N/C | Agreed |
| NSGACL ARUPBoreholes | - | Omit | Background bid information to bidders. | Agreed | | Agreed | N/C | Agreed |
| NSGACL Clarification Wireless LAN Density Vol 2 1 Sect 8 3 8 | Y | - | Remains ER output | Agreed | | Agreed | N/C | Agreed |
| NSGACL Commercial CD Session Nr 1 | - | Omit | Background bid information to bidders. | Agreed | | Agreed | N/C | Agreed |
| NSGACL Cover Note re Drawing 2291 AL | Y | - | Relevant ER document. | Agreed | | Agreed | N/C | Agreed |
| NSGACL December1989SiteInvestigationReport | - | Omit | Background bid information to bidders. | Agreed | | Agreed | N/C | Agreed |
| NSGACL Design Report Final Version | - | Omt | Background bid information to bidders. | Agreed | | Agreed | N/C | Agreed |
| NSGACL Draft Labs Fire Strategy | | | | Agreed | | Agreed | N/C | Agreed |
| NSGACL Draft Section 75 | Y | - | Remains ER output | Agreed | To be replaced with Actual S75 Agreement. Brookfield agree with Board comment but would note for clarity that risk of complying with Section 75 Agreements remains with the Board as per Board accepted Risk Register | On-site and junction requirements are a Brookfield responsibility (risk), with off site a Board issue. | N/C | Agreed |
| NSGACL Drainage and Sewerage Impact Assessment Report 2007 | - | Omit | Background bid information to bidders. | Agreed | | Agreed | N/C | Agreed |
| NSGACL FUGROSoilsInvestigationReport | - | Omit | Background bid information to bidders. | Agreed | | Agreed | N/C | Agreed |
| NSGACL Generic Ward Matrix NCH | Y | - | Remains ER output. | Agreed | | Agreed | N/C | Agreed |
| NSGACL Geotechnical&ContaminationReport | - | Omit | Background bid information to bidders. | Agreed | | Agreed | N/C | Agreed |
| NSGACL Halcrow Flood Risk 2005 | - | Omit | Background bid information to bidders. | Agreed | | Agreed | N/C | Agreed |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NSGACL Hoists | Y | - | Remains ER output | Agreed | | Agreed | Replaced by hoist requirement as detailed in the agreed Equipment List, contained in Folder T of 'The 2010 Instruction to Proceed Project Bible.' | Agreed |
| NSGACL ITPCD Clarification - Decontamination Equipment Services | Y | - | Remains ER output | Agreed | | Agreed | N/C | Agreed |
| NSGACL ITPCD Clarification - Vol2.1 ME7 Food Waste Systems | Y | - | Remains ER output | Agreed | | Agreed | N/C | Agreed |
| NSGACL Labs Area Schedules | | | | Agreed | | Agreed | This document relates to Laboratories and as such is not a feature of 'The 2010 Instruction to Proceed Project Bible.' | Agreed |
| NSGACL Labs Bidders Presentation 2 | - | Omit | Background bid information to bidders. | Agreed | | Agreed | N/C | Agreed |
| NSGACL Labs CD Session Nr 1 | - | Omit | Background bid information to bidders. | Agreed | | Agreed | N/C | Agreed |
| NSGACL Lev 0 compartmentation | | | | Agreed | | Agreed | | |
| NSGACL Lev 1 compartmentation | | | | Agreed | | Agreed | | |
| NSGACL Lev -1 compartmentation | | | | Agreed | | Agreed | | |
| NSGACL Lev 2 compartmentation | | | | Agreed | | Agreed | | |
| NSGACL Lev 3 compartmentation | | | | Agreed | | Agreed | These documents relate to Laboratories and as such are not a feature of 'The 2010 Instruction to Proceed Project Bible.' | Agreed |
| NSGACL Lev 4 compartmentation | | | | Agreed | | Agreed | | |
| NSGACL low carbon design trackerER version rev A inc CA comments | Y | - | ER document subject to development and use during design development process | Agreed | | Agreed | Updated Carbon Tracker identifies work in progress status of his activity. | Agreed |
| NSGACL main tender scoring matrix | - | Omit | Bid submission information/clarification | Agreed | | Agreed | N/C | Agreed |
| NSGACL Masterplan Final 240709 small | - | Omit | Replaced by drawing [NA reference] | Agreed | | Agreed | N/C | Agreed |
| NSGACL Outline Planning Consent Certificate - 07-01158-DC | Y | - | Remains ER output for achievement by the Contractor. | Agreed* | Planning risk is allowed within Brookfield submission although timing of response to Planning Submissions is a Board risk. | Agreed Timing of response from GCC outwith the statutory period in relation to the planning submission is a Board risk, this is dependant, however, upon the submission being correctly compiled and served by BE. That is, should a delay or cost arise due to an incorrectly compiled or served planning submission by BE hat risk remains with BE. | N/C | Agreed |
| NSGACL Patient Catering - Vol 4 | Y | - | Remains ER output | Agreed* | Remains ER output, previous document did not upload. | Agreed | N/C | Agreed |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NSGACL Presentation Logistics CD no 1 | - | Omit | Background bid information to bidders. | Agreed | | Agreed | N/C | Agreed |
| NSGACL Removal of Maximum Temperature Variant | Y | - | Remains ER output for achievement by the Contractor. | Agreed | | Agreed | N/C | Agreed |
| NSGACL Report Demand Analysis 2007 | - | Omit | Background bid information to bidders. | Agreed | | Agreed | N/C | Agreed |
| NSGACL RocksoilSiteInvestigation1998 | - | Omit | Background bid information to bidders. | Agreed | | Agreed | N/C | Agreed |
| NSGACL Schedule of Accommodation - ERrev1 -Vol 4 | - | Omit | Replaced by updated SoA to be agreed between the Board and the Contractor before contract signature. | Agreed | | Agreed | N/C | Agreed |
| NSGACL SHTM 02-01 | Y | - | Remains ER output | Agreed* | | Agreed | N/C | Agreed |
| NSGACL SHTM 03-01 Part A | Y | - | Remains ER output | Agreed | | Agreed | N/C | Agreed |
| NSGACL SHTM 03-01 Part B | Y | - | Remains ER output | Agreed | | Agreed | N/C | Agreed |
| NSGACL SHTM 04-01 Part A | Y | - | Remains ER output | Agreed | | Agreed | N/C | Agreed |
| NSGACL SHTM 04-01 Part B | Y | - | Remains ER output | Agreed | | Agreed | N/C | Agreed |
| NSGACL SHTM 06-01 Part A | Y | - | Remains ER output | Agreed | | Agreed | N/C | Agreed |
| NSGACL Southern General Hospital Ecology Report | Y | - | Remains ER output | Agreed | | Agreed | N/C | Agreed |
| NSGACL Staff and Hospitality Catering - Vol 4 | Y | - | Relevant ER output/requirement. | Agreed* | | Agreed | N/C | Agreed |
| NSGACL Technical Clarification (various) | Y | - | All are relevant ER requirements, with the exception of item 3, 19 which can be discarded (provided information relevant to bid period only). | Agreed | [check RB note of 17 December 2009] | Agreed | Acknowledged that 2009 item 3 should not have been discarded. | Agreed |
| NSGACL Thorburn&PartnersGeotechnicalStudy | - | Omit | Background bid information to bidders. | Agreed | | Agreed | N/C | Agreed |
| NSGACL Updated Appendix R - Fire Strategy | - | Omit | | Agreed | Brookfield responsible for fully fire engineered solution that meets relevant regulatory requirements and Firecode. | Agreed | N/C | Agreed |
| NSGACL WimpeyHealthCareSeptember1994 | - | Omit | Background bid information to bidders. | Agreed | | Agreed | N/C | Agreed |
| NSGH Construction and Title Boundaries | - | Omit | Replace by updated boundary, phasing and logistics drawing to be agreed between the Board and the Contractor before contract signature. | Agreed | | Agreed | N/C | Agreed |
| NSGH SGH Topographical Survey 2D | Y | - | Relevant ER information | Agreed | | Agreed | N/C | Agreed |
| NSGH SGH Topographical Survey 3D | Y | - | Relevant ER information | Agreed | | Agreed | N/C | Agreed |
| Scottish Power Southern General Connection agreement | Y | - | Relevant to ER until updated quote and work to be carried out is developed and taken forwards. | Agreed | | To remain inlcuded in order that the baseline is clear when updated quotes are received in order that change control to accept updated quotations can be effected. | Superseded by accepted quotes and related EW~PMI paperwork. | Agreed |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Scottish Power Southern General quotation | Y | - | Relevant to ER until updated quote and work to be carried out is developed and taken forwards. | Agreed | | To remain inlcuded in order that the baseline is clear when updated quotes are received in order that change control to accept updated quotations can be effected. | Superseded by accepted quotes and related EW~PMI paperwork. | Agreed |
| SGH Block BC 2nd Floor Ward 62 | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. | N/C | Agreed |
| SGH Block BC 4th Floor | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. | N/C | Agreed |
| SGH Block BC 6th Floor | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. | N/C | Agreed |
| SGH Block BC elevations 1 | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. | N/C | Agreed |
| SGH Block BC elevations 2 | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. | N/C | Agreed |
| SGH Block BC Ground Floor | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. | N/C | Agreed |
| SGH Neurology 1st Floor | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. | N/C | Agreed |
| Surgical Block- type 2 summary | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. | N/C | Agreed |
| Surgical Link Bridge - type 2 summary | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. | N/C | Agreed |
| Type 2 sheet- Biochemistry | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. | N/C | Agreed |
| Type 2 sheets - Surgical | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. | N/C | Agreed |
| Type 2 sheets A&E | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. | N/C | Agreed |
| Type 2 Table Report - AE-Ortho | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. | N/C | Agreed |
| Type 2 Table Report - Biochemistry | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. | N/C | Agreed |
| Type 2 Table Report - situ | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. | N/C | Agreed |
| Type 2 Table Report - Surg link | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. | N/C | Agreed |
| Type 2 Table Report - Surgical | Y | - | Included to provide baseline position. | Agreed | | Included to provided baseline position. | N/C | Agreed |
| 2007 04 05 TA Figures Document Final | Y | - | Relevant ER information | Agreed | | Agreed | N/C | Agreed |
| 2007 04 05 TA Final | Y | - | Relevant ER information | Agreed | | Agreed | N/C | Agreed |

**VOLUME 5**

| File Name | Iss. | Rev. | Title | Issue Date | Add | Info/Omit | Board Comment | 2009 Status | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | 2010 Status |
|---|---|---|---|---|---|---|---|---|---|---|
| 01 Employers Requirements Stage D | 1 | - | 01 Employers Requirements Stage D | 02/07/2009 | | | | Agreed | | |
| A1 Master Plan | 1 | - | A1 Master Plan | 02/07/2009 | | | | Agreed | Volume 5 relates to Laboratories and as such is not a feature of the 2010 Instruc ion to Proceed Bible. | Noted and Agreed |
| A10 BREEAM | 1 | - | A10 BREEAM | 02/07/2009 | | | | Agreed | | |
| A13 Risk | 1 | - | A13 Risk | 02/07/2009 | | | | Agreed | | |
| A2 Architectural Location | 1 | | A2 Architectural Location | 02/07/2009 | | | | Agreed | | |
| A3 Stage D Plans 1 | 1 | - | A3 Stage D Plans 1 | 02/07/2009 | | | | Agreed | | |
| A3 Stage D Plans 1 | 2 | A | A3 Stage D Plans 1 | 09/07/2009 | | | | Agreed | | |
| A3 Stage D Plans 2 | 1 | - | A3 Stage D Plans 2 | 02/07/2009 | | | | Agreed | | |
| A4 Elevations | 1 | - | A4 Elevations | 02/07/2009 | | | | Agreed | | |
| A4 Elevations | 2 | A | A4 Elevations | 08/07/2009 | | | | Agreed | | |
| A5 Builderswork Plans 1 | 1 | - | A5 Builderswork Plans 1 | 02/07/2009 | | | | Agreed | | |
| A5 Builderswork Plans 2 | 1 | - | A5 Builderswork Plans 2 | 02/07/2009 | | | | Agreed | | |
| A6 Fitment Plans 1 | 1 | - | A6 Fitment Plans 1 | 02/07/2009 | | | | Agreed | | |
| A6 Fitment Plans 2 | 1 | - | A6 Fitment Plans 2 | 02/07/2009 | | | | Agreed | | |
| A6 Fitment Plans 3 | 1 | - | A6 Fitment Plans 3 | 02/07/2009 | | | | Agreed | | |
| A6 Fitment Plans 4 | 1 | - | A6 Fitment Plans 4 | 02/07/2009 | | | | Agreed | | |
| A7 Fire Strategy | 1 | - | Fire Compartmentation Plans | 03/07/2009 | | | | Agreed | | |
| A7.2 Fire Strategy Report | 1 | | Fire Strategy Report | 03/07/2009 | | | | Agreed | | |
| A8 Visuals 1 | 1 | - | A8 Visuals 1 | 02/07/2009 | | | | Agreed | | |
| A8 Visuals 2 | 1 | - | A8 Visuals 2 | 02/07/2009 | | | | Agreed | | |
| A8 Visuals 3 | 1 | - | A8 Visuals 3 | 02/07/2009 | | | | Agreed | | |
| A9 Planning Application 1 | 1 | - | A9 Planning Application 1 | 02/07/2009 | | | | Agreed | | |
| A9 Planning Application 1 | 2 | A | A9 Planning Application 1 | 21/07/2009 | | | | Agreed | | |
| A9 Planning Application 2 | 1 | - | A9 Planning Application 2 | 02/07/2009 | | | | Agreed | | |
| A9 Planning Application 2 | 2 | A | A9 Planning Application 2 | 21/07/2009 | | | | Agreed | | |
| A9 Planning Application 3 | 1 | - | A9 Planning Application 3 | 02/07/2009 | | | | Agreed | | |
| A9 Planning Application 3 | 2 | A | A9 Planning Application 3 | 21/07/2009 | | | | Agreed | | |
| A9 Planning Application 4 | 1 | - | A9 Planning Application 4 | 21/07/2009 | | | | Agreed | | |

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|---|---|---|---|---|---|---|
| A9 Planning Application 5 | 1 | - | A9 Planning Application 5 | 21/07/2009 | | Agreed |
| A9 Planning Application 6 | 1 | - | A9 Planning Application 6 | 21/07/2009 | | Agreed |
| A9 Planning Application 7 | 1 | - | A9 Planning Application 7 | 21/07/2009 | | Agreed |
| AL(00)01 | 1 | - | Level -1 | 02/07/2009 | | Agreed |
| AL(00)02 | 1 | - | Level 0 | 02/07/2009 | | Agreed |
| AL(00)03 | 1 | - | Level 1 | 02/07/2009 | | Agreed |
| AL(00)04 | 1 | - | Level 2 | 02/07/2009 | | Agreed |
| AL(00)05 | 1 | - | Level 3 | 02/07/2009 | | Agreed |
| AL(00)06 | 1 | - | Level 4 | 02/07/2009 | | Agreed |
| AL(00)07 | 1 | - | Level 5 | 02/07/2009 | | Agreed |
| AL(05)01 | 1 | - | Elevation 1 | 02/07/2009 | | Agreed |
| AL(05)02 | 1 | - | Elevation 2 | 02/07/2009 | | Agreed |
| AL(05)03 | 1 | - | Elevation 3 | 02/07/2009 | | Agreed |
| AL(05)04 | 1 | - | Elevation 4 | 02/07/2009 | | Agreed |
| AL(05)05 | 1 | - | Elevation 5 | 02/07/2009 | | Agreed |
| AL(05)06 | 1 | - | Elevation 6 | 02/07/2009 | | Agreed |
| AL(05)07 | 1 | - | Elevation 7 | 02/07/2009 | | Agreed |
| AL(20)01 | 1 | - | Section AA | 28/07/2009 | | Agreed |
| AL(20)02 | 1 | - | Section BB | 28/07/2009 | | Agreed |
| AL(20)03 | 1 | - | Section CC | 28/07/2009 | | Agreed |
| B2A Mortuary | 1 | - | Outline Brief Mortuary | 03/07/2009 | | Agreed |
| B3A Blood Sciences | 1 | - | Outline Brief Blood Sciences | 03/07/2009 | | Agreed |
| B4A Genetics | 1 | - | Outline Brief Genetics | 03/07/2009 | | Agreed |
| B5A Pathology | 1 | - | Outline Brief Pathology | 03/07/2009 | | Agreed |
| B6A Micro-Biology | 1 | - | Outline Brief Micro Biology | 03/07/2009 | | Agreed |
| C Outline Specification rev A | 1 | - | Outline Specifications | 03/07/2009 | | Agreed |
| C Outline Specification rev A | 2 | B | Outline Specifications | 08/07/2009 | | Agreed |
| Site & Setting Out | 1 | - | A9 Site & Setting Out DWG | 21/07/2009 | | Agreed |
| NSGACL B of approx Q | 1 | 1 | Labs BW B of Approx Quants | 22/07/2009 | | Agreed |
| NSGACL Labs M&E Pricing Sch | 1 | 1 | M&E Pricing Sch for Labs | 22/07/2009 | | Agreed |

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|---|---|---|---|---|---|---|---|---|
| NSGACL 17-07m-16 mes stage d rev 01 | 1 | | Update - Appendix A11, Outline Description of Mechanical & Electrical Engineering Services & Outline | 22/07/2009 | | Agreed | | |
| NSGACL 2475 Letter | 1 | | Glasgow City Council Letter to BMJ re Labs Planning Submission 09/01676/DC | 31/07/2009 | | Agreed | | |
| NSGACL G1313_ M(54)SK01-A3 | 1 | | Natural Gas Schematic | 11/08/2009 | | Agreed | | |
| NSGACL G1313_ U(96)SK01 Z (A1) | 1 | | Site Utility Routes | 11/08/2009 | | Agreed | | |
| NSGACL Laboratories BREEAM | 1 | | Labs initial workshop template write up | 02/07/2009 | | Agreed | | |
| NSGACL Laboratory Block Con App Docs Final Draft | 1 | | Laboratory block - Draft Consultants Appointment Document - 26 June 2009 | 17/07/2009 | | Agreed | | |
| NSGACL Labs M&E Spec | 1 | | Laboratory Development, Stage D Appendix 2, Mechanical & Electrical Services Specification 12th July | 14/07/2009 | | Agreed | | |
| NSGACL Lift Schedule Revision 3 07 08 09 Stage D | 1 | | New Laboratory Facility, Lift Schedule Rev 03, 7 Aug '09 : Stage D | 10/08/2009 | | Agreed | | |
| NSGACL Main M&E Plant Schedule - Labs | 1 | | Labs Building - Main M&E Plant Schedule, 14/7/09 | 16/07/2009 | | Agreed | | |
| NSGACL-G1313_ E(61)SK03 | 1 | | LEVEL 0 PLAN - MAIN ELECTRICAL CONTAINMENT ROUTES | 17/07/2009 | | Agreed | | |
| NSGACL-G1313_ E(61)(-)SK01 | 1 | | Power Connections Prior to Energy Centre | 03/07/2009 | | Agreed | | |
| NSGACL-G1313_ E(61)SK02 | 1 | | LEVEL -1 PLAN - MAIN ELECTRICAL CONTAINMENT ROUTES | 16/07/2009 | | Agreed | | |
| NSGACL-G1313_ E(63)(-)SK01 | 1 | | Schematic Layout of Emergency Lighting Installation | 03/07/2009 | | Agreed | | |
| NSGACL-G1313_ E(64)(-)SK01 | 1 | | Schematic Layout of CCTV & Intruder Alarm Installation | 03/07/2009 | | Agreed | | |
| NSGACL-G1313_ E(65)(-)SK01 | 1 | | Schematic Layout of Data/Comms Installation | 03/07/2009 | | Agreed | | |
| NSGACL-G1313_ E(67)(-)SK01 | 1 | | Schematic Layout of Fire Detection and Alarm System | 03/07/2009 | | Agreed | | |
| NSGACL-G1313_ E(68)(-)SK01 | 1 | | Data/Comms Schematic Site Distribution | 03/07/2009 | | Agreed | | |
| NSGACL-G1313_ M(50)(-)SK01 | 1 | | Schematic Layout of Domestic Water Services | 03/07/2009 | | Agreed | | |
| NSGACL-G1313_ M(50)(-)SK02 | 1 | | Schematic Layout of Main Cooling Services | 03/07/2009 | | Agreed | | |
| NSGACL-G1313_ M(50)(-)SK03 | 1 | | Schematic Layout of Main Heating Services | 03/07/2009 | | Agreed | | |
| NSGACL-G1313_E(62)(1)SK01 | 1 | | LEVEL 1 - INDICATIVE LAYOUT OF POWER SERVICES | 16/07/2009 | | Agreed | | |
| NSGACL-G1313_E(62)(1)SK01 | 2 | | LEVEL 1 - INDICATIVE LAYOUT OF POWER SERVICES | 17/07/2009 | | Agreed | | |
| NSGACL-G1313_E(63)(1)SK02 | 1 | | LEVEL 1 - INDICATIVE LAYOUT OF LIGHTING & EMERGENCY LIGHTING | 16/07/2009 | | Agreed | | |
| NSGACL-G1313_E(63)(1)SK02 | 2 | | LEVEL 1 - INDICATIVE LAYOUT OF LIGHTING & EMERGENCY LIGHTING | 17/07/2009 | | Agreed | | |
| NSGACL-G1313_E(67)(1)SK02 | 1 | | LEVEL 1 - INDICATIVE LAYOUT OF FIRE DETECTION & ALARM SYSTEM | 16/07/2009 | | Agreed | | |
| NSGACL-G1313_E(67)(1)SK02 | 2 | | LEVEL 1 - INDICATIVE LAYOUT OF FIRE DETECTION & ALARM SYSTEM | 17/07/2009 | | Agreed | | |
| NSGACL-G1313_M(50)SK04 | 1 | | LEVEL -1 PLAN - MORTUARY - TYPICAL MECHANICAL SERVICES | 16/07/2009 | | Agreed | | |
| NSGACL-G1313_M(50)SK04 | 2 | | LEVEL -1 PLAN - MORTUARY - TYPICAL MECHANICAL SERVICES | 17/07/2009 | | Agreed | | |
| NSGACL-G1313_M(50)SK05 | 1 | | LEVEL 0 PLAN - SHEET 1 of 3 - TYPICAL MECHANICAL SERVICES | 16/07/2009 | | Agreed | | |

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|---|---|---|---|---|---|---|---|---|
| NSGACL-G1313_M(50)SK05 | 2 | | LEVEL 0 PLAN - SHEET 1 of 3 - TYPICAL MECHANICAL SERVICES | 17/07/2009 | | Agreed | | |
| NSGACL-G1313_M(50)SK06 | 1 | | LEVEL 0 PLAN - SHEET 2 of 3 - TYPICAL MECHANICAL SERVICES | 16/07/2009 | | Agreed | | |
| NSGACL-G1313_M(50)SK06 | 2 | | LEVEL 0 PLAN - SHEET 2 of 3 - TYPICAL MECHANICAL SERVICES | 17/07/2009 | | Agreed | | |
| NSGACL-G1313_M(50)SK07 | 1 | | LEVEL 0 PLAN - SHEET 3 of 3 - TYPICAL MECHANICAL SERVICES | 16/07/2009 | | Agreed | | |
| NSGACL-G1313_M(50)SK07 | 2 | | LEVEL 0 PLAN - SHEET 3 of 3 - TYPICAL MECHANICAL SERVICES | 17/07/2009 | | Agreed | | |
| NSGACL-G1313_M(56)(1)SK01 | 1 | | LEVEL 1 - INDICATIVE LAYOUT OF SPACE HEATING SERVICES | 16/07/2009 | | Agreed | | |
| NSGACL-G1313_M(56)(1)SK01 | 2 | | LEVEL 1 - INDICATIVE LAYOUT OF SPACE HEATING SERVICES | 17/07/2009 | | Agreed | | |
| NSGACL-G1313_M(57)(1)SK01 | 1 | | LEVEL 1 - INDICATIVE LAYOUT OF VENTILATION SERVICES | 16/07/2009 | | Agreed | | |
| NSGACL-G1313_M(57)(1)SK01 | 2 | | LEVEL 1 - INDICATIVE LAYOUT OF VENTILATION SERVICES | 17/07/2009 | | Agreed | | |
| NSGACL-G1313_ME(50)SK01 | 1 | | FRONT OFFICE BLOCK - FIRST, SECOND, THIRD & ROOF PLANS - TYPICAL M&E SERVICES | 16/07/2009 | | Agreed | | |
| NSGACL-G1313_ME(50)SK01 | 2 | | FRONT OFFICE BLOCK - FIRST, SECOND, THIRD & ROOF PLANS - TYPICAL M&E SERVICES | 17/07/2009 | | Agreed | | |

# This Document is 'The Clarification Log (2010 ItP) – FINAL'

| Item | Topic/Bid Reference | Board Clarification | Bidder Response | ADD | NO CHANGE / INFO | BOARD COMMENT (2009/2010 Commentary or 'NC' for No Change from 2009 Project Bible position) |
|---|---|---|---|---|---|---|
| Technical Clarification 1 | | | | | | |
| **General** | | | | | | |
| 0.0 | | | | | | |
| **Logistics** | | | | | | |
| 1.0 | Site Parking | You have options but no firm plans for site parking, please confirm that the provision for site parking (incl any delivery area/holding area/lay-down areas off site) for all phases are included in your priced bid. | Brookfield have considered a number of options with regards to temporary parking/holding areas etc during the construction period and should we be selected would wish to discuss with the Board and other interested parties these arrangements to develop a strategy for the benefit of the Project. In the meantime, we confirm our prelims identify pricing allowances for the relevant Stages and refer you to the logistics section. In addition, our procurement strategy with regards the supply chain will include for the provision of temp parking spaces and this will be identified in the cost when packages are let accordingly. I.e. the amounts in the Prelims will be supplemented by amounts in the trade cost plan. We also recognise that using local labour will enable us to encourage the use of public transport to mitigate the requirement for extensive on site/off site temporary parking. Finally whilst we identified on the risk register temporary parking as being an issue to resolve, we felt a combination of the above will be sufficient to deal temporary parking and this reduced the risk element to acceptable. | | NC | **2009 Project Bible**<br>Brookfield have identified options for car parking as well as the associated cost allowance (£220,000). A decision on which option will be taken up to be made post-contract<br><br>**2010 ItP Project Bible**<br>Work in Progress Logistics details and proposals to be monitored and developed through Stage 3 between the Board and BCL. All off site/logistics activity to be discussed, presented and agreed with the Board prior to commencement of any activities. |
| 2.0 | Delivery Team | Several of your proposed delivery team appear to have commitments to another healthcare scheme (i.e. Peterborough). Please confirm how your delivery team will be deployed in line with the NSGH timescales and your programme requirements. | We reaffirm our commitment that the proposed delivery team will be deployed in accordance with the NSGH timescales and our programme requirements. Taking each stage:<br><br>- Labs Construction Team:<br>The individuals noted are available now, and no longer have commitments on Peterborough.<br><br>- FBC/Core team:<br>The individuals are available now, and have already been working on the NSGH project.<br><br>- Adult/Children's Team:<br>The individuals identified will be available before November 2010. At Peterborough, the Mental Health Unit and City Care Centre have already been completed on programme and handed over to the Trust earlier this year. This has released some of the individuals who have since being involved in the bid submission. The main Acute facility is 3 months ahead of programme and notice will be given shortly to confirm the end of September 2010 date for handover. Many departments are being closed off progressively (as some of the Board's team will have witnessed during the recent site visit). By the end of 2009, the Acute facility will be into testing and commissioning phase and we are confident that a September 2010 completion is likely and the individuals will be available as scheduled. | | NC | NC |

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| **Design/HP** | | | | | | |
| 3.0 | Entrances | Confirm your proposals for significant entrances to the site per ER requirement in this regard. | The NSGH campus masterplan has been configured to provide clear entrances which lead directly to the primary arrival space at the heart of the campus. Entrances have been designed in plan form to provide the necessary function and capacity to respond to highway requirements associated with the various modes of transport. Significant entrances are to be delivered as features within the context of both the wayfinding and public art strategies. The entrances are important as part of the legibility and identity of the rejuvenated hospital campus. To achieve this it will be necessary for the design team to work with the Board to determine the correct balance between an innovative and unique site-specific response (informed by public art) and the guidance for standardised signage contained within the NHS Scotland guidance for signage and branding for use within NHS sites (which we have reviewed). For this reason our designs have not been developed beyond the concept stage in advance of Stage 2 engagement. The attached concept images illustrate the general potential for an entrance feature sign at the primary Govan Road entrance to<br>the site, but should not be considered a firm design proposal at this point. We can confirm that the commercial proposal includes provision for this approach.<br><br>Our drawing GIL-WS-00-PL-502 illustrates the signage hierarchy and proposed locations for the various sign types. This includes the proposed location of campus gateway signage features at the key entrances to the campus. It is intended that the main entrances should include feature lighting as part of the significant entrance features. It should be noted that the entrances need to be considered in parallel with the design and quality of the main arrival square, as this forms an important part of the entrance and arrival sequence and experience. The point of entrance and the route to the arrival square should therefore be considered as part of the entrance arrangement. | | NC | NC |
| 4.0 | Specification | Confirm your proposals for electronic information points per ER requirement (7.15.4) in this regard. | In response to the ER requirement (7.15.4) we have made provision for 1x 'Real Time Public Transport System' electronic Information Point externally at the Bus Drop-Off Area.<br><br>Additionally, in response to ER requirement (7.2.19), as part of our Wayfinding Strategy we have proposed electronic/interactive 'You Are Here' maps in the Main Entrance Foyers to both the Adult and Children's Hospitals.<br><br>Please refer to our Wayfinding Strategy contained within **Volume 3.0; Section 3.2** for further details of our proposals and imagery. | | info | Agreed that real time will only be provided if supported by transport system. |
| 5.0 | Interstitial Blinds | Confirm your strategy for interstitial blinds to external windows/façade and internal observation screens (this to include a cross-section detail of your proposal(s)). | Interstitial Blinds have been included in our priced bid to **internal** glazed screens generally to all Bedrooms, including those within Critical Care (Adult Hospital and Children's PICU), AAU and all Inpatient Wards (Adult and Children's Hospitals).<br>In addition, interstitial blinds have been included to internal door vision panels as part of our Internal Door detailed proposals. Our Internal Door Strategy is contained within the Introduction to<br>Volume 2.0; Section 2.21<br>- Door & Ironmongery Schedules. Where a door is noted in the Schedule as being<br>'obscurable'<br>, this equates to a vistamatic type vision panel with interstitial | Y | | Interstitial blinds are also included for all external windows. |

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| | | | blinds.<br><br>Please note that our priced bid does not currently have a provision for internal blinds or curtains which are not integral to the internal fabric of the building. In our past experience these items would be included in the Equipment List. We have priced this List accordingly as requested by the Board, and would be pleased to debate with the Board further whether these items should be included within the Equipment List.<br><br>With respect to **external** windows, we have included for interstitial blinds to all external windows in patient areas within Critical Care (Adult Hospital and Children's PICU).<br><br>Again, please note that our priced bid does not currently have a provision for internal blinds or curtains which are not integral to the internal fabric of the building.<br><br>Please refer our separate attachments for the requested detailed section drawings, our Internal Glazed Screen Strategy Document and External Windows Privacy Strategy Document. | | | |
| **M&E Services** | | | | | | |
| 6.0 | | | | | | |
| **Renewables/Sustainability/BREEAM** | | | | | | |
| 7.0 | Carbon | You noted at the presentation of 21 September you're your variant 2 for Laboratories will achieve the 80Kg CO2m2 – can you confirm that your compliant bid achieves this target also. | Achieving the 80kg CO2 m2 for both the compliant and Variant Option 1 Laboratory bid will be dependant on the construction of the Energy Centre, with which the overall solution is integrated. **RFI 144** refers and is attached for ease of reference.<br><br>As noted in **RFI 147** (attached) the Energy Centre is dependant on FBC and commencement of Stage 3.<br><br>Variant Option 2 offers an integrated M&E plant solution and the early construction of the Energy Centre shell and core to house it. This may be achieved through an advanced design and planning process and cash flow solution indicated in Volume 16 of our bid submission. | | info | Note that stand alone Labs does not achieve 80kg $CO_2/m^2$ |
| 8.0 | BREEAM | Clarify BREEAM Ene 1 score – 8 and 11 referred to in different sections. | Please note the correct score is 8 and we apologise for the confusion. | | info | NC |
| 9.0 | Renewables | Confirm which LZC and renewables are included in the bid. | LZC –<br>3MW Combined Heat and Power units.<br>High efficient friction less bearing chillers providing COP 9.<br>1000kW Absorption chiller unit.<br>Active chilled beams.<br>Variable speed pumps.<br>Natural daylighting.<br>Natural ventilation.<br><br>Renewables.<br>12no Vertical axis wind turbines. | Y | | NC |
| 10.0 | Energy Model | Confirm that the energy model is fully compatible with the servicing strategies set out in volume 3 in particular the use of a sealed building with chilled beams. | Brookfield confirm the energy model is fully compatible with the requirements as set out in Volume 3 in particular the use of sealed building with chilled beams. | Y | Info | Refer to Sustainability and Energy Issues |

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| 11.0 | Energy Monitoring | Confirm that the energy monitoring system illustrated is included in the bid. | Brookfield confirm the energy monitoring system is included in the bid. | | Info | **2009 Project Bible**<br>Refer to M&E Clarification Log in Contract Data Part 1for confirmation of position on building metering<br>**2010 ItP Project Bible**<br>Energy monitoring per 2009 proposals, with design being developed in this regard during Stage 3. |
| 12.0 | Energy Management | Has active energy management been included for by BE post construction as per clarification? | Brookfield confirm we will provide active monitoring, reporting and fine tuning during the 24 months DLP period. Please refer to our Volume 3 Sec 3.24 Item 1 Building Services Commissioning Strategy, Post Occupancy DLP Period for further information. | Y | | NC |
| Item | **Topic/Bid Reference** | **Board Clarification** | **Bidder Response** | | | |
| Technical Clarification 2 | | | | | | |
| **General** | | | | | | |
| 1.0 | Bid Return Section 5 – Component / Product & Manufacturer Schedule | Noted that M&E related items do not appear in Section 5.<br><br>Clarification required of M&E component/product and manufacturers as well as (for all elements) that listed names will be utilised or "equal and approved" component/product manufacturers. | Full component schedule is as detailed in ***Appendix Q1*** attached<br><br>This indicates the quality of manufacturers proposed for components / products | | | **2009 Project Bible**<br>Component manufacturer Schedule<br><br>Agreed Schedule Included in Volume 5 of the Contractor's Proposals contained in Contract Data Part 1.<br>**2010 ItP Project Bible**<br>Updated agreed Component List located in Folder H1 of The 2010 Instruction to Proceed Project Bible. |
| 2.0 | Bid Return Section 7 – SHTM Compliance | **Mandatory Section** – clarification is required with regard to the following items:<br><br>**SHTM85 and SHTM86** – these are relevant as the design joins the existing hospitals, what are the proposals to comply in this regard.<br><br>**Health and Safety Action Notices (HSANs)** – require to confirm will comply with rather than "with reference to".<br><br>**NHSE10 and SN(01)01** – confirmation that anti-ligature is included in A&E as well as DFCP.<br><br>**NHSE HN04** – confirmation that anti-ligature is included in A&E as well as DFCP. | Full clarifications have been provided in the attached ***Q2 Appendix*** | | | **2009 Project Bible**<br>Compliance to be as per tables in Volume 7 of the Contractor's Proposals contained in Contract Data Part 1. |

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|---|---|---|---|---|---|---|
| | | **SFPN3** – clarification required of how compliance with updated document will be achieved/documented.<br><br>**SHTM2010** – confirmation required that design will comply with rather than "with reference to".<br><br>**SHTM2003** – notes that the services follow the principles set down in the HTM – clarification of compliance with the SHTM required (and specifically compliance with the services dimensions to be provided).<br><br>**SHTM2024 Part 4** – confirmation required that original maintenance provisions are included and priced in the bid. | | | | **2010 ItP Project Bible**<br>Original 2009 SHTM listing remains and is located in Folder i1 of The 2010 Instruction to Proceed Project Bible. Any agreed alternative compliance is contained in either The 2010 Instruction to Proceed Log located in Folder S of The 2010 Instruction to Proceed Project Bible or the accepted 1:500 and 1:200 (general arrangement) departmental layouts (Appendix K).<br><br>The above is subject to the proving of clinical functionality in affected rooms/areas, per the narrative in relation to Volume 1 of the Contractors Proposals in the (Appendix 2 & 3) 'Notice to Proceed' letter signed by the Parties. |
| 3.0 | Bid Return Section 7 – SHTM Compliance | Where no specific options have been listed in your bid return (ref ERs 5.2.3) clarify that all options remain available to the Board with no additional costs to the Board. | We have endeavoured in our bid submission to confirm in detail the basis of our design, specifications and cost plan. To avoid uncertainty these proposals need to take priority over the various options given in the various documents scheduled in tables 2 and 3 of the ER's.<br><br>We are however conscious that within the various documents there are options that the Board may feel would enhance the scheme and assist in producing an exemplar facility. We are more than happy to review any options with the Board, within the confines of the cost plan, to ensure that the optimum solution is adopted across the project" | | | **2009 Project Bible**<br>Compliance to be as tables in Volume 7 of the Contractor's Proposals contained in Contract Data Part 1.<br><br>**2010 ItP Project Bible**<br>Original 2009 SHTM listing remains and is located in Folder i1 of The 2010 Instruction to Proceed Project Bible. Any agreed alternative compliance is contained in either The 2010 Instruction to Proceed Log located in Folder S of The 2010 Instruction to Proceed Project Bible or the accepted 1:500 and 1:200 (general arrangement) departmental layouts (Appendix K).<br><br>The above is subject to the proving of clinical functionality in affected rooms/areas, per the narrative in relation to Volume 1 of the Contractors Proposals in the (Appendix 2 & 3) 'Notice to Proceed' letter signed by the Parties. |
| **Logistics** | | | | | | |
| - | - | No items in this TC. | | | | |
| **Design/HP** | | | | | | |
| 4.0 | H+S Landscape | Courtyards – clarify what is intended by white gravel? | The white gravel is a aesthetic material used in geographical arrangements producing dramatic patterned landscapes when viewed from above. This material can be laid loose or bound to correspond to the courtyards function. Please refer to drawings GIL-WS-00-EF-S04 Courtyard Design Intent. ***See Appendix Q4-7 attached*** | Y | | NC |
| 5.0 | H+S Landscape | Aside from the separately identified therapy courtyards is there any access or intended function for the remaining courtyards indicated? | The other courtyards have the potential to be accessed depending on the adjacent hospital departments, to be developed further with the board. Please refer to drawings GIL-WS-00-EF-S04 Courtyard Design Intent<br>***See Appendix Q4-7 attached*** | Y | | NC |
| 6.0 | H+S Landscape | External Works Layout Dwg No. CD-WS-00-PL-711-01 indicates concrete blocks to the front of the hospital. The masterplan Dwg No. GIL-WS-00-PL-100 indicates exposed aggregate concrete paving. The Outline Specification for roads, car | The palette of materials has been selected to provide a cost effective high quality environment. Natural granite is proposed to the entrance thresholds with concrete pavers with exposed granite aggregate proposed to the arrival square. Please refer to drawings GIL-WS-00-EF-S05 Arrival Square Pavement Design intent | Y | | NC |

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| | | parks, pavements and cycle paths suggests paving in these areas will be natural stone granite. Can we clarify actual proposals for these areas? | ***See Appendix Q4-7 attached*** | | | |
| 7.0 | H+S Landscape | The drawings indicate a limited number of bike shelter locations (2No.)? Is this correct or are other bike shelter locations intended? | The two cycle shelters shown on the master plan are key structural features place near the main entrances, other cycle stands are located throughout the site in key location. Please refer to drawings GIL-WS-00-EF-S06 Cycle Parking Strategy and GIL-WS-00-PL-115 Vehicle Movements- Cycles<br>***See Appendix Q4-7 attached*** | Y | | NC |
| **M&E Services** | | | | | | |
| 8.0 | M&E Services | Please indicate any deviations from M&E elements of the ER's. | The following deviations are proposed:<br>• UPS autonomies proposed are compliant with SHTM 06-01 and differ in some respects from the ERs. | | | **2009 Project Bible**<br>Refer to the RFI Log in Contract Data Part 1<br>**2010 ItP Project Bible**<br>Refer to the RFI Log (2010 ItP) in Folder B1 of The Instruction to Proceed Project Bible. |
| | | | • The proposals for automatic lighting controls as described in Volume 3 Section 3.12 and Volume 4 Section 4.3.6 differs in some respect from the ERs. | | | **2009 Project Bible**<br>Refer to the RFI Log in Contract Data Part 1<br>**2010 ItP Project Bible**<br>Refer to the RFI Log (2010 ItP) in Folder B1 of The Instruction to Proceed Project Bible. |
| | | | • A single energy centre is proposed split into two plant spaces with 4 hour fire separation to provide the resilience of two separate energy centres. | Y | | Agreed |
| | | | • N+1 has not been provided to all plant as noted in Volume 2/1 Clause 8.1.1.17. N+1 has been included to all energy source plant, pumps, heat exchangers and duplicate motors provided on air handling plant. | | | **2009 Project Bible**<br>Refer to the M&E Clarification Log in Contract Data Part 1.<br>**2010 ItP Project Bible**<br>Refer to the M&E Clarification Log (2010 ItP) in Folder B1 and The 2010 Instruction to Proceed Log in Folder S of The Instruction to Proceed Project Bible. |
| | | | • Dual path distribution has not been provided on all systems as this would be impractical for piped systems and specialist electrical systems, e.g fire alarms. Supplies from the energy centre have an element of duplication for resilience and electrical power distribution has A & B separation throughout using diverse routes wherever possible. | | | **2009 Project Bible**<br>Refer to the M&E Clarification Log in Contract Data Part 1.<br>**2010 ItP Project Bible**<br>Refer to the M&E Clarification Log (2010 ItP) in Folder B1 and The 2010 Instruction to Proceed Log in Folder S of The Instruction to Proceed Project Bible. |
| | | | • Bulk water storage has been based on the busiest 12 hour period rather than 24 hour as suggested in volume 2/1 clause 8.2.8.2. It is considered that with duplicate incoming water mains to the site a reduced water storage capacity will reduce the risk of legionella. | | | **2009 Project Bible**<br>Refer to the M&E Clarification Log in Contract Data Part 1.<br>**2010 ItP Project Bible**<br>Refer to the M&E Clarification Log (2010 ItP) in Folder B1 of The Instruction to Proceed Project Bible. |
| 9.0 | M&E Services | Please confirm that racks will be provided for Client's active equipment. | The following allowances have been made:-10 racks in each of the adult's and the children's hospital main comms rooms, and<br>2 racks in each hub room | | | Deviation from ER's not accepted<br><br>The ER's requirement noted below, is agreed as included and to be provided by the Contractor |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | C1-C6 External comms<br>S1-S10 Board servers<br>E1-E8 General board equipment.<br>B1-B6 contractors equipment including patching BMS CCTV raid etc.<br>3 racks in each hub room |
| 10.0 | M&E Services | Please confirm that BMS IP network will be fully stand alone and that all active equipment has been included. | Yes | | NC | NC |
| 11.0 | M&E Services | Please confirm that asset tagging system has been included and that all services equipment shall be tagged. | Included | | NC | NC |
| 12.0 | M&E Services | What function does scaffolding platform have in plant replacement strategy for transformers and generators. | The scaffolding platform allows a level surface for the equipment to be withdrawn from the plant space and craned off to ground level | | info | **2009 Project Bible**<br>Plant replacement strategy for large items requires to be further developed in Stage 2<br>**2010 ItP Project Bible**<br>Design development progressing during Stage 3 for this item. |
| 13.0 | M&E Services | Confirm that reference to BOC should be "Air Products". | Yes | | info | NC |
| 14.0 | M&E Services | Please provide luminaire details to supplement pictorial views | Refer to separate document outlining details<br>***See Appendix Q14 attached*** | Y | | NC |
| 15.0 | M&E Services | Please confirm light switches will be selected to suit lighting control system. | Yes | | NC | NC |
| 16.0 | M&E Services | Please confirm that bedside adjustable luminaires will be a modern low energy high output units. | Yes | | NC | NC |
| 17.0 | M&E Services | Please confirm fire alarm PC includes incident location graphics. | Included | | NC | NC |
| 18.0 | M&E Services | Please confirm that 4 CHP units have been proposed as the narrative (schedule indicates 3). | Three CHP units are proposed | | info | NC |
| 19.0 | M&E Services | Television outlets on equipment schedule (are these back up for the CAT6A for digital distribution via the patient entertainment system? | YES, This allows flexibility and future proofing | | info | NC |
| 20.0 | M&E Services | Please provide details on the proposed patient entertainment systems. | Refer to supplementary schematic MER-XX-XX-SM-1400-001 outlining details<br>***See Appendix Q20 attached*** | Y | | **2010 ItP Project Bible**<br>~~ER requirement stands, supplementary schematic for information, further specific details to be provided by BCL for Board review as design development.~~<br>NC |
| 21.0 | M&E Services | Please advise how Renal & Specialist Departments water temperature requirements will be achieved. | This system will interact with the BMS which monitors the temperature and, if required, dumps RO water from the circulating loop to maintain optimum temperature conditions. A heat sanitise cycle is also allowed for. | Y | | NC |
| 22.0 | M&E Services | Confirm reference to 5A Switches equipment schedule should be 20A. | Confirmed | | NC | NC |
| 23.0 | M&E Services | Please confirm that metering will be provided to meet BREEAM requirements. | Yes | | NC | NC |
| 24.0 | M&E Services | Please advise proposals for water spillage protection from fan coils in secondary comms room. | Drip drays and leak detection | Y | | **2009 Project Bible**<br>Positioning of leak detection to be included in design development |

| | | | | | | |
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| | | | | | | See Item 34 Appendix B<br><br>**2010 ItP Project Bible**<br>Refer to the 2010 Instruction to Proceed Log located in Folder S of The Instruction to Proceed Project Bible for details of leak detection. |
| 25.0 | M&E Services | Please confirm compliance with maintainability and area isolation requirements. | Maintainability and area isolation will be incorporated in the design to give compliance. Individual rooms will have isolation of components such as sanitary ware and terminal heating/cooling devices. It will not be possible to isolate each individual room for lighting and power. It will be possible to isolate each individual circuit, and with each room having at least two circuits the room will continue to function | | | Design to achieve ER's including 8.1.5.2 (c) and 8.1.5.4. (see note below with regard to treatment of and agreed position in relation to 8.1.5.4) |
| 26.0 | M&E Services | Please confirm that the renal Central Concentrate Delivery system is included (adult hospital). | Yes | | Info | NC |
| 27.0 | M&E Services | Please confirm that all services comply with HAI – SCRIBE. | The Services Engineer will be part of the overall SCRIBE team along with the Board's Infection Control Manager, Clinical Advisers, Facilities Manager, and Departmental Representatives, plus the other members of the design team and other relevant specialists. The Services Engineer will discharge the duties as set out in HAI-SCRIBE Implementation Strategy | | info | NC |
| 28.0 | M&E Services | Please confirm that all plant and equipment will be suitably isolated to prevent transmission of noise and vibration. | Yes | | info | NC |
| 29.0 | M&E Services | Please confirm that full environmental proving off all rooms will be provided. | Yes | | Info | NC |
| 30.0 | M&E Services | Please confirm that all metering requirements will be provided in accordance with the ER's and BREEAM requirements. | Yes | | NC | NC |
| 31.0 | M&E Services | Please confirm that all services elements are included to meet the fire engineering solution, e.g. stair pressurisation, smoke control etc. | Yes | | Info | NC |
| 32.0 | M&E Services | Please confirm that ICT cooling has been included and provide details. | Yes, this is achieved with a chilled water solution, via crac units and fan coil units, as appropriate. | | Info | NC |
| 33.0 | M&E Services | Please confirm that specialist drainage has been included. | Included | | Info | NC |
| 34.0 | M&E Services | Please confirm that leak detection has been included. | Included | | Info | NC |
| 35.0 | M&E Services | Please indicate percentage capacity of all water service pipework mains from the energy centre to the main buildings for resilience. | The A and B circuits are sized for 66% of the maximum operational load. The A & B circuits from the energy centre are primary circuits and totally isolated from the secondary plantroom circuits via the plate heat exchanger units. It is envisaged that any routine maintenance | Y | | **2009 Project Bible**<br>Refer to the M&E Clarification Log in Contract Data Part 1.<br><br>**2010 ItP Project Bible**<br>Refer to the M&E Clarification Log (2010 ItP) in Folder B1 and The 2010 Instruction to Proceed Log in Folder S of The Instruction to Proceed Project Bible. |
| **Renewables/Sustainability/BREEAM** | | | | | | |
| - | - | No items in this TC. | | | | |
| **Laboratories** | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 36.0 | Laboratories | The Values on Labs Summary Page for Overhead and Profit do not correspond with % values provided on Stage 1 or Incoming Utility Costs Associated with Stage 1. | This is Correct. The figures are calculated by adding 6.2% plus an apportioned value for overhead recovery. | | | **Laboratories item – does not form part of the 2010 Instruction to Proceed data.** |
| 37.0 | Laboratories | On Labs Final Summary Page (Page 4 of Submission) £281,552.00 in included for Additional Fee and Profit on Max Cost. If you apply the %'s from elsewhere on the page this value would be approx £43K less? | Unlike the way the Board have asked us to submit the MPTC Calculator Brookfield methodology for calculating Overhead and Profit is by taking this amount against Prime Cost excluding Fees which actually means that in the case of the Laboratory Building the gross margin on Prime Cost is circa 7.5% and thus provides the number given. | | | **Laboratories item – does not form part of the 2010 Instruction to Proceed data.** |
| 38.0 | Laboratories | Can you confirm extent of tunnels included within Stage 1 Section | The bid is based upon the URS and BMJ drawings issued under addendum 34. The basement and tunnels are reduced for the variant option and are as detailed within our Volume 13 of the bid.<br>The extent of tunnels are as per the BMJ demarcation lines identified on the above BMJ drawings | | | Brookfield require the route of the tunnels to be reviewed to ensure that the Labs building and the Adult and Childrens Hospital align. There is currently a mismatch in propose routes that needs to be resolved<br><br>**Concluded** |
| 39.0 | Laboratories | No evidence of anything noted as "Provisional". Please confirm or provide detail of items to be considered as Provisional. The Bills make reference to "general assumptions". Please confirm that they are not to be considered provisional. | There are no provisional items within the cost plan | | | **Laboratories item – does not form part of the 2010 Instruction to Proceed data.** |
| 40.0 | Laboratories | Substructure: Please confirm what exactly the £100k allowance is for fire escape and stairs includes for. | Fire strategy requirements dictate that an escape tunnel and stair will be required from the basement tunnel that is not currently indicated by BMJ or URS drawings.<br>Cost allowance included is based on similar staircase and concrete enclosure to adult basement tunnel. | | | **Laboratories item – does not form part of the 2010 Instruction to Proceed data.** |
| 41.0 | Laboratories | Substructure: Allowance has been included for 14 Nr lift pits. Please confirm Nrs. Current drawing shows 12 Nr FF, goods & staff Lifts and 4 Nr lifts in connection with Robotics. | Confirmed, all lift pits are as detailed on the drawings are covered either in this specific item or in general substructure measurement. | | | **Laboratories item – does not form part of the 2010 Instruction to Proceed data.** |
| 42.0 | Laboratories | Upper Floors: Please confirm all allowances for recesses or thickening of slabs is included. | Confirmed, included in rates | | | **Laboratories item – does not form part of the 2010 Instruction to Proceed data.** |
| 43.0 | Laboratories | Stairs: Number of assumptions/clarifications: Design team to appraise/comment to facilitate in the removal from pricing docs. | No assumptions made in Cost Plan | | | **Laboratories item – does not form part of the 2010 Instruction to Proceed data.** |
| 44.0 | Laboratories | Ext Walls: Please identify where Spec item 1.12 (louvers to office block) appear in your bid. | Allowance taken in copper cladding section. | | | **Laboratories item – does not form part of the 2010 Instruction to Proceed data.** |
| 45.0 | Laboratories | Ext Walls: Ext brise soleil system included. Not stated as being required on previous dwgs. | Builders work drawings received 24th August show indication of Brise Soleil and we have based our provision on this. | | | **Laboratories item – does not form part of the 2010 Instruction to Proceed data.** |
| 46.0 | Laboratories | Windows: Window sizes do not tally with C&B's original measure | Window are measured from the latest issue drawings as opposed to original C&B measure | | | **Laboratories item – does not form part of the 2010 Instruction to Proceed data.** |
| 47.0 | Laboratories | Ext Doors: Please advise where Revolving entrance doors are included. | Taken in External Walls section of Cost Plan | | | **Laboratories item – does not form part of the 2010 Instruction to Proceed data.** |

<table>
<tr>
<td>48.0</td>
<td>Laboratories</td>
<td>M&E: Please provide details of how M&E values arrived at and if possible provide detailed back up.</td>
<td>Listed below are the M&E values submitted in our Bid based on a quantity of 25,322 m2<br><br>
<table>
<tr><th>Item</th><th>Unit Rate (£)</th><th>Estimated Cost (£)</th></tr>
<tr><td>5A Sanitary Appliances</td><td>17.09</td><td>432,833.63</td></tr>
<tr><td>5C Disposal Installations</td><td>22.67</td><td>574,000.24</td></tr>
<tr><td>5D Water Installations</td><td>47.58</td><td>1,097,899.44</td></tr>
<tr><td>5E-G Mechanical Installations</td><td>332.69</td><td>8,424,257.16</td></tr>
<tr><td>5H Electrical Installations</td><td>149.68</td><td>3,790,277.99</td></tr>
<tr><td>5I Gas & other fuel installations</td><td>3.73</td><td>94,353.60</td></tr>
<tr><td>5K Protective Installations</td><td>3.13</td><td>79,580.60</td></tr>
<tr><td>5L Communication Installations</td><td>157.22</td><td>3,981,165.48</td></tr>
<tr><td>5N BWICS</td><td>39.42</td><td>998,193.24</td></tr>
<tr><td>5M Special Installations</td><td>11.96</td><td>557,040.00</td></tr>
</table>
<br>See Appendix Q48 for the Summary and details. This information is also included with our response to RFI 007</td>
<td></td><td></td>
<td>Laboratories item – does not form part of the 2010 Instruction to Proceed data.</td>
</tr>
<tr>
<td>49.0</td><td>Laboratories</td>
<td>M&E Lifts: Current drawings show 4 Nr FF Lifts, 4 Nr Goods Lifts, 3 Nr Passenger Lifts and 1 Nr Mortuary Lifts. This does not correspond with your bid. Please advise.</td>
<td>Drawings show 16nr lifts which we have priced.</td>
<td></td><td></td>
<td>Laboratories item – does not form part of the 2010 Instruction to Proceed data.</td>
</tr>
<tr>
<td>50.0</td><td>Laboratories</td>
<td>Siteworks: Imported fill for backfilling. Is there no potential to re-use excavated materials ?</td>
<td>Option to re-use excavated material is limited and will require extensive double handling and logistical issues retaining a clean site.</td>
<td></td><td></td>
<td>Laboratories item – does not form part of the 2010 Instruction to Proceed data.</td>
</tr>
<tr>
<td>51.0</td><td>Laboratories</td>
<td>Siteworks: No inclusion of barrier system to service yard. Please advise.</td>
<td>Included in bid</td>
<td></td><td></td>
<td>Laboratories item – does not form part of the 2010 Instruction to Proceed data.</td>
</tr>
<tr>
<td>52.0</td><td>Laboratories</td>
<td>Ext Services: £5k allowed for main water distribution. Seems low</td>
<td>The allowance is for the final connection between a valved connection on the site water mains and the laboratory building boundary.<br>Site water mains and pipe work within the building are covered within the energy centre section.</td>
<td></td><td></td>
<td>Laboratories item – does not form part of the 2010 Instruction to Proceed data.</td>
</tr>
<tr>
<td>53.0</td><td>Laboratories</td>
<td>Please provide statement on Inflation allowances included.</td>
<td>Given that this work will be primarily secured in Year 2010 no allowance has been made for any inflation of the Net Package Costs. It is assumed that all packages can be procured at 2009 prices. There is an allowance within the preliminaries for a 3% staff increase in Jan 2010 and a similar increase in 2011.</td>
<td></td><td></td>
<td>Laboratories item – does not form part of the 2010 Instruction to Proceed data.</td>
</tr>
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| 54.0 | Laboratories | Has audio/visual system to Mortuary been included? If so, where and how much. | An allowance of £10k has been made with the M&E section of the Tender Bid | | | **Laboratories item – does not form part of the 2010 Instruction to Proceed data.** |
| 55.0 | Laboratories | Please confirm that the Cat 3 Containment Facilities Spec referred to in Clause 1.0, Appendix C1.2 of Outline Architect Spec is included. Is so, please advise where and provide breakdown of value. | The wall, floor and ceiling finish items are based on Polyflor.<br>Single Leaf Doors £ 17,500.00<br>1 /12 Leaf Doors £ 5,000.00<br>Wall Finishes £ 47,900.00<br>Floor Finishes £ 17,300.00<br>Ceiling Finishes £ 8,650.00<br>Safe Change Filters £ 12,000.00<br>Cat 3 Light Fittings £ 8,500.00<br>£ 116,850.00<br>All costs above are net of Sub-Contract Prelims (The percentage additions for S/C Prelims are 10% on internal doors, floors and ceilings and 19% on walls) , B.E. Prelims and B.E. OH&P | | | **Laboratories item – does not form part of the 2010 Instruction to Proceed data.** |
| 56.0 | Laboratories | Has allowance been included in bid for various treatments to soffits under 1F slab in open yard or entrance areas? | Included in bid. | | | **Laboratories item – does not form part of the 2010 Instruction to Proceed data.** |
| 57.0 | Laboratories | Design fees included are different to the fees provided to Bidders. Please provide details of difference. | The difference in design fee for the laboratories is due to additional consultants identified as being required to advise on building control and CDM. We have also made an allowance within the risk register to cover additional fees to the design team resulting from an increase in their scope of works | | | **Laboratories item – does not form part of the 2010 Instruction to Proceed data.** |
| 58.0 | Laboratories | Please confirm that all temporary services connections prior to Energy Centre being completed are included | Main incoming services are included within the energy centre section. Allowance has been made for local temporary service connections until Energy Centre is sufficiently progressed. | | | **Laboratories item – does not form part of the 2010 Instruction to Proceed data.** |
| 59.0 | Laboratories | Please confirm that all robotics costs included in Hospital element of bid. | Confirmed | | | **Laboratories item – does not form part of the 2010 Instruction to Proceed data.** |
| 60.0 | Laboratories | Please identify any costs associated with pneumatics included in the Labs element of your bid. | An allowance £62,200 has been included within section 5L Communications of the bid. This includes for the distribution Pipe work and Receivers within the Labs, but does not include any of the main plant elements which are included within the main hospital buildings. See Appendix Q60 for further information | | | **Laboratories item – does not form part of the 2010 Instruction to Proceed data.** |

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| Technical Clarification 3 | | | | | | |
| **General** | | | | | | |
| 1.0 | LCC | n relation to any perceived LCC benefits/savings over the period, can you provide supporting details/justification of same. | Our Life Cycle Cost Analysis, contained within Volume 12.8 of our submission, provides full details of the breakdown of Life Cycle Costs for each element of the project. We believe that this provides the supporting details/justification, however, should there be any specific areas where you feel further information is required we will be happy to provide it. | | info | NC |
| **Logistics** | | | | | | |
| - | - | No items in this TC. | - | | | |

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| **Design/HP** | | | | | | |
| 2.0 | Energy Centre | Please confirm the location in your compliant bid the Energy Centre Layout plan reflecting the retention of the Stage D Laboratories design. | We would enclose drawing NA-EC-00-PL-251-020 that shows the energy centre from our masterplan located against the stage D laboratory design.<br><br>There is some flexibility with regard to the plan location that would require BMJ input should our bid prove to be successful.<br><br>The laboratory stage D design shows all main plant within the laboratory building plant rooms, which enables the laboratory building to operate stand alone.<br><br>The compliant bid for the Energy Centre does allow for some plant in the current designs; namely Standby Generators and Boiler capacity as detailed in Volume 3 Sections 3.8 & 3.10 and Volume 4 Section 4.55. | | | Subject to Development in Stage 2<br><br>**Concluded**<br>(Illustrated on Planning Consent Drawings MSC1 and 2) |
| **M&E Services** | | | | | | |
| - | - | | - | - | | |
| **Renewables/Sustainability/BREEAM** | | | | | | |
| 3.0 | - | Please confirm that your compliant laboratory scheme will achieve BREEAM Excellent. | Our assessment of the compliant stage D design BREEAM rating is 65 which achieves very good but falls 5 points short of an excellent rating. The main reason for this shortfall is the difficulty in achieving the energy target of 80kgCO2/m2 without linking the laboratory building to the energy centre as confirmed in the Board response to RFI144.<br>There are a number of other options that could be looked at to improve the BREEAM rating such as reduction in CO2 emissions, limiting water consumption etc. These are not currently part of the compliant scheme. | | | **Laboratories item – does not form part of the 2010 Instruction to Proceed data.** |
| **Laboratories** | | | | | | |
| - | - | No items in this TC. | - | | | |
| Technical Clarification 4 | | | | | | |
| - | - | No items in this TC. | - | | | |
| **Logistics** | | | | | | |
| - | - | No items in this TC. | - | | | |
| **Design/HP** | | | | | | |
| 1.0 | Schedule of Accommodation | Clarity is required with regard to your Schedule of Accommodation. The attached Appendix A identifies the area assessment presently (in column C). Please identify each actual figure in the column D 'Confirmation' listing to reflect the following (with item 3 provided separately):<br><br>1. **Gross departmental area** (including planning and engineering and departmental circulation) for each department and the total for each hospital<br>2. **Net departmental area** (sum of net as drawn/designed rooms only) for each department | Please find attached the completed Appendix A which has identified the actual area figures requested to be clarified in column D 'Confirmation'.<br><br>We have assumed the 'Y' noted against Section Number 1 is the Board's acceptance that this information has already been provided by Brookfield in Volume 1; Sections 1.1, 1.2, 1.3, 1.4 of our Bid Submission.<br><br>In addition, please note that the Total Gross Floor Area noted in our submission did not include the % Planning allowance. This SOA was generated by Codebook, and was an accurate 'As Drawn Area' which excluded the thickness of | | | **2009 Project Bible**<br>Refer to the agreed SoA 1:200 Drawings and related requirements contained in Volume 1 of the Contractors Proposals in Contract Data Part 1 and to the narrative in this regard contained in the signed Appendix 2 and 3 Instruction to Proceed (see Volume 1 of the Contractor's Proposals). |

| | | | | | | |
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| | | and the total for each hospital<br>3. **Net room areas** (excluding all ducts, pipe boxing and service zones) listed room by room and by department<br>4. **Circulation area** (departmental) for each department and the total for each hospital<br>5. **Communications and plant areas** (interdepartmental circulation horizontal and vertical and main plant rooms and risers) for each hospital<br>**Total gross floor area** for each hospital. | the internal partitions. This has now been included in the completed Appendix A. These figures represent the GIFA which has been priced and included within the Cost Plan. | | | **2010 ItP Project Bible**<br>Refer to the agreed SoA 1:200 Drawings and related requirements contained in Volume 1 of the Contractors Proposals in Contract Data Part 1 and to the narrative in this regard contained in the signed Appendix 2 and 3 Instruction to Proceed (see Volume 1 of the Contractor's Proposals). |
| 2.0 | MRI replacement | Please confirm your proposals (methodology, routes and structural provision to support) the replacement/retro fit of MRI equipment. | In the absence of specific MRI product information, the building footprint areas identified on the plans as housing MRI installations have been checked against a 7.5 tonne magnet installation (example from a recent comparable project).<br>In each case it was noted that the floor and foundation structures as currently presented could be appropriately detailed to facilitate the incorporation of this equipment.<br>The proposed transit route for the MRI installation is not known but is expected to be either through double access doors at ground level, along corridors and possibly via a wall knock-out access panel into the proposed room. Alternatively, the MRI unit could be delivered to the FM area and transported via the service tunnel to a lift and then to the corridor etc as above. The floor and foundation structures for the possible routes noted above have been checked against the 7.5t load and noted to be able to be appropriately detailed to facilitate the incorporation of this equipment.<br>The final location of any such equipment will require to be specifically checked against the details of the actual equipment proposed. | | | This will be subject to Design Development Review<br>Allowance based upon 7.5t MRI load<br><br>**MRI Concluded** |
| **M&E Service** | | | | | | |
| 3.0 | M&E Services | Please confirm pipework types for DH&CW, CHW and heating. | For DH&CW pipework, Stainless Steel Mapress by Gilbert (or equivalent) is proposed up to 67mm dia. And an ABS type material will be used on sizes above this. Copper will not be used on these systems.<br>For CHW & LTHW, carbon steel galvanised Mapress by Gilbert (or equivalent), Large bore, mild steel medium grade tube, Victaulic mechanical couplings (or equivalent).<br>For MTHW mild steel heavy grade tube fully welded/flanged. | | | Agreed stainless steel throughout.<br><br>(Any alternate compliance/product to be submitted to the Board for review. To be taken to VE forum). |
| 4.0 | M&E Services | Please provide more clarity (detail) with regard to your proposed lighting controls. | A mixture of automatic 'absence' and 'presence' detection will be provided.<br><br>Presence detection: detector switches lighting on and off.<br>Extent of provision: intermittently occupied areas such as WCs, en suites, corridors, ward kitchens, stores, plant rooms, services risers, hospital streets, bathrooms etc.<br><br>Absence detection: lights manually switched on, detector extinguishes lighting in unoccupied room.<br>Extent of provision: offices, consulting rooms etc.<br><br>In addition, in rooms benefiting from daylight, luminaires near windows will be dimmable, regulated by the amount of daylight available.<br><br>Dimmable lighting has been included where specifically required by the ADB sheets.<br><br>Automatic control of lighting in rooms which have plenty of natural light will be regulated by means of a photocell within the space to ensure the required LUX is achieved by the combination of ambient and artificial light. | | | **2009 Project Bible**<br>Refer to the RFI Log contained in Contract Data Part 1.<br><br>**2010 ItP Project Bible**<br>Refer to the RFI Log (2010 ItP) in Folder B1 of The Instruction to Proceed Project Bible. |
| 5.0 | M&E Services | Please confirm that duty / stand-by plate heat exchangers will be provided for Domestic hot water. | Packaged plate heat exchangers/buffer vessels will be arranged to provide run/standby as described in Volume 4 Specification 4.28 and Volume 5 Schedule 5.2. | | | NC |

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| 6.0 | M&E Services | Please provide details of proposed thermostatic mixing valves for DHW. | Taps with integral TMV3 will be used wherever suitable (refer to attached data sheet). In situations where these are not appropriate separate TMV3 thermostatic mixing valves will be used such as Oventrop Brawa-Mix 97 (or equivalent). | | | NC |
| 7.0 | M&E Services | Please provide details of trench make up for main services. | Trench depths, spacings and backfill will be as NHS Model Engineering Specifications C01 for pipe services and C41 for electrical services. Buried pre-insulated heating and chilled water mains will be in accordance with the system manufacturer's recommendations but will be similar to above. | | | NC |
| 8.0 | M&E Services | Please confirm that twin regulating valves have been included for gas supplies. | Yes confirmed | | | NC |
| 9.0 | M&E Services | Please confirm that NRV will be fitted at each fire isolation valve as ER's. | Yes confirmed | | | NC |
| 10.0 | M&E Services | Please confirm mechanical air change rate for the ward tower. | A typical ward in the tower has the following air change rates to either meet the ADB requirements or achieve the environment conditions:<br>• Bedrooms 2.5 ACH (related to ensuite extract rate and air volume for chilled beam unit loadings)<br>• Ensuites 10 ACH<br>• Clean Utility 6ACH<br>• Disposal Hold 10 ACH<br>• Pantry 6 ACH<br>• Dirty Utility 10 ACH<br>• Equipment store<br>• Cleaner 5 ACH<br>• Nurse base Up to 12 ACH to balance extract from utility spaces, etc<br>• Office/meeting 4 ACH | | | **2009 Project Bible**<br>Refer to the M&E Clarification Log in Contract Data Part 1 for typical single bed ward.<br>**2010 ItP Project Bible**<br>Refer to the M&E Clarification Log (2010 ItP) in Folder B1 of The Instruction to Proceed Project Bible. |
| 11.0 | M&E Services | Please confirm type of fire Extinguishants gas proposed for the main Comms rooms. | The main comms rooms will be protected by a gaseous fire suppression system, the two gases for consideration at detailed design stage are NOVEC1230 and FM200. Both gases have attributes and issues; NOVEC1230 has a Global Warming Potential(GWP) of 1, while FM200 has a GWP of 2900. Certainly NOVEC1230 is kinder to the environment, but it is less kind to the IT assets it is protecting due to the much greater temperature drop when released, over FM200. The rapid rate of change of temperature has been shown to result in failure of the electronic components. The hope is that the suppression gas is never released and that the systems operate on a double knock strategy of operation | | | Subject to detailed review Stage 2<br>**2010 ItP Project Bible**<br>Incorporated in Fire Strategy, included in Appendix K in Folder V of the 2010 Instruction to Proceed Project Bible |
| 12.0 | M&E Services | Please indicate the plant resilience for hot and cold water services, e.g. full duplicate or is one extra unit proposed per plant area? | HWS calorifiers are provided in groups to serve zones of the building. Each group includes a standby calorifier. Refer to Volume 5 Schedule 5.2 Calorifier. | | | NC |
| 13.0 | M&E Services | Further to your responses to TC#2, the items listed in the attached Appendix B require further clarification/responses. | As noted on Appendix B | | | NC |
| **Renewables/Sustainability/BREEAM** | | | | | | |
| - | - | No items in this TC. | - | | | |
| **Laboratories** | | | | | | |
| - | - | No items in this TC. | - | | | |
| Technical Clarification 5 | | | | | | |

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| **General** | | | | | | |
| 1.0 | LCC | Please check and confirm/clarify 60 year LCC values. | We can confirm the 60 year LCC values, which are based on the same assumptions as the 30 year values. The assumptions and detail are outlined within the LC Models provided. | | | NC |
| 2.0 | LCC | Please resubmit LCC rates as per Volume 4 Clarification Technical 19n0 – Item 8 Table 1 Item 4.0. | The LCC rates have been derived from detailed LC models based on the Specification and Capital Cost information in the Brookfield (Doig & Smith) Capital Cost Plans ("*Stage 3 Bid Cost Plan"* and *"Stage 1 Non-Compliant Bid Cost Plan"*). These cost plans have been submitted based on the NSGH bid deliverable cost plan breakdown requirements.<br><br>In line with these the LC Models have therefore only been able to been built for:<br><br>1) The Acute Adult and Children's Hospital;<br><br>2) The Laboratory Building<br><br>3) The External Works<br><br>Refer to Appendix 1 for Hospital Benchmarks used. | | | NC |
| 3.0 | FM | Please provide information in connection with derivation of FM services £/m2/yr rate – e.g. Sample Range, Hospital Type, Level of Service. Ditto as against differing Facilities e.g. Hospital/Lab etc. | The £/$m^2$/yr rate for FM Services is based on an average cost derived from the Davis Langdon FM database which includes detailed FM service costs and specifications across a suitable range of appropriate projects. The database has been adjusted to reflect the current size and location of this Project. | | | NC |
| 4.0 | FM | Please provide breakdown of FM rate as per requirements of Table 1 Item 6.3 (Management/Staff/Contracted/Materials/Equipment costs) | An indication of the expected split of FM costs is as follows:<br>Management / Admin: 12.5%<br>Staff: 37.5%<br>External Contracts: 25%<br>Materials: 20%<br>Equipment: 5% | | | NC |
| 5.0 | Software | Please confirm that your Zutec software has been included in your priced proposals (this to include access, licensing and any necessary product maintenance requirements). Further please advise of system compatibility (i.e. does this interface with 'standard' software packaging and provision such as Microsoft products). | We confirm Zutec software/service is included in our priced proposals. This includes the access, licensing and associated product maintenance requirements during the 2 year DLP. We would also highlight that Zutec have included an additional 12 months beyond the 2 year DLP as a benefit to the project.<br><br>Zutec system is compatible with Microsoft products. Besides overcoming the logistics of handling volumes of hard copies, it provides an efficient and quick means to search/locate project information/data. This facility is also available remotely (from anywhere with internet connection).<br><br>At the end of DLP, a hard drive of the project information uploaded at that time will be handed over to the Board. The information in that hard drive is readable using internet browser (ie. Only software required to read/run the data is an Internet Explorer). This information can be exported/copied into Microsoft Word or Excel.<br><br>Should the Board wish to use the Zutec website to make ongoing updates to the project database beyond DLP, Zutec is able to offer a hosting solution on a monthly or annual fee basis. | | | NC |
| **Logistics** | | | | | | |
| - | - | No items in this TC. | - | | | |
| **Design/HP** | | | | | | |

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| 6.0 | Fire Strategy | Can you confirm the qualified chartered fire engineer who will develop your design/strategy moving forwards. | The qualified chartered fire engineer overseeing our design development from WSP is:<br><br>Ryan McCreadie – Associate Director<br>BEng (Hons), PhD, MIFireE, Ceng<br>Chartered Engineer with the Engineering Council Division of the IFE.<br>Membership number – 00035119.<br><br>Mr McCreadie is assisted by the following WSP fire engineers:<br><br>Tom Grace – Associate Director<br>BE (Civil), ME (Fire), CPEng, MIFE, MSFPE, MIEAust<br><br>and<br><br>Kenny Hamill – Senior Fire Engineer<br>BSc (Hons) MRICS MIFireE | | | NC |
| 7.0 | Fire Strategy | It is noted that the smoke control proposal for the atrium relies on the decomposition of the ETFE roof based on a smoke/gas hot gas temperatures. What contingency planning would you recommend with regard to business continuity in this regard? | The ETFE roof system will be designed to ensure that the 'hot wire' activation only occurs in the highly unlikely event where a major fire occurs from adjoining areas into the atrium.<br><br>This activation sequence will be developed/16inalized in conjunction with the Fire Authority and the Board. However, we have considered the following features to limit the need for 'hot wire' activation:<br><br>• The environmental ventilation strategy for the atrium space includes for high level (side) vents to the ETFE roof and this will be used to support the smoke strategy in the early stages of fire development within the atrium (prior to any 'hot wire' activation).<br><br>• Lower volumes of buoyant smoke (at a temperature below ETFE failure) can be exhausted via the natural vent system.<br><br>• The vent sizes will be based on fire engineering calculations using BRE 368 for smoke management systems.<br><br>• Controlled fire load to atrium base by using fire load island philosophy. Fire loads will be concentrated into specific areas and separated by minimum distance to mitigate against fire spreading throughout the atrium base.<br>• The design fire size will be within the capacity for the natural vent system.<br><br>Furthermore and to reduce the threat of a major conflagration from adjoining areas into the atrium the following design features will be in place:<br><br>• Fire separation of areas opening onto atrium<br><br>• Sprinklers to areas adjoining atrium and appropriate areas in the atrium itself<br><br>• Glazing at ward levels to prevent smoke ingress from atrium to adjoining circulation areas<br><br>• Fire separation between clinical areas and circulation areas adjoining atrium<br>In developing the 'hot wire' activation sequence with the Enforcing Authorities and the Board, the aim is to filter out and avoid unnecessary occurrence by subjecting the activation to a number of "knocks/triggers". It is envisaged that this multiple layer control will firstly involve detection of a fire within the compartment adjacent to and off the atrium that may spread into the atrium. This detection is then subject to another knock whereby a manual override is provided to allow a suitable investigation period to establish cause of alert and validation of the size of the fire threat for 'hot wire' system to be finally activated. | | | **2010 ItP Project Bible**<br>BCL proposals incorporated in Fire Strategy, included in Appendix K in Folder V of the 2010 Instruction to Proceed Project Bible. Development of this item is subject to review and comment by the Board as part of the Stage 3 Design Development. |

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| | | | In the next stage of our design development, we will assess the possibility of limiting the loss of the ETFE roof to partial sections only (ie. Sufficient to vent the fire size to be agreed with the Enforcing Authorities). We will also assess to further minimize the impact of damaged roof on the operation for the clinical side of the Hospital by for example having glazed (smoke) separation to the atrium as mentioned above.<br><br>In reference to the contingency planning with regard to the business continuity, we believe that the ETFE roof 'hot wire' system would only occur in a very significant fire incident. In this scenario, the Hospital building itself is likely to have extensive damages and will be subject to major business continuity contingency planning. | | | |
| 7.0 | **M&E Service** | | | | | |
| 8.0 | Lift Study | Please confirm that your reference to the Exemplar in the lift study is erroneous and provide bed movement time from the ground floor to the top storey ward. | The data provided was based on the population figures issued by the client in the exemplar report. The approx time taken to move a bed from Ground to top storey ward will be 42 seconds assuming no intermediate stops (door opening at ground to door opening at top floor). On average each journey will take - 60 seconds including intermediate stops. | | | **2010 ItP Project Bible**<br>NC |
| 9.0 | Maintenance | Please confirm that a maintenance gantry in the atrium (ventilation actuator maintenance) is included in your priced proposals. | Actuators will be located externally (IP65 rated) for ease of maintenance.<br><br>Localised access facilities will be provided as necessary. | | | NC |
| **Renewables/Sustainability/BREEAM** | | | | | | |
| 10.0 | U-Value | Please confirm your primary U-values for (i) Glazing, (ii) Fabric and (iii) Roof. | Glazing 1.4 $W/m^2K$ inc frame<br>External wall 0.3 $W/m^2K$<br>Roof 0.25 $W/m^2K$ | | | NC |
| 11.0 | Permeability | Please confirm your building permeability. | The air permeability (infiltration) will be in accordance with the ERs Volume 2/1 App M&E.4/3.3.5(1) i.e 5$m^3$/hr/$m^2$ @ 50Pa | | | NC |
| **Laboratories** | | | | | | |
| - | - | No items in this TC. | - | | | |

**APPENDIX B**
**NSGH – Bid Evaluation – TC#4 Items from TC # 2 which require further clarification**

| Prev TC ref | Original Item | Action update required | Bidder Response | | | |
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| 1 | List received of suggested suppliers | Client not aware of several e.g. Switchgear, fire alarm, Nurse call and wholesalers used for several systems please provide details and confirm that any changes will require agreement with the Board (up to three manufacturers for each M E & PH item) | The list of suggested suppliers gives an indication of the manufacture/suppliers of the components proposed. The final selection of components will be by agreement with the Board from a selection of no fewer that 3 manufacturers unless specialist equipment dictates otherwise | | | **2009 Project Bible**<br>Refer Volume 5 the Contractor's Proposals in Contract Data Part 1.<br><br>**2010 ItP Project Bible**<br>Refer to the agreed Component List and position, located in Folder H1 of The Instruction to Proceed Project Bible. |
| 10 | Please confirm that BMS IP network will be fully stand alone and that all active equipment has been included. | Yes. Please provide supporting narrative for the included BMS IP network. E.g. raid storage, servers racks switches etc | The BMS kernel is built on two fault tolerant servers configured in a primary and hot standby fashion. The operating system will be Linux based with a SQL database for data management. The storage of BMS data will be on a RAID configured system and this will hold the immediate data live for 1 month. The SQL will be used for back up functionality and subsequent long terms analysis of the BMS system.<br>The system will have a primary fibre backbone with the appropriate Cisco managed switches breaking out into the copper IP networks at local system | | | NC |

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| | | | level. | | | |
| 11 | Tagging | Included. Please provide supporting narrative. e.g. tags are electronic integrated in the WIFI systems etc | The Tagging system works on RFID technology and there are two methods of operation.<br>1. For items such as wheelchairs, the system will display graphically the location of the asset and can be polled to find the nearest required equipment, such as staff requiring a wheelchair.<br>2. Other items can be set up so that they are governed by a boundary and if the asset is brought beyond this defined boundary, an alarm is triggered. | | | NC |
| 12 | Scaffolding will be used to land generators and transformers | Is this practical, will the scaffolding have permanent foundations etc. | The majority of replacement and maintenance items detailed in the plant replacement strategy in Volume 3.23 of our submission are dealt with via the FM lifts.<br><br>It is anticipated that the expected frequency for the replacement of the major plant items is once every 20-25 years or so in normal circumstances, if at all, and, if required, likely to take place during a period of planned major plant renewal.<br><br>It is considered that it is a reasonable strategy to allow for the erection of a temporary scaffolding working platform to facilitate the removal and replacement of equipment. A structure of this type with sufficient height and capacity can be easily erected at reasonable cost using readily available materials and labour.<br><br>It will be possible to erect such a temporary structure using standard scaffolding details with the footings bearing onto the ground externally, but with protection applied to the surface finishes.<br>It is possible to incorporate permanent concrete foundations to facilitate this work but it is unlikely that the specific scaffolding arrangement will be available during the initial construction work to enable a specific design to be constructed, or that the scaffolding proposals will not change over time and render the installed foundations redundant.<br><br>Where the equipment is required to be transported over the flat roof to reach a loading platform, the structure has sufficient design load capacity to facilitate this but with the actual roof finishes requiring protection as noted in the bid documentation. | | | NC |
| 13 | Medical gases and VIE | Please provide details of the plant resilience for medical air, 02, vacuum surgical air gas scavenging and nitrous oxide | All medical gas systems and plant are designed as per the current SHTM02-01, resilience within the selected plant items being provided in the following way:<br>Medical Air; a quadruplex plant will be provided, one compressor will act as a permanent standby, the remaining three compressors will be rotated through the demand requirements, this will insure boiling off of any excess condensate.<br>O2; two VIE stores will be provided, each store will be selected to provide 100% of the calculated demand, the stores will be configured as a run and standby mode.<br>AGSS; all AGSS pumps will be selected as duplex units, each pump will be rated to 100% of the calculated load. Each duplex plant will serve only four operating theatres.<br>Nitrous Oxide; a 2 x 10 manifold system with full automatic changeover facilities will be provided complete with a 2 x 1 ESM (emergency) manifold back up, all manifolds will be fully alarmed.<br>All other Air4 and Air 7 systems will have similar manifold systems complete with alarms and automatic changeover facilities | | | NC |
| 14 | luminaire details | Please provide info on LED and feature lighting luminaires | Refer to attached supplementary information | | | NC |
| 17 | Fire alarm PC includes incident location graphics | Please confirm fire alarm PC includes incident location graphics | Confirmed as included | | | NC |

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| 20 | Patient entertainment systems. | Schematic representation noted. Please provide equipment details e.g. infrastructure, equipment, patient interface etc. | The primary patient and staff interface within the ward spaces, is based on a unit, such as the Lincor system. These units are connected back over CAT6A cables to the local hub rooms to an appropriate Cisco managed switch. At this point the system is connected back to the head end, via fibre network. The head end, is a fault tolerant server solution with various interfaces to broadcast receiver equipment.<br>It is possible for this system to be integrated with medical records IT to have the local interface become part of the clinical information management at the bedside. This is not included in this proposal at this time. There is only one screen in the patient space that covers all functionality. | | | NC |
| 23 | Please confirm that metering | BREEAM compliance noted, please provide a narrative e.g. central monitoring and storage | Metering of engineering services will be provided in accordance with the requirements of the ERs, BREEAM and GIL 65. All metering points will be monitored, recorded and stored on the BMS. | | | NC |
| 24 | Water spillage protection in secondary comms room. | It is noted that fan coils will have drip trays. On the assumption that the drip tray is full please advise how fan coils can be used in secondary comms rooms while ensuring that the equipment will be protected | Subject to the final layout of the comms rooms options for the fan coil units include positioning high level detection in the drip trays linked to the FCU operation, or more preferably locating the FCU outside of the comms room and ducting the conditioned air into the room. | | | NC |
| 25 | Please confirm compliance with maintainability and area isolation requirements. | Compliance on Electrical services noted, please confirm compliance with maintainability and area isolation requirements. | Isolation of electrical services will be possible as follows:<br><br>It will be possible to isolate an entire HV ring by opening protective devices at each end in the energy centre.<br><br>Sections of HV ring may be isolated by selective switching of devices at substations along the length of the ring.<br><br>Transformers may be isolated at the associated ring main units.<br><br>Main LV Switchboards may be isolated by opening their main incomer.<br><br>Submains cables to sub switchboards may be isolated by opening their protective device.<br><br>Sub switchboards may be isolated by opening their main incomer.<br><br>A minimum of 2 distribution boards will be provided per department and final circuits will be interleaved so far as is practicable (see below). Thus isolation of one distribution board will affect half of the circuits in the area served by that board.<br><br>The majority of rooms will be provided with at least 2 lighting and 2 small power circuits. Exceptions will be rooms with one luminaire or one socket outlet such as toilets, cupboards, risers and so on where it would be impractical to provide duplication.<br><br>The ERs appear to require each individual room to be capable of isolation without impact upon adjoining areas. We have not interpreted this to mean that each room should be provided with dedicated electrical circuits. Strict adherence to this requirement would result in a minimum of 4 circuits dedicated to each room ie: Side A lighting, Side A power, Side B lighting, Side B power. A department with 100 rooms would require 400 circuits which equates to say 10 no. 18 way 3 phase distribution boards. There would be a considerable impact on the size of the local sub switchboards and the quantity of submains cabling as well as on the quantity of final circuit cable containment systems and space requirements to accommodate the distribution boards and large sub switchboards. | | | 2009 statement remains. |
| 28 | Plant and equipment will be suitably isolated to | Compliance noted, please provide narrative on proposals | Sound and vibration control for ventilation systems are described in Volume 4 Specification 4.33 giving proposals for plant attenuation, cross-talk attenuation and vibration control under fans etc. | | | NC |

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| | prevent transmission of noise and vibration. | | Major plant such as chillers, generators, compressor etc. will be provided with spring isolation mounts as required to reduce vibration.<br><br>Vibration isolation of pumps will be assessed with the pump manufacturer to determine the most appropriate method of isolation, with spring pipe hangers provided adjacent to pump assemblies.<br><br>Plant noise breakout to site boundaries and intrusive noise into adjacent buildings will be controlled by sound attenuators in the fresh air intakes to all plant to meet the limiting noise criteria for the hospital site. | | | |
| 29 | Please confirm that full environmental proving off all rooms will be provided. | Compliance noted, please provide narrative on proposals | A full environmental check on all rooms will be provided. This will be undertaken at the commissioning stage of the project, all rooms will be put through a range of internal conditions to prove the capacity within the systems to increase and or decrease the space temperatures within a set time line. These tests will be trend logged within the BMS over a given period of time and any faults found will be addressed before final handover. | | | NC |
| 31 | Please confirm that all services elements are included to meet the fire engineering solution, e.g. stair pressurisation, smoke control etc | Compliance noted, please provide narrative on proposals | All service elements have been included to meet the Section 2.10 Fire Strategy report.<br>Fire engineering has been used wherever beneficial to meet, or surpass, the minimum fire safety performance standards contained within the various guidance documents. To achieve this the services strategy includes for areas such as detection / alarm systems; escape bed lift provision; smoke dispersal from stair protected zones / fire fighting shafts / lift lobbies, atrium smoke and ventilation strategy; basement smoke control / clearance strategy; fire damper actuation etc. | | | **2009 Project Bible**<br>Contractor to develop a fire engineered strategy which complies with Statutory Regulations and Fire Code<br><br>**2010 ItP Project Bible**<br>Incorporated in Fire Strategy, included in Appendix K in Folder V of The 2010 Instruction to Proceed Project Bible. |
| 34 | Please confirm that leak detection has been included. | Compliance noted, please provide narrative on proposals | The leak detection systems will be developed during the detailed design phase and will utilise linear detection elements, broken into appropriate lengths. The system will form part of the BMS, with a graphic interface of the overall system. Leak detection will be logged under the BMS alarm handling and it will also be possible to configure plant shut down or other intervention, on the presence of a leak being detected. | | | **2010 ItP Project Bible**<br>Refer to the 2010 Instruction to Proceed Log located in Folder S of The Instruction to Proceed Project Bible for details of leak detection. |
| 35 | Please indicate percentage capacity of all water service pipework mains from the energy centre to the main buildings for resilience. | Heating response noted, please provide narrative for CWS and CHWS | The site water mains feed directly into the hospital with bulk storage in the basement. No CWS is fed from the Energy Centre.<br><br>HWS is generated locally within the plant areas to feed the various zones of the building. No HWS is fed from the Energy Centre. | | | **2009 Project Bible**<br>Refer to the M&E Clarification Log in Contract Data Part 1.<br><br>**2010 ItP Project Bible**<br>Refer to the M&E Clarification Log (2010 ItP) in Folder B1 and The 2010 Instruction to Proceed Log in Folder S of The Instruction to Proceed Project Bible. |

**This document is 'The RFI Log (2010 ItP) – FINAL'**

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 001 | Drawings to be uploaded in dwg format<br><br>**RESPONSE: THESE HAVE BEEN UPLOADED** | - | Info | Drawings addressed under the Drawing Log to be issued to Brookfield under separate cover. | Agreed | Brookfield Drawings to be included as Works Information 2 should take precedence over Works Information 1 (Employer Requirements) in the event of conflict. | Exceptions to be highlighted by the Board (i.e. out put CD1 drawings that require to remain, to be met by the developed BE CD2 drawing). | **Agreed that BIW log to be amended as relevant to replace Board drawings with Brookfield drawings. Refer BIW Log. | The Contractor drawing list is agreed and has been inserted into the contract: this can be located in the Contents Page of Volume 2 of the Contractors Proposals in Contract Data Part 1.<br><br>The Board M&E drawings that remain which remain as the output requirement of the Board, and require to be met by the Contractor design, are contained in the Employer's Requirements.<br><br>It is confirmed that the items agreed in the M&E Clarifications Log take precedence over the M&E drawings where relevant.<br><br>The Contractor is required to present their design proposals (drawings and narrative) through the design development (Stage 2) process for review by the Board, with such development by the Contractor to demonstrate achievement by the design of the above mentioned output requirement(s) of the Board through the iterative process of the developing design. | The Contractor drawing list is agreed and contained in Appendix K, which resides in Folders U, V & W of the 2010 Instruction to Proceed Project Bible (Appendix K therefore represents the current work in progress in relation to the Contractor's Proposals).<br><br>Any ER drawings that remain as the output requirement of the Board are listed in The BIW Log (ItP 2010).<br><br>Any BCL (2009 Project Bible) drawings that have not been superseded by Appendix K design development remain the relevant work in progress design to be referred to.<br><br>It is confirmed that items agreed in the Logs are agreed alternative compliance in respect of the ERs and also take precedence over the drawings. | Agreed |
| 002 | **Bedrooms – Clinical Risk Category.** Page 184 of the ERs states that wards are to be classed as Clinical Risk Category 3. Page 27 of Appendix M&E3 lists bedrooms as IEE GN7 Group 1, which would normally be viewed as Clinical Risk Category 4. We believe that the latter statement is correct.<br><br>**RESPONSE: IEE GN7 GROUP 1 TAKES PRECEDENCE** | - | NC | Information is included in ERs and therefore need not be added. | Agreed | BCL offer based on Wards being Clinical Risk Category 4 which we do not believe is reflected within ER`s. | It is agreed that wards are clinical risk 4 as SHTM | Agreed | | N/C | Agreed |
| 003 | **Crash Call** The ERs refer to "crash" call. Is this "staff to staff" call or an additional layer of call?<br><br>i.e.:<br><br>Patient to Staff / | Y | - | Statement that Crash Call is staff to staff with automatic paging to time scheduled list to | Agreed | * Subject to confirmation that as per Board intention the ER`s are updated such that this is clearly defined in the Works Information 1 | This document to be included as an addendum to Works Information Part 1. The ER's will not be updated (track changed) rather | **Noted but then there will be a discrepancy between the actual original ER`s and the | Agreed that addendum Logs take precedence over original ERs where a discrepancy occurs. | N/C | Agreed |

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| | staff to staff /<br>and Crash call<br><br>or<br><br>Patient to Staff /<br>and Staff to Staff (aka Crash).<br><br>**RESPONSE: CRASH CALL IS STAFF TO STAFF WITH AUTOMATIC PAGING TO TIME SCHEDULED LIST** | | | be included ERs for clarity. | | (Employer Requirements). | the RFI log, BIW log etc sit as addendum to ERs. | subsequent addendum documents. In this situation how would the Board address this discrepancy? | | | |
| 004 | HTM06-01 states that electrical loads in hospitals are growing by 3% to 6% per year. At 6% growth the spare capacity would be used within 5 years, at 3% within 9 years.<br><br>Based on current experience at SGH, does the Board have a view on whether the allowance of 25% for future growth is adequate?<br><br>**RESPONSE: THE 25% IS OVER THE COMPLETE FOOTPRINT, THIS IS IN LINE WITH THE FINANCIAL MODEL** | Y | - | Statement that 25% is over the complete footprint to be included in ERs for clarity. | Agreed | * Subject to confirmation that as per Board intention the ER`s are updated such that this is clearly defined in the Works Information 1 (Employer Requirements). | See response to Item 003, above. | Agreed | See agreed position in relation to Item 003, above. | N/C | Agreed |
| 005 | HTM 06-01 states that it is preferable for large healthcare premises that dual public electrical supplies should be provided from diverse sources originating from separate distribution network operator substations and fed from different parts of the National Grid with independent cable routes to and across the site to the main substation.<br><br>Can you advise if the negotiations carried out to date with the Utilities have indicated the extent to which this would be possible?<br><br>**RESPONSE: ONGOING NEGOTIATIONS INCLUDE THE PROVISION OF A TERTIARY 11KV CONNECTION (THIS WILL BE PRESENTED AT THE BREAKER IDENTIFIED FOR THE TEMPORARILY LAB SUPPLY)** | - | NC | Compliance with the HTM (now SHTM) requirement is included in the ERs and is to be met by the Contractor – the specific issue requires to be addressed by the Contractor (with support by the Board) as an aspect of the 33kV discussions and agreement with the utility provider. | Agreed | *Contractor, in discussion with Scottish Power, will endeavour to satisfy this requirement subject to availability of diverse sources from the grid. | No further action | **As discussed at the utilities meeting held on 2nd Dec 09 Brookfield understand that the Board accept that dual supplies from the grid may not be available. | The Board accept twin supplies from the Govan Road grid connection point. | N/C | Agreed |
| 006 | **<u>High Voltage Generators.</u>**<br>We note from drawing G1274E/(60)01 that Low Voltage generators are proposed each with a step up transformer for site ring connection. Would there be any objection, in principle, to High Voltage generators? We note that the CHP is shown as an HV unit.<br><br>**RESPONSE: THIS CONCEPT HAS BEEN INDICATED TO ALLOW THE USE OF EASY TO OBTAIN 400V HIRE SETS TO COVER MACHINE OUTAGES. ANY SOLUTION MUST INCLUDE THE USE OF EASY TO OBTAIN 400V HIRE SETS TO COVER MACHINE** | Y | - | The statement that any design solution must include the provision for use of easy to obtain 400V hire sets to cover machine outages to be included in ERs for clarity. | Agreed | * Subject to confirmation that as per Board intention the ER`s are updated such that this is clearly defined in the Works Information 1 (Employer Requirements). | See response to Item 003, above. | **Refer to Brookfield response to 003 above | See agreed position in relation to Item 003, above | N/C | Agreed |

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| | **OUTAGES** | | | | | | | | | | |
| 007 | The ERs, page 143, require the services to be configured to ensure that isolation can be achieved in each room without taking other rooms out of use. As written this requirement could be taken to mean that, for example, each electrical circuit must serve no more than one room, which we are sure is not intended. We seek further guidance on the intention of this clause.<br><br>**RESPONSE: A ROOM MAY BE "IN USE" AS LONG AS A PROPORTION (SAY 50%) OF THE OUTLETS ARE RETAINED AVAILABLE DURING MAINTENANCE OF A FINAL CIRCUIT OR LOCAL DB** | Y | - | The statement that a room may be "in use" as long as a proportion (50%) of the outlets are retained available during maintenance of a final circuit or local DB to be included in the ERs for clarity. | Agreed | * Subject to confirmation that as per Board intention the ER`s are updated such that this is clearly defined in the Works Information 1 (Employer Requirements). | See response to Item 003, above. | **Refer to Brookfield response to 003 above | See agreed position in relation to Item 003, above | N/C | Agreed |
| 008 | **Standby Lighting**<br>We seek clarification of Appendix M&E3, page 27, clause 3.5, Standby Lighting.<br><br>The ERs appear to require Grade A standby lighting to be UPS supported. We believe that this is not always necessary and that compliance with applicable standards can be achieved in a more cost effective manner.<br><br>Standby lighting grades signify the percentage of normal lighting to be maintained on mains failure. The grade of standby lighting required is not related to the permitted duration of interruption to the power supply.<br><br>For example, CIBSE LG2 requires bedrooms to be provided with Grade A standby lighting. Bedrooms are classed as group 1 by IEE GN7 and MEIGaN which implies that they would fall into Clinical Risk Category 4. The table below which is based on Appendix 1 of HTM 06-01 (we do not believe that SHTM 06-01 has been published yet) would indicate that this type of room would normally require the interruption to general lighting to be not more than 15 seconds. Thus it would not be usual to support all lighting to all bedrooms by UPS.<br><br>**Clinical risk category** / **IEE GN7 /MEIGaN group** / **Standby Grade / % provision** / **Interruptio to general lighting**<br>3 / 0 / B / 30-50% / <15s to 3hours><br>4 / 1 / A / 95%+ / <15s | - | NC | Overall treatment of lighting on Board 'Watchlist' for development and compliance to be demonstrated by the Contractor. | Agreed | Brookfield design will be compliant with SHTM06-01, CIBSE LG2, IEE GN7 and MEIGaN. Brookfield design proposal does not include for UPS support to all Grade A lighting as a blanket provision, as the grade of standby lighting is unrelated to the permitted duration of interruption to the power supply. | This can only be accepted if BE guarantee that the lights will be reinstated (by the generators) within 15 seconds. This will be challenging and will require full load management<br><br>OR<br><br>Provide inverter cover to grade A lighting with for example 5 minute battery autonomy. | **Load estimate of lighting is such that 1 generator on "A" side and one on "B" side will accept the lighting load within 15 seconds. Generators will be selected and configured and controlled to achieve this. The remainder of the load will be supported when remaining generators are synchronised | BE to demonstrate via Design Development (Reviewable Design Data) that this can be achieved.<br><br>Should this not be the case (i.e. cannot demonstrate) BE to revert to and include inverters at no additional cost to the Board. | N/C | Agreed |

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| | 5 \| 2 \| A / 95%+ \| <15s \| <0.5s<br><br>The above implies that only 'fixed medical lighting and escape lighting' is required to be supported by battery or UPS. This is often interpreted to include the lighting around an operating table.<br><br>We appreciate that there may be special circumstances and therefore would welcome to opportunity to discuss this further at a workshop with the Board to arrive at a solution acceptable to the Board.<br><br>**RESPONSE: PLEASE ADD TO SUB-GROUP AGENDA AT NEXT DESIGN DIALOGUE SESSION IF REQUIRED** | | | | | | | | | | |
| 009 | **Treatment Room Lighting**<br><br>P186 of the ERs implies that luminaires in Treatment Rooms are to be fed from 2 circuits – does this mean 2 circuits to each luminaire? We request guidance on the reason for this.<br><br>**RESPONSE: SINGLE SUPPLY TO LUMINARIES. LUMINAIRES TO BE SPLIT EVENLY OVER TWO CIRCUITS FROM ALTERNATIVE DISTRIBUTION BOARDS.** | - | NC | ERs address this item. | Agreed | BCL bid submission Volume 4 section 4.35 provides for LV distribution split between two distribution boards. | Light fittings shall be on one circuit generally. Patient treatment areas, where procedures will take place, to have minimum of two lighting circuits. | Agreed | Light fittings shall be on one circuit generally. Patient treatment areas, where procedures will take place, to have minimum of two lighting circuits. | N/C | Agreed |
| 010 | Could you please provide the final version of the Geo-Environmental Report as the current version is in draft form only. | - | Info | This information was issued to bidders for background/information purposes. | Agreed | Please note that we have not received the final SI report. Brookfield submission allows for risk. Further SI to be undertaken. | BE to check records as disc was uplifted from the offices of Currie & Brown | Still checking!!Memory loss at BE | Copy of SI Report provided to BE at meeting of 08 December 2009.<br><br>No further action in relation to this item, with the BIW Log to include the SI Report as Contract Data Part 1. | N/C | Agreed |
| 011 | The Drainage Strategy Report makes reference to a Drainage Impact Assessment being undertaken by Scottish Water in 2007. Could a copy of this report be provided?<br><br>**RESPONSE: THIS HAS BEEN UPLOADED TO BIW** | - | Info | This information is addressed under the BIW Log. | Agreed | | n/c | | This information is addressed under the BIW Log. | N/C | Agreed |
| 012 | The Drainage Strategy Report is in Outline Form only – can you confirm:<br><br>Whether a Hydraulic model of the Linthouse Burn has been undertaken and provide the information?<br><br>**RESPONSE: A HYDRAULIC MODEL OF THE LINTHOUSE BURN HAS NOT BEEN UNDERTAKEN** | - | Info | Development Impact Assessment is addressed under the BIW Log. | Agreed | See comment on Labs below. | n/c | | | N/C | Agreed |

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| | What discussions have taken place to date with Scottish Water regards drainage capacity at the nearby treatment works?<br><br>**RESPONSE: A DEDVELOPMENT IMPACT ASSESSMENT HAS BEEN SUBMITTED TO CONFRIM CAPACTIY – WILL BE UPLOADED TO BIW.**<br><br>What discussions have taken place to date with SEPA regards surface water drainage to the existing culverted watercourses that run through the site?<br>**RESPONSE: THE DRAINAGE STRATEGY REPORT REFLECTS THE NATURE OF THE DISCUSSIONS WHICH HAVE TAKEN PLACE WITH SEPA** | | | | | | | | | | |
| 013 | Although the Car Parks and future works are not included in the current scope, can you clarify whether the Drainage Impact Assessment and design of the future works needs to account of any changes to the surface runoff and/or foul drainage i.e. is it a site-wide scheme with input from others?<br><br>**RESPONSE: THE DRAINAGE IMPACT ASSESSMENT CONSIDERS THE SITE AS A WHOLE. THE DESIGN OF FUTURE/OTHER WORKS WILL BE REQUIRED TO FIT IN TO THE FRAMEWORK OF THE DRAINAGE STRATEGY REPORT** | - | Info | No action required with regard to this RFI. | Agreed | Brookfield bid submission includes for the new drainage system required for the Works, and the currently identified Car Parks and requires timely input from Board and Third Parties in regard to information re Car Parks. | n/c | **Just to clarify that Brookfield will make allowance for the carpark drainage in its design of the overall site drainage. Brookfield have not allowed for installing any drainage specifically associated with the carparks constructed by others. | Agreed | N/C | Agreed |
| 014 | Notwithstanding Volume 2/1 section 2.3 can you please clarify the extent of the demolition and site clearance that will be undertaken by others and the status of the ground at the time of handover to the successful contractor?<br><br>**RESPONSE: IT IS THE BOARD'S INTENTION TO PROVIDE A CLEAR SITE (WITH THE EXCEPTION OF THE ACTIVITIES TO BE CARRIED OUT BY THE CONTRACTOR PER THE ER's – INCLUDING THE CULVERT DIVERSION AND HV DIVERSION), WITH FURTHER CLARIFICATION TO BE MADE BY THE BOARD WITH REGARD TO THE POTENTIAL FOR RE-USE OF DEMOLITION MATERIALS IN THE CONSTRUCTION PHASE (E.G. PILING MATS)** | - | NC | ERs address this item. | Agreed | Site levels still to be confirmed by the Board. BCL proposals based on working from existing levels. | Assume existing levels are retained at completion of demolition | Agreed | Agreed existing levels are retained at completion of the demolition. | NC | Agreed |
| 015 | Could you please provide a list of available archive information in relation to the site, and clarify when this will be available:<br><br>Buried Services, drainage, LV, HV, | - | Info | This information is addressed under the BIW Log to be issued to Brookfield | Agreed | Brookfield submission allows for any impact in risk register. | BE Risk item. | Not all BE risks. Refer to risk allocation in risk register. Brookfield note | Agreed. | N/C | Agreed |

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| | Existing Structures incl foundations and buried structures<br>Topographic Survey<br><br>**RESPONSE: ALL AVAILABLE INFORMATIN HAS BEEN UPLOADED AND HEALTH AND SAFETY INFORMATION FROM THE DEMOLITIONS WILL BE HANDED OVER AT THE RELEVANT TIME** | | | under separate cover. | | | | that pursuant to item 15 of the Board Risk Register (Appendix E of ITSFB) unidentified below ground services is a Board risk. | | | |
| 016 | We note that there is Japanese Knotweed present on the site, can you clarify whether this affects the construction areas and if this will be dealt with in the site clearance contract or main contract?<br><br>**RESPONSE: JAPANESE KNOTWEEK IS CURRENTLY GROWING WITHIN GHE NEW HOSPITALS DEVELOPMENT SITE. JK PLAND MATERIAL HAS BEEN TREATED BY A LICENSED CONTRACTOR FOR THE LAST TWO CALENDAR YEARS. THE TREATMENT HAS KILLED OFF SIGNIFICANT AREA OF JK, EVIDENCED BY DRY DEAD CANES AND MINIMAL RE-GROWTH. THE BOARD HAVE SURVEYED THE FULL NEW BUILD SITE AND IDENTIFIED 4 POCKETS OF JK THAT HAS COMMENCED GROWTH IN MAY 2009. THE OBARD HAVE COMMISSIONIED THE LICENSED CONTRACTOR TO REVISIT THE SITE WITHIN THE NEXT TWO WEEKS TO SPRAY AREAS, AND RETURN IN MID SUMMER AND AGAIN IN LATE AUGUST 2009 TO UNDERTAKE A FULL SEASONS TREATMENT. THE BOARD INTEND TO CLEAN UP AREAS OF THE SITE FROM BUILDING MATERIALS AS PART OF THE DEMOLITION WORKS AND WILL AS PART OF THIS CONTRACT EXCAVATE, BUND AND FENCE OFF ANY POCKETS OF JK REMAININ, WITH CONCENTRATED TREATMENT UNTIL TOTALLY KILLED OFF.<br><br>THE BOARD WILL ACTIVELY MONITOR THE BUILD SITE DURING THE CONSTRUCTION PHASE 2010-2016 AND TAKE ACTION TO REMOVE, BUND AND TREAT ANY NEW GROWTH.<br><br>SEE ALSO SECTION 6.2.2 (d) OF VOLUME 2/1 OF THE ITPD WITH REGARD TO JK.** | - | NC | ERs address this item (topic is on Board Watchlist). | Agreed | Brookfield would note that this is a Board Risk item. | n/c | | Agreed that this is a Board risk item. | N/C | Agreed |
| 017 | Could you please provide copies of the existing fire strategy documentation relating to adjacent buildings, or alternatively confirm that it is acceptable to contact the Fire Officer direct?<br><br>**RESPONSE: ADJACENT BUILDINGS** | - | Info | No action required in respect of this RFI. | Agreed | BCL have an obligation to liaise with the Fire Officer and not to detrimentally affect fire strategies of other adjacent facilities. The | Board to provide copies of existing Fire Risk Assessments/Fire Action Plans. These will be uploaded to BIW Volume 6. | **Brookfield to check upon receipt to ensure that compliance can be maintained. | Data has been reviewed by BE and physical logistics viewed on site (incl fire path and hammer-head at neo-natal building). | N/C | Agreed |

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| | **FOLLOW A HORIZONTAL EVACUATION STRATEGY. PLEASE CLARIFY YOUR QUERY AND YOUR SPECIFIC INFORMATIN REQUIREMENTS**. | | | | | design has been developed to meet the requirements of SHTM 86 insofar as supporting a reasonable and ordinary fire risk assessment by the Board and no adverse fire safety issues will be created to the existing hospital by the proposed design. However in order to develop the fire strategy we will need to review the existing fire strategy documentation relating to adjacent / proposed adjoining buildings. | | | Any logistics requirements (hoarding line adjustments etc) on site to prevent negative impact on fire routes, escapes etc will be addressed and carried out by BE at no additional cost. | | |
| 018 | Please can you confirm if it is possible to bring the Blue Light A&E access from the back of the site off the A739/Hardgate Road?<br><br>**RESPONSE: THE BLUE-LIGHT ROUTE PRESENTLY FOLLOWS THIS ROUTE (AT THE SOUTH-WEST END OF THE SITE) AND THIS REQUIES TO BE MAINTAINED AT ALL TIMES AS WELL AS THE GOVAN ROAD ENTRANCE TO THE SITE – I.E. THE 'THROUGH ROUTE' MUST BE MAINTAINED.** | - | NC | ERs address this item. | Agreed | | n/c | | ERs address this item. | N/C | Agreed |
| 019 | In order for our Design Team to progress the 1:50 Room Layouts we would be pleased to receive the ADB Brief in electronic **.mdb** format.<br><br>**RESPONSE: THE ADB WILL BE ISSUED IN EXCEL** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI | N/C | Agreed |
| 020 | Could you please provide copies of the drainage requirements for the Laboratory Facility relating to:<br><br>Surface Water Runoff<br>Foul Water Flows<br><br>**RESPONSE: SURFACE IS NOT SPECIFICALLY DETAILED FOR THE LABS PRESENTLY (TO BE ADVISED DURING DESIGN DEVELOPMENT BY THE BOARD), HOWEVER FOUL WATER FLOWS ARE CONTAINED IN THE DRAINAGE STRATEGY REPORT.** | - | Info | This is a Laboratory Design Development issue and is addressed through the developing package of design information for that aspect of the Works. | Agreed | | n/c | | This is a Laboratory Design Development issue and is addressed through the developing package of design information for that aspect of the Works | Laboratories – not relevant to this Log. | Agreed |
| 021 | Further to the Commercial Competitive Dialogue meeting no 1 we would be pleased to receive a copy of the following in relation to the **Laboratories/FM facility only** : | - | Info | This is addressed through the Contract/Commercial area of | Agreed | | n/c | | This is addressed through the Contract/Contract Data Part 2. | Laboratories – not relevant to this Log. | Agreed |

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| | Draft Design Consultant Appointment for BMJ (incorporating other consultants of the Labs/FM design)<br>Schedule of Scope of Services for each discipline<br>Schedule of Total Fees for each discipline for each Design Stage together with details of fees paid/accrued to date.<br>Design programme and schedule of deliverables<br><br>**RESPONSE: THE RELEVANT DOCUMENTATION WILL BE AVAILABLE IN DUE COURSE.** | | | the Contract preparation being undertaken. | | | | | | | |
| 022 | With reference to ITPD Document Volume Three 'Bid Deliverables and Evaluation', Section 2.3 '1:200 Department Layouts' please confirm whether this is a minimum of 11 nr ***including***:<br>Section 2.4 – Accident & Emergency Department<br>Section 2.5 – Adult Theatres Department<br>Section 2.6 – Adult Ward<br>Section 2.7 – Childrens Ward<br>Section 2.8 – Childrens Accident & Emergency Department?<br><br>**RESPONSE: THE ELEVEN REQUIRED LAYOUTS ARE AS FOLLOWS:**<br><br>**ADULT A&E**<br>**ADULT ACUTE ASSESSMENT UNIT**<br>**ADULT RADIOLOGY (2 FLOORS)**<br>**ADULT WARD**<br>**ADULT THEATRES**<br>**ADULT CRITICAL CARE**<br>**CHILDREN'S A&E**<br>**CHILDREN'S OBSERVATION WARD**<br>**CHILDREN'S RADIOLOGY (2 FLOORS)**<br>**CHILDREN'S THEATRES**<br>**CHILDREN'S WARD**<br><br>In addition, please confirm if there is any preference for the other departmental layouts you wish our Team to develop at 1:200 scale?<br><br>**RESPONSE: ELEVEN AS ABOVE** | - | Info | ERs and ITPD/ITSFB updates address this RFI. | Agreed | | n/c | | ERs and ITPD/ITSFB updates address this RFI. | N/C | Agreed |
| 023 | With reference to ITPD Document Volume Three 'Bid Deliverables and Evaluation', Section 2.9 '1:50 Room Layout and Wall Elevations' please provide a list of the 1:50 Room Layouts required. If this is to match the Generic ADB Room Data Sheets already provided, please provide an Index of these to allow us to ensure we prepare the correct number/room types.<br><br>**RESPONSE: ADB CODES ARE BEING ADDED TO THE SOA, THE 1:50 REQUIREMENT ROOMS WILL BE** | - | Info | ERs and ITPD/ITSFB updates address this RFI. | Agreed | | n/c | | ERs and ITPD/ITSFB updates address this RFI. | N/C | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| | **HIGHLIGHTED BY A COLOURING/SHADING.** | | | | | | | | | | |
| 024 | With reference to ITPD Document Volume Three 'Bid Deliverables and Evaluation', Section 1.0 Accommodation Schedule (items 1.1 to 1.4) please can you confirm if these areas are required for the 'whole hospital scheme' or only the 11 number of Departments required to meet the Project Deliverables?<br><br>**RESPONSE: WHOLE SCHEME** | - | Info | ERs and ITPD/ITSFB updates address this RFI. | Agreed | | n/c | | ERs and ITPD/ITSFB updates address this RFI. | N/C | Agreed |
| 025 | Could the Board please arrange a meeting between BCL and WRAP to review the following:<br><br>WRAP commentary upon BCL Waste Management Plan<br>BCL understanding of WRAP KPI's<br>Alignment of BCL and WRAP benchmarking<br><br>**RESPONSE: THE BOARD PROPOSE TO MAKE THE WRAP ADVISOR AVAILABLE AT THE NEXT LOGISTICS MEETING. CONFIRMATION TO BE PROVIDED.** | - | Info | Addressed during Competitive Dialogue sessions/meetings. | Agreed | Wrap proposals included in BCL submission. | n/c | | Wrap proposals included in BCL submission | N/C | Agreed |
| 026 | Can the board confirm that the currently vacant area of "green zone" land can be made available for use by BCL during the construction of the laboratories.<br><br>**RESPONSE: BIDDER TO SUBMIT A MARK-UP OF THE SITE IDENTIFYING THE AREA FOR CONSIDERATION TO ALLOW THE BOARD TO CONFIRM** | - | Info | RFI closed as more specific information relation to this query was subsequently issued by the bidder. | Agreed | | n/c | | RFI closed as more specific information relation to this query was subsequently issued by the bidder | N/C | Agreed |
| 027 | Can the Board provide a rough quantity of crushed material that could be left on site following the demolition of the existing buildings. It is likely that this material can be reused for a piling mat and subbase offering some commercial benefit.<br><br>**RESPONSE: QUANTITIES NOT AVAILABLE AT THIS TIME** | - | Info | No action required in respect of this RFI. | Agreed | The board did not advise a quantity of crushed demolition material they stated "quantities not available at this time". Brookfield assumed crushed materials would not be removed from site. | Material can be used by BE if required. Piling is BE issue and risk of need to import pile mats if demolitions arising are not usable rests with BE. | BE made an assessment of 8,875m3 of suitable crushed material being available from the demolition. | Board will crush relevant demolition material and leave on site. BE risk on volume arising from this. | Concluded | Agreed |
| 028 | The nature of pathology and microbiology in particular, requires that departments take into consideration statutory requirements and recommendations made under the following:<br><br>Home Office, Anti Terrorism Crime and Security Act 2001,<br>part 7<br>Home Office, Personnel Security Measures for Laboratories,<br>2005<br>London First and National Counter Terrorism | - | Info | Any specific requirements have been included in the Laboratories design. | Agreed | | n/c | | Any specific requirements have been included in the Laboratories design. | N/C | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| | Security Office,<br>Secure in the Knowledge, 2005<br><br>With this in mind, please can you provide us with the measures proposed, to ensure the safety and security of all staff, equipment and controlled substances including micro-organisms that have a bearing on the design and specification of the architectural elements of the project. e.g. provision of a robust controlled access system, cladding design, internal partition design, door specification, CCTV. | | | | | | | | | | |
| 029 | **CLINICAL SPACE DEFINITION**<br><br>At the M&E break out session at Design Dialogue Meeting 2 we were advised that a list of spaces defined as "Clinical" as referred to in to ERs was available.<br><br>Please could the Board forward a copy of this.<br><br>Response required by 9th June 2009<br><br>**RESPONSE: THERE IS NO SUCH LISTING PRESENTLY, HOWEVER THE BOARD WILL CLARIFY THE AREAS TO BE CONSIDERED IF A SPECIFIC QUERY CAN BE ESTABLISHED BY THE BIDDER** | - | Info | No action required in respect of this RFI. | Agreed | Board to forward the information as requested? | From a services perspective, it is understood that query relates to sealed luminaires and not using clinical spaces to access services.<br>Sealed fittings will not be required unless procedures take place in the area.<br>Access to services should not be via high utilisation areas | Agreed | From a services perspective, it is understood that query relates to sealed luminaires and not using clinical spaces to access services.<br>Sealed fittings will not be required unless procedures take place in the area.<br>Access to services should not be via high utilisation areas | N/C | Agreed |
| 030 | **Existing Infrastructure**<br><br>Please provide records of existing site wide services infrastructure.<br><br>We request a response by 9th June 2009.<br><br>**RESPONSE: THE UPDATED DRAWING WILL BE UPLOADED TO BIW BY CLOSE OF BUSINESS 11 JUNE 2009** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | Brookfield submission allows for any impact in risk register. | n/c | | Brookfield submission allows for any impact in risk register. | N/C | Agreed |
| 031 | **Dual electrical distribution**<br><br>We query the required extent of dual unified distribution paths for **all** electrical systems, i.e.: departments fed from two boards, side A and side B, and interleaving of final circuits.<br>We assume that this requirement applies to Risk Category 3 and 4 departments only.<br><br>We propose that lower risk category departments will be provided with unified supplies, i.e.: departments provided with a single distribution board fed from either side A or side B, but not both.<br><br>We request a response by 9th June 2009.<br><br>**RESPONSE: DUAL UNIFIED DISTRIBUTION** | Y | - | Statement that dual unified distribution paths to be provided for all departments to be included ERs for clarity. | Agreed * | * Subject to confirmation that this is clearly defined in line with Brookfield submission within the Works Information 1 (Employer Requirements).<br>Brookfield bid submission includes for dual unified supplies | This appears compliant (see item 68 below for further comment) | **Refer to Brookfield response to 003 above | See agreed position in relation to Item 003, above, as well as RFI # 068. | N/C | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| | **PATHS TO BE PROVIDED FOR ALL DEPARTMENTS** | | | | | | | | | | |
| 032 | **Lighting Controls**<br><br>The ERs refer to automatic lighting controls in a number of places.<br><br>We propose the following simplified lighting control strategy for your consideration and comment:<br><br>A mixture of automatic 'absence' and 'presence' detection will be provided.<br><br>Presence detection : detector switches lighting on and off.<br>Provided to intermittently occupied areas such as WCs, en suites, corridors, ward kitchens, stores, plant rooms, services risers, hospital streets, bathrooms etc.<br><br>Absence detection : lights manually switched on, detector extinguishes lighting in unoccupied room.<br>Extent of provision to be agreed but likely to cover offices, consulting rooms etc.<br><br>In addition, in rooms benefiting from daylight, luminaires near windows will be dimmable, regulated by the amount of daylight available.<br><br>The ERs require lighting in corridors to be dimmed when unoccupied and scheduled by BMS. We do not believe that this will be necessary as the detectors will extinguish lights in unoccupied areas regardless of the time of day.<br><br>The ERs require dimmable lighting 'throughout'. Please clarify if this means each room regardless of available daylight and function.<br><br>We request a response by 9th June 2009.<br><br>**RESPONSE: PLEASE PROVIDE LIGHTING CONTROL IN ACCORDANCE WITH ER's. PLANT ROOM OVERRIDE INTEGRATED WITH THE ACCESS CONTROLS ETC. DIMMING TO BE PROVIDED THROUGHOUT TO PREVENT OVER LIGHTING AND TO MINIMIZE ENERGY USAGE.** | - | NC | Lighting controls on Board Watchlist. | Agreed | BCL included for the simplified proposal as outlined in the RFI and this is contained in our bid submission. | Generally accepted. The reason for the "watch list" is to focus the Board on monitoring compliance going forward<br><br>Brookfield to substantiate that the proposed system will function as described in relation to the automatic dimming regulated by the amount of daylight available. | Agreed | BCL included for the simplified proposal as outlined in the RFI and this is contained in our bid submission.<br><br>Brookfield to substantiate that the proposed system will function as described in relation to the automatic dimming regulated by the amount of daylight available. | N/C | Agreed |
| 033 | **Service Capacity Reserve**<br><br>With reference to ITPD Vol 2/1 Clause 8.1.25.1 please could you clarify the extent of reserve to major items of equipment. | Y | - | Statement that energy matching by modular selection of plant and provision of | Agreed | * Subject to confirmation that this is clearly defined in line with Brookfield submission within the Works Information 1 (Employer | See response to Item 003, above. | **Refer to Brookfield response to 003 above | See agreed position in relation to Item 003, above, additionally: statement that energy matching by modular selection of plant and provision of integrated | N/C | Agreed |

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| | Whilst an expansion of 25% is common on electrical systems, when applied to mechanical plant this leads to significant oversizing and potential inefficient running in terms of energy use which could affect the proposed energy target, and also result in poor control.<br><br>Response required by 9th June 2009<br><br>**RESPONSE: PLEASE COMPLY WITH ER's. ENSURE ENERGY MATCHING BY MODULAR SELECTION OF PLANT AND PROVIDE INTEGRATED CONTROLS.** | | | integrated controls to be included in ERs for clarity. | | Requirements). | | | controls to be included in ERs for clarity remains correct. | | |
| 034 | **Site Heating Loads**<br><br>The calculation of heating loads for the new hospitals are given in Appendix M&E.2 / 2.0 and broken into heating, ventilation and HWS. Please could you provide the basis of calculation for the heating and ventilation loads.<br><br>Response required by 9th June 2009<br><br>**RESPONSE: LOADS PREPARED ON SQ M BASIS TO ASSIST IN EARLY DISCUSSIONS WITH UTILITY COMPANIES. IT IS IMPERATIVE THAT THE BIDDER PROVIDES THEIR DETAILED LOAD CALCULATIONS FOR THE NEW HOSPITALS AS INDICATED IN ITEM 5 ON PAGE 12 OF APPENDIX M&E 2.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. | N/C | Agreed |
| 035 | **Variable Volume Pump Systems**<br><br>The Board's exemplar schematics for heating and cooling systems indicate constant volume flow systems with 3 port valve bypass control of equipment.<br>We would wish to provide variable volume pumping (VVP) systems utilizing 2 port control valves and differential pressure control.<br>VVP systems can reduce electrical consumption for pumping significantly, and we feel that this is an essential requirement to meeting the carbon target required.<br><br>Response required by 9th June 2008.<br><br>**RESPONSE: 3 PORT VALVE ARRANGEMENTS TO BE PROVIDED AS DETAILED, BOARD REQUIREMENT** | - | NC | This item is on the Board Watchlist. | Agreed | Brookfield submission includes for VVP systems | 2 port valves introduced by bidder for energy saving.<br>Valve selection is critical-to be selected to reflect actual duty.<br><br>This item to be retained on board watch list through design and installation. | **Workshop to be arranged for ZBP to reassure Board on variable volume control | Agreed that a 2-port solution is accepted by the Board, with valving proposals and solutions, as a specific aspect of the developing design, to be proposed and reviewed by the Board through the design development process. | N/C | Agreed |
| 036 | **Re: Community Engagement**<br>Further to the Logistics meeting no 2 and as directed we would be pleased if Mark could arrange an introductory meeting with the following:<br><br>Ross Campbell: Glasgow Regeneration | - | Info | Addressed during Competitive Dialogue sessions/meetings. | Agreed | | n/c | | Addressed during Competitive Dialogue sessions/meetings. | N/C | Agreed |

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| | Agencies<br>Sharon McGrath: City Building<br>Maggie Lennon: Bridges Programme<br>Morag Keith: West of Scotland Colleges Partnership<br>Hugh McCafferty: Construction Skills<br>Jim Brown: EU Skills<br>Ian Stirrat: Summit Skills<br>Robert Andrew: Supplier Development Programme<br>Lauren McNichol: Glasgow Chamber of Commerce<br>Stewart Farmer: Federation of Small Businesses<br>Jillian Moffat: Scottish Enterprise<br>Gerry Higgins: Community Enterprises in Strathcylde (CEiS) | | | | | | | | | | |
| 037 | Within the laboratory building mention is made of animal holding facilities but no further reference found, nor area identified on drawings. Please confirm is this statement is a correct requirement or purely an oversight in document preparation.<br><br>**RESPONSE: THERE ARE NO ANIMAL HOLDING FACILITIES BRIEFED.** | - | Info | No action required in respect of this RFI. | Agreed | Board confirmation during dialogue session that facility will not be used for any animal holding. | n/c | | Board confirmation during dialogue session that facility will not be used for any animal holding. | N/C | Agreed |
| 038 | Please confirm the number of floors currently proposed on the laboratory building is as follows:<br><br>Level 0<br>Level 1<br>Level 2<br>Level 3<br>Level 4<br>Roof,<br><br>along with the number/size of floors to be considered as potential future accommodation.<br><br>**RESPONSE: FURTHER TO THE FLOORS THAT YOU HAVE NOTED THERE IS A LEVEL -1 (BASEMENT LEVEL). AS FUTURE EXPANSION WE ARE PROPOSING THAT THE NORTH BLOCK TO THE REAR OF THE SITE BE USED AS FUTURE EXPANSION THIS BLOCK CURRENTLY HAS A ROOF AT LEVEL 4.** | - | Info | No action required in respect of this RFI. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do BE think their LABS option is being taken? | BCL to confirm that there have been no changes to the scheme between bid and stage E issue of information | Stage D information to form Contract Data Part 1.<br><br>Alignment and change control to be monitored through design development, this will include review and challenge if necessary of Stage E information. | Laboratories – not relevant to this Log. | Agreed |

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| 039 | Within the laboratory building, please advise expected pattern of usage for the office pod central conference facilities e.g. intermittent/constant etc, as this will influence potential services solutions.<br><br>Also, will main conference facility have a raked floor?<br><br>**RESPONSE: THE SEMINAR FACILITY/CAFÉ AREA IS DESIGNED AS A CENTRALLY BOOKABLE FACILITY FOR USE BY THE LABORATORY FACILITY. THIS MAY BE HEAVILY USED ON A DAY TO DAY BASIS, ALSO IT IS ENVISAGED THAT THIS AREA MAY BE USED OUT OF HOURS AS A SEMINAR FACILITY FOR THE MAIN HOSPITAL. THE FLOOR WILL BE LEVEL.** | - | Info | Any specific requirements have been included in the Laboratories design. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do BE think their LABS option is being taken? | BCL to confirm that there have been no changes to the scheme between bid and stage E issue of information | See agreed position in relation to Item 0038, above | Laboratories – not relevant to this Log. | Agreed |
| 040 | Within the laboratory building, suggestion is made that the office pod will have some public access.<br><br>Please advise whether the level of public access to the office areas will dictate that openable windows will have openings limited to 100mm (This will impact on effective natural ventilation).<br><br>**RESPONSE: THERE ARE VISITING AREAS FOR PATIENTS WITHIN MOST OF THE LEVELS WITHIN THE OFFICE POD, PUBLIC ACCESS WILL BE LINITED, HOWEVER THE FACILITY IS DESIGNED TO BE RELIANT ON THE BUILDINGS SERVICES VENTILATION STRATEGY WITH THE ADDITIONAL PROVISION OF NATURAL VENTILATION TO THE OFFICE AREAS. THE OPENING LIMITATION REQUIREMENT IS 100MM AS PER THE HOSPITAL REQUIREMENT.** | - | Info | Any specific requirements have been included in the Laboratories design. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | 100mm opening limitation is a laboratories ER requirement<br><br>But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do BE think their LABS option is being taken? | BCL to confirm that there have been no changes to the scheme between bid and stage E issue of information<br><br>Check 100mm compliance | See agreed position in relation to Item 0038, above | Laboratories – not relevant to this Log. | Agreed |

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| 041 | Reference is made for a separate incoming electrical supply for the laboratory building due to programme issues of deriving a supply from the final site network. No mention is made of similar requirements for the other statutory services e.g. water, gas, telecoms, drainage etc.<br><br>Please confirm if our assumption of the following is correct.<br>Electricity: Board<br>Water: Bidder<br>Gas: Bidder<br>Telecoms: Bidder<br>Drainage: Bidder<br>IT Infrastructure: Bidder<br><br>**RESPONSE: UTILITY COMPANY APPLICATIONS WILL BE REQURIED BY THE BIDDER FOR THE FOLLOWING SERVICES TO FEED THE LABORATORY BUILDING: POWER/WATER/GAS. TELECOMS AND I.T. TO THE LABORATORIES WILL BE PROVIDED FROM THE RETAINED ESTATE. DUCT ROUTING DRAWING/S WILL BE INCLUDED IN THE LABORATORIES STAGE D INFORMATION.** | - | Info | No action required in respect of this RFI. | Agreed * | Brookfield submission and Commercial Clarification No 3 refers | Primary Sub station will be required for lab start up to ensure value for money on utility supplies Refer to minutes of meeting 02 December | **Brookfield believe that following the utilities meeting on 2nd Dec 09 it is a Board decision to install Primary 33kVa Substation as part of Stage 1 Works and as such have allowed for this. Commercial Clarification No. 3 indicated that if the Board sort to reduce Stage 1 costs by putting substation in Stage 3 works then additional money would be required in Stage 1 but this will not now be required | Agreed | Sub-station activity being advanced per Stage 2 discussions and recorded contract requirements. | Agreed |
| 042 | Several references are made to the proximity of the sewage treatment works to the laboratory building, including potential for carbon filtration of fresh air ventilation plant.<br><br>Requirements for natural ventilation are also identified wherever practical.<br><br>Please confirm whether openable windows are acceptable on all elevations especially in close proximity to the sewage works.<br><br>**RESPONSE: AS NOTED IN RFI 40 THE FACILITY IS DESIGNED TO BE RELIANT ON THE BULDINGS SERVICED VENTILATION STRATEGY WITH THE ADDITIONAL PROVISION OF NATURAL VENTILATION TO THE OFFICE AREAS. A CFD ANALYSIS WILL BE CARRIED OUT TO FULLY UNDERSTAND THE AFFECTS OF BOTH THE FACILITY ON ITS SURROUNDING ENVIRONMENT AND THE SURROUNDING ENVIRONMENT ON THE BUILDING. OPENING WINDOWS ARE TO BE PRICED TO ALL OFFICES IN THE INTERIM.** | - | Info | No action required in respect of this RFI. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do BE think their LABS option is being taken? | BCL to confirm that there have been no changes to the scheme between bid and stage E issue of information | See agreed position in relation to Item 0038, above. | Laboratories – not relevant to this Log. | Agreed |

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| 043 | On the laboratory building solar-thermal panels have been suggested to support hot water generation. The solar collectors would occupy significant areas of roof which are required to be lightly populated to allow future upward expansion.<br><br>Please confirm requirements.<br><br>**RESPONSE: THIS ELEMENT IS BEING CONSIDERED IN THE ONGOING LABORATORY DESIGN WORKS** | - | NC | The Contractor will require to address and deliver this area of the Laboratory design following issue of the Board Stage E design. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do BE think their LABS option is being taken? | BCL to confirm that there have been no changes to the scheme between bid and stage E issue of information | See agreed position in relation to Item 0038, above. | Laboratories – not relevant to this Log. | Agreed |
| 044 | Reference is made to potential sprinkler protection of the laboratory building, however no plant space is specifically identified for the significant quantities of water storage and associated plant.<br><br>Please confirm requirements.<br><br>**RESPONSE: THE PRESENT FIRE STRATEGY FOR THE LABORATORIES NEGATES THE REQUIREMENT FOR SPRINKLERS.** | - | NC | The Contractor will require to address and deliver this area of the Laboratory design following issue of the Board Stage E design. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do BE think their LABS option is being taken? | BCL to confirm that there have been no changes to the scheme between bid and stage E issue of information | See agreed position in relation to Item 0038, above. | Laboratories – not relevant to this Log. | Agreed |
| 045 | Reference is made to standby generation to support the electrical services in the laboratory building, in the event of mains failure.<br><br>We have assumed that this plant/facility will be located in the energy centre and form part of the site-wide backup.<br><br>In the interim period between the laboratory block and the energy centre being online, we have assumed connections for temporary generators will be provided for the laboratory block.<br><br>Please advise albeit we note the current discussions during dialogue meetings regarding potential early delivery of the energy centre.<br><br>**RESPONSE: THE GENERATORS FOR THE LABORATORIES SHALL BE LOCATED WITHIN THE ENERGY CENTRE.**<br><br>**AN INTERIM SOLUTION REQUIRES TO BE DEVELOPED BY THE BIDDER:**<br>**A) POTENTIAL EARLY DELIVERY OF THE ENERGY CENTRE.**<br>**B) TEMPORARY LOCATION OF TWO OF THE UNITS WITHIN PART OF THE FM SHELL.**<br>**C) PURCHASE AND FUTURE SALE OF CONTAINERISED SETS COMPLETE WITH FUEL DISTRIBUTION TO BE LOCATED WITHIN THE SERVICE YARD.** | - | NC | Interim solution of the Contractor on Board Watchlist (to pass through Reviewable Design Data). | Agreed | Brookfield submission and Commercial Clarification no 3 refers. | Reference minutes of 02 December Utilities meeting. Contractor to provide 100% standby capacity for Laboratories via one of three options detailed in RFI reply. | No allowance was made for temporary generators. BE are now investigating options | Confirmed that a contingent/resilient position is required in order to cover any gap period to maintain standby generator provision.<br><br>Noted and agreed that the design includes for the physical 'hook-up' of a generator provision (e.g. distribution boards and connection points etc) as well as the necessary hard-standing/location. The actual generator, however, is not included in the BE cost allowances. | N/C | Agreed |

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| 046 | Reference is made to local tri-generation units per floor/plantroom within the laboratory building. Would a centralised facility be considered to serve the whole building?<br><br>**RESPONSE: THE TRI-GENERATION SHALL BE INCORPORATED WITHIN THE ENERGY CENTRE.** | - | Info | No action required in respect of this RFI. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | Tri-generation to be incorporated within the energy centre<br><br>But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do BE think their LABS option is being taken? | BCL to confirm that there have been no changes to the scheme between bid and stage E issue of information Brookfield confirm that there is no allowance within Wallace Whittle design for Tri-generation in the Labs scheme but allowance for CHP is made within the Energy Centre (Stage 3 Works). | See agreed position in relation to Item 0038, above. | Laboratories – not relevant to this Log. | Agreed |
| 047 | Halcrow Group Ltd – Flood Risk Assessment, April 2005. At the design dialogue meeting no. 2 we were advised that this report would be issued to the bidders. We have checked our records but currently do not appear to received this document. Please confirm when this report will be made available including relevant non commercial issues of the brief.<br><br>**RESPONSE: THE REPORT HAS BEEN UPLOADED TO BIW** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c | | This information is addressed under the BIW Log within Contract Data Part 1. | N/C | Agreed |

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| 048 | **Foul Water Discharge**<br>Scottish Water have advised that a DIA (Drainage Impact Assessment) will be required to establish the impact of any additional foul flow on Shieldhall Sewage Works and adjacent combined / foul flow infrastructure. Is it the Board's intention that this DIA will be commissioned by the Board during this tender period?<br>**RESPONSE: AN APPLICATION FOR DEVELOPMENT IMPACT ASSESSMENT WAS SUBMITTED ON BEHALF OF THE BOARD IN ADVANCE OF THE TEMDER PROCESS.**<br><br>The URS DIA report states that "Greater Glasgow and Clyde are committed to the reasonable upgrading of any Scottish Water Infrastructure identified through this process" The extent of works cannot be fully defined until the DIA has been undertaken therefore please advise what the Board considers would be reasonable upgrading to the off-site network in terms of a potential budget/cost.<br>**RESPONSE: THE RESPONSE TO THE DIA APPLICATION HAS BEEN RECEIVED FROM SCOTTISH WATER AND HAS BEEN UPLOADED ON TO BIW SYSTEM. THE DRAINAGE STRATEGY REPORT REFLECTS THE CONTENT OF THE DIA APPLICATION.**<br><br>Do the foul flows within table 4.3 (DIA report) include areas of hard standing discharging to foul system e.g. helipad. We would be pleased to understand the rational behind this requirement.<br>**RESPONSE: FLOWS FROM THE SE AREAS SHOULD BE CALCULATED BASED ON THE DETAILED DESIGN. THE RATIONALE WAS TO IDENTIFY PROMOTE AREAS WHICH WOULD BE DIFFICULT TO PROVIDE THE TREATMENT REQUIRED AND DISCHARGE INSTEAD TO THE FOUL SYSTEM. THE ADDITIONAL LOADS WILL BE OFFSET BY THE REMOVAL OF SUFACE FLOWS ELSEWHERE IN THE SCHEME.** | - | Info | No action required in respect of this RFI, this area of design remains the responsibility of the Contractor. | Agreed | *Risk register Stage 2 D25 refers | | | No action required in respect of this RFI, this area of design remains the responsibility of the Contractor. | N/C | Agreed |

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| 049 | **Surface Water**<br>Discharge<br>Glasgow City Council flooding department have confirmed a catchment hydraulic simulation/model will be required in order to demonstrate the hospital site (including culverted burns, Linthouse open channel (north of Govan Rd), existing surface water flows, upstream flows etc) can withstand flooding 'issues' with the 1 in 1000 year storm event. This modeling process takes circa 12wks to complete from inception to completion (advised by Scottish Water). Please advise if this modeling has been commissioned by the Board? If not please confirm it's acceptable to adopt the flood levels as detailed in section 6.2.1 of the URS DIA and Strategy Report dated 1 May 2009 i.e. worst flooding event = 5.31 m O.D. These levels will be used to set the ground floor levels for the proposed buildings.<br><br>**RESPONSE: THIS MODELLING HAS NOT BEEN COMMMISSIONED BY THE BOARD. AN INTERIM LEVEL FOR PLATFORM WILL BE ADVISED TO BIDDERS.**<br><br>Attenuation<br>Please confirm attenuation requirements for the site. Has the entire site to be attenuated to green-field run off or is it acceptable to limit the discharge to that as per exiting i.e. the proportion of surface water discharging to the culvert at present.<br>Please confirm discussion with Scottish Water/SERA/GCC flooding dept with regards to this issue.<br><br>**RESPONSE: THE DRAINAGE IMPACT ASSESSMENT AND STRATEGY REPORT REFLECT THE DISCUSSIONS WITH THE RESPECTIVE BODIES.**<br><br>Section 4.2.2. Drainage network design considerations<br>Please confirm what design storm is to be used for the joint probability assessment.<br><br>**RESPONSE: AS STATED IN SECTION 4.2.2, REFER TO APPENDIX F OF THE DRAINAGE IMPACT ASSESSMENT AND STRATEGY REPORT.**<br><br>The DIA report states that landscaped areas should be connected to the culverted watercourse – has this been agreed in principal with Scottish Water or GCC?<br><br>**RESPONSE: THE CULVERTED WATERCOURSE IS IN THE RIPARIAN OWNERSHIP OF NHS. SCOTTISH WATER AND GCC HAVE NO REMIT IN THIS RESPECT.** | - | Info | No action required in respect of this RFI, however as discussed at the meeting with the Board on 18 November 2009 URS to be instructed to commence metering and monitoring of Linthouse and Jenny's Burn.<br><br>The design requirement with regard to drainage (including attenuation) remains the responsibility of the Contractor. | Agreed | Note that a full surface water hydraulic model of the catchment is required. *Risk register Stage 2 D19 refers | | | Note that a full surface water hydraulic model of the catchment is required. *Risk register Stage 2 D19 refers | N/C | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 050 | We are investigating the surface water strategy for the site and would ask if it is feasible to move the proposed laboratory building 2-3m south east? If acceptable this would facilitate the diversion of the Jenny's Burn culverted watercourse behind the lab, FM and energy centre.<br><br>**RESPONSE: THERE IS SOME LEEWAY FOR THE LABS BUILDING TO MOVE BUT THIS WOULD NEED TO BE LOOKED AT IN THE OVERALL CONTEXT OF THE PROPOSED SITE MASTERPLAN. HOWEVER A DRASTIC RELOCATION OF THE LABS WOULD NOT BE ADVISABLE DUE TO THE PLANNING IMPLICATIONS.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. | N/C | Agreed |
| 051 | **Linthouse Burn**<br>Please confirm who owns and maintains the Linthouse Burn culvert out with the site boundary. If upgrading of the culvert and open channel is required have any discussions taken place with the respective owners with regards to this issue? If so please confirm these discussions and the implications of any agreements reached.<br><br>**RESPONSE: LINTHOUSE BURN ANTICIPATED TO BE IN RIPARIAN OWNERSHIP OUTWITH THE SITE. MODELLING OF BURN SHOULD ENSURE THAT THERE IS NO IMPACT ON OTHER OWNERSHIPS.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. | N/C | Agreed |

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| 052 | **URS DIA Report**<br>Executive Summary – foul and surface water drainage strategy. 1st bullet point states that "the future development is to be served by a separate foul and surface water drainage infrastructure where practicable".<br><br>We would be pleased to receive your thoughts on the definition of "practicable" as this is open to interpretation and could have significant cost implications if, for example, it's the Board's requirement that the entire existing network has to be split into foul and surface water systems. Or alternatively is it deemed acceptable to undertake the minimal from an engineering and Scottish Water approval perspective.<br><br>**RESPONSE: ALL NEW DEVELOPMENT TO BE SERVED ON A SEPARATE DRAINAGE SYSTEM. OTHER AREAS OF THE CAMPUS – SUCH AS THE CAR PARKING AREAS IDENTIFIED WITHIN THE DRAINAGE IMPACT ASSESSMENT AND STRATEGY REPORT – ARE TO BE CONSIDERED TO SEPARATION FROM THE COMBINED SYSTEM TO IMPROVE THE DRAINAGE PROVISION ON THE SITE.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. | N/C | Agreed |
| 053 | Please provide copies of correspondence confirming agreement of drainage strategy from stakeholders i.e. Scottish Water, SEPA and Glasgow City Council Flooding Dept.<br><br>**RESPONSE: RELEVANT CORRESPONDENCE WILL BE UPLOADED AS RECEIVED. THE DRAINAGE IMPACT ASSESSMENT AND STRATEGY REPORT REFLECT THE CONSULTATIONS WITH THESE PARTIES.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. | N/C | Agreed |
| 054 | Please provide copies of correspondence with SEPA regarding consultation on CAR requirements. Please also confirm discussions with SEPA regarding CAR requirements for the front end buildings e.g. Labs and multi-story car park.<br><br>**RESPONSE: ALL DEVELOPMENTS WILL REQUIRE TO GO THROUGH THE RELEVANT CAR PROCESS AND APPLICATIONS AT THEIR RESPECTIVE DETAILED STAGES.** | - | Info | No action required in respect of this RFI, the Contractor remains responsible for the relevant CAR requirements. | Agreed | | n/c | | No action required in respect of this RFI, the Contractor remains responsible for the relevant CAR requirements. | N/C | Agreed |

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| 055 | SEPA published flooding maps indicate that during a 1 in 200 year storm event (0.5% probability) there is potential flooding to the north west corner of the site at building ref 'AG'. In the absence of more detailed information please confirm flooding protection to the existing buildings are excluded from this contract and that we should only consider 1:1000 year return periods for new buildings.<br><br>**RESPONSE: PROTECTION TO 1:1000 SHOULD ONLY BE CONSIDERED FOR NEW BUILDINGS. THERE SHALL BE NO INCREASE IN FLOOD RISK TO EXISTING BUILDINGS IN THE 1:200 RETURN PERIOD.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. | N/C | Agreed |

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| 056 | It would appear from the Travel Plan that considerable detailed work or a Transport Assessment has been undertaken on the site. We would be pleased if you could provide us with a copy of this document to understand in more detail the discussions that have taken place.<br><br>**RESPONSE: THE RELEVANT TRAVEL INFORMATION IS INCLUDED IN APPENDIX O OF VOLUME 2/1 OF THE ITPD.**<br><br>In the absence of a Travel Assessment please confirm the following:<br><br><u>FM Building</u><br>The service access to this building is by Hardgate Road, is there a restriction on how many access ways are need to be provided?<br><br>**RESPONSE: ACCESS NEEDS TO BE VIA THE NW CORNER OF THE BUILDING AS SHOWN, THE POINT FOR CONTROL BY THE TRANSPORT MANAGER.**<br><br>As discussed in dialogue meetings we would welcome your thoughts on whether the position of the building could be moved east?<br>**RESPONSE: THIS COULD BE CONSIDERED.**<br><br><u>Transport/Parking Provision</u><br>**RESPONSE: OTHER THAN WHERE A SPECIFIC ADDITIONAL ANSWER HAS BEEN ADDED BY THE BOARD, THE UNDER NOTED WILL ALL BE DICTATED BY THE DETAILED PLANNING REQUIREMENTS TO BE MET BY THE CONTRACTOR.**<br><br>• Please confirm requirement for the number of taxi parking bays for children's and adult entrance and along the site?<br>• Please confirm requirement for the number of visitor drop off spaces for children's and adult entrance and along the site?<br>• Please confirm the maximum bus size to access the site.<br>**RESPONSE: 'BENDI-BUS' FOR LENGTH, DOUBLE DECKER FOR HEIGHT.**<br>• Please confirm requirement for the number of visitor drop off spaces near entrances?<br>• Please confirm number of disabled parking spaces required in addition to the capacity of the multi-storey car park?<br>• The "fastlink" service is to be provided by "bendy" bus or normal bus, is this access exclusive for bus service or can be used for taxis and visitor drop off? Does this service need to be able to turn around within site to enter and exit via Govan Road. | Y | - | Relevant responses to be included in ERs for clarity as minimum requirements (e.g. drop offs, transport interchange) – as noted in the RFI, however, Planning will dictate specific requirements on the site. | Agreed * | * Subject to confirmation that this is clearly defined in line with Brookfield submission within the Works Information 1 (Employer Requirements). | As stated in Board Comment 1 – the drop off etc in the RFI to be met, with planning dictating actual outturn requirements. That is, BE submission not being overwritten into ERs. The ERs state what is required (incl the RFI responses) wit BE to achieve this (as amended by planning). | **Brookfield will comply with the requirements of the Planning Authority | Brookfield will comply with the requirements of the Planning Authority | N/C | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 057 | Please find enclosed preliminary main office proposals and location mark-up on the Ogilvy Site off Hardgate Road.<br><br>These drawings will be developed to show door and workstation positions etc. and specifications will be produced, however, we request your initial comments<br><br>**RESPONSE: IT WOULD APPEAR THAT THE BOARD WOULD REQUIRE TO MOVE LEVELS TO USE THE SHARED MEETING SPACE, IT WOULD BE PREFERABLE IF THIS WAS ADJACENT TO THE BOARD ACCOMMODATION. ALSO, SPACE WILL BE REQUIRED FOR THE BOARD PRINTERS AND PLOTTER.** | - | NC | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Agreed | | n/c | | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Logistics progress forms part of the ongoing design and construction groups agendas as the design and site requirements develop through Stage 3.<br><br>BCL and the Board to liaise in respect of logistics on the site and external to the site as necessary. | Agreed |
| 058 | Following logistics dialogue meeting No 2, can you please confirm when buildings AV and AW are to be demolished (existing Boiler House and Works Dept)<br><br>Information requested for our hoarding line proposals<br><br>**RESPONSE: AS PER DISCUSSIONS AT LOGISTICS DIALOGUE #3 – DEMOLITIONS TO OCCUR END JUNE 2009. BOARD TO ADVISE ROAD RE-ALIGNMENT WORKS THERAFTER.** | - | NC | On Board Watchlist for discussion with Brookfield to agree exact delineation of site hoardings prior to mobilisation. | Agreed | | n/c | | On Board Watchlist for discussion with Brookfield to agree exact delineation of site hoardings prior to mobilisation. | Logistics progress forms part of the ongoing design and construction groups agendas as the design and site requirements develop through Stage 3.<br><br>BCL and the Board to liaise in respect of logistics on the site and external to the site as necessary. | Agreed |
| 059 | Following Logistics Dialogue meeting No 2, can you confirm the Boards intent to demolish existing buildings within the October 2010 phase during the summer of 2010.<br><br>(Drawing PD-HLM-S(00)X-XX-005 Buildings BD, BE,BF, BG, BH, BI and BJ<br><br>**RESPONSE: THAT IS CORRECT** | - | Info | No action required in respect of this RFI, however as discussed at the meeting with the Board of 18 November 2009 Currie & Brown shall issue a package for pricing the demolition works in relation to these buildings. | Agreed | | n/c | | No action required in respect of this RFI, however as discussed at the meeting with the Board of 18 November 2009 Currie & Brown shall issue a package for pricing the demolition works in relation to these buildings (post contract). | Logistics progress forms part of the ongoing design and construction groups agendas as the design and site requirements develop through Stage 3.<br><br>BCL and the Board to liaise in respect of logistics on the site and external to the site as necessary. | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 060 | Our RFI's 058 and 059 request dates for some existing building demolition by the Board.<br><br>Could you please advise indicative dates for demolition of other areas not by the Bidder.<br><br>This information is requested to assist us in preparation of Vol. 3 Site Interface Appendix A – Bid Deliverable item 10.1<br><br>**RESPONSE: THE BOARD HAS BEEN PROGRESSING THE INDICATIVE PROGRAMMES FOR OTHER AREAS OF THE SITE AND THE OUTCOME INFORMATION WILL BE POSTED ON BIW FOR ALL BIDDERS.** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c | | This information is addressed under the BIW Log contained in Contract Data Part 1. | N/C | Agreed |
| 061 | Reference is made in the briefing documents to exposed structural soffits in the laboratory areas. Given the extent of engineering services at high level, especially close to the plant pods, is the client team satisfied that the level of exposed services will be complimentary to the "quality" environment required for the lab areas?<br>**RESPONSE: PLEASE SEE STAGE D DESIGN DRAWINGS, THIS INCLUDES CEILING INFORMATION.** | - | Info | Any specific requirements have been included in the Laboratories design. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do BE think their LABS option is being taken? | BCL to confirm that there have been no changes to the scheme between bid and stage E issue of information | See agreed position in relation to Item 0038, above. | Laboratories – not relevant to this Log. | Agreed |
| 062 | <u>Fast link</u><br>Please confirm if provision for fast link turning is required within the site or is the statutory minimum requirement such that only a through route for the fast link is required as a minimum.<br><br>We would note that at the architecture sub-group (bidder day #3) it was advised that provision for turning was required however, at the C&S sub-group URS confirmed that the minimum required was for a through route only.<br><br>Please clarify accordingly.<br><br>**RESPONSE: PROVISION IS REQUIRED FOR BOTH SERVICES WHICH TERMINATE AT THE HOSPITAL, AND FOR THOSE SERVICES WHICH CONTINUE THEIR ROUTE TO/FROM THE WEST.** | - | Info | The requirement and solution will be developed and provided by Brookfield in response to Planning/Transportation requirements which they are responsible for achieving. | Agreed | | n/c | | The requirement and solution will be developed and provided by Brookfield in response to Planning/Transportation requirements which they are responsible for achieving. | N/C | Agreed |

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| 063 | We note the information currently set out in Volume 2/1 Section 7 (7.2.26 to 7.2.29 inclusive) with regards the helipad at roof level. In order to assess more fully we would be pleased if the Board can confirm loading information of the helicopter proposed for the new hospital. In particular, please indicate maximum loads that are exerted on the roof structure.<br><br>**RESPONSE: THE HELICOPTER LANDING PAD IS TO BE DESIGNED IN ACCORDANCE WITH HBN 15-03: HOSPITAL HELIPADS. SEARCH AND RESCUE HELICOPTERS ACCESS IS TO BE ALLOWED FOR SAR HELICOPTERS CAN BE UP TO 15t MAXIMUM WEIGHT. DESIGN SHOULD CONSIDER THIS CRITERIA.** | Y | - | Reference to loads to be included in ERs for clarity. | Agreed * | *Subject to ER's being updated to reflect Brookfield bid submission. | Compliance with HBN 15-03 Hospital Helipads required. | **Being checked to ensure original assumptions correct. | 15tonne requirement confirmed. | N/C | Agreed |
| 064 | Travel Plan<br>At the design briefing session #3 (10 June 09) URS advised that they are not in possession of a Traffic Assessment for the site and the only document they have is the Travel Plan compiled by JMP (Dec 07). With regards to this Travel Plan this makes specific reference to a TA page 2 point 1.15 which states the following " an outline planning application was lodged with GCC in May 07 along with a TA which identified……."<br><br>We are investigating the internal site road network and require information with regards to traffic flows, movement etc and require a copy of the TA for reference purposes. We would be pleased if the Board could provide us with a copy.<br><br>**RESPONSE: THE JMP TRANSPORT ASSESSMENT OF APRIL 2007 WILL BE UPLOADED TO BIW.** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c | | This information is addressed under the BIW Log contained in Contract Data Part 1. | N/C | Agreed |
| 065 | Linthouse Culvert<br><br>We would be pleased if the Board could provide record information with regards to the Linthouse Burn Culvert including (but not limited to) depths, manhole sizes, manhole depths etc.<br><br>**RESPONSE: WE UNDERSTAND THAT THE BIDDER IS LIAISING WITH THE BOARD RE ACCESS TO THE DRAINAGE RECORDS AND FOR PERMISSION TO UNDERTAKE SUPPLEMENTARY SURVEYS.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. | N/C | Agreed |

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| 066 | **Re: Risk Register**<br><br>Further to the Commercial Dialogue meeting No 2 we attach a draft Risk Register as promised for your consideration. Clearly, this document will change during the bid period as other risks are identified and others mitigated.<br><br>Please note we have amended the categories with the following headings:<br>Business<br>Construction<br>Design<br>Environmental and Sustainability<br>Operational<br>Programme<br>Statutory<br><br>In addition, we have separated for ease of reference those risks we feel sit with Brookfield, those with the Board and those we believe are shared between both parties subject of course to mutual agreement. At this stage we have identified the risk and proposed the mitigation for the Brookfield and shared items. Our focus now will be to score the risk and review potential cost implications accordingly.<br><br>In the meantime, as discussed we would be pleased for the Board to review the attached and in particular propose mitigation measures for those identified as "NHS GGC" and comment on those stated as "Shared".<br><br>We look forward to receipt of your comments prior to the next Commercial Dialogue meeting. | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. | N/C | Agreed |
| 067 | **Re: Areas Schedule**<br>Further to the Commercial Dialogue meeting no 2 please find attached soft copy of the areas schedule of the exemplar scheme we tabled at the meeting.<br><br>As discussed, we would ask the Board to identify where stated its view on areas schedule "life for like" so we may assess any differences or assumptions made. | - | Info | No action required in respect of this RFI. | Agreed | *Refer to Brookfield submission Volume One for SOA. | Agreed SoA to be inserted. | Agreed | Agreed SoA inserted in Volume 1 of the Contractor's Proposals in Contract Data Part 1. | Agreed SOA 1:200 Drawings included in Folder C1 of The 2010 Instruction to Proceed Project Bible (see also narrative in Appendix 2 & 3 in respect of Volume 1 of the Contractor's Proposals in the 2010 Instruction to Proceed). | Agreed |

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| 068 | **Dual Electrical Supplies – Supplementary Query**<br><br>Further to our previous RFI in which we queried the required extent of dual unified distribution paths for all electrical systems we confirm our interpretation of your requirements:<br><br>As required by the ERs and as confirmed by the Board in DDM#3, all departments will have dual unified supplies i.e.: departments will be provided with two distribution boards, one fed from side A and one from side B of the network.<br><br>In general, in rooms within departments, the final circuits will be interleaved such that each room is fed partially from side A and partially side B of the distribution network.<br><br>However, Clinical Risk Category 1 and 2 rooms within departments will **not** be provided with interleaved final circuits. Determination of Risk Categories will be as defined by SHTM 06-01, 4.19 and 4.20.<br><br>**RESPONSE: ALL ROOMS SHALL BE PROVIDED WITH INTERLEAVED FINAL CIRCUITS** | Y | - | The requirement for all rooms to be provided with interleaved final circuits to be included in ERs for clarity. | Agreed | Clinical Risk Category 1 and 2 rooms within departments will **not** be provided with interleaved final circuits. Determination of Risk Categories will be as defined by SHTM 06-01, 4.19 and 4.20. | Concern is corridors and consultation rooms.<br><br>Only exception should be stores and any accommodation with a single light fitting or single socket outlet | Agreed | Clinical Risk Category 1 and 2 rooms within departments will **not** be provided with interleaved final circuits. Determination of Risk Categories will be as defined by SHTM 06-01, 4.19 and 4.20.<br><br>Concern is corridors and consultation rooms.<br><br>Only exception should be stores and any accommodation with a single light fitting or single socket outlet | N/C | Agreed |
| 069 | **33kV substation**<br><br>Please advise the dimensions of the 33kV substation, LxWxH.<br><br>**RESPONSE: INDICATIVE SIZES ARE SHOWN ON DRAWING G1274/ME(60)02 APPENDIX M REFERRED TO IN ER SECTION 8.4. THE FINAL DIMENSIONS WILL BE DETERMINED BY THE CONTRACTOR AND THE UTILITY COMPANY.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. | N/C | Agreed |
| 070 | As per item 2-43 of logistics competitive dialogue 2 we would attach our draft Site Waste Management Plan (SWMP) for your comment.<br><br>Please pass this document to WRAP for comment against their procedures and benchmarking protocols.<br><br>**RESPONSE: THE BOARD WILL PASS THE DOCUMENT TO THE WRAP REPRESENTATIVE IN SCOTLAND FOR ANY COMMENTS.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. | N/C | Agreed |

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| 071 | Further to RFI 026 please advise if the 3 areas of unoccupied land (or any part of) as highlighted on the attached sketch BE-LOG-SK/DJ/1008 could be made available as part of the Nov 2009 phased handover to facilitate New Laboratory development site offices, car parking, and haul routes.<br><br>We would confirm that occasional access to the VIE compound and turning for oil vehicles would be afforded through site haul roads and gates<br><br>**RESPONSE: THIS WAS REVIEWED AND CONSIDERED PER THE DIALOGUE AT LOGISTICS DIALOGUE #3. THE AREA OF LAND IDENTIFIED CAN BE AVAILABLE AS PART OF THE NOV 2009 PHASED HANDOVER**. | - | Info | No action required in respect of this RFI. | Agreed * | Land confirmed as available for BCL use | Logistics agreement for contract signature to confirm areas of land, shared car park etc. | **Agreed, meeting required to finalise amendments to parking etc | Updated and agreed Logistics plans inserted as Volume 10 of the Contractor's Proposals in Contract Data Part 2. | Logistics progress forms part of the ongoing design and construction groups agendas as the design and site requirements develop through Stage 3.<br><br>BCL and the Board to liaise in respect of logistics on the site and external to the site as necessary. | Agreed |
| 072 | Find attached our Hoarding proposals to the South and East site boundaries for your review and comment.<br><br>We would note that we have identified 2 possible relocation options for the Bus stop which we can include in the discussions for Logistics dialogue 3 prior to your response.<br><br>We would also request demolition date associated with the works department building to allow co-ordination of hoarding road and service diversion works<br><br>**RESPONSE: THIS WAS REVIEWED AND CONSIDERED PER THE DIALOGUE AT LOGISTICS DIALOGUE #3** | - | NC | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Agreed | | n/c | | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Logistics progress forms part of the ongoing design and construction groups agendas as the design and site requirements develop through Stage 3.<br><br>BCL and the Board to liaise in respect of logistics on the site and external to the site as necessary. | Agreed |
| 073 | Further to Logistics Dialogue meeting Minute 2-26, please find attached our updated site access hoarding and storage routes layout to Laboratory Development (Dwg BE-LOG-SK/DJ/1004A that includes access to VIE and for demolition works.<br><br>We would request your review and comment.<br><br>THIS WAS REVIEWED AND CONSIDERED PER THE DIALOGUE AT LOGISTICS DIALOGUE #3 | - | NC | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Agreed | | n/c | | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Logistics progress forms part of the ongoing design and construction groups agendas as the design and site requirements develop through Stage 3.<br><br>BCL and the Board to liaise in respect of logistics on the site and external to the site as necessary. | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 074 | **Ref Laboratories Building site area**<br><br>We are aware that the relocation of the compactor will be carried out by the Board. Please confirm that the remaining concrete base and hard-standing are included in that removal package of works by the Board's demolition contractor.<br><br>**RESPONSE: THE REMOVAL WILL BE BY THE CONTRACTOR WHO IS APPOINTED BY THE BOARD TO BUILD THE LABS AND HOSPITAL PROJECT (I.E. NOT BY THE BOARD'S DEMOLITION CONTRACTOR)** | Y | - | Per discussions at the meeting with the Board on 18 November 2009 this is to be moved to the location adjacent to the CMB. | Agreed | Subject to confirmation as well that the concrete base and hardstanding will also be removed. | Technical Clarification 20nr (on BIW) and RFI confirm that base and hardstanding (as well as fencing etc) to be removed by Works Contractor (i.e. BE). | Agreed | Technical Clarification 20nr (on BIW Log) and RFI confirm that base and hardstanding (as well as fencing etc) to be removed by Works Contractor (i.e. BE). | Concluded | Agreed |
| 075 | **Re: Board Spend profile**<br>Further to the Commercial Dialogue meeting no 2 we tabled a standard cash flow model and would welcome any comments the Board has in this regard.<br><br>In addition, it was stated by the Board that your own spend profiles are year end (March). We would be pleased to receive details and parameters of the Board's cash flow for each year so that we may review accordingly against those parameters.<br><br>**RESPONSE: AS CONFIRMED AT COMMERCIAL DIALOGUE MEETING #3, THE BOARD HAVE USED CASHFLOW INFORMATION PROVIDED TO INFORM DISCUSSIONS WITH SCOTTISH GOVERNMENT ON DRAWDOWN OF FUNDING. NO ISSUES ON FUNDING PROFILE ARE ANTICIPATED AT PRESENT.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. | N/C | Agreed |
| 076 | Existing Drainage<br>There is reference in the URS Drainage Impact Assessment; " NSGACL NHS Greater Glasgow & Clyde - NSGH Drainage Strategy Report_iss2_revA.pdf " (section 3.3.3) to an NHS assets survey which also included a CCTV survey carried out in 2003. We would be pleased if the Board could provide a copy of this survey.<br><br>**RESPONSE: THE CCTV SURVEY INFORMATION IS AVAILABLE FOR VIEWING AT HILLINGTON BY ARRANGEMENT WITH THE BOARD. PLEASE CONTACT FRANCES WRATH ON 0141 892 6700 FOR DETAILS.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. | N/C | Agreed |

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| 077 | At the last Labs/FM Dialogue, we were advised that the architectural plans and elevation drawings reviewed by BMJ Architects would be issued via BIW, in pdf. and DWG formats, however we do not yet appear to have been issued these in the addendum uploaded to date.<br><br>**RESPONSE: THE PLANS ARE ON BIW, ELEVATIONS WILL BE POSTED ON BIW BY END OF JUNE 2009** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c | | This information is addressed under the BIW Log contained in Contract Data Part 1. | Laboratories – not relevant to this Log. | Agreed |
| 078 | **UPS Provision**<br><br>The ERs require all Isolated Power Supply Units in Risk Category 5 areas (group 2 locations) to be supported by UPS with 3 hour autonomy.<br><br>SHTM 06-01 recommends a typical autonomy of 60 minutes for theatres and 15-30m for non theatres.<br><br>We are concerned about size, weight and cost. To illustrate what a 3 hour autonomy means in practice we estimate that for the adult Theatres there would be 2 no. UPS rooms each approximately 12mx4m with batteries weighing approx 30 Tonnes.<br><br>Similarly, the ERs require a UPS of 2 hour autonomy for the 2 server rooms. Typically the autonomy of a server room UPS is significantly less than 2 hours, the principle being that the UPS is provided to enable seamless operating during the brief period between mains failure and generator start up. In the unlikely event of generator failure the autonomy of the UPS should be sufficient to enable a controlled shut down of the servers, say 15 minutes.<br><br>Your comments would be appreciated.<br><br>Response required by 26th June 2009<br><br>**RESPONSE: YOUR COMMENTS ARE NOTED, FOR BID RETURN WOULD YOU PLEASE PROVIDE COMPLIANCE WITH THE ER's.**<br><br>**THE ER's REPRESENT THE BOARD'S REQUIREMENTS AT DATE OF TENDER, THE TOPIC SHALL BE REVISITED DURING THE DETAILED DESIGN STAGE AND THE FINAL SOLUTION WILL BE SUBJECT TO DISCUSSION WITH THE PARTICULAR DEPARTMENTS.**<br><br>**WOULD YOU PLEASE INCLUDE LOAD AND BATTERY AUTONOMY DETAILS WITH YOUR PROPOSAL.** | - | NC | This item is on the Board Watchlist for compliance by the Contractor to be fully demonstrated. | Agreed | Brookfield proposal includes for design in compliance with SHTM 06-01. | 15 min for non Theatre UPS is not acceptable, 30min minimum to allow intervention if required<br><br>15 min for servers is not acceptable, 30min minimum to allow intervention if required | Any additional requirement in excess of 15 minutes will have a cost impact as this has not been allowed within the Brookfield submission. | Agreed that the Contractor will provide 1hr to Theatres and 30mins elsewhere at no additional cost. | N/C | Agreed |

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| 079 | Drainage & Sewers Impact Assessment compiled by Black & Veatch dated Jun 07 states the following on page 3.6<br><br>The following options have been considered for diversion of Jenny's Burn Culvert:<br>(a) Option 1<br>The new development will include landscaped areas and roads as well as the new hospital buildings. It may be possible to find a gravity route through the development site which follows a road or footpath and therefore minimises impact on construction of the buildings. As it may follow the most direct route between upstream and downstream connection points, this may be the lowest cost option for diversion of Jenny's Burn Culvert.<br>However, this option would require agreement from the developer to incorporate the culvert into the layout of the new hospital grounds. Following discussion with the NHS, it was confirmed that routing the diverted culvert through the new site is not permitted.<br><br>Please confirm if this constrain still exists in terms of re-routing Jenny's Burn?<br><br>**RESPONSE: THE OPTIONS FROM THE BLACK & VEATCH REPORT REFER TO PREVIOUS SCHEME CONSTRAINTS, CURRENT AT THE TIME FOR REPORTING. WE WOULD SUGGEST THAT THIS HAS BEEN MADE CLEAR FROM THE COMPETITIVE DIALOGUE SESSIONS THAT ROUTING THE DIVERTED CULVERT THROUGH THE "NEW SITE" AS IT IS TERMED IS PERMISSABLE.** | Y | - | Diversion through the site permissible to be included in the ERs for clarity. | Agreed | | n/c | | Diversion through the site permissible to be included in the ERs for clarity. | N/C | Agreed |

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| 080 | Further to RFI 071 please advise if the 3 areas of unoccupied land (or any part of) as highlighted on the attached sketch BE-LOG-SK/DJ/1009 could be made available prior to the dates identified on the phased handover drawings.<br><br>Area 4 is requested as part of the Nov 2009 phased handover to facilitate New Laboratory development site offices, car parking, and haul routes.<br><br>Areas 5 and 6 are requested for June 2010 to provide early access to carry out road works to establish hoarding lines and commence any necessary Culvert and Foul drainage diversion activities.<br><br>**RESPONSE: AREA 4 WOULD BE AVAILABLE AS ILLUSTRATED ON THE OVERMARK OF YOUR SKETCH. AREAS 5 AND 6 CANNOT AT THIS STAGE BE CONFIRMED AVAILABLE IN THE TIMELINES YOU NOTE.** | - | NC | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Agreed | | n/c | | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Logistics progress forms part of the ongoing design and construction groups agendas as the design and site requirements develop through Stage 3.<br><br>BCL and the Board to liaise in respect of logistics on the site and external to the site as necessary. | Agreed |
| 081 | It is noted that the footprint currently identified as the Maternity Unit on the topographical and existing layouts for that building does not reflect the construction as existing. Further to the logistics dialogue meeting #2 minute 2-39 and logistics dialogue meeting #3 minute 2-33 we would be pleased if the Board can confirm by illustration the pinch points/logistics for the maternity access to be included as part of their review and response to this.<br><br>**RESPONSE: A DRAWING WILL BE UPLOADED TO BIW BY THE BOARD** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c | | This information is addressed under the BIW Log contained in Contract Data Part 1. | N/C | Agreed |
| 082 | **FM Building layout and location**<br><br>We are in receipt of the latest FM DWG files. However upon review they do not appear to reference into our drawings in the correct location. We would be pleased if the Board could provide us with the latest FM floor plans in DWG format with a reference point that we can align with either the existing survey or exemplar scheme so that the building can be placed accurately.<br><br>**RESPONSE: STAGE D LABS INFORMATION HAS NOW BEEN UPLOADED TO BIW** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c | | This information is addressed under the BIW Log contained in Contract Data Part 1. | N/C | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 083 | Re Community Benefits<br><br>Further to the Community Engagement bidder meeting on Monday 29th June we would be pleased if the Board would confirm the following:<br><br>1) The percentage split between a) Targeted Recruitment and Training and b) SME/Social Enterprise development [Volume 2/1, Appendix V, Page 3]<br><br>2) Clarification on what the actual SME supplier development objectives are. (Volume 2/1, Appendix V, page 10) | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. | N/C | Agreed |
| 084 | Please confirm the maximum vehicle height requirements for headroom purposes at link bridge locations.<br><br>**RESPONSE: THE MINIMUM CLEARANCE REQUIREMENT IS 5.3M** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | Minimum height clearance to be included in ERs at 5.3m per original RFI response. | | This information is addressed under the BIW Log contained in Contract Data Part 1. | N/C | Agreed |
| 085 | Response to RFI 12 and Scottish Water correspondence to URS dated 9 June 09 uploaded onto BIW.<br><br>The SW correspondence states ***" Sheildhall WWTW which has the capacity to accept the foul drainage, provided the foul flow is connected downstream of the terminal CSO to Shieldhall WWTW"***<br>Can URS please seek clarification from Scottish Water with regards to the location of the 'terminal CSO' as this may have a cost implication in relation to 'off site' sewerage works .<br><br>**RESPONSE: SCOTTISH WATER HAVE SINCE CONFIRMED THAT NO WORKS ARE REQUIRED TO EFFECT A CONNECTION FROM THE SITE DOWNSTREAM OF THE TERMINAL CSO TO SHIELDHALL WWTW. THE CURRENT CONNECTION POSITION IS DEEMED OK.**<br><br>**THE MEETING RECORD OF THE DISCUSSIONS WITH SCOTTISH WATER WILL BE UPLOADED TO BIW.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. | N/C | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 086 | Please could the Board please provide the information relating to BREEAM and sustainability, which was shown at the Design Dialogue meeting on the 23rd June 2009. We understood this was going to be uploaded for distribution last week. This includes the BREEAM pre-assessment by the Board's assessor, feedback on transport, aquifer/groundwater and ecology for BREEAM credits, details of acceptable flush volumes for the hospital and feedback from the meeting with Scottish Water relating to the potential for using biogas.<br><br>**RESPONSE: THIS INFORMATION IS INCLUDED AT VOL 2/1 APPENDIX U AND IN VOLUME 5. THE ECOLOGY REPORT WILL BE ISSUED AS SOON AS POSSIBLE. THE SCOTTISH WATER AQUIFER ASSESSMENT IS ANTICIPATED AT THE END OF JULY 2009.** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover.<br><br>Additionally, the aquifer information is anticipated to be available for review w/c 23 November 2009. | Agreed * | | Aquifer information is to be available by 09 December. Board will upload this to BIW Volume 6 as soon as it is available | **Aquifer information not checked by BE | Information due 09 December and will be available to BE upon receipt.<br><br>Potential to make Building Warrant benefits (cost reduction) if water used for construction purposes (e.g. batching plant) – consider jointly moving forwards post-contract. | Being addressed by contract structure (EW and PMI) | Agreed |
| 087 | **33 kV supply rating**<br><br>We note from the Scottish Power Energy Networks Quotation issued under addendum 14 that the Maximum import Capacity will be 15, 910kVA, which is somewhat lower than the figure of 20,500kVA stated in Appendix M&E2.<br><br>Please clarify.<br><br>We would be pleased if the Board were able to provide a response to this RFI no later than 10th July 2009<br><br>**RESPONSE: THIS POINT IS NOTED, THE DIFFERENCE IS THE RETAINED ESTATE. THE INFRASTRUCTURE IS RATED TO ACCOMMODATE THE GREATER LOAD (THE SUPPLY AGREEMENT WILL BE FLEXIBLE)** | - | Info | No action required in respect of this RFI. | Agreed * | Brookfield submission has only allowed for the quotation from Scottish Power supplied by the Board which identified that maximum import capacity was only 15,910Kva. | Reference minutes of Utilities meeting of 02 December. | **Post this meeting Brookfield are reviewing quotations obtained by the Board in order to ensure that subsequent agreed supply is adequate. Any additional costs over and above that allowed for by Brookfield will be a compensation event. | Brookfield are reviewing quotations obtained by the Board in order to ensure that subsequent agreed supply is adequate. Any additional costs over and above that allowed for by Brookfield will be a compensation event. | Sub-station activity being advanced per Stage 2 discussions and recorded contract requirements. | Agreed |

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| 088 | As part of the rationalisation of the area v budget constraints we seek the Board's comments/view on the possible relocation of the Facilities Management Workshops and Associated Office space for the FM Supervisors over to the new Energy Centre.<br><br>Assuming this is an acceptable solution would it be also appropriate to locate the basement mortuary area into the space vacated by the FM Workshops?<br><br>We would ask the Board to respond as soon as possible to enable us to move forward with the design and cost options.<br><br>**RESPONSE: THE ATTACHED SCHEDULE 'SGH FM TRANSFERS' IDENTIFIES THE AREAS THAT CAN BE TRANSFERRED FROM THE LABORATORY BLOCK TO THE MAIN HOSPITAL BUILDING. FURTHER, THE ATTACHED UPDATED SOA IDENTIFIES AN ADDITIONAL POTENTIAL AREA CONSIDERATINS IN RELATION TO CO-LOCATION OF AREAS.**<br><br>**CONSTRAINTS TO BE OBSERVED ARE:**<br><br>**1) THE SPLIT BETWEEN DIRTY AND CLEAN DELIVERIES IN LINE WITH INFECTION CONTROL REQUIREMENTS;**<br>**2) THE PROVISION OF AN FM YARD TO CATER FOR 150 VEHICLE MOVEMENTS DAILY (INCLUDING ARTICULATED VEHICLES); AND**<br>**3) THE FM YARD AND DELIVERY/UPLIFT OPERATIONS SHOULD NOT BE VISIBLE FROM CLINICAL AREAS OF THE CHILDREN'S HOSPITAL.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. | N/C | Agreed |
| 089 | With reference to the new Lab-Building, we would be pleased for the Board to provide us with set out coordinates of the new building to allow Brookfield to prepare the correct set out of our drawings.<br><br>**RESPONSE: THIS INFORMATION FORMED AN ASPECT OF THE DOCUMENTATION AND INFORMATION SUBMITTED TO PLANNING AND WAS THERFORE UPLOADED TO BIW** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c | | This information is addressed under the BIW Log contained in Contract Data Part 1. | Laboratories – not relevant to this Log. | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 090 | Please can we receive an indication of whether WC flush volumes of 4.5 litres are acceptable to the board (as required under BREEAM Wat 1) for all WCs? This was discussed at DD meeting #4 as potentially unacceptable. Thanks.<br><br>**RESPONSE: CONFIRMED AS NOT ACCEPTABLE** | - | Info | No action required in respect of this RFI. | Agreed * | | 4.5litres confirmed as not acceptable per original RFI response. | **Brookfield confirm that we will look to incorporate 6litres allowance as per ER`s but this will impact BREAM rating and thus careful consideration will be required. | Contractor to provide 6litres to clinical areas and 4.5litres to non-clinical areas (per agreed listing identifying these areas).<br><br>Watchlist Item – must work without double shunting and to support BREEAM approach. | Dual action flush proposed. | Agreed |
| 091 | We would be pleased if the Board can confirm the actual number of Loaded Rooms as per the ADB sheets, as the current information available in the various documents varies from 73 to 100. We would appreciate your response as soon as possible.<br><br>**RESPONSE: THE SUM OF THE TWO LISTS IS 100 ROOMS MADE UP OF 28 NCH, 42 NSGH AND 30 COMMON TO BOTH NCH & NSGH.**<br><br>**THE ADB RDS COVERING THESE LISTS ARE LOCATED IN ITPD VOLUME 2/1 APPENDIX E.**<br><br>**ALL DRAWINGS ARE AVAILABLE FROM BIW.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. | N/C | Agreed |
| 092 | We have been advised (by SSE) that there has been a review of NHS Board owned land which may consider potential sites for installing wind turbines. The contact name we were given was Ian Powrie of NHS Estates. Is it possible to be given the results of this review, in order to complete a comprehensive assessment of the potential for installing an off site wind turbine, able to supply renewable energy to NSGH? Thanks.<br><br>**RESPONSE: AS PER THE ER's (2.3.1.2 OF M&E APPENDIX 4) THE OPERATIONAL ENERGY TARGETS ARE TO BE MEASURED AT THE INCOMING ENERGY METERS AND THERFORE OFF-SITE SOLUTIONS ARE NOT TO BE CONSIDERED AT THIS STAGE. THE DOCUMENT TO WHICH YOU REFER (ABOVE) WILL NOT THERFORE BE ISSUED AT THIS STAGE.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI | N/C | Agreed |

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| 093 | Could the Board please advise how is the Ecoteric carbon tracker and evaluation matrix are going to be integrated into the bid evaluation process? Information on how to structure our response as part of a bid deliverable as well as details of its evaluation would be appreciated. Thanks.<br><br>**RESPONSE: THE BID DELIVERABLES APPENDIX OF ITPD VOLUME 3 IS BEING UPDATED FOR ISSUE PRIOR TO CLOSE OF COMPETITIVE DIALOGUE TO CONFIRM REQUIREMENTS. IN GENERAL A COMPLIANCE STATEMENT WILL REQUIRE TO BE SUBMITTED. THIS COMPLIANCE STATEMENT WILL BE EVALUATED/SCORED IN ACCORDANCE WITH THE EVALUATION PROCESS SET OUT IN ITPD VOLUME 3.** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI | N/C | Agreed |
| 094 | Can the Board confirm the likely volume and mix of waste the final project is likely to generate? An indication of volume and waste streams would be appreciated as well as any specific waste management constraints already known. Thanks.<br><br>**RESPONSE: HEALTHCARE WASTE (FORMERLY CLINICAL WASTE) 1700 TONNES**<br>**CYTOTOXIC WASTE 8 TONNES**<br>**ANATOMICAL WASTE 6 TONNES**<br>**PHARMACY WASTE 2.5 TONNES**<br>**DOMESTIC WASTE INC. RECYCLATES 2004 TONNES**<br><br>**THIS IS BASED ON CURRENT POSITION, AS IT IS DIFFICULT TO PREDICT FUTURE LEGISLATIVE OR CLINICAL PRACTICE CHANGES AND THE IMPACTS THIS MAY HAVE ON WASTE ARISINGS.** | Y | - | Waste details to be included in the ERs for clarity. | Agreed | | n/c | | No action required in respect of this RFI | N/C | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 095 | The Employers' Requirements state that:<br><br>*7.17.3 The Art strategy will be developed in the context of;*<br>*a. current Board arts strategy work already being undertaken in Glasgow as part of ASRI and the new Maternity Unit at Southern General Hospital;*<br>*b. the range of cultural, regeneration, funding partnerships already established within Greater Glasgow and Clyde;*<br><br>We would be pleased if you can provide a copy of the current Board arts strategy for our review, to ensure compatibility. In addition, please provide details of the art programme for the new Maternity Unit and a short commentary to highlight the headlines of the process and to summarise the key lessons learned from this. It would also be greatly appreciated if you could provide a list to confirm those funding partnerships which have already been established, for our review and to enable us to ensure appropriate continuity.<br><br>**RESPONSE: AN EXAMPLE ARTS DOCUMENT FROM THE BOARD HAS BEEN UPLOADED TO VOL 5 OF BIW.** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c | | This information is addressed under the BIW Log contained in Contract Data Part 1. | N/C | Agreed |
| 096 | Could the Board confirm the number, type (medium pressure, low pressure) and available capacity of natural gas supplies that could serve the site? Thanks.<br><br>**RESPONSE: THE RELEVANT INFOMATION IS HOSTED ON BIW** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed * | BCL have confirmed assumptions in submission | Refer to minutes of Utilities meeting of 02 December | **Agreed. Brookfield understand medium pressure supply will be provided and as such confirm this has been allowed for within design of the installed services. | Brookfield understand medium pressure supply will be provided and as such confirm this has been allowed for within design of the installed services. | N/C | Agreed |
| 097 | Further to the Boards response to RFI 057 regarding Clients Office Requirements, would the Board accept their offices being located on the second floor over the Brookfield offices, with easy access to shared meeting rooms on first floor. Disabled access for wheelchairs to second floor would not be viable. | - | NC | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Agreed | | n/c | | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Logistics progress forms part of the ongoing design and construction groups agendas as the design and site requirements develop through Stage 3.<br><br>BCL and the Board to liaise in respect of logistics on the site and external to the site as necessary. | Agreed |

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| 098 | Please can you provide further details by way of a room by room SOA breakdown for the following departments:<br><br>Decontamination<br>Medical Physics<br>Medical Photography<br>Hotel Services & Domestic Portering<br>Staff Changing<br>Equipment Library/Store (non-Bio-Engineering)<br>Sterile Store<br><br>In addition, please can you confirm whether the Equipment List provided has included for the above departments.<br><br>**RESPONSE: THE INFORMATION HAS BEEN INCLUDED IN THE UPDATED SOA ON BIW, WITH THE EXCEPTION OF FM + STAFF AREAS THAT HAVE TO BE SCHEDULED OUT BY BIDDERS (PER ITEM 17 OF THE TECHNICAL CLARIFICATION LIST UPLOADED TO BIW ON 14 AUGUST 2009)** | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | Please Note that a detailed SOA was not provided, therefore we assume that the area allocation provided in the Brookfield Bid Submission, which matches the Board's SOA, is correct. In addition, we assume that all equipment required was provided in the Board's Equipment List, which has been priced for in the Brookfield Bid Submission. | Common SoA to be agreed, BE were to provide ADB allowances also however (HLM to advise). | ADB allowances for what? | BE confirmed (including confirmation from Nightingale Architects and Doig & Smith) that their bid includes for partitions, doors, ceilings, services etc with regard to the areas requested per the ERs and RFI – allowances being based on a pro-rata $m^2$ cost to the rest of the hospital. Noted and agreed that no allowance has been made for equipment beyond the agreed Equipment List. | N/C | Agreed |
| 099 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 1 - Cleaner sockets:** OUT005 (SOCKET outlet switched 13amp single, wall mounted) to be added in all rooms, where not provided in the brief. Placed at 150mm cc from door opening. Exceptions are WC's, Shower Rooms, Bathrooms, En-suites, Changing Rooms and Parking Bays (Resus trolley, Wheelchair, mobile X-ray)<br><br>**RESPONSE: THIS RULE APPEARS REASONABLE** | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 100 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 2 - Light switches:** SWC001 (SWITCH 5amp ac single pole, 1 way, wall mounted) to be added in all rooms. Placed at 150mm cc from door opening. Exceptions are WC's, Shower and Bathrooms refer to **QUERY 003**.<br><br>**RESPONSE: THIS RULE APPEARS REASONABLE HOWEVER 5 AMP SWITCH SHOULD BE 10A RETRACTABLE SWITCH INTEGRATED WITH LIGHTING CONTROL SYSTEM** | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |
| 101 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 3 - Wet areas:** Please confirm light switch type (i.e. pull cord SWC014 (SWITCH 5amp ac single pole, 1 way, ceiling pull cord) or SWC001 (SWITCH 5amp ac single pole, 1 way, wall mounted) and position of light switches in all wet rooms and WC's.<br><br>**RESPONSE: PULL CORD SWITCHES ARE ONLY TO BE USED WHERE ALTERNATIVES ARE NOT AVAILABLE** | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |
| 102 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 4 - X-Ray viewers:** Electrical supply to this item be standardised as an OUT052 (CONNECTION UNIT switched 13amp, wall/trunking mounted to M&E detail) below and a cable outlet OUT002 (OUTLET cable, wall/trunking mounted) behind unit throughout the project.<br><br>**RESPONSE: THIS RULE APPEARS REASONABLE** | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 103 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 5 - Water boilers:** Electrical supply to this item to be standardised as an OUT052 (CONNECTION UNIT switched 13amp, wall/trunking mounted to M&E detail)<br><br>**RESPONSE: IF WATER BOILERS ARE PROPOSED THIS RULE APPEARS REASONABLE** | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |
| 104 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 6 - Dishwasher, Washing Machine/Tumble Dryer:** Electrical supply to this item to be standardised as a low level OUT006 (SOCKET outlet unswitched 13amp single, wall mounted) and an OUT052 (CONNECTION UNIT switched 13amp, wall/trunking mounted to M&E detail) above the worktop throughout the project.<br><br>**RESPONSE: THIS RULE APPEARS REASONABLE, CONNECTION UNIT TO BE LABELLED WITH APPLIANCE NAME** | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |
| 105 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 7 - Fridges under worktops:** Electrical supply to this item to be standardised as a low level OUT006 (SOCKET outlet unswitched 13amp single, wall mounted and) and an OUT054 (CONNECTION UNIT unswitched 13amp, with pilot light) above the worktop throughout the project.<br><br>**RESPONSE:** This rule appears reasonable, connection unit to be labelled fridge. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 106 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 8 - Tall appliances:** Electrical supply to these items should be standardized as an OUT006 (SOCKET outlet unswitched 13amp single, wall mounted and) behind unit and OUT054 (CONNECTION UNIT unswitched 13amp, with pilot light) accessible next to unit.<br><br>**RESPONSE:** This rule appears reasonable, connection unit to be labelled with appliance name. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |
| 107 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 9 - High Level Controlled drug cupboard:** Electrical supply to this item to be standardised as an OUT050 (CONNECTION UNIT, to controlled drugs cupboard, wall mounted) behind and LIG081 (LUMINAIRE fitted with single fluorescent lamp with switch, below drug cupboard, 8watt, 400mm) if not included in the description of the drug cupboard, below unit throughout the project.<br><br>**RESPONSE:** This rule appears reasonable. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |
| 108 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 10 - High Level Drug Fridge:** Electrical supply to this item will be standardised as an OUT006 (SOCKET outlet unswitched 13amp single, wall mounted) behind unit and OUT054 (CONNECTION UNIT unswitched 13amp, with pilot light) accessible next to unit.<br><br>**RESPONSE:** This rule appears reasonable, connection unit to be labelled with appliance name. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |

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| 109 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 11 - Vending Machines:** Electrical supply to this item to be standardised as a low level OUT006 (SOCKET outlet unswitched 13amp single, wall mounted) throughout the project.<br><br>**RESPONSE:** This rule appears reasonable. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |
| 110 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 12 - Drinking Water Dispensers:** Floor standing OUT010 (SOCKET outlet switched 13amp double, wall / trunking mounted) adjacent to item throughout the project. From Mains OUT315 (OUTLET drinking water for equipment) and a low level OUT006 (SOCKET outlet unswitched 13amp single, wall mounted) throughout the project.<br><br>**RESPONSE:** Please clarify proposal. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |
| 111 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 13 - Ovens:** Electrical supply to this item be standardised as an OUT052 (CONNECTION UNIT switched 13amp, wall/trunking mounted to M&E detail) as well as an OUT054 (CONNECTION UNIT unswitched 13amp, with pilot light) above and a cable outlet OUT002 (OUTLET cable, wall/trunking mounted) behind unit throughout the project.<br><br>**RESPONSE:** No ovens. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |

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| 112 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 14 - TV's:** Electrical supply to this item to be standardised as an OUT206 (SOCKET outlet television aerial, single, wall mounted) & an OUT010 (SOCKET outlet switched 13amp double, wall / trunking mounted).<br><br>**RESPONSE:** This rule appears reasonable. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |
| 113 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 15 - Microwave oven, Toaster & Kettle:** Electrical supply to this item to be standardised as an OUT010 (SOCKET outlet switched 13amp double, wall / trunking mounted) adjacent to item throughout project.<br><br>**RESPONSE:** Acceptable. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |
| 114 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 16 - Bedpan Macerator:** Electrical supply to this item will be standardised as an OUT075 (OUTLET isolator, 32 amp, TP&N, wall mounted 3 phase) and an OUT046 (CONNECTION UNIT unswitched 13amp, flex outlet, wall mounted) adjacent to item throughout project.<br><br>**RESPONSE:** Board to confirm rating and voltage. 13 amp flex outlet is mismatch with TP&N supply. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |

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| 115 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 17 - Fax Machine, Copier, Printer:** Electrical supply to these items to be standardised as an OUT010 (SOCKET outlet switched 13amp double, wall / trunking mounted) and an OUT121 (SOCKET outlet data; wall/trunking mounted) throughout the project.<br><br>**RESPONSE:** This rule appears reasonable. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |
| 116 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 18 - Over Head Projector:** Electrical supply to this item to be standardised as an OUT010 (SOCKET outlet switched 13amp double, wall / trunking mounted) throughout the project.<br><br>**RESPONSE:** We don't envisage overhead projectors in this project as most presentations are via computer and will be done with ceiling mounted projectors. If an overhead projector (floor standing) is required a wall mounted outlet would only be suitable provided it does not cause a trip hazard when the projector cable is plugged in. If that was the case then we would expect to see a floor box with OUT009. Suggest socket outlet is located on angled plate on ceiling adjacent overhead projector. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |
| 117 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 19 - Resus Trolley, ECG, Mobile Suction Apparatus, Electric Portable Suction Unit:** Electrical supply to these items to be standardised as an OUT010 (SOCKET outlet switched 13amp double, wall / trunking mounted) throughout the project.<br><br>**RESPONSE:** This rule appears reasonable. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |

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| 118 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 20 - Examination Lamp (wall mounted):** Electrical supply to this item to be standardised as an OUT052 (CONNECTION UNIT switched 13amp, wall/trunking mounted to M&E detail) adjacent to the unit and a cable outlet OUT002 (OUTLET cable, wall/trunking mounted) behind unit throughout the project.<br><br>**RESPONSE:** This rule appears reasonable. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |
| 119 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 21 - Reception desks:** A generic description referring to architectural detail to be used throughout the project i.e. COU8037 - COUNTER, RECEPTION - Bespoke furniture - Details as design.<br><br>**RESPONSE:** We had provided a code (COU077) in the equipment list so agree with the principle. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |
| 120 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 22 - Staff Base/ Nurse Base:** A generic description referring to architectural detail to be used throughout the project i.e. COU8005-COUNTER, STAFF – Bespoke<br><br>**RESPONSE:** We had provided a code (COU999) in the equipment list so agree with the principle. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |

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| 121 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 23 - Sanitary bins:** BIN9000 (BIN, sanitary) to be added in all unisex and female WC's.<br><br>**RESPONSE:** This rule appears reasonable. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |
| 122 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 24 - Soap Dispensers:** Will be fixed on the wash hand basin panel on the left hand side and paper towel dispensers on the right with mirrors and shaver sockets as close as possible next to the wash hand basin.<br><br>**RESPONSE:** This is one of a number of standard assemblies which will be required to be agreed with the board before the full room loading process gets underway but for the purposes of the submission bidders should use their own experience. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |
| 123 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 25 - Hand dryers -** Electrical supply to this item to be standardised as an OUT059 (CONNECTION UNIT switched 13amp, flex, indicator light).<br><br>**RESPONSE:** If hand dryers are proposed, we recommend that final connection is via concealed cable to hand dryer via conduit from outlet. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |

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| 124 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 26 - Wash hand basin- Independent wheelchair/Accessible WC's:**<br>NA Codebook cell WAS902L/R (BASIN, for accessible WC's, right/left hand, small, general pattern, vitreous china, 1 central tap hole, no overflow, exposed waste, 400x370mm, HTM64LBG/S) to be used.<br><br>**RESPONSE:** Central tap hole for accessible WCs would not be acceptable as the tap should be on the corner closest to the toilet pan as recommended in HBN 00-02 para 3.40. Both BS8300 & HBN 00-02 illustrate this. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |
| 125 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 27 - IPS panels:** Will be added behind wash hand basins, WC's, Disposal Units & sinks. IPS8006 (IPS PANEL 125 deep; length as drawn) is used for wash hand basins and sinks generally 750mm in length and IPS8000 (IPS PANEL 300 deep, length as drawn) used for WC's and Disposal units.<br><br>**RESPONSE:** This appears reasonable. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |
| 126 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 28 - Shelves:** A maximum of 5 shelves to be placed on top of each other (at 350mm intervals), with top shelf at 1700mm off floor level.<br><br>**RESPONSE:** In principle yes, if the shelves are over 400mm deep would expect the top shelf to be lower, also expect the shelving to be adjustable so that there is the opportunity to change the height of the shelves to suit what is being stored in the future. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |

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| 127 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 29 - Wheelchair turning circles:** SPA8013 (1500 DIAM. WHEELCHAIR TURNING CIRCLE) to be added in all Independent/Disabled as well as assisted rooms where the Room Data specifies that the patient may be in a wheelchair.<br><br>**RESPONSE:** This appears reasonable. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |
| 128 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 31 - Computer workstation arrangements:** Will comprise of the following - 1 x COM032 (COMPUTER VDT MONITOR, (Part of COM031) or COM046 (COMPUTER MONITOR, 15 "; TFT, digital flat panel display, desk top) depending on the brief , 1 x COM031 (COMPUTER KEYBOARD, (Part of COM031), 1 x COM033 COMPUTER KEYBOARD, (Part of COM031), 2 x OUT010 (SOCKET outlet switched 13amp twin, wall/trunking mounted), and 1 x OUT121 (SOCKET outlet data; wall/trunking mounted).<br><br>**RESPONSE:** Would expect them all to be flat screen regardless of brief as ADB is not really up to date and there are very few that are the big VDT monitors these days. The rest is fine. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |

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| 129 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 32 - 300mm Opening:** An unobstructed space of at least 300mm on the pull side of the door between the leading edge of the door and any return wall will be left open to provide for wheelchair access in accordance with DDA requirements.<br><br>**RESPONSE:** Bidders are required to comply with the recommendations fo HBN 00-04 (ITPD Vol 2/1 section 5.1.2) which recommends a minimum of 450mm with a preference for 600mm. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |
| 130 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 33 - Services:** Power outlets will be standard regardless of whether it is wall or trunking mounted. OUT012's briefed (SOCKET outlet switched 13amp twin, trunking mounted) will be replaced with item OUT010 (SOCKET outlet switched 13amp twin, wall/trunking mounted).<br><br>**RESPONSE:** Board may wish to differentiate between wall or trunking mounted outlets at 1:20 drawing. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |

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| 131 | With reference to ITPD Volume 3 appendix A Bid Deliverables we would be pleased if the Board could clarify the following deliverable requirements:<br><br>Section 2.11: Heli pad proposals: Is this limited to location on roof level or does the Board require details on structural support, fire fighting, lighting etc. **RESPONSE: Information under this item (which is now item 2.12) is limited to structural and architectural proposals**<br><br>Section 3.5: Please confirm if this is the same deliverable as 3.26 or confirm what the Board require under this deliverable if different. **RESPONSE: 3.5 and 3.26 were the same deliverable. Item 3.5 has now been replaced by a requirement for FM strategy**<br><br>Section 3.22: Heli pad M&E services design strategy. Please confirm the Board's operational strategy/protocol so we may consider this in more detail. Alternatively, is this amplification of item 2.11 above. **RESPONSE: The requirement is in relation to specific details relating to M+E (lighting, fire fighting, etc.)**<br><br>Section 3.26: See above item 3.5 clarification request. **RESPONSE: See response above**<br><br>Section 4.0 General: Please advise what level of specifications the Board require at this stage. We propose to submit outline specifications unless stated otherwise within our submission. **RESPONSE: sufficient information should be provided in order that the Board understand what forms the basis of the bid offer)**<br><br>Section 4.19 Fittings, fixtures and furniture: Could the Board please clarify what is required in this section. **RESPONSE: outline of specific inclusions in your bid offer**<br><br>Section 4.20: Soft Furnishings: Could the Board please clarify what is required in this section. **RESPONSE: outline of specific inclusions in your bid offer**<br><br>Section 4.21: Works of Art: Could the Board please clarify what is required in this section. **RESPONSE: outline of specific inclusions in your bid offer**<br><br>Section 4.22: Could the Board please clarify what is required in this section. **RESPONSE: details of Group1 specifications**<br><br>Section 4.24: Services Equipment: Could the Board please clarify what is required in this section. **RESPONSE: kitchen equipment etc**<br><br>Section 4.25: Could the Board please clarify what is required in this section. **RESPONSE: details of relevant works/specifications (e.g. | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. | N/C | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 132 | 1. Could area 7 be made available to us for siting Phase 1 offices and Welfare on Commencement phase 1 of Construction.<br><br>2. Could area 8 be made available to us for siting Phase 2/3 offices and welfare in August 2010 assuming in our bid Car Park 2 is on Area 4.<br><br>Note: Previous land usage requests:<br>RFI 071 only covers part of Area 7<br>RFI 080 response makes available to us Area 4 but this RFI was raised prior to us moving position of car park 2 and its availability will now depend on Car Park 2 Programme.<br><br>Please can you respond as a matter of urgency: this information is required later today if possible.<br><br>**RESPONSE:** Point 1 - Yes<br><br>**RESPONSE:** Point 2 - No, available fro approval of FBC Nov 2010 and with provision that Site Accommodation must be removed from Area 8 by Dec 2013 as Board need that site back for new build car park. Board do not have sufficient detail and comfort that the required size of Car Park can be delivered on Area 4. | - | NC | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Agreed * | *Subject to availability as per BCL bid submission. | To be agreed pre-contract and therefore prior to mobilisation. | ** Meeting required to finalise land matters prior to contract | Agreed Logistics information included as Volume 10 of the Contractor's Proposals in Contract Data Part 1. | Logistics progress forms part of the ongoing design and construction groups agendas as the design and site requirements develop through Stage 3.<br><br>BCL and the Board to liaise in respect of logistics on the site and external to the site as necessary. | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 133 | With reference to Tender Addendum **TAD-00023**, and the attached documents **'NSGH Suggested Drawn Rooms'** and **'NCH Suggested Drawn Rooms'**, please clarify the following discrepancies in relation to the Document Volume Three 'Bid Deliverables and Evaluation', Section 2.9 '1:50 Room Layout and Wall Elevations' ITPD List of Key Rooms :<br>(1) There are duplicate Room Types (ADB Briefing Code);<br>**X0240** – used for:<br>NSGH Renal Wards 16 Beds + Day Unit – Minor Procedures & Treatment Room and<br>NSGH Accident & Emergency – Major Procedure Room –<br>**X0253** – used for:<br>NSGH Renal Wards 16 Beds + Day Unit – 4 Station Dialysis Room and<br>NSGH Dialysis Unit (30 Stations) – 4-Bed Dialysis -<br>**V1610** – used for:<br>NSGH Generic Wards 28 Beds – Patients En-Suite Assisted Shower, WC, & Wash Double Assist<br>NCH Assessment Area 20 Beds – Shower, WC, & Wash: Accessible, Wheelchair Assisted - **N0111** – used for:<br>NSGH Radiology – Radiological/Surgical Endovascular Laboratory Theatre<br>NCH Cardiac Cath Lab & Interventional Radiology Suite – Interventional Radiology Lab<br>**E0127** – used for:<br>NSGH Radiology – General Computed Radiography Room inc Control Area<br>NCH Radiology – General Computed Radiography X-Ray Room inc Control<br>**X0240** – used for:<br>NSGH Renal Wards 16 Beds + Day Unit – Minor Procedures & Treatment Room (inc prep)<br>NSGH Accident & Emergency – Major Procedure Room<br>**X0242A** – used for:<br>NSGH Accident & Emergency – MIU Assess / Treatment Room<br>NCH Accident & Emergency – Assess & Treatment Room A&E, Multi-Functional<br>Please confirm if this is correct? If any require a different Clinical Briefing please provide this to enable us to produce the drawings as requested<br><br>**RESPONSE:** Generally this is correct. In the absence of any dialogue with end users the same level of equipment has been assumed for costing purposes hence the allocation of the same room code to potentially different room types. The development of the detailed clinical brief won't happen until after the preferred bidder has been appointed. For the purpose of the submission if the same ADB room code is allocated to more than one room then the same | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | *Subject to BCL bid submission | n/c | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |

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| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 133 | (2) The following Room Types (ADB Briefing Code); which were included in the Volume 2.1: Appendix E - ADB Room Data Sheets are now missing from the **'NSGH Suggested Drawn Rooms'** and **'NCH Suggested Drawn Rooms'**; **C0201**, **C0304**, **C1020**, **K0378**, **T0106**, **T0212A**, **X0206**, **X0238** and **X0255**. Please confirm that these rooms are no longer required to meet the Bid Deliverable requirements?<br><br>**RESPONSE: Yes these are required and should have appeared on the room lists which have since been revised and will be uploaded on BIW**<br><br>(3) The following Room Types (ADB Briefing Code); which were not included in the Volume 2.1: Appendix E - ADB Room Data Sheets are now included in the **'NSGH Suggested Drawn Rooms'** and **'NCH Suggested Drawn Rooms'**; **Z0303 –** NSGH Aseptic Dispensary Model 2: CIVAS Outer Support Room (prep)<br>**Z0404 –** NSGH Aseptic Dispensary Model 2: TPN Outer Support Room (prep)<br>**Z0105 –** NSGH Option 3 Dispensary (Adult and Children) – Dispensary<br>**C0216 –** NSGH Outpatient Department Accommodation – Consulting / Exam Room (interconnecting)<br><br>We do not have ADB Room Data Sheets for these, please can you provide the brief as **.mdb** or **excel** format?<br><br>**RESPONSE: The aseptic suite rooms will be a specialist fit-out and have been removed from the revised lists of rooms to be drawn for the submission. The CO216 room code has been replaced by CO201 on the revised lists.**<br><br>In addition, please note that the department '**NSGH Aseptic Dispensary Model 2**' does not currently have an SOA breakdown, and is currently noted as 'block allowance'. Please provide the detailed SOA to enable the design of the 2xrooms requested? | | | | | | | | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 133 cont | You have confirmed in addendum 22 that the Biochemistry block AN is to be demolished April 2012.<br><br>Please advise whether this space could be made available for relocation of the service yard compound beyond the new build site boundary into the cleared space as per the attached sketch.<br><br>**RESPONSE:** The Board have previously advised that the service yard will be relocated by the Contractor to an area adjacent to the helipad. From that location, at the timing noted above, the waste provision of the compound will be serviced from the laboratory building/yard which will be open from January 2012. | - | Info | No action required in respect of this RFI. | Agreed | *Subject to space being available upon Labs completion. | Waste compound now being located elsewhere, per discussions with BE at recent meetings. | n/c | Waste compound now being located elsewhere, per discussions with BE at recent meetings. | Concluded | Agreed |
| 134 | With reference to ITPD Volume 3 appendix A Bid Deliverables we would be pleased if the Board could clarify the following deliverable requirement:<br>Section 12.8: Whole Life Cycle Cost Estimate for 30 Year Period.<br><br>At the Commercial Dialogue meeting No 3 it was confirmed by the Board that it was actually Life Cycle Cost (LCC) that is required rather than Whole Life Cost (WLC). On this basis we propose to submit the following:<br><br>1) Published high level cost per m2<br>2) Replacement Costs and timescales<br>3) Planned & Preventative Maintenance<br>4) Energy Usage assumptions<br>5) Energy Cost assumptions<br><br>The following items shall be evidenced in relation to the above:<br><br>**<u>Building</u>**<br><br>Roof<br>Cladding<br>Glazing<br>Decoration<br>Flooring<br>Partitions<br>Ceilings<br>Grounds Maintenance<br><br>**(continued over)** | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. | N/C | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 135 cont | **Mechanical**<br><br>- AHU's<br>- Chillers<br>- Boilers<br>- Pumps<br>- CHP<br>- Controls<br>- Sanitary fittings/water consumption<br><br>**Electrical**<br>- Lighting lamps<br>- Lighting controls<br>- UPS<br><br>**Medical systems**<br>- Pneumatic Tube systems<br>- Medical gases<br>- Robotics<br><br>**Vertical Transportation**<br>- Escalators<br>- Lifts<br><br>We would be pleased if the Board could confirm this is acceptable or alternatively advise any other elements/systems that would be required.<br><br>Your response at the earliest would be gratefully appreciated.<br><br>**RESPONSE:** LCC not WLC is correct. Periods should be for 30 years and 60 years (BREEAM requirement).<br><br>Format of LCCP to be as stated in Vol 2/1 Section 5.3.5.3 - Table 2 Item 6.1 - this is more comprehensive than the fairly high level example proposed. If the requisite level of information is not available at this stage, then this should be highlighted/stated with reasons and assumptions given. | See above | | | | | | | | | |
| 136 | Re Laboratories: Equipment<br><br>We would be pleased if the Board could confirm if an Equipment List will be issued for the Laboratories for the Bidders to price or alternatively please advise what the Board require bidders to provide in the submission in relation equipment to the Laboratory facility.<br><br>**RESPONSE:** Room Data information with Group 1& 2 Equipment information will be issued by BMJ. | - | Info | This will comprise an aspect of the Stage E Laboratories Design Information | Agreed | | | | This will comprise an aspect of the Stage E Laboratories Design Information | Laboratories – not relevant to this Log. | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 137 a | Re Laboratories: Bills of Quantities/M&E Tender Addendum 022<br><br>We would be pleased if the Board could confirm if they require the bidder to complete pricing information using the Bills of Quantities and tender addendum 022 format or the pricing templates included in Volume 3.<br><br>**RESPONSE:** Volume 3 needs to be completed. The Bill of Quantities should be also priced and returned (including any additional items not included in the Bills) to give back up to Volume 3. | - | Info | No action required in respect of this RFI. | Agreed | | | | No action required in respect of this RFI. | Laboratories – not relevant to this Log. | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 137 b | Re Medical Equipment on Schedule of Components<br><br>We would be pleased if the Board could confirm if they require the bidder to price for the following medical equipment items contained on the Schedule of Components.<br>IMG026 IMAGE INTENSIFIER and X-RAY TUBE FLUOROSCOPY, U-arm, floor mounted, (intensifier underneath the table, x-ray tube above)<br><br>IMG061 IMAGER, COMPUTER TOMOGRAPHY (CT) , 16 slice unit<br><br>IMG066 TABLE PATIENT - CT imager, floating top, (Part of IMG061)<br><br>IMG082 IMAGER, MAGNETIC RESONANCE IMAGING (MRI), open<br><br>IMG083 TABLE PATIENT - MRI imager, movable top, on castors, (Part of IMG082)<br><br>IMG021 IMAGE INTENSIFIER UNIT, C-arm, mobile<br><br>IMG023 IMAGE INTENSIFIER, monitor, (Part of IMG021)<br><br>IMG024 IMAGE INTENSIFIER, monitor trolley, (Part of IMG021)<br><br>IMG070 IMAGER GAMMA CAMERA, digital, single detector, with monitor<br><br>IMG072 IMAGER GAMMA CAMERA, digital, multi detector/PET, with monitor<br><br>IMG073 TABLE PATIENT - SPECT, gamma camera, variable height, 970/730H 2060W 720D, Part of gamma camera)<br><br>IMG074 IMAGER COLLIMATOR RACK, gamma camera, 1300H 770W 800D, (Included in IMG070, IMG071, IMG091)<br><br>IMG075 IMAGER COLLIMATOR RACK, gamma camera PET, (Included in IMG072 and IMG091)<br><br>IMG076 IMAGER CART exchange collimator, gamma camera, 1270H 670W 910D, (Part of IMG070 and IMG072)<br><br>IMG077 CONSOLE UNIT and COMPUTER for gamma camera/PET, 1180H 1040W 900D, (Included in IMG070, IMG071, IMG072 and IMG091)<br>A49342285<br>IMG079 IMAGER DISK UNIT optical, (Part of IMG077) | - | Info | No action required in respect of this RFI. | Agreed ** | Refer to Brookfield Bid submission Volume 6 which identifies equipment allowed for within bid. | Equipment list to be adjusted to reflect items that have been omitted in commercial adjustment (e.g. renal equipment and other medical equipment). | **Can the Board provide BE with details of the adjustments made | Agreed Equipment List (incl adjustments) included as Volume 6 of the Contractor's Proposals in Contract Data Part 1. | Agreed Equipment List contained in Folder T of The 2010 Instruction to Proceed Project Bible.<br><br>As clarified in the Notice to Proceed Letter (Appendix 2&3 to the foregoing agreement between Greater Glasgow and Clyde Health Board and Brookfield Construction) | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 137 b | MG042 IMAGER CONTROL CABINET and GENERATOR for mammography, approximate 2000H 1000W 1000D<br><br>IMG043 IMAGER POWER CABINET for mammography, with on/off and emergency off button, (Part of IMG041)<br><br>IMG044 CONTROL CONSOLE and RADIATION PROTECTION SCREEN for mammography unit, (Part of IMG041)<br><br>IMG055 IMAGER BONE DESITOMETRY UNIT, with rotating detector/X-ray tube and mowing couch, floor mounted, approximate 1500H 1500W 3000D<br><br>IMG056 IMAGER CONTROL CABINET for bone densitometry, approximate 1500H 750W 750D, (Part of IMG055)<br><br>IMG102 MONITOR viewing flat panel display for image intensifier, (Part of IMG025, IMG026, IMG028 and IMG030)<br><br>IMG104 TROLLEY for monitor image intensifier, (Part of IMG102)<br><br>IMG105 TABLE PATIENT - image intensifier, X-ray, floating top, (Part of IMG026, or IMG030)<br><br>IMG109 IMAGING CHAIR, with arms, tilt, on castors<br><br>IMG142 IMAGING, Computed Radiography Unit, low/medium-throughput, CR plate reader, o/a 1415H 730W 700D<br><br>XRA001 X-RAY UNIT TUBE, dental, mobile<br><br>XRA007 X-RAY IMAGING UNIT, adjustable arm 1840/580mm, electric, mobile, battery driven, 1840H 2240W 660W<br><br>**RESPONSE:** It has been noted that some elements of Group coding requires to be adjusted on the equipment list (this to identify adjusted coding to items which were originally listed as Group 1). An updated equipment list will therefore be issued to all bidders with the adjusted Group codings highlighted. | See above | | | | | | | | | |
| 138 | There is no # 138 (137a and 137b however). | | | | Agreed | | n/c | | | | |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 139 | We would be pleased if you can provide any information detailing the existing Arts program within the Board and in particular any existing art strategy within the Southern General Hospital.<br><br>**RESPONSE:** An example arts document from the Board has been uploaded to Vol 14 of BIW. | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | To Check BIW log | n/c | | This information is addressed under the BIW Log in Contract Data Part 1. | N/C | Agreed |
| 140 | Please advise whether the mortuary building referred to in the 1978 Thorburn report when discussing the trial shaft, is the same mortuary building that is adjacent to the Urology and Pathology units to the east of the existing heli-pad.<br><br>**RESPONSE:** Incorrect. The 1978 Thorburn report refers to a trial shaft in the location of the existing south car park and old mortuary building. | - | Info | No action required in respect of this RFI. | Agreed | | n/c | | No action required in respect of this RFI. | N/C | Agreed |
| 141 | <u>Re Mock Ups</u><br><br>We would be pleased if the Board would confirm if they are happy for Brookfield to price for the provision of the following mock ups or alternatively add or delete any other rooms you wish us to include.<br><br>Single bed en suite with touch down space<br><br>4 bed bay with en suite<br><br>Dirty Utility<br><br>Clean Utility<br><br>Consultant's Exam room<br><br>**RESPONSE:** The requirements of ERs (Volume 2/1) with regard to mock-up rooms (6.6.2) and exemplar rooms (6.6.3) to be followed. Should the bidder wish to include for additional rooms/spaces they may include such in their bid. | - | Info | No action required in respect of this RFI. | Agreed * | | Discuss mock-up location, timing, extent with BE prior to contract. | **On site location required | 4-bed room to be taped out, filming and photos etc to demonstrate provision and key group taken to visit location where this can be viewed in-situ.<br><br>Other rooms to be provided on site, this could be in canteen area and will be removed from site at end of Stage 2 (As will be signed off).<br><br>Any pods/modular construction to be provided with on site demonstration of siting and location of fittings etc + off site visit to fabrication area(s) | N/C | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 142 | Re: Laboratories/Permit to Discharge Certificate<br><br>We would be pleased if the Board would confirm if there are any substances that require special treatment prior to discharge into the drainage system.<br><br>In addition, would the Board confirm that they will procure the Permit to Discharge Certificate.<br><br>**RESPONSE:** In our recent meeting with Scottish Water, we asked Scottish Water to clarify whether they would accept the nature of discharge to the foul network. Scottish water requested that we supply details of the likely effluent - this is currently being finalised. Scottish Water will then pass onto their trade effluent department for review.<br><br>This will relate to the Permit to Discharge - the need for which will be dependant on Scottish Water's review of the list provided. They have commented that NHS may require an amendment to the current trade effluent consent.<br><br>That said, the bid team should promote any permit to discharge on the NHS's behalf. | Y | - | This is an aspect of the design that the Contractor is responsible for and requires to develop and satisfy in the Laboratory element of the scheme. | Agreed | Confirmed in dialogue that there were no requirements for special drainage. Board to procure the Permit to Discharge Certificate | | Francis W was looking into this | Acknowledged that BE have made allowances per the Stage D design information in this respect. | Laboratories – not relevant to this Log. | Agreed |
| 143 | Re: Laboratories Design- Home Office Requirements<br><br>We would be pleased if the Board would confirm if the design of the Labs facility or any distinct parts of the facility is/are required to meet any Home Office standards.<br><br>**RESPONSE:** Home office standards apply to Level 4 Microbiology in terms of containment and finishes for CAT 2 laboratories.<br><br>The CAT 3 Laboratories within Microbiology and Pathology will also require to conform to Home Office Standards. Home office personnel will following construction during the commissioning phase review installation for regulation compliance. | - | Info | This will comprise an aspect of the Stage E Laboratories Design Information | Agreed * | | BE to comply with original RFI response as ER requirement. | **Brookfield bid submission allows for requirements to CAT 3 LABS AND Mortuary but not for CAT 2 grade to the rest of level 4. | This to form an aspect of the Stage D to Stage E Laboratory review and alingnment. | Laboratories – not relevant to this Log. | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 144 | Have, and how have, the Labs team achieved the 80kgCO2/m2/annum design energy target?<br><br>**RESPONSE:** The Laboratory Design is ongoing and the model is being refined, however, the overall solution is integrated with the Energy centre. Further design information will be made available in due course. | Y | | This is an aspect of the design that the Contractor is responsible for and requires to develop and satisfy in the Laboratory element of the scheme. | Agreed | As clarified in Brookfield Bid submission, the ITSFB design does not currently meet this requirement and any fundamental change to the Labs Scheme that may be required to be implemented, if practical, to achieve this energy target will be a Change under the Contract | Compliance to be achieved upon connection to the Energy Centre. | Agreed | Compliance to be achieved upon connection to the Energy Centre. | In Accordance with CE010 Lab Project Stage 1 – RIBA stage D to Stage E reconciliation. | Agreed |
| 145 | Re: Cladding Materials to Labs & FM Buildings<br><br>There seems to be some discrepancy on cladding material information shown on the Planning drawings compared to information in Pricing Schedules and the Outline Architectural Specifications. We would be pleased if the Board would clarify and confirm which document takes precedent.<br><br>RESPONSE: The Planning Drawings and the Outline Specification take precedent over the pricing information. Information on the Rainscreen is located in the Outline Architectural specifications. | - | Info | This will comprise an aspect of the Stage E Laboratories Design Information | Agreed | | Planning drawings and outline specification take precedence per original RFI response. | | Compliance to be achieved upon connection to the Energy Centre. | N/C | Agreed |
| 146 | Further to TAD 00025 with the Laboratories Ecological Report attached, we would be pleased if the Board would confirm if it is the intention of the Board to procure a Bat Survey on the Laboratories the Energy Centre Site and the Main Hospital Site as indicated in the URS Report dated July 2009 section 6.1.2 , Page 7.<br><br>**Response:** A bat habitat assessment is expected to be undertaken by the Board during Sept.2009 of the Laboratories,Energy Centre and Main Hospital sites. This will be passed to the main bidder on contract award.<br><br>The sites of the Laboratories or Energy Centre contain no buildings or trees /habitat which are considered suitable for roosting. Additionally there has been no reports of evidence of bats on the site. | Y | - | The bat survey is available from the Board w/c 23 November 2009. | Agreed * | *Bat survey is still awaited. | Bat survey will be uploaded to BIW Volume 6 (new volume) | | Bat survey will be uploaded to BIW Volume 6 (new volume) | N/C | Agreed |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 | Brookfield Comment 2 | Agreed Position 2009 Contract | 2010 ItP Comments (N/C = No Change from Agreed 2009 Contract) | Agreed Position 2010 ItP |
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| 147 | Re Energy Centre<br><br>We would be pleased if the Board would urgently confirm the start date of the Energy Centre as there appears to confusion as to the verbal advice given at the last dialogue meeting.<br><br>Response: The Energy centre forms part of the main hospital build and should commence in Nov.2010 at outset of stage 3 | - | Info | No action required in respect of this RFI. | Agreed | Brookfield would note that all Works in this regard is currently included in Stage 3 Works. | Energy Centre will be part of Stage 3 and expectation is that the shell, as a minimum, will be completed in year 1 to coincide with completion of laboratories. | | Energy Centre will be part of Stage 3 and expectation is that the shell, as a minimum, will be completed in year 1 to coincide with completion of laboratories. | N/C | Agreed |

**THIS IS THE SUSTAINABILITY LOG (2010 ItP)**

**Sustainability and Energy Consumption**

**2009 Project Bible Requirements = Black Text**
**2009 Project Bible Responses from Brookfield = Red Text**
**2010 Instruction to Proceed Status = Blue Text**

1) Operational Energy Targets (basis)
   - Updated Energy Model to be produced within 6 weeks
   - Issue updated report prior to each key design stage (condition of approval to proceed to subsequent stages)
   - Final model to be provided 3 months in advance of Stage 3

   Brookfield will include within the detailed design programs for Laboratory and Adult / Children's hospital monthly sustainability design review hold points up to FBC as per schedule provided by WSP & Ecoteric.

   Hospital and Laboratories energy targets are addressed and included as part of the design development. Specific workgroups focus on energy issues and report to the design groups and in turn the Project Management Group.

   Range of dates for progressive development of model to be provided. Final iteration of model will be delivered no later than 3 months prior to the completion of Stage 3.

2) Operational Energy Targets (areas)
   - Clarify exact area as a benchmark going forward

   80kg$CO_2$m$^2$ against net building area 136,490m$^2$

   Targets being addressed through activity and groups identified in Item 1 – above.

   The current gross area is in the order of 171,000m$^2$: the figure to be utilised for modelling shall be determined by applying the equivalent calculation to the current gross area that was utilised for the 2009 Project Bible to determine the 136,490m$^2$ previously to be applied.

3) Operational Energy Targets (content)
   - State clearly in Mwh per annum and $CO_2$ for fossil and electrical energy, the building demand, gross energy supply and carbon offset by renewables
   - State assumed area in m2

   Energy model will include this information and will be developed during the design development stage as BE programme

   Targets being addressed through activity and groups identified in Item 1 – above.

4) Operational and Design Energy Target
   - Include climate change impact within future modelling

Future modelling could include potential effect of climate change subject to an agreed set of parameters.

Modelling to be addressed through activity and groups identified in Item 1 – above.

5) Operational Energy Target: Energy Costs
   - Range of 15% given on Energy Cost: Confirm stated energy target includes upper value of range stated.

80kg$CO_2$m$^2$ is within upper range (£2.6 million plus 15%) as stated.

2009 statement stands.

6) Laboratories Board to advise energy use determined at Stage E
   - Establish likely energy usage of laboratories

Ecoteric confirmed stage D laboratory design did not comply with target emission reduction (TER) 80kg$CO_2$m$^2$ and or BREEAM Rating Excellence.

The Board has stated that the laboratory target emission reduction 80kg$CO_2$m$^2$ is to be achieved upon connection to the Energy Centre.

Stage E Laboratory design will be assessed upon receipt in respect of BREEAM rating and target emission reduction.

The Laboratory position is in accordance with CE010 Lab Project Stage 1 – RIBA Stage D to Stage E reconciliation.

7) Future Proofing
   - Confirm provision of a comprehensive solution for future fuel flexibility without impact on current design

Reference Clause 8.3.38 of Volume 2/1, there is no specific requirements for 'future fuel flexing' and as such the Contractor's Proposals do not include these.
However, as boilers are dual fuel oil and gas, some ability exists to run on alternative fuels although limited by current oil storage provision as Appendix M&E.2 Section 4 (7 days).

Future fuels flexibility based on fuel oil, natural gas and biogas if supplied as the same characteristics of natural gas.

2009 statement stands.

8) Lighting Controls
   - Clarify extent of automatic controls

Lighting control based on Brookfield proposal and as stated in agreed RFI log.

Controls addressed in Logs and design development.

9) Renewables
   - Clarify what has been included
   - Clarify output of proposed wind turbines

Refer to contractor's proposal section 3.20.
Brookfield will further investigate the following:

- Off site wind.
- Borehole water use.
- Ground Source.

The investigations and conclusions will consider commercial viability

Relevant items being progressed per Early Warning contract activity.

10) Active Energy Management
   - Provide statement on deliverables, expertise and included scope.

Brookfield advised that the bid offer included during 24 months DLP (as per Contractors proposal Vol 3 3.24)

- Energy monitoring.
- Monthly energy report.
- Ongoing fine tuning of systems to ensure compliance with design.
- Zutec asset management system interfaced with the energy metering system
- WSP sustainability will review energy data and reports.

2009 statement stands.

11) Natural Ventilation

- Clarify extent of openable windows within bid

The Board's requirement to limit space temperatures to 26 °C means that the use of natural ventilation is limited and that a sealed building is the only way to meet the requirement.

There may be areas that can be naturally ventilated, but this can only be determined once the whole building has been thermally modelled during the detailed design stage, and is reliant on the following being available:-

- Signed off 1-200 layouts
- Signed off envelope details
- Agreed information on occupancy and equipment gains
- Agreed room environmental conditions (also expressed on a set of Environmental Treatment drawings)

However, at this time our opinion is that all continuously occupied spaces will be sealed and use either all air or chilled beams to maintain the required conditions. Transient spaces such as street, circulation spaces and atria (subject to CFD analysis) are envisaged as being naturally ventilated, as there is unlikely to be a strict requirement for upper temperature control

Design development addresses ventilation proposals and details.

12) Energy Saving Measures

- Provide detailed list of bid inclusions.
- System by system, zone by zone listing required stating heat recovery, motor type and controls method required in design development stage.

Refer to Volume 3 Section 3.20 of Contractor Proposals for details.
Brookfield will provide all necessary information during detailed design and technical Submissions prior to procurement.

Design development will address energy saving measures.

13) Whole Site Energy

- Confirm retained and future estates are included within the energy provision of the Energy Centre.

Agreed that this is not a Brookfield issue.
Ecoteric will discuss issue with Board.

2009 statement stands.

14) Individual Room Controls

- Confirm ability to control rooms individually.

It is envisaged that the majority of the hospital will be able to be provided with individual room temperature control on the following basis:-

- Individual occupied spaces served by chilled beams will have local control
- Heated only spaces utilising radiant panels with have local control
- Specialist 'air conditioned' areas (such as theatre suites, diagnostic imaging, etc) will have individual room control

In multiple occupancy spaces such as A&E cubicles areas, waiting areas, ancillary support rooms, etc where individual room control is impractical then temperature control will be on common return air.

Design development addresses room controls.

**This document is 'The 2010 Instruction to Proceed Log - FINAL'**

| | Clause | Subject | BCL Comment | Board Comment | Status | Owner | Action by | Awareness | Board Action Response |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.15 - Para 3 | Availability & Expansion | Does this need tying down to "Design Reserve" in terms of "anticipated changes in medical equipment. | The design as developed, incorporating the required spare capacity on electrical & mechanical distribution is deemed compliant with the intentions of this clause. See also Design Reserve Capacity Matrix (FINAL) | Agreed | | | | |
| 2 | 5.1 | 5.1 NHS Documents | These documents will be taken into consideration in the final design, however, it is likely that there will be some conflict between the ER's and these documents. Some of the older documents published are also not appropriate for the scale of the project, eg (SHTM 2023. | Any non-compliance with documents listed as mandatory within the ER's will require to be agreed with NHS GG&C. Conflicts raised in the evolving design design moving forwards should be highlighted for discussion. | Agreed | | | | |
| 3 | 5.1.4.1(j) | NHS Model Engineering Specification | These are now considered to be significantly out of date in terms of standards (BS) and modern materials. The National Building Specification (NBS) has been used which encompasses the spirit of MES. | Agreed that the NBS specification is appropriate and may be used. Some items from MES may require to be retained (to be identified by Capita) | Agreed that NBS specification and British Standards are the relevant standards to be utilised (and adapted if necessary). | | | | |
| 4 | 5.12.3 | Services Capacity Resource | Plantrooms and risers do not have 25% additional area for future flexibility, but space is included in the plant and riser services as Design Reserve (see 8.1.12.3) | The intent of the ER's was to incorporate 25% capacity, in total, for expansion of systems. This can be achieved via a combination of Design Reserve or space. See Design Reserve Capacity Matrix (FINAL) | Agreed and will go on to Stage 3 Design Development Watchlist. | | | | |
| 5 | NOT USED | | | | | | | | |
| 6 | 6.8.7.1 | Testing & Commissioning Documentation | Ductwork cleaning etc. | The list of test documentation provided within the ER's was indicative. It is anticipated that a full "Deliverables Schedule" of documentation will be agreed between the parties including the Project Supervisor. | Agreed | | | | |
| 7 | 7.3.3 | Ceiling Heights | How is the 4500mm clear height for the Therapy Room to be accommodated. | Stage 3 design development item - details to be proposed and provided by BCL. | To go on to Stage 3 Design Development Watchlist | | | | |
| 8 | 7.3.5(b) | 3D Design | 3D modelling will only be used where simple zoning strategy cannot be employed along with sections. | This limitation will only be accepted by NHS GG&C if adequately demonstrated as suggested. The Requirement to provide 3D modelling therefore remains a part of the ER's at this time. | Agreed | | | | |
| 9 | 7.3.5(e) vi | Non access ceilings | Where access is required (on an infrequent basis) the removal of the luminaires will be used to set VCD's etc. | Will not get VCDs out with the rooms in Recovery Suite, Anaesthetic Rooms, Theatres and therefore propose to have access through luminaires | Agreed that ER requirement remains presently. Detailed proposals to be provided by BCL to the Board for review and consideration as part of Stage 3 design development. Add to Stage 3 Design Development Watchlist | | | | |
| 10 | 7.5.5(k) | Door Closers | Doors will be closed at night via fire alarm system and not BMS. Integration is high level between BMS and Fire Alarm (they squawk to each other but do not interact/control). | 8.3.4.24 (p193) of the ER's provides details in this regard - to be via fire alarm - BCL proposal is compliant therefore with the ER requirement. | Confirmation of where front end Fire Alarm to reside. Practical implications and Strategy for (building wide shut-down) to be taken forward by Commissioning Group during Stage 3 design development (e.g. local versus isolated control, doors dropping at a set time, protocols, writing out doors from dropping etc). | | | | |
| 11 | 7.6.5 | Windows | No use of opening windows | It is noted that there are no opening windows and therefore those elements of this section that relate solely to opening windows are accepted to be non-applicable, however, there are elements of the section that remain applicable to fixed glazing and these remain part of the Employer's Requirements. | Agreed | | | | |
| 12 | 7.7.2 | Envelope Solutions | The building is sealed and no natural ventilation applies | 7.7.2(d) states that 'a sealed building where a maximum temperature solution is provided' is acceptable. | Agreed | | | | |
| 13 | 7.9.6(h) | | Make a note in H&C specs about prohibited use of flexible hose connections | Prohibition to remain and be enforced + noted in specifications by BCL | Agreed | | | | |
| 14 | 7.12.6 | Lifts | States that dimensions are between the handrails. It is taken that this is to get bulky items into the lifts and not to oversize them which would result in inefficiencies | Understood that no non-compliance with the ER requirement is proposed by BCL. | Agreed | | | | |
| 15 | 7.12.9 | Lifts | states that the doors in all lifts shall have a clear opening of 1100mm. There are 4 Lifts in the laboratories which only have 900mm openings, these are all passenger lifts. The shaft sizes inherited do not allow doors with an opening that wide. We have incorporated the maximum width of opening of 900mm which is in accordance with HTM 2024 and EN81, the European Lift Standard. | Accepted | Agreed | | | | |
| 16 | 7.12.10a | Lifts | States that lifts within the atrium should be fully glazed. Due to fire issues all the shafts and lifts in the atrium are solid construction and lobbied. | Board to consider this proposal in the context of the fire strategy during Stage 3 design development. ER remains, proposal to be tabled during Stage 3. | To go on to Stage 3 Design Development Watchlist | | | | |
| 17 | 8.1.1.13 | IPS/UPS | States that power distribution systems and final circuits where required shall incorporate IPS and UPS systems to meet the requirements of (SHTM 06-01. UPS will be provided for clinical risk category 5 only, IPS will be provided in accordance with Healthcare interpretation of IEE guidance note 7 (Chapter 10) and IEC 60364-7-710-2005. The Board will assess each medical location and provide bespoke PART A schedule. MEIGaN requirements are limited to the locations listed in MEIGaN clause 3.2 i.e. "imaging areas" | This is a clarification statement from BCL that they are complying with MEIGaN - the application for such being Imaging. Agree only applies in certain areas, BCL to provide identification of areas | Agreed that both IPS and MEIGaN lists are reflective of requirement and noted that these will adjust with the design development to settle on exact rooms for the final solution. | | | | |
| 18 | 8.1.2.3 | | Generally the principles of HTM 2023 will be followed for access, but in some cases the size of the development will require some divergence from the HTM. | Please provide examples of divergence in order that this can be assessed. | Agreed that any divergence fro m SHTM 2023 to be raised in advance by BCL during the Stage 3 design development for review and consideration by the Board. Add to Stage 3 Design Development Watchlist. | | | | |
| 19 | 8.1.3.1 | | 25% space reserve in risers and service voids. Does this apply elsewhere? | The intent of the ER's was to incorporate 25% capacity, in total, for expansion of systems. This can be achieved via a combination of Design Reserve and space. | Agreed - see also Item 4 | | | | |
| 20 | 8.1.3.2 | | 25% reserve capacity matrix. | See Design Rserve Capacity Matrix (FINAL) | Agreed - see also Item 4 | | | | |
| 21 | 8.1.3.4 | | Access will be required in clinical areas where ~~demonstrable~~ grid ceilings are provided. In critical care areas this will be minimised and avoid patient occupied zones | ER to remain, BCL to make detailed proposal durin g Stage 3 design development for Board consideration. | To go on to Stage 3 Design Development Watchlist | | | | |
| 22 | 8.1.3.8 | | Generally pipe work and electrical services will run in corridor zones, but ductwork will run above occupied rooms. | Access points etc for duct cleaning should be located out with occupied rooms wherever possible - ER to remain, BCL to make detailed proposals durin g Stage 3 design development for Board consideration. | To go on to Stage 3 Design Development Watchlist | | | | |

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| 23 | 8.1.4 | ICT Rooms and IT | gives conflicting requirements with regards to services and wet systems in the ICT rooms. It is proposed, as far as possible, to route all drainage from rooms overhead to avoid the ICT rooms. Where this is not possible, additional measures including drip trays will be incorporated. Wet cooling units will be provided in all ICT rooms and n+1 in the two main server rooms. Pipes will be routed to run close to walls and to avoid racks. Pipes from other services will not be routed through the ICT Rooms. Leak detection will be provided to give warning of water on the floor. Cleaning will be carried out as specified. | Please advise what conflicting advice is given. | Agreed that no ceilings in nodal ICT rooms. Agreed that ceilings will be provided in Server rooms per the ER requirement. These to be waterproof. No wet services to be above ICT or Server Rooms. | |
| 24 | 8.1.23.3 | | States infers that 8 diverse routes for IT could be required into the A&C. This is not possible and it is proposed to bring 2 routes into the building each with 4 network providers | Diversity is achieved by the interlinking of 8.1.23.1 (i.e. linkage of IT Rm1 to IT Rm2 Adult¬Children's). 4 ducts out at Renfrew Road and 4 ducts at Hardgate Road. | Agreed | |
| 25 | 8.1.5.11 | | Whole practical individual room temperature control will be provided, however, in larger departments with multiple rooms, e.g. AAW upper temperature control will be averaged across larger zones or groups of rooms. | | Agreed | |
| 26 | 8.1.12.3 | | Dual paths have not been provided to piped systems except for external heating and chilled water mains. RFI Log 031 & 068 refer to electrical services. | In terms of dual paths, the following has been provided. | With reference to the water systems only; Dual 100% paths on the MTHW & Chilled water from the energy centre to the A&C (in separate trenches). Dual paths will not be provided on any other water distribution systems. However the zoning of each system allows for coverage within the hospital being split into sections. Each pumpset is twin head, each heat exchange staion is modular with redundency, each calriofier station is grouped in sets with redundence. Where possible feed in routes are split, example in wards, half a ward is fed from one side and half the other side, with regards domestic water. | |
| 27 | 8.1.12.5 | | 25% reserve capacity has not been applied to theatre plant as this is unlikely to change, but 10% has been incorporated. | Nature of installation (pod per theatre) makes this practical (i.e. would add whole plant per new theatre) 10% for tolerance update etc | Agreed | |
| 28 | 8.1.22.9 | | Clarification required as to the intention of this clause. The gas provision to be discrete but the outlet 'normal' and useable in the normal fashion assumed - with back-up requirements not beside the bed/in view etc to avoid anxiety in patients in children's hospital | Agreed that ancillary equipment is covered, plus the requirement for covered outlets that are anti-ligature in DCFP and the 1xEmergency Department (special room). | Agreed | |
| 29 | 8.1.22.3 | | New VIE compound will not be sited as per drawing G1274/U(96)01. See Masterplan for locations | Accepted that the location will be set by the space available within the Masterplan. | Agreed | |
| 30 | 8.1.24.1 | | Refer to 5.1.4.1(j) | | Agreed - see also Item 4 | |
| 31 | 8.1.25.1 | | Refer to 8.1.12.5. Space to allow for extension of generation capacity of 25% growth. Allowance has been made for generation of 18MVA on the basis of N+1 | | Agreed | |
| 32 | 8.2.2.1 | | Bypasses to critical department control valves are not currently included as these result in dead legs. It would be anticipated that a selection of spare valves be held for quick 'swap out'. | ER requirement to remain. | Agreed - ER requirement to remain. | |
| 33 | 8.2.2.2 | IT & Hubs | Permits FM equipment to be located in the ICT rooms. We will take up this option in certain areas. | No non-compliance with ER's is proposed. | Agreed | |
| 34 | 8.2.3.2 | | Refer to RFI Log for revised metering proposals - sub-metering for each department may not be achievable | If no variation is proposed to contractual position, i.e. installation as per revised specification in RFI Log, then this is compliant. | Agreed as per the details contained in the original 2009 M&E Clarifications Log - reinforces position that sub-metering does not cover every department. | |
| 35 | 8.2.11.1 | Ventilation | Can be read that all rooms have local temperature control. Local controls will be provided in all rooms with Fan Coil Units or Chilled Beams. Elsewhere adjustment of ventilated areas will be carried out as a BMS function by changing set points. | ER's call for all rooms to have LTControls. | The under noted is Agreed, on the basis that it only applies to the Acute Assessment Unit and that it is subject to demonstration of satisfactory details of proposals and controls during the Stage 3 Design Development. Agreed In Principle therefore and moved to Stage 3 Watchlist.The environmental systems in the Acute Assessment ward comprise mechanical ventilation and radiant heating panels the latter with local control. The radiant panels satisfy the heat losses and the ventilation the heat gains. As the assessment wards are used for short periods of time the internal heat gains do not vary greatly and therefore having a multiple room control will not greatly vary the internal summertime temperature. The critical care areas have an all air system and are grouped such that one heater battery serves a series of two or three bed bays. Each of the groups of bed bays have a similar aspect and solar gains/heat losses and as they are of the same use have similar internal gains. The bays are also open/curtained bays and so could not be treated individually. Therefore grouping the room control should maintain the space condition within the required limits. | |
| 36 | 8.2.15.1 | | For clarity IT hub rooms do not have N+1 resilience. | This was not the intent of the ER clause. These are covered by the requirements of clause 8.2.15.2 | Agreed | |
| 37 | 8.2.17.4 | | Are standard bedheads being used in NCH? If so, what about concealing medical gases? NA to advise | Agreed that ancillary equipment is covered, plus the requirement for covered outlets that are anti-ligature in DCFP and the 1xEmergency Department (special room). | Agreed | |
| 38 | 8.2.20.6 | | Piped gases in the hospital will be Nitrous Oxide, Surgical Air 7 bar, Medical Air 4 bar, Medical Vacuum and Anaesthetic Gas Scavenging. Oxygen/Nitrous Oxide mixture and Helium/Oxygen are used in limited spaces and are assumed to be by means of local portable bottles. | Piped gas requirements are clarified within the room data sheets. | Agreed that ER remains, this issue is addressed and dealt with under the contract via the Early Warning Raised and subsequent PMI. | |
| 39 | 8.2.27.2 | | Fuel for boilers and generators will be the same, namely diesel oil. | 35sec and diesel oil are the same provision | Agreed | |
| 40 | 8.2.27.6 | | Reference is Model Engineering Specification. (3) | Capita note that some MES items to be retained (to be confirmed by Capita) | Agreed that NBS specification and British Standards are the relevant standards to be utilised (and adapted if necessary). | |
| 41 | 8.2.29.3 | | MTHW will not be supplied directly to dishwashers | MTHW is a pressurised system and therefore not compatible with system. Will come from domestic system. | Agreed | |
| 42 | 8.2.30.1 | | Method of leak detection by meter reading differences | Major leak detection where water enters building No satellite tanks (all will be in main building) ~ small break tanks in the hospitals. Meter at each of the external boundaries and each of the entry points. Detection will need to be by checking external (incomer) versus meter at entry to building - no automated/alarmed provision. BMS pulsed output could be added to SWater meter if we can or put pressure gauge on income to spike on BMS. | Agreed - BCL have included pulse output meter reader to SWater supply that will then flag on BMS. If not provided bt SWater an extra meter will be provided by BCL and the ER requirement met. | |

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| 43 | 8.2.30.2(c) | Leak detection provision | Leak detection will not be provided in plant room bunds adjacent to Theatres, etc but in ceiling voids above theatres etc. This will allow detection for both the area above the Theatre (i.e. the void) as well from the plant room. If to be in plant room also tape to go near top of riser to trigger, not blanket that will trigger on condensation etc. | This is not agreed and will need to be revisited. | Agreed that ER requirement remains, specific proposals for compliance to be provided by BCL for Board review during Stage 3 design development. To go on Stage 3 Design Development Watchlist. |
| 44 | 8.2.32.1 | | As advised by the Fire Consultant. Staircase pressurisation is not required. | As per the ER's pressurisation is to be provided as required. If the strategy meets all requirements without pressurisation then this is accepted. | Agreed |
| 45 | 8.3.2.1.3 | MV Systems | The MV Distribution system arrangements will be as shown on drawing No. ZBP-xx-xx SC-SK-001. | Agreed | Agreed |
| 46 | 8.3.2.1.4 | MV Systems | The MV Distribution system arrangements will be as shown on drawing No. ZBP-xx-xx SC-SK-001. This coupled with automatic change over between A and B supplies at LV provides a resilient solution. | Agreed | Agreed |
| 47 | 8.3.2.1.5 | MV Systems | The MV ring circuits are being designed to be open circuit as shown on drawing ZPB-XX-XX-SC-SK-001. Resilience will be designed in by selection and operation of the LV devices in the main LV switch panels. Protection schemes will be time graded to minimise disruption | Agreed | Agreed |
| 48 | 8.3.2.1.6 | MV Systems | Metering, earth fault protection, overcurrent protection and ENMS control will be provided as shown on drawing number ZPB-XX-XX-SC-SK-001. The ENMS (Electrical Network Management Systems will be specifically designed to control the MV and LV distribution networks to match the available supplies to the load and the load to the available supplies - Refer to the MV specification for further details. | Agreed | Agreed |
| 49 | 8.3.2.1.7 | MV Systems | The MV distribution system arrangements will be as shown on drawing ZPB-XX-XX-SC-SK-001. | Agreed | Agreed |
| 50 | 8.3.2.2.4 | LV Systems | Metering will be provided to accord with the Building Regulations. Each meter will have digital outputs to the BEMS systems where energy consumption will be recorded. The ENMS will record energy usage for the purpose of protection of the distribution systems and ensuring the available supplies are not overloaded. | Agreed | Agreed |
| 51 | 8.3.2.2.5 | LV Systems | The ENMS will be provided with principle control units in the main 33/11kV sub-stations and in each of the generator control rooms. A system status panel will be provided within the FM office. This will enable monitoring of the whole of the MV and LV networks. Local system status panels will be provided on each main LV switchboard. These will enable monitoring of the local MV systems. | Agreed | Agreed |
| 52 | 8.3.2.2.6 | LV Systems | Systems status schematics will be provided on the ENMS panels. The schematics available on these will be commensurate with the levels of monitoring and control noted above. | Agreed | Agreed |
| 53 | 8.3.2.2.7 | Touch screen PC within Main Switchboards | Where provided, the screen will provide viewing functionality only, no control will be provided via the touch-screen PCs. | Only suitably trained and appointed personnel should have the ability to alter control set points. The switchboard screen should only be used for display. In the event of an alarm condition or the requirement for an alteration of a set point the switchboard operator should contact the designate personnel within the Board facilities team. | Agreed |
| 54 | 8.3.2.2.10 | Sub-distribution and final distribution boards construction | in clinical risk categories 3, 4 & 5 it is proposed to provide Form 4 Type 2 sub-distribution boards. A review is required with the Board and Design Team as to the suitability of using Form 4 Type 6 panel boards which are commercially available through a handful of suppliers. Final distribution boards will be constructed to the requirements given in 8.3.2.2.22, not 8.3.2.2.10 | Agreed to refer to VE items (Opportunities) where this issue is 'live' - any adjustment/change will be governed by Change Control. | Agreed that ER requirement remains, this item to be addressed via commercial mechanisms (VE and Early Warning) thorugh the contract. |
| 55 | 8.3.3.1.11 | Treatment Room Circuitry | Luminaires within Treatment Rooms will each be fed from a single circuit, however, a minimum of two circuits will be provided in each Treatment Room. As agreed in RFI entry 009. | | Agreed |
| 56 | 8.3.2.2.13 | Tower Ward Clinical Risk category | The ER's state that these shall be Clinical Risk Category 3 however the agreed entry (002) within the RFI log amends this to Clinical Risk Category 4. Note that power within these areas will not be provided by UPS/IPS. | | Agreed |
| 57 | 8.3.3.1.9 | | All signage is to be illuminated - This will be done with normal ceiling lighting, supplemented where required. There is no intention to provide illuminated signage. | | Approach and solution to be agreed through Signage Strategy during Stage 3 design development. |
| 58 | 8.3.3.1.12 | | Indicates that lighting is part of the bedhead - We are considering mounting the 2 circuit luminaire above the bedhead trunking, but controlled from the bedhead trunking | Details to be submitted for consideration | Agreed ER requirement to remain. Details to be submitted for review and comment by the Board as part of the Stage 3 design development. Add to Stage 3 Design Development Watchlist. |
| 59 | 8.3.3.1.13 | | Indicates that there is bedhead and overhead schemes in interventional and treatment rooms. - the lighting will be ceiling only incorporating dimmable lighting to achieve the mode required. | | Agreed that 1:50 room layouts identify requirement. |
| 60 | 8.3.3.1.14 | Luminaire Placement | Mercury to respond on the placement of luminaires above patient positions. Indicates that there are lights above all bedheads. This applies only to ward areas. | In Stage 3 watchlist | Agreed that ER requriement remains, practical application of getting ceiling grid to avoid all patient spaces in recovery to be raised in Stage 3 Design Development. Will be demonstrated in 1 50 reflected ceiling plan session in early 2011 with proposals submitted for Board review and consideration. To go on to Stage 3 Design Development Watchlist. |
| 61 | 8.3.3.1.15 | | Indicates that the bedhead unit is controlled from the door. This is not proposed, there will be lighting provided in each bedroom controlled from the door to allow staff to get to the bedhead and adjust the lighting on the bedhead to the required levels. | | Agreed that overhead lighting is controlled at the door with overbead lighting controlled at each bed. |
| 62 | 8.3.3.2.7 | Lighting | indicates that isolation devices are required at all luminaires - it is intended to install a Rock rose socket for each luminaire located above the ceiling to allow each luminaire to be removed. This is not an isolation device. | Agreed | Agreed |
| 63 | 8.3.3.2.8 | Lighting | indicates that corridors and circulation areas are 2 way and intermediate switched - it is proposed to have one circuit permanently on and the other on PIR control. This approach is safer and more efficient. | Agreed | Agreed |
| 64 | 8.3.3.2.11 | Lighting | indicates that switches are to be engraved - it is proposed to use proprietary self adhesive printed labels as an alternative to prevent infection control issues. | Are adhesive printable labels cleanable - yes. | Board requirement to be concluded during Stage 3 Design Development. |
| 65 | 8.3.3.2.12 | Lighting | indicates that there will be circuit labels at all electrical accessories - it is proposed to use proprietary self adhesive printed labels as an alternative to prevent infection control issues. | ditto | Board requirement to be concluded during Stage 3 Design Development. |

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| 66 | 8.3.3.3.1 | Lighting | Indicates that the emergency lighting self test/monitoring system reports to the BMS - the system is standalone and the Head End located in the FM building. | BMS will monitor the system (high level). Dali system control on open BMS is proposed but under development. | ER remains, specific proposals to be devleoped and proposed to the Board during the Stage 3 design development. To go on to the Stage 3 Design Development Watchlist. |
| 67 | 8.3.3.3.2 | Lighting | indicates that the emergency lighting circuits are monitored - The emergency luminaires are monitored. | Agreed | Agreed |
| 68 | 8.3.3.5.1, 8.3.3.5.2 & 8.3.3.6.4 | Wiring | Wiring within all areas (clinical & non-clinical), with the exception of plantrooms where the wiring will be as per 8.3.5.1, may be provided by modular wiring systems. 8.3.3.5.2 states that modular wiring may be considered but only in non-clinical areas.<br>Modular wiring to be considered in non-clinical areas - ward areas are intended to be wired with Modular wiring. Should<br>Modular wiring systems be provided they will be robust and will allow for future growth | Principle agreed, Stage 3 Design Development to provide details for review/comment. | Agreed that principle of proposal acceptable on the basis tha t acceptable details are proposed and agreed as par t of the Stage 3 design development. Add to Stage 3 Design Development Watchlist. |
| 69 | 8.3.3.6.1 | Small Power Wiring | MEIGaN applies only to the imaging suites. | BCL to give details (see item 17) | Agreed that both IPS and MEIGaN lists are reflective of requirement and noted that these will adjust with the design development to settle on exact rooms for the final solution. |
| 70 | 8.3.3.6.2 | Small Power Circuits from IPS | Clarification that small power circuits will only be provided from Insulated Power Supplies in those areas defined as group 2 by IEE Guidance note 7 and areas requested by the Board following the Boards Clinical Risk Category review. | not yet agreed - BCL to provide listing | Agreed that both IPS and MEIGaN lists are reflective of requirement and noted that these will adjust with the design development to settle on exact rooms for the final solution. |
| 71 | 8.3.3.7.9 | | Indicates that the BMS controls the external lighting - it is proposed to provide photocells in all external lights such that there is a facility at each column to connect to other items such as signs etc. Where this is not practical, such as bollards, then these shall be controlled on a circuit basis via a photocell. Similar circuits may be controlled by timeclocks as necessary. | Single photocell can have all lights out pan-site if it fails. Multi-cells give better coverage by individual location but can create legacy maintenance issue. | Agreed that individual photocell proposal is acceptable with BMS contrlol to remain a feature of the proposal. Specific details to be submitted for Board review and comment during Stage 3 design development. |
| 72 | 8.3.4.9 | | Link to Hillington - this link and Hardware at Hillington to be provided by the Board. Export facility will be provided. | This can be done via provider data centre (Schindler first and then to Board) | Agreed |
| 73 | 8.3.4.19 | Fire Suppression Systems | These will be provided to the 2no. Server Rooms only. | Fire management solutions in sub-stations to be agreed. Helipad Fire requirements specified elsewhere. | Agreed that ER requirement is provided in respect of Server Rooms. Sub-station and Helipad requirements to be further developed and submitted to Board for review and comment as part of the Stage 3 design development. |
| 74 | 8.3.4.25 | Fire Alarm System Cabling | ERs ask for all wiring to be MICC with red LSF sheath. We propose that all cables shall be the types specified in BS5839 and be of red outer sheath and of the low smoke, zero halogen type (commonly referred to as LSF). All cables, including power cables and network cables, associated with the Fire Detection and Alarm System shall be of the enhanced type, meeting the PH120 classification when tested in accordance with BSEN 50200 and the 120 minute survival time when tested in accordance with BS8434-2. These may not be MICC but will satisfy the above criteria. | The ER requirement is for MICC cable and this will require to be formally varied. An EWN has already been raised in relation to this so this log will not address any change to specification of this item. | Agreed that any change to specification or acceptance of alternative compliance specification will be addressed via commercial contract provisions. |
| 75 | 8.3.5.13 | | indicates 2 lines. One to the lift company and one to Hillington - this is not in compliance with EN81 and as such this cannot be provided. If the line was put to Schindler data Centre then Hillington could be the primary contact if required. One line will be required to each lift, this will be an analogue line by the Board. | This can be done via provider data centre (Schindler first and then to Board) | Agreed |
| 76 | 8.3.6 | Information Technology Equipment & Distribution Systems | no non compliance proposed at this time. However design development and integration across anumber of system may lead to some divergance from ER's. | Any non-compliance with documents listed as mandatory within the ER's will require to be agreed with NHS GG&C. Conflicts raised in the evolving design design moving forwards should be highlighted for discussion. | Add to Stage 3 Design Development Watchlist |
| 77 | 8.3.8 | Wireless Networks | no non compliance proposed at this time. However design development and integration across anumber of system may lead to some divergance from ER's. | Any non-compliance with documents listed as mandatory within the ER's will require to be agreed with NHS GG&C. Conflicts raised in the evolving design design moving forwards should be highlighted for discussion. | Add to Stage 3 Design Development Watchlist |
| 78 | 8.3.9 | External Services (WAN) | no non compliance proposed at this time. However design development and integration across anumber of system may lead to some divergance from ER's. | Any non-compliance with documents listed as mandatory within the ER's will require to be agreed with NHS GG&C. Conflicts raised in the evolving design design moving forwards should be highlighted for discussion. | Add to Stage 3 Design Development Watchlist |
| 79 | 8.3.11 | Data Patch Panels | no non compliance proposed at this time. However design development and integration across anumber of system may lead to some divergance from ER's. | Any non-compliance with documents listed as mandatory within the ER's will require to be agreed with NHS GG&C. Conflicts raised in the evolving design design moving forwards should be highlighted for discussion. | Add to Stage 3 Design Development Watchlist |
| 80 | 8.3.13.2 | Public Address System - Emergency Messaging | Pre-recorded coded emergency messages will not be provided. No voice alarm system being provided. | | Agreed |
| 81 | 8.3.14 | Staff Location System | no non compliance proposed at this time. However design development and integration across anumber of system may lead to some divergance from ER's. | Any non-compliance with documents listed as mandatory within the ER's will require to be agreed with NHS GG&C. Conflicts raised in the evolving design design moving forwards should be highlighted for discussion. | Add to Stage 3 Design Development Watchlist |
| 82 | 8.3.18.1 | Induction Loops | Fixed induction loops will be provided to reception areas - portable to other areas. | | Agreed that fixed induction loop is required in reception (and associated waiting and ancillary areas), audiology department and sanctury areas. Portable infrastructure to be provided in all other areas of the Hospitals. |
| 83 | 8.3.24 | Paging | no non compliance proposed at this time. However design development and integration across anumber of system may lead to some divergance from ER's. | Any non-compliance with documents listed as mandatory within the ER's will require to be agreed with NHS GG&C. Conflicts raised in the evolving design design moving forwards should be highlighted for discussion. | Add to Stage 3 Design Development Watchlist |

| | | | | | |
|---|---|---|---|---|---|
| 84 | 8.3.25.2 (e) | Local Intruder Alarm Systems | Local intruder alarm systems will not be provided to plant rooms. This was 'agreed' with the Board. | Cross-check to be carried out. | Agreed that local intruder alarm systems to be developed during Stage 3 design development process. Controlled (and logged) entry to plantrooms required rather than local alarms, alarms and logged entry requirements for Comms Rms to be agreed. Alarms and Logged Entry to be added to Stage 3 Design Development Watchlist. |
| 85 | 8.3.30.2 | UPS Lighting | this is limited by suitable risk assessment and applies to clinical risk category 5 only. This is as detailed in Healthcare Interpretation of IEC Guidance Note 7. | Agreed | Agreed |
| 86 | 8.3.30.3 | UPS in Critical Care | This is detailed in Healthcare Interpretation of IEC Guidance Note 7. We will provide non standard sockets if necessary but this is in contradiction to GN7 and also means that all equipment would need to be fitted with special plugs. Please keep to GN7. | Agreed, standard sockets to be colour coded. | Agreed, standard sockets to be colour coded. |
| 87 | 8.3.31.4 | Active Mimics at Switchboards | This may be interpreted as giving the opportunity to short circuit electrical safety systems by giving remote operating positions. On Health and Safety grounds this should not be provided and if lft in could endanger many people and shutdown power to the Hospital. Control should be from the power control heads, only, in the Energy Centre and the Intake Substation. A window on the system will be provided in the FM Control Room. | Agreed - no active mimics (see 54) | Agreed - no active mimics |
| 88 | 8.3.31.7 | | Delete all and comply with SHTM 06-01 | Principle of compliance with 06-01 agreed, detail to be developed during Stage 3 (06-01 to be followed and met) | Principle of compliance with 06-01 agreed, detail to be developed during Stage 3 (06-01 to be followed and met) |
| 89 | 8.3.31.17 | | this is reduced to 1500 litre to minimise fire load. | Principle agreed, subject to value engineering outcome. | Principle agreed, subject to value engineering outcome. |
| 90 | 8.3.34.2d | Lifts | Indicates that consideration shall be given that lifts will serve all floors. We propose rationalising this with on-going discussions with the Board and sketch XX-YY | The clause indicates that all floors shall be served by lifts, not that every lift shall serve every floor. The ER requirement is unchanged and the principles agreed in discussion of sketch XX-YY are agreed. | Agreed |
| 91 | 8.3.34.2g | Lifts | Indicates that consideration be given to install two lines to each lift , one for alarm and one for maintenance - Only one line will be used and it will be directed to the Schindler Response Centre who will monitor the lifts and respond to emergencies. Schindler would be set up to respond directly to the Board's Central Communication Centre. This is in accordance with EN81, the Lifts European Directive. Should the Board wish to change this after PC then they are at liberty to do so as long as they comply with the requirements of EN81. | | Agreed |
| 92 | 8.3.34.2n | Lifts | Indicates that consideration be given to use conventional lift types p Machine Room-less lifts (MRL) are being provided in all locations. | | Agreed |
| 93 | 8.3.35 | Tagging | Outside of ZBP scope. | **Ancillary note: Board to consider presently for the Laboratories (tagging and HFS input) to clarify requirement.** | Agreed that ER requirement to remain. Specific tagging requirement, optionsand HFS offering to be determined and agreed during Stage 3. Add to Stage 3 Design Development Watchlist. |
| 94 | Appendix M&E 1 | | Assumed to be replaced by Utility Application | BCL to provide narrative to identify their requirement/outlook. | Current design is inline with all sections within this appendix, all drawings referred to are superseded by Appendix K versions. |
| 95 | Appendix M&E 2 | | To be commented upon | ER Appendix will be complied with | Agreed |
| 96 | Appendix M&E 3 | | To be commented upon | ER Appendix will be complied with | Agreed |
| 97 | Appendix M&E 4 | | To be commented upon | ER Appendix will be complied with | Agreed |
| 98 | Appendix M&E 5 | | To be commented upon. MERCURY ENGINEERING to confirm system architecture, etc. | Complying with M&E 5 - some design specifics to be raised and agreed during subsequent design development. | Agreed that ER Appendix M&E5 remains, subject to the 4 items noted below |
| | 98a | 1.3 Para 2 | Perimeter Rooms generally have individual occupant control, but internally grouped rooms where this is not practical, will use area averaging control. | PART OF DISCUSSION WITH REGARD TO VENTILATION AND CONTROLS | The under noted is Agreed, on the basis that it only applies to the Acute Assessment Unit and that it is subject to demonstration of satisfactory details of proposals and controls during the Stage 3 Design Development. Agreed In Principle therefore and moved to Stage 3 Watchlist.The environmental systems in the Acute Assessment ward comprise mechanical ventilation and radiant heating panels the latter with local control. The radiant panels satisfy the heat losses and the ventilation the heat gains. As the assessment wards are used for short periods of time the internal heat gains do not vary greatly and therefore having a multiple room control will not greatly vary the internal summertime temperature. The critical care areas have an all air system and are grouped such that one heater battery serves a series of two or three bed bays. Each of the groups of bed bays have a similar aspect and solar gains/heat losses and as they are of the same use have similar internal gains. The bays are also open/curtained bays and so could not be treated individually. Therefore grouping the room control should maintain the space condition within the required limits |
| | 98b | Paras 3 & 4 | As discussed with the Board at review meeting held on 1st September 2010 indication of this type is not required | Para 3 - it is agreed relates to signage Para 4 - not applicable as building is sealed | Para 3 - it is agreed relates to signage Para 4 - agreed not applicable as building is sealed |
| | 98c | P.16 Line 14 | Clarify Decontamination Tracking | | Agreed that Washer Disinfectors likely to be linked to BMS and that scopes to have tagging and tracking system inbuilt. Specifics of Decon items that require to 'talk' to BMS and basis of this (e.g. constant status versus fault alarm) and related requirements to be agreed during Stage 3 design development. Add to Stage 3 Design Development Watchlist. |
| | 98d | P.16 Line 16 | Clarify list of major health equipment and whether facilities are provided on equipment to provide 'Status' and 'Fault'. Agreed not required at meeting on 1st September 2010. | | Agreed that ER requirement to remain. Specifics of Major Equipment Items that require to 'talk' to BMS and basis of this (e.g. constant status versus fault alarm) and related requirements to be agreed during Stage 3 design development. Add to Stage 3 Design Development Watchlist. |
| 99 | Appendix M&E 6 | | Assumed replaced by Stage 1/2/3 Design Proposals | ER Appendix will be complied with | Agreed |
| 100 | Appendix M&E 7 | | Swisslog to comment on PTS & AMT compliance | ER Appendix will be complied with | Agreed |

**New South Glasgow Hospitals**
**2010 Instruction to Proceed Bible – Index (Page 1 of 2)**

| 2009 Project Bible | 2010 Instruction To Proceed |
|---|---|
| **Folder A** – Employer's Requirements | **Folder A1** – ERs remain output standard to be achieved by the Contractor. Any agreed adjustments are listed in 'The M&E Clarification Log (2010 ItP) – FINAL' (located in Folder B1) or 'The 2010 Instruction To Proceed Log – FINAL' (located in Folder S). |
| **Folder B** – Logs | **Folder B1** – 2009 logs updated to provide 2010 versions:<br><br>The BIW Log (2010 ItP) – FINAL;<br>The Clarification Log (2010 ItP) – FINAL;<br>The M&E Clarification Log (2010 ItP) – FINAL;<br>The RFI Log (2010 ItP) – FINAL; and<br>The Sustainability Log (2010 ItP) – FINAL. |
| **Folder C** – Volume 1 Schedule of Accommodation | **Folder C1** – blank other than copy of Appendix 2 & 3 of the 2010 Instruction to Proceed letter (which clarifies the position between the Parties in relation to SoA at Volume 1 of the Contractor's Proposals) a copy of the 'SOA 1:200 Drawings (General Arrangement) Plans' drawing list, and a copy of the (non-exhaustive) list of functionality requirements for individual rooms/spaces noted by the Board at this point in time. |
| **Folder D** – Volume 2 – Drawings 2.1 – 2.10 | **Folder D1** – where an item from the 2009 bible has not been superseded by a Folder U, V or W (written or drawn) Appendix K document the Folder D 2009 version remains current. |
| **Folder E** – Volume 2 – Drawings 2.11 – 2.48 | **Folder E1** – where an item from the 2009 bible has not been superseded by a Folder U, V or W (written or drawn) Appendix K document the Folder E 2009 version remains current. |
| **Folder F** – Volume 3 Design Narratives | **Folder F1** – where an item from the 2009 bible has not been superseded by a Folder U, V or W (written or drawn) Appendix K document the Folder F 2009 version remains current. |
| **Folder G** – Volume 4 Specifications | **Folder G1** – where an item from the 2009 bible has not been superseded by a Folder U, V or W (written or drawn) Appendix K document the Folder G 2009 version remains current. |
| **Folder H** – Part 1 Volume 5 Components | **Folder H1** – Updated Component List included. |
| **Folder I** – Volume 7 SHTM | **Folder i1** – 2009 information retained as the output to be achieved by the Contractor. Any agreed adjustments are listed in 'The M&E Clarification Log (2010 ItP) – FINAL' (located in Folder B1) or 'The 2010 Instruction To Proceed Log – FINAL' (located in Folder S). |
| **Folder J** – Volume 8 ADB | **Folder J1** – 2009 ADB sheets remain, to be read in conjunction with the enclosed Environmental Matrix and the Environmental Matrix Report. 2009 ADB sheets to be updated to incorporate agreed environmental information and data from the agreed 1:50 process. |

**New South Glasgow Hospitals**
**2010 Instruction to Proceed Bible – Index (Page 2 of 2)**

| | |
|---|---|
| **Folder K** – Volume 9 Programme | **Folder K1** – Programmes (Revision Date 17/12/2010 – Issue Date 03/01/2011) Stage 3 Summary Master Programme, BCL-GSM-CN02-001, enclosed for reference. (This does not affect the monthly programme process/acceptance under the Contract, rather notes the programme version as at the issue of the ItP). |
| **Folder L** – Volume 10 Logistics | **Folder L1** – updated phased logistics drawings enclosed. Ongoing logistics discussed and agreed between the Parties on an ongoing basis through Phase 3 + Phase 3A. |
| **Folder M** – Not Used | Not used. This was M&E information which moved to Contract Data Part 2 and is located with the Folder B1 Logs |
| **Folder N** – Labs Arch Drawings AA 70 Series | Not used. As per 2009 Project Bible – not forming part of this ItP |
| **Folder O** – Labs Arch Drawings other than AA 70 Series | Not used. As per 2009 Project Bible – not forming part of this ItP |
| **Folder P** – Labs Civil, Structural and MEP | Not used. As per 2009 Project Bible – not forming part of this ItP |
| **Folder Q** – Labs Briefing Sheets | Not used. As per 2009 Project Bible – not forming part of this ItP |
| **Folder R** – Ground Investigation Report | **Folder R1** – 2009 Bible Folder R information included as this is the basis of the agreed risk position between the parties. |
| **Folder S** – 2010 ITP Log | **Folder S** – new folder - new log 'The 2010 Instruction to Proceed Log – FINAL' enclosed to capture alternate design solutions / comments as relevant from Stage 2 process. |
| **Folder T** – Equipment List | **Folder T** – new folder – agreed current Equipment List enclosed. |
| **Folder U** – Appendix K (Masterplan and Architecture) | **Folder U** – new folder - relevant Appendix K (Masterplan and Architecture) work in progress design development enclosed. |
| **Folder V** – Appendix K (M&E Engineering) | **Folder V** – new folder - relevant Appendix K (M&E Engineering) work in progress design development enclosed. (Includes the 'Response to Comments on Appendix K M&E Drawings' tracker). |
| **Folder W** – Appendix K (Civil and Structural Engineering) | **Folder W** – new folder - relevant Appendix K (Civil and Structural Engineering) work in progress design development enclosed. (Includes the ['Report on Civil and Structural Engineering Drawings]). |
| **Folder X** – Critical Failures | **Folder X** – new folder – work in progress in relation to Critical Failures enclosed. |
| **Folder Y** – Statutory Consents | **Folder Y** – new folder - Planning information and documentation enclosed. |
| **Folder Z** – Unallocated | Unallocated |

***Removal of Mandatory Maximum Temperature Variant.***

*The maximum temperature variant has been removed from the bid requirements, the bidders shall put forward schemes to ensure thermal comfort and avoid overheating.*

*Sustainability has a major input into the project and all solutions must seek to minimize $C0_2$ and energy usage, however this must not be at the expense of thermal comfort and avoidance of over heating.*

For design purposes the level of thermal comfort shall be:

Room temperatures should not go below 18 $^{o}$C in winter for longer than 2 hours at a time, or higher than 26$^{o}$C in summer for more that 50 hours in total, but not on successive days.

*Feasibility studies are to be carried out into the potential use of low and zero carbon technologies to reduce carbon emissions associated with the operation of the building.*

*The bidder's attention is drawn to the Employers Requirements and in particular the following sections:*

***Appendix M&E3***
***Paragraph (Extracts)***

*2.4.3 Chilled Beams*

*The use of active chilled beams should be considered within all ward areas.*

*Active chilled beams will provide tempered, filtered air together with heating and comfort cooling of the space; thus providing effective local control of the environmental conditions.*

*2.4.4 Thermal Comfort*

*High levels of comfort are required for all users; in particular staff and patients.*

*Openable windows can be used as part of the ventilation strategy, and it is necessary to ensure that other, often contradictory requirements such as restricting openings for safety reasons, are met.*

*In perimeter spaces where mechanical ventilation is provided for functional reasons a mixed mode approach is a possible solution.*

*2.4.5 General Chilled Water*

*Sustainable cooling shall be used where possible with conventional chilling (with free cooling coils) used as required as a top up and to provide system resilience, all lower carbon means of supplying cooling such as bore holes, piling systems and absorption chilling must be fully investigated and chosen if there is a carbon advantage over conventional cooling.*

*Chillers shall be selected to operate at design duty with an external ambient temperature of 30$^{o}$C dry bulb.*

*Chillers to have variable speed head pressure control with load and efficiency optimized head pressure and chilled water flow temperature control to improve seasonal efficiency.*

*3.1 External Design Temperatures*

| | | |
|---|---|---|
| *Summer* | *26.2°C DB* | *18.5°C WB* |
| *Winter* | *- 6°C* | |

*Global warming potential shall be considered and the Contractor shall provide suggestions for dealing with this under the innovation section of the tender return documents.*

***Appendix M&E2***
***Paragraph (Extracts)***

2.3 Cooling Load

The Cooling requirement shall be developed by the Contractor for the ~~standard and max temp mandatory variant~~ bid~~s~~, all cooling shall be provided by the most efficient method including, absorption chillers, free cooling etc.

5.0 25% uplift for power to main hospitals.

***Section 8***
***Paragraphs***

8.1.7 Thermal Comfort – (full contents)

8.1.8 Air Quality – (full contents)

8.2.11.3 The need to maintain the specified comfort conditions in all areas but particularly in clinical areas is of paramount importance and the Contractor shall develop strategies for achieving the specified environmental conditions with minimum energy consumption.

8.2.11.5 It is essential that the Contractor designs and provides ventilation and air conditioning systems which will ensure occupants comfort. This shall be achieved by use of well tested design principals and suitable plant selection. Air flow problems must be avoided by accurate system balancing, correct selection and location of air diffusers to prevent high air velocities and stratification together with adequate air volumes and accurate temperature control.

8.2.11.8 Air changes shall be in accordance with CIBSE guides, SHTM's, HTM's and Building Regulations.

8.2.11.10 Ensure heat gain from all Equipment and personnel is allowed for in sizing and selection of the systems.

8.1.25 In accordance with Good Industry Practice, all plant, plant spaces and building services systems shall be specifically designed and provided with defined reserve capacity allowances and future expansion capabilities for the Facilities (e.g. distribution boards with 25% spare capacity, 25% additional containment, 25% spare capacity in distribution Pipework, 25% additional plant capacity, 25% additional cooling capacity, 25% additional air handling capacity etc. for the buildings as designed).

NHS Greater Glasgow and Clyde

# Building The Hospital

## Queen Elizabeth University Hospital and Royal Hospital for Children – Why the site was chosen

### Background

Throughout the western world hospitals and the services they provide were changing fast. Many of the most important services were on a "same day" basis – in out-patient clinics, minor injuries units, X-ray and rehabilitation departments, day case surgery. Doctors were becoming more specialised – especially in surgery – and there was growing evidence that specialist teams got the best and safest results, especially where the illness or injury was most serious.

Patients expected faster, more convenient services in patient-friendly modern surroundings, and the confidence of knowing the very best people were in the place they were needed
most.

In Glasgow, there were too many dilapidated old buildings with scattered services and dispersed staff. Hospital services were not fit for the 21st century.

It was decided that only a major redesign of services could give people in Glasgow the standards of service they should expect.

Many cities had tackled this problem by closing some of their large acute hospitals, sometimes replacing them with new ones on the edge of the city or town. We did not want to go down this route – but at the same time, doing nothing was not an option.

Since the autumn of 1997, wide-ranging discussions had been held across Glasgow and
rrounding areas about the sort of services patients needed.

Three main messages emerged:

- Local people wanted local access for as many services as possible.
- A population the size of the south side (350,000 people) needed one comprehensive set of well-staffed specialist services rather than numerous over-stretched and patchy sets of services.
- There was an urgent need for modern well-designed user-friendly services and buildings.

On the face of it, the second of these options was not easy to reconcile with the first. But the development of “same day” services (known as “Ambulatory Care”) provided a way in which the city could fully achieve the second (essential in the interests of safety and best possible results in diagnosis and treatment) and at the same time get very close indeed to also fully providing the first.

The third message – the need for modern, well-designed, user-friendly facilities – led to investigations into a range of options, including the creation of a new hospital on a new central site.

## What was the pattern of services at the time?

The South Glasgow Trust services were provided from five sites:

### Victoria Infirmary

Served a population of approximately 200,000.

Busy Accident and Emergency Department, and offered a range of acute district general hospital services.

Its buildings mostly dated from phased development in the second hjalf of the 20th century. Links between related departments were often poor and it was increasingly difficult to provide modern diagnostic and treatment methods.

A number of services were integrated between the Victoria Infirmary and Southern neral Hospital (i.e. ENT, eyes, Urology, Dermatology and Maternity) and for these services inpatient and day case facilities were only at one or other site.

## Southern General Hospital

Served a population of approx. 150,000

Not only provided the full range of district general hospital but had a number of specialties which serve not only the whole of South Glasgow but Greater Glasgow, the West of Scotland and further afield – i.e. National Spinal Injuries Unit, Institute of Neurosciences, WestMARC (the wheelchair and artificial limb service), and Oral and Maxillo-facial Surgery.

The emergency and trauma nature of the specialties located at the Southern General required good access to the motorway network and helicopter access – the site's location and large campus made this possible. Although some parts of the Southern General were in old buildings, it also had some 600 beds in modern facilities.

Mansionhouse Unit: Unit for assessment, rehabilitation and continuing care for the elderly.

Cowglen Hospital: 120 beds for elderly continuing care.

Mearnskirk House: 72 beds for elderly continuing care provided under a PFI arrangement.

## What was being proposed?

The plan was to create a new single set of facilities for in-patient services on one site to serve the south side, with a new, state-of-the-art Ambulatory Care Centre at the Victoria Infirmary.

The idea had strong support among south side doctors, and it had been supported in much of the wider public debate that had already taken place.

## The rationale

At the time, the south side had to maintain two 24-hour rotas in orthopaedics, general surgery and gynaecology when the workload to be covered could be dealt with by one.

Having two rotas instead of one added to the longstanding problem of junior doctors working scandalously long hours and often meant less consultant time was available to tackle waiting times for clinics and operations.

A single set of specialist services for the south side meant that specialist teams could be larger, and with their beds concentrated together their time could be used more effectively, so keeping waiting times down.

There was a strong desire for a single “A & E Department”. This would allow more consultant presence in dealing with serious cases for a greater part of each 24 hour period than is the case at the moment – it would be a major step forward in quality of service.

The proposal to include a Minor Injuries Unit in the new Ambulatory Care Centre at the Victoria maintained local access for the great majority of people who used the Victoria Infirmary at the time.

A & E Department. A very similar service has existed at Stobhill for years – people are very pleased with it and there have been no problems about its safety.

Our leaflet on Accident and Emergency Services goes into detail about the concerns that people have expressed about longer ambulance journey times in cases where someone has had a heart attack or very serious accident.

## The options for a single in-patient site

We looked at five options:

1. A new Ambulatory Care Centre at the Victoria Infirmary and a completely new hospital for in-patient services on a new site reasonably convenient for everyone on the south side.
2. A new Ambulatory Care Centre at the Victoria Infirmary and creating a completely modern in-patient hospital at the Southern General by demolishing old buildings and constructing new ones. (These two options are explained more fully later)
3. In-patients at the Victoria Infirmary site with Ambulatory Care Centre at the Southern General.

This was rejected because it would have made access to major Accident and Emergency services in the city unsuitable for patients from the west of Greater Glasgow. In addition, the Victoria Infirmary site (11 acres) was too small to accommodate all of the services that would be required.

4. All services at the Victoria Infirmary.

   Rejected for the same reasons. It would also deny to the residents of South-West Glasgow the ease of access to an acceptable range of local services.

5. All services at the Southern General.

   Rejected because it did not give any local access to services for residents of SouthEast Glasgow.

## Child and Maternity Services

In looking at Options 1 and 2 the Trust explored whether it was also decided to consult on re-locating the Yorkhill Children's Hospital services to the south side. The view was that there were good clinical reasons for considering it and it would also help to ensure that maternity in-patient services remained securely in South Glasgow.

## Option 1 – "A New Site Hospital"

Three possible sites were identified:

- In the Pollok area a site of approximately 44.7 acres, incorporating the Cowglen Hospital and the National Savings Bank (NSB), bounded by Boydstone Road, Barrhead Road, M77 motorway and Kennishead Wood. Additional adjacent land to the south of Cowglen Hospital would be needed to accommodate all the possible services.
- 73.6 acres incorporating the Pollok Playing Fields, leased to the National Savings Bank and land owned by the Pollok Estate.
- 80 acres at Darnley Mains adjacent to the M77 and next to B & Q Warehouse.

After further investigations, Site 1 was considered the one worth detailed consideration.

It would have meant closure, demolition and sale of the Victoria Infirmary, Mansionhouse it and most of the Southern General Hospital site.

The cost of building a new in-patient hospital at the Cowglen site and an Ambulatory Care Centre at the Victoria Infirmary was estimated at £346.4 million (assuming financing under Public Private Partnership), with annual running costs of £18.4m.

These figures did not include the cost of buying land from NSB or the owner of the field adjacent to Cowglen Hospital. However, it was estimated that around £22m in receipts from selling land at the Victoria Infirmary, Mansionhouse Unit, Southern General or Yorkhill would help off-set this cost.

There were, however, some significant risks with this option:

- It would be a hospital of around 1,400 beds, and would take around seven years to build. The South Glasgow Trust would have to commit itself to that number of beds with no chance of adjusting the size of the hospital downwards if required.
- The land needed might not have been available for sale or might have been extremely expensive given its zoning for retail or commercial use.
- Building a hospital of this size in a single phase had not been attempted in the UK before. This could have pushed up the cost to reflect the increased risk of over-runs.
- Because of the intensive traffic flows in the area, it was not known whether the project would create town planning or road infrastructure requirements that would add to the cost.

## Option 2 – "Redeveloping the Southern General"

The Southern General sat on 67 acres of land, and its geographical location close to the M8, M77 and Clyde Tunnel made it very accessible to ambulances and the public.

In the previous decade or so the hospital had benefited from around £60m of capital investment to provide new or substantially upgraded facilities. The site also had a range of modern in-patient facilities so there was a significant basis around which a new hospital could be developed.

A redevelopment of the existing Southern General Hospital site would mean closure, demolition and sale of the Victoria Infirmary and Mansionhouse Unit.

A proposed three-part development over a ten-year period, to provide a new Southside hospital based around the existing investment, would carry a total cost of £241.8m.

This option carried fewer risks around calculating bed numbers, land availability, local traffic or project complexity.

However, there was a risk that the third part of the redevelopment might not proceed if government or Health Board policy changed after completion of the first contract. There was also concern around risk of disruption to existing services as buildings would be demolished and constructed in the centre of existing facilities.

## Choosing between the two options

Both options included provision for a new Ambulatory Care Centre and 120 rehabilitation beds. In addition, they both included a "23-hour elective surgery" service at the Victoria Infirmary which would allow minimally invasive surgery and treatment to be given to those patients needing one overnight stay to aid their recovery.

The differences between the options lay in four areas – accessibility, speed of completion, risks and cost.

While it was estimated that the Cowglen option would be completed earlier, in all other areas the balance was in favour of the Southern General option.

## The Consultation

In April 2000, public consultation on Modernising Glasgow's Acute Hospital Services began, with the one of the key considerations being the creation of a newly built hospital for the south side of the city. The Southern General was the preferred site for the project.

After seven months, the Greater Glasgow Health Board announced that it was confident its five key aims had widespread recognition and support. The five aims were:

- Modern facilities for a better patient experience.
- Creating larger specialist teams of doctors in order to assure more continuous availability of specialties and to tackle new requirements governing the working hours of senior and junior doctors.

- Maintaining local access for as much of the city's population as possible.
- Creating a pattern of hospital services that made sense across Glasgow as a whole.
- Levering in major capital investment in a way that was affordable.

## The preferred site

The Greater Glasgow health board was proposing a new hospital on the site of the Southern General. It would be a completely new construction, with the exception of:

- The Institute of Neurosciences (including the new Maxillo-facial and ENT units).
- The Spinal Injuries Unit.
- Westmarc.
- Podiatry Department.
- The new PFI wards for the elderly.
- The maternity unit (subject to consultation).

However, in making its case for the Southern General site, the board recognised there was considerable backing for a greenfield site option, at Cowglen.

It proposed that the outline business case should compare the Southern General, Cowglen and a third option to do nothing.

## What happened next – the key dates

**June 2002**: The Scottish Government Health Secretary approves the city-wide Acute Services Strategy, including the new hospital at the Southern General.

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**2004**: Health Secretary announces funding for new Children's Hospital to be built on a site that will allow "triple" location of services.

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**2005**: Option appraisal for location of new Children's Hospital (Calder Group).

**2006**:

**March**: Calder reports – children's hospital to be sited at Southern General Hospital.

**April**: Dissolution of Argyll & Clyde Health Board – merger creates Greater Glasgow and Clyde Health Board.

**May**: Project Director appointed for the new South Glasgow Hospitals.

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**2007**:

Project Initiation Documentation agreed by the Project Executive Group.

**April**: Outline Business Case (OBC) for maternity services approved.

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**2008**:

**January**: Outline (town) Planning approval given.

**February**: OBC for hospital project approved by Board.

**April**: OBC approved by Scottish Government and work on Full Business Case (FBC) begins.

**May**: FBC for maternity services approved.

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**2009**:

**February**: Advert for construction placed in the Official Journal of the European Union. Open Day held at Hampden Park.

**May-August**: Competitive Dialogue takes place.

**September**: Tenders returned to Board and evaluation commences.

**4 December**: FBC for labs development approved.

**18 December**: Brookfield appointed as preferred bidder.

---

**2010**:

**July**: Mock-up rooms created at Ibrox for public viewing.

**October**: FBC approved by Board.

**December**: FBC approved by Scottish Government.

**December**: Contract for Brookfield to build hospitals.

---

**March 2011**: Construction of Adult and Children's Hospitals commences.

---

**March 2012**: Labs building handed over.

---

**June 2013**: Hospitals "topping out" ceremony.

---

**March-December 2014**: Programme of site visits for staff.

---

**2015**:

**26 January**: Hospitals handed over to health board.

**April**: Migration of Adult Hospitals commences.

**June**: Final migration phase – migration of Children's Hospital.

**July**: The new hospital is granted the right to use the name "Queen Elizabeth University Hospital" by Queen Elizabeth II. Its original name had been South Glasgow University Hospital.

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**Summer 2016**: Queen Elizabeth University Hospital campus is fully operational.

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## NHS GREATER GLASGOW & CLYDE

# ASR PHASE II

# NEW SOUTH GLASGOW HOSPITAL, NEW CHILDREN'S HOSPITAL AND NEW LABORATORY BUILD OUTLINE BUSINESS CASE

## FEBRUARY 2008

NHS
Greater Glasgow and Clyde

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# 1. EXECUTIVE SUMMARY

## 1.1 INTRODUCTION

The purpose of this Outline Business Case (OBC) is to present proposals for the development of an integrated Children's and Adult Hospital and a new laboratory build on the site of the current Southern General Hospital.

The proposals represent the largest investment in health services undertaken in Scotland and form a major part of NHS Greater Glasgow and Clyde's Acute Services Strategy to modernise health services.

This investment will transform the experience of healthcare for patients and staff alike with Glasgow becoming the home to the largest, most advanced single NHS development delivering gold standard hospitals on the Southern campus.

A jewel in the crown of NHS Scotland, the new hospital campus will provide maternity, paediatric and adult acute services together on the one site. This will ensure immediate access to specialist services of all kinds and therefore the highest quality and safety standards for adults, children and babies alike.

The construction of the new hospitals will give opportunity to redesign radically the way in which health services are delivered and reappraise the skills and profile of the workforce tailoring delivery of modern health services in keeping with the 21st century.

The campus will have excellent transport links. Capitalising on its location besides the M8 motorway, the campus car parking capacity will more than double from the current 1400 spaces to over 3,500 spaces. Public transport will be significantly improved with many of the bus services which currently travel around the site, going through the new site. A network of new bus services providing direct access from South Glasgow will complement the existing 50 buses an hour that currently travel to the site. Major investment will be made to connect cycle and pedestrian pathways to Glasgow's core paths networks to make it easier for staff in particular to walk or cycle to work.

As one of the largest single investments in the south of the city the development has the potential to regenerate and breathe new life into Govan and the wider area. Liaison is taking place with Scottish Enterprise and a number of other external organisations to establish a New Hospitals Engagement Forum to realise this potential and bring added value to the new hospitals project.

The Health Board has been engaging with the Scottish Government to agree the format and content of the Outline Business Case, the outcome is reflected within this document.

## 1.2 THE CASE FOR CHANGE

NHS Greater Glasgow & Clyde recognise the need to ensure that patients who require access to hospital care can be seen, fully investigated and treated as quickly as possible within the appropriate facilities. For patients presenting as an emergency there should be access to specialised care of the highest quality, with access to state of the art investigations and treatment facilities on a 24 hour /7days a week basis. For elective care, patients should be seen, investigated and leave the hospital with a diagnosis and treatment plan wherever possible on the first visit. Underpinning this should be effective information and computer systems which allow GPs, Specialists and patient access to all relevant information needed to deliver high quality and effective patient care.

In 2002 Greater Glasgow Health Board described the case for change, which identified that the status quo was not an option, as there was significant challenge to the sustainability of the configuration of services and to the ability to improve patient pathways and create more efficient and effective care pathways. All of the factors identified remain relevant today with additional challenges and pressures resulting in even greater need to reduce hospital sites and duplication of services. In brief the issues are:

- The need to achieve the objectives of the guidance in 'Better Health, Better Care' and other key national policies. These policies drive reductions in waiting times; fast track access to rapid diagnosis and treatment; provision of services designed around the needs of the patient; modernisation of healthcare through better use of technology and improved integration with primary and social care reducing inequalities in health. To achieve these objectives a major programme of investment in buildings, information technology and redesign of services is required.
- Fragmented services, there is a requirement for patients to move within and around sites and different buildings with an inevitable loss of continuity of patient care, important co-locations of services are not possible and difficulties arise in transferring information between services.
- Increasing sub-specialisation in medicine and surgery and an increasing need to move towards larger teams to ensure all patients can access the appropriate Specialist on a 24hours a day and 7 days a week basis.
- Pressures on staff in sustaining appropriate staffing levels, for example Modernising Medical Careers and the European Working Time Directive impact upon the availability of medical staff and therefore on the sustainability of multiple rotas.
- Outdated buildings unsuitable and unfit for modern healthcare offering a poor patient environment with unsuitable facilities for modernising services, restricting capacity and creating bottlenecks and delays in treatment.

## 1.3 ACUTE SERVICES REVIEW (ASR)

The health services in Glasgow have entered a period of dramatic and exciting change. Following a decade of planning and public consultation, proposals to modernise the acute health services in Glasgow were approved in 2002 by Malcolm Chisholm, Minister for Health and Community Care.
The components of the acute service strategy are as follows:

- A new Beatson West of Scotland Cancer Centre at the Gartnavel General site (2007).
- Two Ambulatory Care and Diagnostic Hospitals on the Stobhill site and on a site adjacent to the Victoria Infirmary site, this will support the future reduction from 6 to 3 adult inpatient sites.
- A reduction in Maternity services from three sites to two, those being the Princess Royal Maternity Hospital at Glasgow Royal site and the redeveloped maternity facility on the new southern campus.
- In North Glasgow, acute in-patient services will be provided from Glasgow Royal Infirmary and Gartnavel General Hospital.
- In South Glasgow, acute in-patient services will be provided from a major new development at the Southern General Hospital.
- Full A&E services will be provided from two sites, located at Glasgow Royal Infirmary and the Southern General Hospital.
- Trauma and Orthopaedic in-patient services will be provided from the two full A&E sites. Orthopaedic out-patient and day case services to be provided from all five adult sites (Gartnavel, Stobhill, GRI, Victoria and Southern General).

- Minor Injury Units will be provided from all five adult sites.

In 2004 the Minister for Health and Community Care announced that the Scottish Government would provide £100 million to enable a new children's hospital to be built on a site which would support the "triple co-location of services". The Royal Hospital for Sick Children is currently co-located with the Queen Mothers Hospital (QMH). The planned closure of the QMH, and the transfer of its activity and services to the Southern and Glasgow Royal sites, will leave the Royal Hospital for Sick Children (RHSC) isolated. Following an option appraisal in 2005, of potential locations for the new children's hospital, the Southern General site was identified as the only location to offer both co-location with maternity and adult services and appropriate vacant land for building. This process was undertaken in collaboration with a Ministerial Advisory Group chaired by Professor Andrew Calder. The report of that Group, published in March 2006, affirmed the selection of the Southern General site as the location for the new children's hospital. This recommendation was accepted by the Minister for Health and Community Care in 2006 following a period of consultation.

A review of laboratory services was carried out to identify the optimal configuration of laboratory services in Glasgow to support the Acute Services Strategy. The preferred option involves: centralising the majority of laboratory services into two main sites at Glasgow Royal and the Southern site; consolidating immunology, tissue typing, stem cell lab work and all other laboratory services associated with leukaemia research and Haemato-oncology onto the Gartnavel site co-location with the West of Scotland Cancer Centre; and finally centralising pathology and genetics services onto a single site near the Southern Campus.

The process to transform acute hospital services across the city is well underway with the opening of the new West of Scotland Cancer Centre in 2007 and construction of two, state of the art, Ambulatory Care Hospitals (ACH) at the Victoria and Stobhill sites. The ACH's will be commissioned over the period late 2007 to summer 2009, which will result in not only significant modernisation of Glasgow's healthcare facilities and creation of single centres of excellence but will also result in 4 of Glasgow's major adult hospital sites operating below capacity.

This document describes the scheme which forms the second phase of the Acute Strategy, this involves the development of the new South Glasgow Hospital campus which not only sees the single biggest phase of modernisation and rationalisation of our adult clinical services, but incorporates the creation of a new Children's Hospital for the Greater Glasgow and West of Scotland populations and the completion of the modernisation of Glasgow's Maternity Services.

On completion of the development of the new adult hospital in 2014, the Board will be able to enact the following:

- inpatient services in the Victoria Infirmary to transfer to the new development thus vacating the Victoria Infirmary site;
- inpatient services at the Mansion House Unit (MHU) to transfer allowing closure of the MHU (Note that some of the beds will already have transferred in 2009 to the new Ambulatory Care Hospital);
- inpatient services housed in outdated buildings on the southern site to be relocated;
- transfer of Accident and Emergency services and associated beds at the Western Infirmary enabling closure of the Western Infirmary.

By 2014, following some major refurbishment and new build works within existing estate at Glasgow Royal Infirmary and Gartnavel General Hospital, sufficient capacity will be created, following the opening of the new South Glasgow Hospital, to allow the 3 site inpatient configuration of adult services to be implemented.

Phase 3 of the Acute Services Strategy sees the major redevelopment and modernisation of the Glasgow Royal Infirmary campus and this work will be developed with a view to being brought forward for funding consideration in the period beyond 2015 followed by the final phase, which would see the redevelopment and modernisation of the retained adult inpatient services required on the Gartnavel General Hospital campus undertaken.

## 1.4 PROPOSED FUTURE SERVICES

### 1.4.1 Adult and Children's Services

***Adult New Build***

A 1,109 bedded adult new build acute hospital is planned. This will provide A&E services and acute specialist in-patient care, a small volume of medical day cases and out-patient clinics serving the local population. No day surgery will be undertaken as this will be provided by the New Victoria Hospital.

***New Children's Hospital***

The proposed new 240 bedded children's hospital will provide A&E services and a comprehensive range of inpatient and day case specialist medical and surgical paediatric services on a local, regional and national basis. The new development will also have outpatient facilities. The Health Board's strategy is that all Glasgow's Children's Services (up to the age of 16 and up to 18 years where appropriate) will be provided at the New Children's Hospital.

The planned number of beds for the adult and children's hospitals are shown below:

| Adult Hospital | |
|---|---|
| ***Specialty*** | ***Beds*** |
| General Medicine (including MHDU) | 407 |
| Haematology | 14 |
| Dermatology | 18 |
| Nephrology (incl surgery) | 80 |
| Geriatric Medicine | 93 |
| CCU | 18 |
| ITU | 20 |
| SHDU | 23 |
| General Surgery & Vascular | 169 |
| Urology | 51 |
| Orthopaedic & Ortho Rehab | 141 |
| ENT | 37 |
| Clyde Beds * | 38 |
| Total In-patient Beds | 1,109 |

| Children's Hospital | |
|---|---|
| ***Specialty*** | ***Beds*** |
| In-patient (including critical care areas) | 193 |
| Short-stay (emergency receiving) | 20 |
| Day Care/Day Investigation | 27 |
| Total | 240 |

* Clyde Beds

In line with the South of the River Strategy for Clyde, consulted and agreed on during 2006/07, the in-patient bed requirements for the following services have been included within the bed model for the new South Glasgow Adult Hospital – Vascular Surgery, ENT, Dermatology and Haematology.

### 1.4.2 New Laboratory Build

The proposed New Laboratory build will provide biochemistry, haematology blood transfusion and mortuary services.

### 1.4.3 Retained Services

The Southern site will retain approximately 630 beds within the Institute of Neurological Services, Maternity, Spinal Injuries and Langlands buildings. The Langlands facility provides older people's services and also services for the young physically disabled.

### 1.4.4 Future Service Changes

At the time of undertaking the latest bed modelling exercise for the ASR it was recognised that there might be future changes to bed numbers as the result of changes to regional services provision such as neurosciences, oral-maxillofacial services, renal services, gynae-oncology services. With the exception of renal services, which has already been factored into the new South Glasgow Adult Hospital's bed model other potential changes to requirements in relation to beds do not affect the new South Glasgow Adult Hospital's current proposals.

## 1.5 EXPECTED BENEFITS OF THE PROJECT

It is anticipated that the proposals set out in this business case will deliver a range of benefits for patients. These are as follows:

- Provision of high quality services which are timely, accessible and consistently available by providing local access to core medical and surgical services and consolidating specialist and tertiary services on fewer sites within the city.
- Investment in high tech equipment and Information Technology
- Attention to design and landscaping to improve the patients overall care
- Fully accessible to all and DDA compliant (Disability Discrimination Act.)
- Reduced waiting times for treatment through the provision of more efficient services increasing clinical capacity by investment in Information Technology (IT), the concentration of clinical teams onto fewer sites, optimising departmental and functional relationships and improving access to diagnostic services such as laboratory services.
- Access to highly specialised services provided by skilled staff facilitated through the centralisation of services.
- Rapid, one stop services through high volume processing of diagnostic tests and an extended working day to fit in with new models of care.
- Protection of elective workload from disruption by emergencies thereby improving the efficiency of the service and reducing the number of cancellations.
- Enhanced staff skills and knowledge through improved retention and recruitment due to a radically better working environment
- Modern, fit for purpose facilities which meet the needs of patients, visitors and staff

- Enhanced University links through co-location of an academic centre with the new hospitals on the Southern General Campus. This will enhance teaching, and research and play a significant role in attracting and retaining high quality staff in all disciplines.

It is also recognised that the proposed new builds on the Southern site could contribute substantially to the local Govan economy and the wider area.

A social economic benefits analysis was carried out by SQW Consultants, funded by NHS Greater Glasgow NHS in partnership with a number of other contributors including Scottish Enterprise and Glasgow City Council.

The analysis looked at the potential impact on the immediate area around the Southern General site, the wider city of Glasgow and the Glasgow Metropolitan City Region. The analysis identified potential benefits within the following categories: economic, human and social, knowledge (e.g. research and development) and place.

In brief SQW has estimated that the future service configurations on the Southern General site will have a combined direct, indirect and induced economic impact of between £30 and £40 million on the South West Glasgow economy; between £110 and £140 million on the city economy and between £240 and £290 million on Glasgow city region by 2012/13. The new builds will also contribute to opportunities for training and employment and the development has the potential to support collaboration between academic, public and private sector partners to realise opportunities in research and development, bio-medical and life sciences.

In conclusion, the Southern General development is seen as a catalyst for wider social and regeneration activity contributing to the creation of higher aspirations for the physical development of the local area.

## 1.6 OPTION APPRAISAL – SITE AND DESIGN OF NEW SOUTH GLASGOW AND NEW CHILDREN'S HOSPITALS

### 1.6.1 Greenfield Option

For purposes of comparison for the Outline Business Case the option of building the new hospitals on a Greenfield site was revisited. This confirmed the outcome of the 2002 review, during which this option was first explored and dismissed because of high cost.

### 1.6.2 New Southern General Campus Options

Site

In thinking about the optimum site on the Southern General Campus for the New South Glasgow and New Children's Hospitals a key criterion has been the need to physically link the new hospitals to the Maternity and Neurosciences buildings. This will allow ready access to a range of paediatric services for foetus in utero or new born babies and mothers access to critical care and other acute services. An area which lies between the Maternity and Neurosciences buildings has therefore been designated for the construction of the new Hospital to allow these links.

Separate or Integrated Hospital Builds

In comparing options to build the new hospitals separately or together as an integrated build, the latter, an integrated build, was considered to offer more benefits, less risk, increased deliverability and lower cost. A further option appraisal took place involving NHS stakeholder input to identify the optimum design solution for the integrated build. An exemplar design was then developed involving input from a wide range of users.

Supporting/Associated Developments and Works

In addition to the new Adult and Children's Hospitals and Laboratory facility there are series of associated developments and works. For the purposes of the Outline Business case two options around the Southern General site have been developed, these are option 1 with a higher percentage of new build associated developments and option 1a utilising more of the existing estate.

### 1.6.3 Benefits Appraisal

A benefits appraisal exercise was undertaken looking at the Greenfield site, Option 1 and Option 1a. The benefits criteria were derived from the project objectives. The criteria were weighted and scored against each of the options. The appraisal of the options produced scores within a very tight band, those options involving an increased percentage of new build producing slightly higher scoring.

## 1.7 LABORATORY SERVICES

A Glasgow wide review of laboratory services identified centralisation of the majority of laboratory services on the Southern General site and Glasgow Royal site as the optimum configuration to support the Acute Services Strategy.

A new build laboratory facility is planned for the Southern General site housing haematology, biochemistry and mortuary services. The laboratory will be located alongside the new hospitals linked via an underground tunnel.

The new build will support the New Adult and Children's Hospitals and other services south of the city. The planned model for the new laboratory development will be one of high volume processing of tests with use of automation and up-to-date integrated IT systems with extended day and 24/7 working to reflect the new patient care models.

## 1.8 FINANCIAL ANALYSIS

The capital cost of the proposal to provide New Adult and Children's Hospitals on the Southern General site is forecast to be £841.7m (Option 1a, 100% single rooms).

It is proposed to fund this following a public capital procurement route, combining £270m of capital resources sourced from the Board's general allocation of capital funds and from capital receipts generated from the disposal of sites which become surplus, together with £20m from its endowment funds, leaving £551.7m to be provided by SGHD in the form of a specific allocation of capital funding to the Board. This represents the level of capital funding which the Board requires to deliver the proposal contained within this Outline Business Case, and which is the subject of the Outline Business Case.

The Board has tested alternative procurement routes for delivering the new Adult and Children's Hospitals, assessing each of these in terms of their capacity to deliver Value for Money and Affordability. The outcome of this assessment confirms that there is little to differentiate the alternative procurement routes in terms of their capacity to deliver Value for Money, however a publicly funded capital route offers the potential to deliver an affordable solution within the context of the Board's financial plan for the 10 year period to 2017/18.

In testing the affordability of a new service commitment of this scale, the Board has required to prepare a 10 year forward financial plan which examines the movements in both funding and expenditure which it is likely to face over this time period. In doing so, it has identified and assessed the key areas of risk which could impact on its financial projections, and reviewed its capacity for mitigating these through management action. On the basis of this analysis, the Board is able to conclude that the proposal which is contained within this OBC is affordable.

## 1.9 ASSOCIATED CAPITAL WORKS

As described, there are a series of smaller capital works and developments associated with the new hospitals, these being: clearance of the build site, development of multi-storey car parks, a clinical support facility and a 22 bedded rehabilitation facility.

The capital cost of these associated works is identified and will be funded from within the Board's Capital Allocation provided through separate business cases. Those projects above the Board's delegated authority will be subject to Capital Investment Group, Scottish Government approval.

It is proposed that all of the above projects and the new adult and children's hospital will be planned and co-ordinated through a Site Programme Co-ordinating Group, ensuring that all potential risks that may occur in delivering a multi-construction project environment are appropriately managed.

## 1.10 PLANNING PERMISSION

The Outline Planning Application was submitted to Glasgow City Council on 13th April 2007. The application was considered at the Glasgow Planning Committee meeting held on 16th January 2008 and received approval subject to specific conditions and the Section 75 legal agreements.

## 1.11 UNIVERSITY – WORKING WITH ACADEMIC PARTNERS

Glasgow University is intending to support the development of the Southern General campus by building an academic centre on the site. This will provide a modern academic facility to support teaching and research. An area of land on the Southern Campus has been identified by the Health Board for this purpose.

A new multidisciplinary Skills and Education Centre is also proposed. Partners in this include the Royal College of Physicians and Surgeons of Glasgow, the University of Glasgow and NHS Education for Scotland. A site adjacent to the new hospitals has been identified as a possible location.

## 1.12 FACILITIES, TECHNOLOGY, WORKFORCE

The reconfiguration of services across Glasgow will have a major impact upon the workforce and the requirements for information technology and facilities.

The Health Board's intention is to provide all hard and soft FM services from within NHS Greater Glasgow and Clyde's facilities pool and to explore the most effective methods of service delivery through benchmarking to achieve value for money and efficiency for these services. The FM services for the PFI Langlands Building in the south of the southern campus will remain with the present contractor and will not form part of this exercise.

There is a need to invest in significant Information Technology (IT) infrastructure with appropriate functionality to support the reconfiguration of services and emerging models of care, which will be crucial to the successful implementation of modern efficient healthcare systems.

As the largest NHS employer in Scotland, NHS Greater Glasgow and Clyde will continue to undertake effective workforce planning linked to issues of service delivery and redesign. This will allow any future workforce gaps to be identified as well as to set in motion a range of solution based action plans.

The proposal to develop the South Glasgow Hospital site will consolidate a range of services which will require the transfer of staff from a number of existing sites across the city. The opportunities for redesign offered by the new investment in facilities and the consolidation of workforce onto fewer sites will allow for significant re-profiling of the workforce.

In determining the potential workforce implications of change, workforce planning methodologies have been developed in conjunction with input from Service Directors and Professional Leads. This has involved analysing a range of policy and legislative drivers for change and a review of the subsequent knock-on effect for future workforce requirements.

## 1.13 REDESIGN OF SERVICES

Another important aspect in the success of the project will be a proactive programme of redesign of services to:

a) ensure efficient services which:

- meet patient needs;
- offer one-stop services;
- offer quick access to diagnostic services;
- reduce the amount of time patients are in hospital;
- provide a balance of care and treatment in the community.

b) provide a high quality streamlined service within the projected bed complement;

c) influence the optimal building layout and design.

An important aspect of the redesign work will be the interface with the Community Health (and Care) Partnerships to ensure, where appropriate, services for patients are provided outside of hospital settings.

A programme of redesign work is underway to address the models of care associated with the Ambulatory Care Hospitals. The programme is closely linked to the planned changes in regional workforce planning and the development and implementation of the information Management and Technology Strategy.

The methodology and templates being put into place to take this work forward will be applied to the New South Glasgow Hospital ensuring consistency in care models and a streamlined flow of service provision within Glasgow.

## 1.14 PROJECT MANAGEMENT ARRANGEMENTS

Robust Project Management arrangements are in place to ensure that the project, and the individual elements within it, meet the expected time, cost and quality criteria.

## 1.15 PARTNERSHIP WORKING

The Board is committed to partnership working. There is an open and inclusive approach to staff side communication and the Board. The project management arrangements incorporate partnership working and staff side input with staff side membership on the two key project groups Project Executive Group and the Acute Services Review Programme Board.

## 1.16 COMMUNITY ENGAGEMENT

NHS Greater Glasgow and Clyde established a Community Engagement team in 2002 to inform and involve patients and the public in the acute services strategy. Dedicated staff have been allocated to the new hospitals and an extensive programme of consultation with patients, carers, families is ongoing. Detailed work involving communities in Greater Govan and South West of Glasgow is also occurring. The team are working in partnership with both local and national

organisations, such as Scottish Enterprise, to develop the full potential of the project for regenerating the wider area.

## 1.17 GATEWAY REVIEW

The New South Glasgow Hospitals project is subject to an Office of Government and Commerce (OGC) Gateway Review.

The review is an independent assessment confirming that the business case is robust to meet the business need, is affordable, achievable with appropriate options explored and likely to achieve value for money.

In doing this, the review outcome highlights whether aspects of the project are red, amber or green (traffic light system). Red means that the project cannot proceed to the next milestone until the issues identified as red are addressed. Amber means that the recommendations identified must be completed before the next Gateway Review stage. Green means that the programme or project is in good shape but may benefit from uptake of any green recommendations to enhance the project.

The project completed a Gateway Review Stage 1 assessment in January 2008. The outcome of the Gateway Review was that there were no red recommendations hence the project may proceed to the Board and Scottish Capital Investment Group with the Outline Business Case.

There were five amber and one green recommendations and these will be addressed before the Gateway 2 Review.

## 1.18 TIMETABLE

A summary of the indicative timetable for the project is shown below:-

| **Description** | **Target Date** |
|---|---|
| Outline Planning Approval | January 2008 |
| Gateway Review | January 2008 |
| Final OBC to NHS Greater Glasgow & Clyde Board | 19th February 2008 |
| Final OBC considered at Scottish Government Capital Investment Group | 26th February 2008 |
| Submit OBC to Cabinet | March 2008 |
| Final OBC Approval | April 2008 |
| Full Business Case Submission | 2nd quarter 2010 |
| Construction Starts | 2nd quarter 2010 |
| Completion – Children's Hospital | 1st quarter 2013 |
| Completion – Acute Hospital | 2nd quarter 2014 |

# 2. PURPOSE AND LAYOUT OF THE OUTLINE BUSINESS CASE

## 2.1 PURPOSE

The purpose of this Business Case is to present proposals for the development of an integrated children's and adult hospital and a laboratory build on the Southern General site.

The overall capital cost of the project is £841.7m (based upon mid point build costs); the anticipated timescale for completion of the development is the 2nd quarter 2014 with transfer of services thereafter.

This project has developed over a period of time and the following describes some of the background to enable an understanding of the history behind the component parts of the project.

### 2.1.1 New Adult Hospital

Over the last 10 years Greater Glasgow Health Board, now NHS Greater Glasgow and Clyde, has been developing an acute and related services strategy to modernise the acute adult health service in Glasgow. The proposals were agreed by the then Health Minister, Malcolm Chisholm, in 2002. The Acute Strategy is composed of four distinct phases.

The new adult hospital constitutes the second phase of the Acute Services Review. The main goal of the Acute Services Review is to address the mounting pressures to change the way in which services are delivered by reducing the number of acute sites across Glasgow and investing in fit for purpose facilities. In more detail the New South Glasgow Hospital development is the major part of the plans to reconfigure services by reducing the adult inpatient sites from the current six hospital sites to three, by the time the new hospital opens in 2014. Two sites, Glasgow Royal and the Southern General, will have A&E and trauma facilities. The third inpatient hospital will be Gartnavel General. These acute sites will be supported by the two new build Ambulatory Care Hospitals.

### 2.1.2 New Children's Hospital

The proposal contained within this business case is for a new children's hospital on the Southern General site which will allow transfer of the current Yorkhill children's services, thus achieving the gold standard of triple co-location as highlighted in Professor Calder's Report (2006).

Hospital services for children in Glasgow are provided by the Royal Hospital for Sick Children, which is sited at Yorkhill and co-located to the Queen Mother's (Maternity) Hospital. The Queen Mother's Hospital is one of three maternity hospitals in Glasgow, the others being located at the Southern General and Glasgow Royal sites. Following a review over a number of years the Health Board is reducing the number of maternity hospitals to two. The Queen Mother's Hospital will close and its services re-locate into a £28m extension and refurbishment at the maternity hospital on the Southern General site and the recently built maternity unit at Glasgow Royal Infirmary.

The transfer of maternity services from the Queen Mother's site will leave the children's hospital isolated. The recognised gold standard is to achieve triple co-location of children services, maternity and adult acute services. This allows safe obstetric care for mothers and preserves the links between maternal and specialist children's services, so that a full range of paediatric back-up and advice is available for both the foetus in utero and a new born child with significant and sometimes life threatening problems. Triple co-location also offers the advantage of strengthening links between paediatric and adult services, facilitating a continuum of care for those young people with long-term conditions.

### 2.1.3 The Laboratory Build

At present there are laboratory services on each acute site. As part of the Acute Strategy a review of laboratory services across Glasgow was undertaken to explore how the service might best support the future reconfigured clinical services, taking into account the clinical linkages between the laboratory specialties and the services needed to support the clinical service profile on each site.

The preferred option is to centralise the majority of laboratory services onto two main sites the Southern General site and the Glasgow Royal site. The designated area available for a new labs build on the Southern site is in close proximity to the proposed build for the new hospitals and therefore will allow a physical link to be formed between the laboratory and the hospitals.

### 2.1.4 Site Available on the Southern Campus

There are 2 key issues in considering the location for the adult and children's hospital, and laboratory facility on the southern site, these are as follows:

- First the requirement to achieve critical clinical adjacencies, linking the new adult and children's hospital to both the existing neurosciences and maternity buildings which sit at opposite ends of the site and,

- Secondly, the existing hospital services must be maintained during the construction of the new developments.

To meet the above criteria the adult, children's and lab new builds must be clustered close together in a partially vacant area of the site situated between the Maternity building and the Neurosciences Institute.

It is planned to construct the children's and adult hospitals as a single building, (*albeit with distinctive and different external and internal identities reinforced by separate approach and entrance areas*), in order to benefit from the clinical co-locations and support services synergies offered by an integrated build.

The new labs build will be under construction prior to the new adult and children's build within the same area of land.

In addition there are a number of capital works associated with the new hospitals, such as multi-storey car parks and a clinical services facility.

## 2.2 LAYOUT OF THE DOCUMENT

The structure and content of this business case is summarised in the table below.

**Outline Business Case – Structure and Content**

- Section 3 provides a profile of NHS Greater Glasgow and Clyde and summarises its activity, performance and financial status.
- Section 4 describes the case for change for the children's hospital, the options considered, current service, a description of the future requirements and project objectives.
- Section 5 details the case for change for the adult hospital, current service and demand for future services and project objectives and benefits.
- Section 6 describes the site and design configuration options for the new Adult and Children's Hospitals, design considerations and benefits appraisal.
- Section 7 gives a short summary of the laboratory proposal, the options and results of the risk and non-financial appraisals.
- Section 8 outlines the risk management strategy.
- Section 9 details the financial appraisal.
- Section 10 explores the procurement model for the scheme.
- Sections 11, 12 and 13 profile the Workforce Issues, Facilities Management and Information Technology Strategy.
- Section 14 describes the Campus Plan, Phasing of works, transport and opportunities for the wider environment.
- Sections 15 to 20 detail the Project Management arrangements to manage stage one and two of the project, the role of advisors, stakeholder involvement, action to address health inequalities, the wider social economic impact of the project and the results of the Gateway Review,
- Section 21 outlines the Benefits Realisation Plan.
- Section 22, gives the plans for post project evaluation.
- Section 23 shows the Outline Timetable for the scheme.

## 2.3 FURTHER INFORMATION

Any queries, comments or requests for further information in relation to this Outline Business Case should be addressed to:

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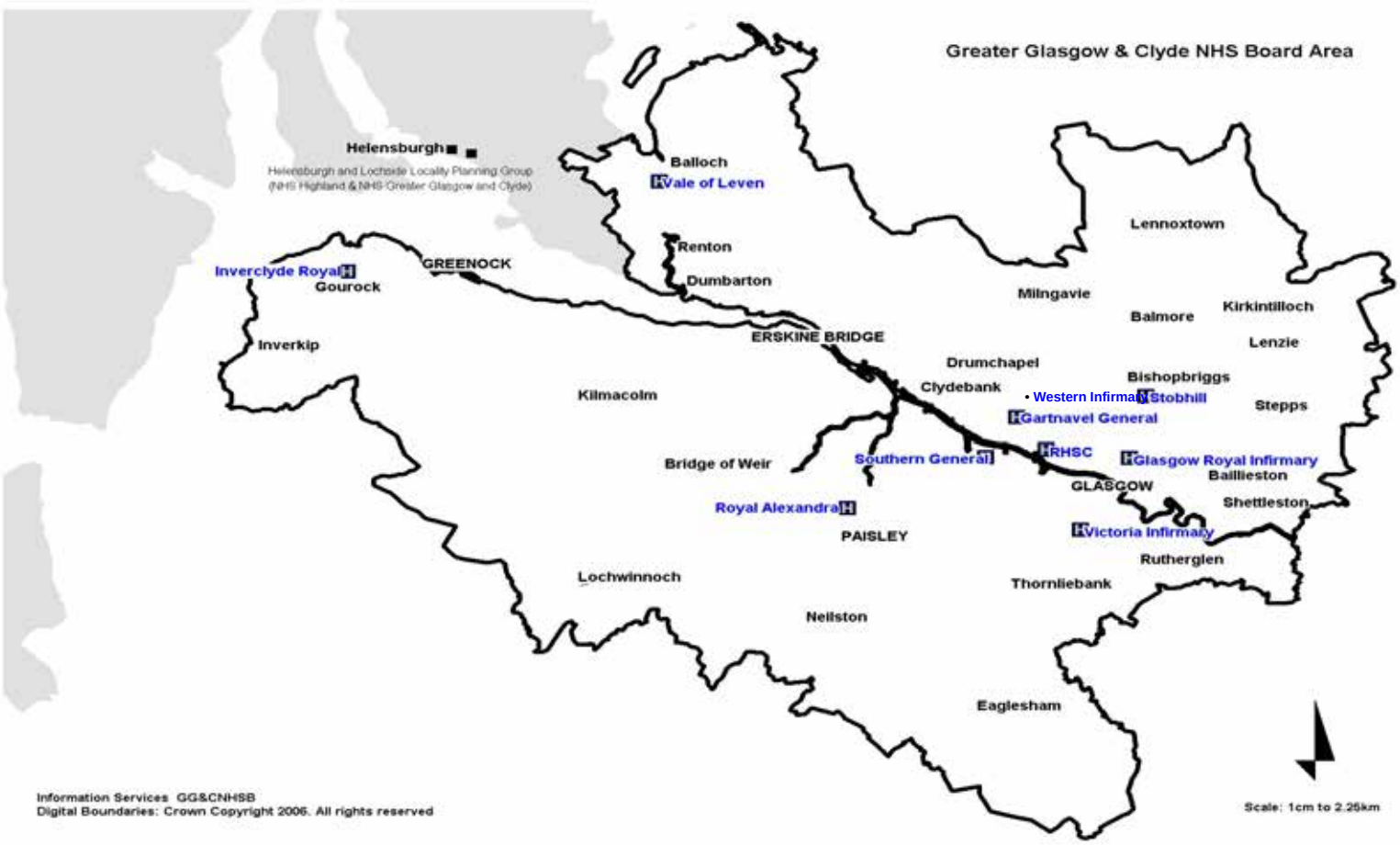
# 3. BACKGROUND AND STRATEGIC CONTEXT

## 3.1 OVERVIEW OF NHS GREATER GLASGOW & CLYDE

NHS Greater Glasgow and Clyde (NHS GG&C), formed in April 2006, is Scotland's newest and largest Health Board. The Board has 40,000 staff serving a total population of 1.2million people, with a budget of £2.2billion. The new Health Board joins the Clyde region of the former Argyll & Clyde Health Board with the former Greater Glasgow, to create NHS Greater Glasgow and Clyde. Acute services are delivered from 10 hospitals, 3 of which lie within Clyde and the remaining 7 are located within Glasgow city. The geographical area covered includes West Dunbartonshire, Inverclyde, Renfrewshire, East Renfrewshire, East Dunbartonshire, Glasgow City, South Lanarkshire (Rutherglen & Cambuslang) and North Glasgow (Stepps-Moodiesburn corridor).

Within Glasgow, the Western and Gartnavel General Hospitals operate in tandem delivering acute care in the west-end of the city. In the north-east of the city acute care is delivered from Stobhill Hospital and Glasgow Royal Infirmary. The Victoria Infirmary serves the south-east and the Southern General Hospital the south-west of the city. Services for children are provided centrally from the Royal Hospital for Sick Children, Yorkhill. Full adult Accident and Emergency services are provided at the Western Infirmary, Glasgow Royal Infirmary, the Victoria Infirmary and the Southern General Hospital. Stobhill Hospital has a Casualty Department which is covered by Consultant staff from Glasgow Royal Infirmary and the Western.

The location of these acute hospitals can be seen the in diagram below.



## 3.2 ORGANISATIONAL STRUCTURE

The Health Board is comprised of an Acute Division, a Mental Health Partnership, 10 CHCPs/CHPs including some joint CHP's with Lanarkshire and a number of Corporate functions. The Acute Division brings together all acute services across the city and Clyde under a single management structure led by the Chief Operating Officer. The Division is made up of eight Directorates of clinical services each managed by a director and clinical management team along with a Facilities Directorate. These are:

- Emergency Care and Medical Services
- Surgery and Anaesthetics
- Rehabilitation
- Regional Services
- Facilities
- Women's and Children's Services
- Oral Health
- Diagnostics
- Clyde

## 3.3 RESPONSIBILITIES OF NHS GREATER GLASGOW AND CLYDE

The NHS Board is responsible for strategic planning and investment in healthcare services to ensure that they meet the needs of the local population and that national targets and directives are implemented.

NHS Greater Glasgow and Clyde's core purposes are to assess the state of health of the people of Greater Glasgow and Clyde and plan and provide services which:

- Promote good health
- Prevent ill-health
- Improve health
- Provide safe and sustainable and equitable treatment for patients.

In doing this, the Board works in close partnership with other NHS organisations, local authorities and other agencies to ensure that social work, education, housing, employment and environmental services unite effectively and efficiently with the NHS in tackling inequalities and underlying health problems in local communities.

## 3.4 SERVICES AND ACTIVITY

The Acute Division of NHS Greater Glasgow and Clyde provides a comprehensive range of services from community based care (midwives, dental services and various outreach services) in addition to the full range of general hospital services. The organisation also hosts some of the most specialised health services in the country, including: cardiothoracic services, the Beatson Oncology Centre, the new West of Scotland Cancer Care Centre, the Institute of Neurological Sciences, transplant services, world-class paediatrics and obstetrics. A summary of services provided and activity undertaken is given in Appendices 1 and 2.

The breakdown of patient activity seen within Glasgow Acute Hospitals by Health Board in 2005/06 is shown in table 1 below.

Table 1

2006/07 Patient Activity seen within Greater Glasgow & Clyde Acute Hospitals (by Health Board)

| Health Board | Activity Inpatient | Episodes | Day Case Episodes | | New Outpatient Episodes | |
|---|---|---|---|---|---|---|
| Greater Glasgow & Clyde | **Actual** 211,731 | **%** 84% | **Actual** 107,276 | **%** 82% | **Actual** 288,230 | **%** 87% |
| Lanarkshire | 12,975 | 5.2% | 10,282 | 8% | 16,773 | 5% |
| Highland | 11,247 | 4.5% | 5,732 | 4% | 11,929 | 4% |
| Ayrshire & Arran | 7,044 | 3% | 4,283 | 3% | 8,075 | 2% |
| Forth Valley | 3,531 | 1.3% | 2,909 | 2% | 3,570 | 1% |
| Dumfries & Galloway | 1,255 | 0.5% | 301 | 0.2% | 876 | - |
| Others remaining Scottish | 3,041 | 1% | 644 | 0.5% | 1,821 | 1% |
| Others | 1,204 | 0.5% | 73 | 0.1% | 301 | - |
| Total | 252028 | 100% | 131500 | 100% | 331,575 | 100% |

It can be seen that over 80% of the workload is attributable to NHS Greater Glasgow & Clyde.

Lanarkshire and Highland account for approximately 5% and 4%of inpatient activity respectively.

Table 2 below details the overall activity trends over the last 5 years from 2001/02 to 2006/07. It can be seen that overall in-patient activity has increased by 4.9%, day cases by 14% and out-patients by 14%.

It should be noted that New South Glasgow Hospital will not undertake day case activity and will provide a local out-patient service. The growth in out-patient attendances within the south of Glasgow over the last 5 years (2002/3 to 2006/7) is 11.5%.

Table 2

Activity Trends within Glasgow Acute Hospitals over the last five years for in-patient episodes, day cases and new out-patient attendances

| | 2001/02 | 2002/03 | 2003/04 | 2004/05 | 2005/06 | 2006/07 | Percentage Increase in activity between 2001/02 and 2006/07 |
|---|---|---|---|---|---|---|---|
| In-Patient Activity | 224,972 | 221,457 | 227,127 | 228,674 | 227,453 | 235,918 | +4.9% |
| Day Cases Activity | 108,233 | 106,597 | 110,747 | 116,108 | 121,065 | 123,309 | +14% |
| New Out-Patient Activity | 271,213 | 275,542 | 270,870 | 280,116 | 296,936 | 309,302 | +14% |

## 3.5 FINANCIAL PERFORMANCE

NHS Greater Glasgow & Clyde (NHSGG&C) has an established record of sound financial management and has consistently achieved its targets. The Board's financial plan forecasts that total expenditure will be contained within its overall funding envelope thereby enabling it to secure achievement of its revenue financial target by managing within its "revenue resource limit" (RRL).

The financial plan incorporates provisions for the latest forecast of additional funding required to support implementation of the Acute Services Review (e.g. Beatson Cancer Centre, and Stobhill and Victoria new hospitals).

The baseline assumption is that the new South Glasgow and new Children's Hospitals and new Laboratory facility will be revenue neutral.

## 3.6 DEMOGRAPHY

### *3.6.1 Current population*

The combined mid-year estimated population of the NHS Greater Glasgow and Clyde area as of 30 June 2005, provided by the General Registrar Office for Scotland (GROS) and based on the 2001 Census, was 1,190,939. The equivalent population for Scotland was 5,094,800.

### *3.6.2 Projected population*

The Scottish population is expected by the GROS to stay around the 5 million mark for the next 18 years, only slightly increasing to 5.1m by 2019 until a decrease is forecasted for after 2036. The Scottish population will become considerably older as a result of decreasing birth rates and the aging of those born during the 'baby boom' (mid 1960s). There will be a shift of the population, both within Scotland, and between Scotland and the rest of the UK and the world. Specifically, significant numbers are expected to migrate from Glasgow City, and most West of Scotland council areas. Counteracting this reduction is the fact that, increasingly, people are immigrating to Scotland most recently from European Union accession states. This inward migration is serving to offset the broadly declining birth rate and the fact that deaths have exceeded births since 1996.

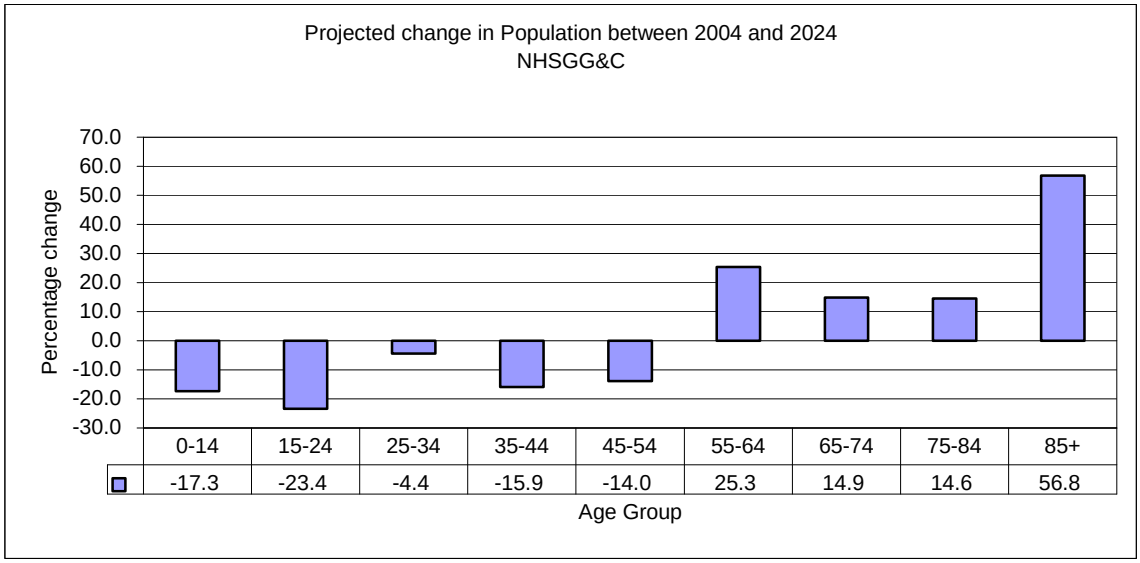
The NHSGG&C population is expected to reduce overall by 5.5% by 2024, although this reduction will be particularly marked for specific age groups with implications for the planning of new hospitals in Glasgow. For example, it is expected that there will be fewer children aged 0-14 years in the GG&C area by 2024. On the other hand, there will be considerably more in the older age groups with implications for the planning of the new hospitals (Table 3).

This so-called 'demographic shift' (ageing of the population), that has been occurring for the past 30 years since deaths exceeded births for the first time in 1976, is more extreme in GG&C than in Scotland as a whole and will continue for the next few decades (Figure 1). The octogenarians will be particularly numerous in Greater Glasgow and Clyde by 2024, having experienced a 57% rise over 2004 figures.

Table 3

The projected change in population in NHS Greater Glasgow and Clyde between 2004 and 2024.

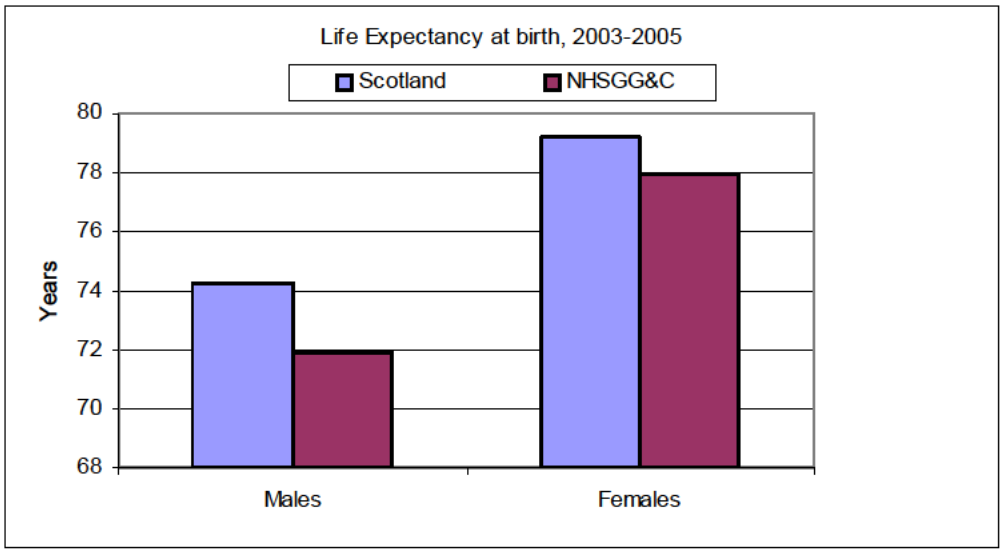
*(Data shown is based on the GRO 2004 – based population predictions (published in 2005)*




*Life expectancy*

Life expectancy at birth is increasing throughout the world at around 4 months per year on average as a result of improving life conditions and medical advances. Average life expectancy at birth is greater for women than for men generally. It is greater, for both genders, in all other NHS Boards in Scotland than in NHSGG&C, confirming that the population of Greater Glasgow and Clyde remains the most socially deprived in Scotland and enjoying the shortest life expectancy as a result.

**Figure 2**




Life Expectancy at birth (years) for residents of NHSGG&C and for residents of Scotland between 2003 and 2005.

## 3.7 HEALTH STATUS AND HEALTH IMPROVEMENT

Chronic disease remains a significant problem with almost 42% of the population reported being treated for more than one health condition, with people in deprived areas (Social Inclusion Partnership, SIP status is used as a proxy for most Deprived postcode areas) slightly more likely to be receiving treatment than residents of less deprived areas (non SIP). The gap between SIP and non-SIP areas is however starting to close. The percentage of people receiving treatment for one or more condition(s) increases with age, see Table 4 below.

Table 4: Percentage of people who received treatment for one or more condition(s) by age group

| Age Group | Percentage |
|---|---|
| 16-44 | 22.3 |
| 45-64 | 54.5 |
| 65+ | 81.0 |

Just over three quarters of residents (78%) reported visiting their GP in the last year. Older people, women, those in more deprived areas, those in poor physical health, those in poor mental health, those who are obese and those who are physically inactive tended to make more frequent use of their GPs.

The proportion of respondents that reported visiting an out patient department has reduced, (30.7% visited an outpatients in 1999, this reduced to 24.6% in 2002 and 22.9% in 2005), but attendance at Accident and Emergency looks different, where significant increases had occurred in the proportion of respondents living in SIP areas that visit A&E, as illustrated in Table 5:

| Table 5: The percentage of respondents who had visited Accident and Emergency in the last year | | | |
|---|---|---|---|
| | Total Sample (%) | SIP (%) (Deprived Areas) | Non SIP (%) (Non deprived areas) |
| 1999 | 14.2 | 11.9 | 15.1 |
| 2002 | 14.9 | 17.0 | 14.1 |
| 2005 | 14.5 | 17.1 | 13.5 |
| Change 1999-2005 | N/A | 5.2 | N/A |
| P | N/A | <0.05 | N/A |
| Confidence Interval | N/A | 0.8-9.6 | N/A |

NHSGGC has established strong partnerships to deliver further Health Improvement within the population in the form of integrated Community Health (Care) Partnerships and Community Planning Partnerships and identified resources to maximize the contribution of acute and mental health services to health improvement.

The aims of NHSGGC and partners including, Local Authorities, Police, Economic Development Agencies and Voluntary Organisations, are to reduce inequalities, improve life circumstances and support improved lifestyles. Let Glasgow Flourish (2006) describes the complex nature and inter relationship between risk factors and health outcome recognising that there is a 'Glasgow effect' that is, an excess of mortality beyond that which can be explained by current indexes of deprivation. The result being that Glasgow's health status remains worse than that of comparable English cities like Liverpool.

The significant Public Health challenges with Glasgow, highlighted by the Director for Public Health Report 2007 include:

- Health Inequalities
- Obesity
- Alcohol misuse

### 3.7.1 Health Inequalities

Much of Glasgow has now become a more affluent and 'middle class' city with a profile that is currently similar to most UK cities. Yet, Glasgow's overall health status does not fully reflect these changes.

### 3.7.2 Mortality and Morbidity

Trends in overall deaths are downward, but the mortality gap between the communities with the highest and lowest mortality has widened noticeably. When the West of Scotland councils are compared there is and eight year gap in male life expectancy with Glasgow having the lowest life expectancy (69.1) and East Dunbartonshire (77.2) the highest.

Even within Greater Glasgow there are differences in life expectancy, for instance, there is an estimated 15 year gap in male life expectancy between Bridgeton & Dennistoun and Anniesland, Bearsden & Milngavie.

Among West of Scotland councils, Glasgow City has one of the lowest proportions of children in its population but the highest proportion of working age.

In Glasgow the proportions of men and woman of pensionable ages are strikingly different – 22% of women compared to 12% of men.

It is notable how relatively young people are when they are first affected by limiting long standing illness, as is the length of time people, particularly women, live with a limiting long-term illness.

Despite overall reductions in mortality, huge health inequalities remain and indeed such inequalities appear on the basis of a number of different mortality and life expectancy measures, to have widened over the last 10 to 20 years.

### 3.7.3 Education

Glasgow City has by far the highest proportion of pupils from minority ethnic communities of any Scottish Local Authority (10.9%), equating to 7,500 pupils. It also has the highest percentage of pupils from less affluent households – 42% of primary school pupils were eligible to receive free school meals in 2004, double the nation's average.

### 3.7.4 Social Environment

Homelessness applications in Glasgow have been consistently double the Scottish average for the last eight years and are much higher proportionally than in the other West of Scotland council areas.

Glasgow City has the highest overall crime rate among councils in Scotland and within the West of Scotland, Glasgow has the highest rates for a range of crime types.

Analysis of violent crime in Glasgow shows that male offenders outnumber females by over three to one and the peak of ages for the offenders and victims are mid-teenage years to early twenties. The areas of residence of violent offenders and victims of violence are highly correlated with deprivation. In some smaller communities in Glasgow over one in ten people have been the victim of a violent crime in the last three years.

### 3.7.5 Economy / Employment / Income

In terms of business, it is clear that Glasgow has retained a position within the UK as a major business centre, and is rated second only to London as a retail centre. However, Glasgow's ranking in terms of economic output has fallen relative to other UK cities in recent years.

There are now more women then men in employment in Glasgow and part-time work has grown to represent more than a quarter of all jobs. The number of Glasgow residents in employment has grown in the recent years (by more than 45,000 jobs in the period 1998-2004) but employment levels remain considerably lower than the Scottish average, although the gap has reduced.

The official unemployment rate and the claimant unemployment rate have both reduced greatly over the last four to five years. Relative inequalities in employment between different parts of the West of Scotland, and within Glasgow, remain however, and official unemployment rates do not provide a true measure of the extent of worklessness. In Glasgow it is estimated that there are 110,000 adults who are not economically active, equating to 30% of the working age population.

The Board is committed to tackling health inequalities and has created a framework around which action plans for CH(c)P's/CHP's, the Acute Operating Division and the Mental Health Partnership are being developed. This is detailed in the NHS Greater Glasgow & Clyde Planning and Priorities Guidance 2007-2010 and the Board's Single Equality Scheme 2007.

## 3.8 WORKFORCE

**Staffing**

The workforce profile and workforce issues are described in detail in Section 11.

Approximately 40,000 staff members are employed by the NHS Greater Glasgow & Clyde. In addition to these, there are University and voluntary staff who also contribute to NHS Greater Glasgow's output. The current whole time equivalent by discipline is shown in table 6 below.

Table 6: Showing NHS Greater Glasgow & Clyde Headcount Figures

| Categories | NHSGG&C Acute |
|---|---|
| Medical (inc GP's)<br><br>Dentist | 4,154<br><br>765 |
| Nursing and Midwifery | 17,423 |
| Therapeutic | 3,253 |
| Healthcare Science and Technical staff | 2,408 |
| Pharmacy | 708 |
| Administration/Clerical and Senior Management | 7,083 |
| Estates, Works and Ancillary | 4,456 |
| **Total** | **40,250** |

## 3.9 UNIVERSITY LINKS – WORKING WITH ACADEMIC PARTNERS

The University of Glasgow Medical School is one of the two largest in Scotland.

NHS Greater Glasgow & Clyde has a long-standing and close working relationship with the University of Glasgow and other Glasgow Universities which manifests itself in a number of ways:

- Academic staff working within the NHS to provide direct clinical services
- Shared posts, particularly in laboratory specialties
- Teaching of undergraduate and postgraduate medical students
- Teaching of science students
- Collaborative research projects between NHS and academic staff which have a significant impact on the local and national economy.

Once developed the new Southern site will be one of the largest clinical campuses in the UK in terms of the range and volume of clinical activity and the accompanying staff profile. As well as creating major opportunities and responsibilities in regard to training and education the pattern of co-located services will facilitate collaborative and innovative research activities across the spectrum of maternal, child and adult health and disease.
Against that background there is a clear recognition by NHS Greater Glasgow and Clyde, the University of Glasgow and the other Universities and educational partners with whom the Health Board engages, that the site will require to sustain, and be supported by, an active programme of on-site education and research.

Planning is already underway with key academic partners for the provision of academic, training and educational facilities on, or near, the new Southern site. These facilities will support clinical research programmes, ensure a modern educational environment for undergraduate teaching across the clinical disciplines and provide clinical skills and associated accommodation to facilitate the professional development of all staff groups.

In addition to enabling the development of existing staff, the creation of high quality academic and educational facilities on and around the site will significantly enhance the ability to recruit and retain the numbers and quality of staff required to maintain excellence in clinical service provision.

# 4. THE NEW CHILDREN'S HOSPITAL DEVELOPMENT

This section describes the following aspects of the Children's Scheme:

- The case for change and the future strategy for delivery of services,
- options considered,
- the current service and a description of the future service requirements,
- Project Objectives, in other words, the benefits the scheme is required to provide.

## 4.1 CASE FOR CHANGE AND FUTURE STRATEGY

Children's hospital services are currently provided by the existing Royal Hospital for Sick Children (RHSC) which is sited at Yorkhill and co-located with the Queen Mother's (Maternity) Hospital (QMH) and the Regional Medical Genetics Services. Apart from these services no other adult medical services are provided on the site.

The main block of the current hospital was built in 1970 with a number of amendments and additional facilities added in the intervening years. A full description of the services provided by the RHSC is incorporated in the next section but the hospital is the largest children's hospital in Scotland and provides a comprehensive range of secondary and tertiary care which is accessed locally, regionally and nationally.

The adjacent QMH was opened in 1964 and part of the rationale for its location on the Yorkhill site was the perceived clinical benefits associated with co-location of children's and maternity services. Over the intervening years the advances in the diagnostic and care options available for both the foetus in utero and a new born child with significant, and sometimes life threatening, problems have increased enormously. In response to these advances the ability to manage a pregnancy in which there is concern for foetal well-being in a setting that provides a full range of paediatric back-up and advice allows the provision of a "gold standard" of care. This becomes particularly pertinent at the time of birth when the capacity to provide full obstetric care to the mother, and equally, to offer seamless and comprehensive care to the new born child without the need for transfer or separation, ensures the highest quality and safest pattern of care for both.

The availability of this pattern of care on the existing Yorkhill site currently results in mothers from all parts of Scotland, known pre-natally to be carrying a child with a significant foetal abnormality requiring early intervention, being transferred to Yorkhill for their obstetric management at the time of birth.

Against that background issues relating to the overall provision of maternity services across Glasgow, combined with concerns regarding the separation of the QMH from other adult services supportive of maternal care, raised questions about the long-term maintenance of the maternity service on the Yorkhill site.

The QMH is currently one of three maternity units within Greater Glasgow, the others being located at the Southern General Hospital (SGH) and the Glasgow Royal Infirmary (the Princess Royal Maternity Hospital)(PRMH). In 2006/07 these three units provide care for a total of 11,910 births (QMH 3,326, SGH 3,092, PRMH 5,492).

The overall fall in the birth rate in recent years, combined with workforce drivers particularly regarding the sustainability of senior and junior medical staffing complements and rota arrangements required the Health Board to consider reducing the maternity units within the city from three to two. That concept was initially accepted by the Health Board's Maternity Services Strategy in 1999 and in 2003 a process was initiated to determine the future configuration of maternity services within the city.

The ensuing professional and public debate was shaped by the twin aspirations of ensuring that mothers, particularly during labour, had ready access to intensive care support and that the foetus at risk received the pattern of integrated and timely care which can only be achieved by the co-location of maternal and paediatric facilities.

Following completion of a consultation exercise the then Greater Glasgow NHS Board, at its meeting in April 2004, agreed a recommendation that a reduction in maternity units be effected by the closure of the QMH. The Minister for Health and Community Care, in September 2004, acknowledged the concerns expressed regarding the consequent loss of the links between maternal and specialist paediatric services afforded by the existing hospital configuration on the Yorkhill site. By way of response the Minister announced that the Scottish Government would provide £100 million to enable a new children's hospital to be built on a site which would support the "triple co-location of services", thereby ensuring safe obstetric care for mothers and the preservation of the links between maternal and specialist children's services, as well as offering the option of strengthened clinical links between paediatric and adult services.

In that latter regard adolescent services and facilities have long been recognised as one of the weakest areas of NHS provision across the UK. Commonly teenagers and young adult patients have to be accommodated within hospital services targeted primarily either at younger children or older adults, neither of which arrangements are suitable for the social, developmental or clinical requirements of this age group. The move of the RHSC to an acute site, implemented in conjunction with the Scotland-wide shift of the upper age limits for children's hospitals from 13th to 16th birthday (and up to 18 where appropriate) will allow the provision of facilities specifically designed for this age group.

In addition the co-location of children's and adult services will support a collaboration between paediatric and adult specialties that will facilitate a continuum of care for those young people with long-term conditions for whom the transition from paediatric to adult services is often a very unsettling and clinically disruptive period.

## 4.2 DESCRIPTION OF OPTIONS CONSIDERED

The main criteria in considering options for the location of the New Children's Hospital were the capacity to address the requirement for "triple co-location" of paediatric maternity and adult services (as identified as the gold service standard by Professor Calder's Report) and the availability of land.

The options considered for the future of children's services were either :-

- 'Do nothing' – in other words leave the children's services on the current site

or

- A new build on an acute site.
-

For the reasons already described the 'do nothing' option was dismissed on the clinical grounds that it would leave the children's services on an isolated site and would not provide the triple co-location required to maximise high quality, safe care.

An additional reason for dismissing the 'do nothing' option was the high cost of refurbishing the current Yorkhill buildings from which children's services are provided.

The preferred option is therefore a new build within an acute site.

The Minister established a Clinical Advisory Group chaired by Professor Andrew Calder with the remit to work with NHS Greater Glasgow to identify the most appropriate site for the new children's hospital through a process of service planning, stakeholder engagement and public consultation.

(GRO – Using General Register Office 2004 based Population Predictions)

An option appraisal exercise considering all of the potential available hospital sites within the Glasgow area took place in October 2005. The Southern General site was identified as the only site which fulfilled the two aforementioned criteria, that of having available land and offering triple co-location of paediatric, maternity and adult services.

In addition, as paediatric neurosurgery is already located on the Southern site, this option also offers a range of additional clinical services which will enhance patient care.

Many children requiring neurosurgical care will also experience other clinical problems which require the advice or input of a range of paediatric specialities and support services. Currently the provision of such support requires either the transfer of the patient or the movement of staff between Yorkhill and the Southern General site. The ability to offer neurosurgical care in the context of a full complement of paediatric medical, surgical and intensive care expertise will substantially facilitate the provision of high quality, safe and comprehensive care to this patient group.

In parallel with the above, and consequent upon the Ministerial announcement in 2004, the decision to build the new children's hospital in Glasgow was recognised in Delivering for Health (2005), the Scottish Government response to the Kerr Report, as being an integral part of the future plans for the delivery of specialist paediatric services in Scotland.

*"We have already agreed funding to relocate the Royal Hospital for Sick Children in Glasgow as a centre for national expertise in specialist children's services. It will be co-located with maternity and adult services providing a 'gold' standard children's hospital"* Malcolm Chisholm 2004

Following publication of Professor Calder's Report published in March 2006, a public consultation process on the future site of the new children's hospital was initiated in April 2006, the outcome of which endorsed the proposal to adopt the Southern General as the site for the new hospital. The proposal was ratified at a Greater Glasgow and Clyde Health Board meeting on 27th June 2006.

Confirmation was also provided by the Scottish Health Council in August 2006 that the consultation process had demonstrated compliance with the relevant guidance for such procedures.

Concurrent work is being undertaken in NHS Lothian regarding the reprovision of their children's hospital facilities, which are currently delivered from a site which does not include maternity or adult hospital services. This project, which has already obtained Initial Agreement from the Scottish Government, also shares the goal of delivering services from a site offering triple co-location.

Clinical and managerial staff involved in the initial planning for the proposed new children's hospitals in both Edinburgh and Glasgow recognise the need for these two projects to be taken forward in a collaborative manner that enhances the overall provision of specialist paediatric services within Scotland. To that end formal links have already been established between the two projects and there is also close interaction with the National Steering Group for Specialist Children's Services, chaired by Malcolm Wright, which has a remit to develop a national delivery plan for specialist paediatric services within Scotland.

## 4.3 DESCRIPTION OF THE CURRENT SERVICE AND FUTURE REQUIREMENTS

The RHSC (Glasgow) is Scotland's largest children's hospital and provides a comprehensive range of specialist care on a local, regional and national basis. Annual activity for 2006-2007 comprised

| | |
|---|---|
| Out-patient attendances: | 72,791 (New: 20,307; Return: 52,484) |
| In-patient admissions | 15,806 (Emergency 54%) |

| | |
|---|---|
| Day Cases | 8,195 |
| A&E Attendances | 38,588 |
| Surgical procedures | 11,636 |

Within Greater Glasgow essentially all in-patient care for children up to their 13th birthday (with the exception of paediatric neuro-surgery as previously mentioned) is provided by RHSC. This includes a full range of secondary medical and surgical paediatric services.

Accident and Emergency services for children aged 12 and under continue to be provided at all the city's current A&E Departments (excluding the Western Infirmary) although most ambulance transfers are brought straight to RHSC. Following earlier discussions within NHS Greater Glasgow agreement was reached that paediatric Accident and Emergency activity should be centralised in the children's hospital. These plans, taken in conjunction with the planned change in age limits for children's hospitals (see below) will involve a significant increase in the number of A&E attendances which will be incorporated into the planning of the new hospital. The parallel development of Minor Injury Units at several sites across Glasgow is designed to ensure that less severe problems can be dealt with nearer to home

The majority of paediatric outpatient activity is also dealt with at RHSC although some work is carried out in Child Development Centres and in other hospital settings (e.g. orthoptics, plastic surgery).

Children and young people aged 13-15 (inclusive) receiving in-patient or outpatient secondary care in Greater Glasgow (including Accident and Emergency attendances) are currently cared for within adult hospital services. Consequent upon recommendations in "Better Health, Better Care", the Kerr Report, Building a Health Service Fit for the Future (2005), and the Action Framework for Children and Young People's Health (2007) these patients will be cared for within the children's hospital services in the future albeit with an emphasis on ensuring the provision of patterns of service and facilities that are appropriate for their age and maturity. This will result in a 5-10% increase in activity across all sectors of RHSC.

In providing local hospital services to the children and young people of Greater Glasgow it is important to recognise that, as of the 2001 census, 25% of the children in Greater Glasgow live in areas characterised by maximum deprivation (Depcat 7). This concentration of deprivation is not replicated elsewhere in the UK and impacts on both the pattern and incidence of disease as well as aspects of service use, issues that require to be reflected in the patterns of service provision.

At a regional level the hospital supports a full range of specialist paediatric services comparable to the spectrum of specialties provided in an adult teaching hospital – cardiology, haemato-oncology, neurology, specialist surgical services, endocrinology and many others. In response to the specialist nature of these services and the long-term care that many patients receiving these services require, patients frequently remain under the care of RHSC at least until 15-16 years of age and sometimes older where appropriate.

These specialist services are accessed from across the West of Scotland Health Board areas and work in collaboration with, and in support of, the services provided in the District General Hospital paediatric units within the regional catchment area.

Yorkhill campus also hosts the regional Medical Genetics Service which includes services for children, adults and families. The relocation of the children's hospital will be accompanied by a requirement to relocate the Medical Genetics Services.

In addition to the aforementioned range of specialist regional services, RHSC is also host to a number of specialties which are designated as national services and for which, in most cases, it is the sole provider in Scotland.

These include :-

Kidney transplantation

Bone marrow transplantation

Cardiac surgery

Interventional cardiology

Extra corporeal life support (delivered in collaboration with three other centres in the UK)

Paediatric intensive care transport (shared service with Edinburgh)

Paediatric intensive care (from April 2007 – shared service with Edinburgh)

Complex airways surgery

Endoprosthetic bone replacement

Vein of Galen Aneurysm (UK service shared with Great Ormond St)

In-patient child psychiatry

Brachial Plexus Palsy

Cleft Lip and Palate (shared service with Edinburgh/Aberdeen)

The role played by RHSC in the delivery and support of both regional and national services is reflected in the fact that around 50% of the in-patient activity in the hospital arises from Health Board areas outwith Greater Glasgow and Clyde.

In considering the provision of specialist paediatric services it is pertinent to note that a number of aspects of the configuration and delivery of such services in Scotland are currently under review. This process includes, in particular, paediatric neurosurgery and haemato-oncology. The output of these reviews may realign service provision between the four specialist children's services in Scotland and may therefore impact on future activity levels and patient pathways albeit the result of these reviews will not be available until after the submission date for the Outline Business Case and therefore will be addressed within the Full Business Case submission for the New Glasgow Children's Hospital.

The national Cancer review will report in 2008 with the current likelihood of having no material impact on the exemplar design for the new Children's Hospital.

Neurosurgery will provide and initial report on adult services in 2008 but with no firm date as yet for reporting on paediatric neurosurgery. This Business case does not attempt to prejudge the outcome of the review. Even if complex neurosurgery were to be centralised in Glasgow it would only comprise 1 to 2 beds. In the unlikely scenario that every head injury and shunt procedure for Scotland were to be centralised then the impact would be more significant and difficult to give an accurate figure although it is estimated it would be no more than 8 to 10 beds. This could be comfortably accommodated within the design of the new children's hospital.

**Bed Modelling**

The RHSC currently has a total of 271 beds. These are configured as :-

14 ICU beds

6 HDU beds

23 Neonatal Surgical beds

185 In-Patient Ward beds (depending on activity levels some may be utilised on a five day basis)

14 Day Surgery beds

10 Medical Day Care beds

10 Short Stay Beds (23 hour acute receiving unit)

9 Child Psychiatry beds

In addition, there are approximately 8 paediatric neurosurgery beds (2 ICU and 6 HDU and ward) in the Institute of Neurosciences and an average of 12-15 in-patient beds in use across the adult sector for patients aged 13-15 years.

The RHSC currently utilises 7 main operating theatres plus a dental suite and has facilities for :-

| | |
|---|---|
| Cardiac catheterisation | Interventional radiology |
| MRI | CT scanning |
| Nuclear medicine | |

There are currently a full range of dedicated paediatric laboratory support services on the Yorkhill campus :-

| | |
|---|---|
| Haematology | Bio-chemistry |
| Microbiology | Virology |
| Pathology | |

In addition to supporting the work of the RHSC with specialist laboratory services and professional advice these services are also accessed in various ways by primary care and other regional centres. In particular the pathology service undertakes perinatal and paediatric post-mortems, including forensic examinations, for most of the West of Scotland Health Board areas.

## 4.4 DESCRIPTION OF FUTURE SERVICE REQUIREMENTS

The relocation of the RHSC to the Southern General site does not, of itself, fundamentally change the role of the hospital in the provision of local, regional and national services. Future service requirements of the hospital will therefore closely mirror those which currently pertain, namely the need to be able to provide the broad range and patterns of service currently delivered at RHSC and to accommodate the required activity levels in a way that ensures timely accessibility for all patient groups.

At a local level, in addition to providing secondary hospital-based care for children under 13 in the Glasgow area, the new hospital will require to accommodate those patients aged 13-15 years (and potentially some in the 16–18 years age group) currently admitted to adult hospitals across the city. This equates with some 1,500 admissions; 2,800 bed days; 470 day cases and 1,100 surgical procedures.

In addition, it is intended that, following co-location, the in-patient care of children undergoing neurosurgical procedures will also be provided within the new children's hospital. This currently involves 260 admissions and 1,670 bed days annually for patients aged 0-15 yrs.

The hospital will remain the main provider of specialist care for West of Scotland Health Boards albeit there may, over time, be some capacity for different models of shared care to be developed between RHSC and regional district general paediatric units which may allow some elements of the patient journey to be delivered nearer home. In that regard it should however be noted that a number of contrary drivers, which affect the sustainability of DGH paediatric services or argue for increased specialist input into care, have tended to increase inward referrals over recent years and there is no immediate evidence that this trend will not persist.

Equally, as the largest children's hospital and the host to a range of national services, the RHSC will continue to play a pivotal role in the overall delivery of specialist services for children and young people in Scotland. In that regard the models of care and service configuration for specialist children's services in Scotland are currently the subject of review by the National Steering Group for Specialist Children's Services and the resultant National Delivery Plan, circulated for consultation during spring 2008, may contain some recommendations that could impact on activity levels in a few specialities, most notably haemato-oncology. In a parallel, a national review of adult and paediatric neurosurgery may also bring forward proposals for service reconfiguration. Any such recommendations would require to be scoped and addressed in the development of the final business case.

In considering future service requirements it is also pertinent to note that for many hospital services RHSC is the sole provider either at a local, regional or, in some cases, national level. Indeed there are at least two specialities in which RHSC is one of only two or four providers in the United Kingdom. As a result there is a strong imperative to ensure that the pattern of accommodation and services provided in the new hospital is capable of maintaining activity levels commensurate with clinical demand and of coping with anticipated periods of peak activity.

In parallel there will be a requirement to ensure that known and anticipated performance targets for services for children and young people can be addressed.

A Community Engagement Team has been established to ensure patient, carer and community involvement in the development of the new hospitals. The Community Engagement Team has undertaken an extensive programme of consultation with families, support groups, charities, voluntary organisations and local community organisations.

### 4.4.1 Bed Model

Key to the ability of the new hospital to deliver activity levels that accommodate clinical demand is the incorporation of an appropriate bed model, both in terms of overall bed capacity and also the distribution of beds between critical care, in- patients and ambulatory/day care services.

As already identified, RHSC currently has 271 beds. In addition there are, on average, between 15 and 20 beds in Glasgow occupied by patients (young people aged 13-15 or neurosurgical patients) whose care will, in the future, be delivered in the new children's hospital. The current virtual bed pool of the patient population who will use the new hospital has therefore been calculated as 289.

In order to develop a credible bed model for the new children's hospital NHSGGC engaged the services of CHKS who have undertaken comparable work for the Health Board in the past and are also providing advice in respect of the bed model for the new adult hospital which is incorporated in this Outline Business Case.

In developing their recommendations CHKS utilised data relating to activity patterns for patients aged 0-16 in Glasgow hospitals (excluding Clyde) for the financial year 2004-2005. Speciality-specific performance, as measured by day case rates and average lengths of stay (ALOS), were measured against two peer groups of hospitals in England – a group of six specialist children's hospitals and a group of five teaching hospitals with significant paediatric facilities. In all areas the 2004-2005 data from the peer group hospitals was used as the comparator.

In addition, CHKS adjusted the bed model to reflect anticipated changes in the population over the next decade (based on General Register Office predictions) and differing levels of bed occupancy.

The analysis and recommendations in the CHKS report were underpinned by a number of key assumptions

- That the population would change in line with projected estimates. For the purposes of this exercise, and based on the predicted changed in the NHS GG 0-16 population over the next decade, a reduction of 11% was applied.

- That hospitalisation rates will remain steady such that a fall in population will result in a comparable fall in activity.

- That there will be no material change in existing referral patterns or service configuration.

- That all patients under 16 currently managed in Glasgow hospitals outwith RHSC would be accommodated in the New Children's Hospital (this excludes obstetric and adolescent psychiatric patients).

Based on the incremental application of the impact of

  - the predicted fall in the population of children aged 0-15

  - operating at best peer performance rates across all specialities

  - achieving occupancy rates of 85% elective work and 65% non-elective work

CHKS estimated that there could be a potential reduction of 72 in-patient beds albeit this would required to be accompanied by a sufficient increase in day case and short-stay beds to accommodate the necessary changes in practice in favour of ambulatory and day care that are required to deliver the overall bed reduction. Taking these issues into consideration the final recommendation from CHKS favoured an overall bed complement of 245 beds.

The CHKS review did not include any recommendations regarding in-patient child psychiatry which currently incorporates 9 beds and delivers a national service. Existing occupancy rates and patterns of use suggest that the service could be maintained without loss of quality from a pool of six beds. A further adjustment of the proposed internal configuration of services within the new children's hospital was also agreed which was seen to offer increased flexibility and efficiency of bed utilisation and as a result the proposed bed model for the new children's hospital is based on a total of 240 beds, a reduction of nearly 50 beds from the total bed pool currently available to the relevant patient population.

It is proposed that the total of 240 beds will be configured as

193 In-Patient beds (including critical care areas, wards, psychiatry and 23 hour beds)

20 Short-Stay beds (emergency receiving)

27 Day Care/Day Investigation

In order to deliver the desired objective of a combined neonatal medical and surgical service serving both the maternity and children's hospitals on the Southern General site twelve of the 240 beds will be provided within the redeveloped maternity / neonatal building on the Southern General site to which the new children's hospital will be immediately juxtaposed. These 12 neonatal intensive care cots will be accessed by neonatal surgical patients currently cared for in RHSC. As a result, the bed capacity of the new children's hospital building itself will be 228.

The proposed overall reduction in bed numbers and the accompanying shift in focus in favour of day and short stay care will require a significant redesign of patient pathways and the ways in which services are configured. A wide-ranging service redesign programme is currently being progressed within the NHS GG&C Women and Children's Directorate in order both to consolidate proposals regarding future service configurations and to ensure that there is opportunity to test new models of care well in advance of the opening of the new hospital. This programme will also incorporate work with Regional Planning structures and other West of Scotland Health Boards in order to identify and accommodate any anticipated changes in service patterns which will impact on the future role and contribution of the Royal Hospital for Sick Children.

## 4.5 PROJECT OBJECTIVES

The objectives of the scheme are given below. They are categorised under the four headings of :-

- Clinical Effectiveness and Safety for Patients
- Fit for Purpose of Facilities
- Positive Impact for Staff
- Maintain and Enhance Academic Links

The following describes each in more detail: -

### 4.5.1 Clinical Effectiveness and Patient Safety

Fundamental to the rationale for locating the new children's hospital at the Southern General site is the requirement to achieve the clinical benefits of co-location with adult and, in particular, maternity services.

Restoration of linkage between maternity and paediatric facilities which currently exists on the Yorkhill site will allow the continuance of the services which have developed to ensure high quality care for the foetus at risk and the new-born infant with serious or life-threatening problems. These services support diagnosis, advice and intra-uterine management in the case of a foetus with significant abnormalities, the appropriate management of labour and the capacity to operate or undertake other interventions on the new-born baby without unnecessary transfers or inappropriate separation from the mother.

The co-location with the adult hospital, will also support engagement with adult services and clinicians which will offer particular assistance in the management of adolescent patients. This will become particularly relevant as the age limit for the children's hospital is elevated to the 16th birthday. Some specialties, for example gynaecology, are not replicated in paediatric practice but will be reflected in the clinical activity profile of the hospital with the change in age limits. The capacity to engage readily with specialist expertise from outwith the children's hospital will be a major clinical advantage in such instances.

The transition of young people with long-term clinical conditions from paediatric to adult services has long been recognised as challenging for the patient and family. The presence of co-located services can facilitate better transition arrangements and minimise the difficulties encountered during the transition process.

Modern health care increasingly incorporates multi-disciplinary and cross-specialty approaches, particularly in the management of complex problems. Interventions may require the concurrent involvement of multiple specialists. The configuration of the new hospital including, in particular, the integration of theatre and diagnostic imaging and intervention suites will support the best of modern practice in these clinical scenarios.

Many clinical areas in the current RHSC are required to manage a mixture of emergency and elective activity and a mix of patients with significantly varying severity of conditions and expected lengths of stay. The complexity of such arrangements mitigates against well-structured care pathways and best practice. The opportunity to configure the hospital to specifically accommodate differing care pathways will not only increase organisational efficiency but also enhance patient care and safety.

There is a clear recognition of the benefits of much closer integration of neonatal medical, surgical and medical intensive care facilities than has previously been possible on the Yorkhill site. Arrangements are being made to take forward such integration within the existing campus but the development of purpose-built facilities designed around such an integrated service will support high quality multi-disciplinary care to this very vulnerable patient group.

Healthcare acquired infections remain a major source of morbidity and prolonged hospital stay. The new hospital will be designed in accordance with best practice in terms of infection control principles and should thereby minimise the occurrence of HAI and the allied risks.

An additional advantage of a new children's hospital will be the opportunity to ensure the centralisation of all paediatric A&E activity. This proposal, which accords with guidance on the provision of Accident and Emergency services to children, has already been agreed in principle but would have required significant capital investment at the existing RHSC given that it will result in a substantial increase in A&E attendances. The provision of new hospital facilities will allow the development of a purpose-built paediatric A&E department designed around modern emergency care practice and supported by adequately sited and sized short-stay and assessment facilities to minimise hospital admissions.

Information technology plays an increasingly vital role in the support and delivery of best clinical practice. The new hospital will offer an opportunity to incorporate state-of-the-art information management arrangements which will facilitate good care, minimise risk and ensure efficient working practices. Telemedicine is now an integral part of the role of RHSC as a tertiary referral centre. The capacity to include telemedicine capability in the relevant areas of the new hospital will significantly enhance the hospital's role in supporting and co-operating with children's services elsewhere in Scotland and in ensuring patient transfers are safe and timely.

Finally, although difficult to quantify, there is evidence that the construction and environment of a hospital can have a direct impact on patient well-being and recovery times. The use of modern design principles, enhanced by other influences (e.g. artwork) that improve the built environment, should have a positive influence on patients.

### 4.5.2 Fit for Purpose Facilities

Although not as old as many other hospital buildings within Glasgow the RHSC is not designed around current patterns of hospital-based care. Aside from issues relating simply to the age of the building the configuration of the clinical areas is either designed around models of care from the 1950s and 60s or, in regards to more recent development, has been shaped by limitations of space and operational feasibility.

The opportunity to develop a "Fit for Purpose" hospital built around current and future patterns of patient care will offer significant advantages to staff, patients and their families. These include, in particular, the ability to support closer working between the intensive and high dependency care areas and the facilities with which they interact e.g. theatres, diagnostic imaging.

- integrated neonatal medical and surgical services
- well structured dedicated 23 hour, day and ambulatory care services
- appropriate separation of emergency and elective activity
- integrated theatres, MRI and interventional radiology facilities for complex multi-interventional procedures

In addition the resultant ease of patient and staff movement between these areas as and when required, will offer not only better, more efficient and ultimately safer pathways of care but will also have a direct impact on the sustainability of staff rotas, the delivery of Hospital at Night models of care, better infection control management and the more efficient use of resources.

The New Children's Hospital will also provide the opportunity to ensure the centralisation of all paediatric A&E activity which will result in an increase in attendances from 38,000 to 46,000 per annum.

The scheme, through the provision of new hospital facilities will allow the development of a purpose-built paediatric A&E department designed around modern emergency care practice and supported by adequately sited and sized short-stay and assessment facilities to minimise hospital admissions.

The configuration of the hospital will also support access from A&E to Diagnostic Imaging and swift transfer to ICU as well as being able to develop any clinically useful synergies with the adjacent adult A&E department with which it will share emergency ambulance routes.

***Child, Parent and Family-Friendly Facilities***

The different psychological, developmental and clinical needs of infants, children and young people, their dependence on parents and carers and the complex dynamics of the wider family circle require that hospital facilities for children and young people are specifically designed around their particular needs.

This requirement has been increasingly recognised in the design of children's hospitals developed in the UK and internationally in recent years and the new children's hospital will have the opportunity to draw on a growing range of innovative ideas and design options in order to provide an environment practically and aesthetically suited to children and families.

One particular age-group traditionally neglected in the provision of hospital facilities are adolescent patients. The new hospital, which will accommodate all children and young people up to the 16$^{th}$ birthday (and some 16-18 year olds) will incorporate facilities designed to address the particular developmental, psychosocial and educational needs of this patient group.

Parents and carers not only provide emotional support and comfort to children in hospital but are also key partners in their care. The current RHSC does provide a number of single cubicles and offers some space for a parent to stay with a child but the accommodation is limited and in the four bedded and other ward areas the provision for resident parents is far from ideal in terms of space, comfort, privacy or access to toilet and allied facilities.

The hospital inpatient area is planned on 57% single rooms the rest being within 4-bedded areas. This was agreed following consultation on the appropriate mix of single/multi-bed wards for Children. The outcome of the consultation with children, young people and their carers was that there was a strongly expressed preference from both patients and parents for the retention of a mixture of single rooms and small bed bays (2-4 beds). This mixture was seen to offer flexibility in addressing a number of factors including the level of the illness, the need for isolation, the need for company to aid recovery, and the preference of teenagers in particular either for privacy or companionship. Such a mixture of accommodation is also in line with extant 'best practice' statements regarding adolescent care.

The Clinical Advisory Group also agreed that there should be a mixture of single and multi occupancy rooms within wards. It was accepted that there was a need for higher levels of single rooms in assessment areas and Intensive Care.

A key element of planning within the ward areas will be the inclusion of parental bedside facilities throughout the hospital (specific and different provision will be required in intensive care areas). This will not only address the personal needs of parents or carers but will significantly enhance their capacity to contribute appropriately to their child's care as well as lessening the infection control risks inherent in crowded accommodation.

In addition to bedside parental accommodation the current RHSC benefits greatly from the availability of additional parent/family accommodation provided adjacent to the site by the charities Ronald McDonald House and CLIC/Sargent. These facilities are particularly designed around the needs of parents/families of children who require prolonged hospital stays. Clearly the decisions regarding reprovision of such facilities alongside the New Children's Hospital will rest with the charities involved but there would be a clear intention to work closely with these respective charities to facilitate the continuation of the current, and much valued, arrangements at the new site.

***Patient Security***

The hospital will support parent, carer and family access in ways that differ materially from many adult departments. In the latter the pattern and volume of public movement in the hospital brings difficulties in terms of ensuring the safety and security of child patients. The New Children's Hospital will offer options to reconfigure public movement within the premises which will allow the introduction of modern security measures which are both as effective and as efficient as possible.

### 4.5.3 Positive Impact for Staff

Many of the potential advantages of the new children's hospital in terms of clinical care and a "fit for purpose" environment also constitute true benefits for staff. The capacity to facilitate high quality care with efficient care pathways and to maximise synergies within the children's hospital and with other services on the site combined with ease of access to enhanced academic facilities and opportunities all favour more efficient working and improved professional development and offer the attraction of working in a centre capable of sustaining a high reputation for the clinical care provided.

In addition a hospital within which departmental arrangements are configured to take advantage of the synergies between individual specialties and services will foster innovative and flexible working practices across the clinical disciplines with the resultant consequence of enhancing experience and job satisfaction as well as supporting more efficient staffing structures.

Equally, a hospital built to modern standards in terms of design, facilities (including dedicated staff facilities), equipment and space will provide an attractive, healthy and safe working environment.

Potentially the opportunities offered by a new children's hospital located in such a way as to maximise the opportunities and benefits inherent in the overall development proposed for the Southern General site are comparable to the best international centres. Such an arrangement will play a major future role in attracting and retaining high quality staff of all disciplines.

The development of an acute triple co-location campus of the size and scale which is envisaged for the Southern General site as a whole is also likely to include or attract a range of professional, social and recreational facilities either within or in the vicinity of the campus from which staff at the new children's hospital, along with other staff working on the site, can benefit.

### 4.5.4 Maintain and Enhance Academic Links

RHSC, as the largest children's hospital facility in Scotland, is a key centre of under-graduate and post-graduate teaching and clinical research. The infrastructure to support these activities on the current Yorkhill site is increasingly in need of new investment in terms of teaching accommodation, clinical skills facilities, clinical trials accommodation etc. As a result, the capacity, within the existing Yorkhill campus, to host significant local, national and international training events and conferences is extremely limited in a way that is detrimental to the hospital fulfilling its wider academic role.

The re-location to a site which will become a major hub of education and research and will have appropriate facilities to sustain these activities will address these long standing needs and thereby allow the hospital to better fulfil its potential as a major centre for teaching, research and development in the field of child health.

In addition, the opportunities afforded by co-location will foster increased academic collaboration between paediatric, obstetric and adult specialities across a range of common education research interests.

# 5. THE NEW SOUTH GLASGOW HOSPITAL DEVELOPMENT (NEW ACUTE ADULT HOSPITAL)

This section describes the following aspects of the Acute adult hospital development: -

- The case for change
- Overview of the Acute Services Strategy
- Description of current service at Southern General
- Proposed future adult services on the Southern site
- Project Objectives

## 5.1 THE CASE FOR CHANGE – ACUTE SERVICES WITHIN GLASGOW

Health Services in Glasgow are on the verge of a dramatic and exciting change. Following a decade of planning and public consultation, proposals to modernise the acute health services in Glasgow were approved in 2002 by Malcolm Chisholm, the then Minister for Health. This 10 year multi-million pound strategy will see the transformation of acute services across the city including the replacement of outdated Victorian buildings, and the creation of one-stop/rapid diagnosis and treatment models for the vast majority of patients.

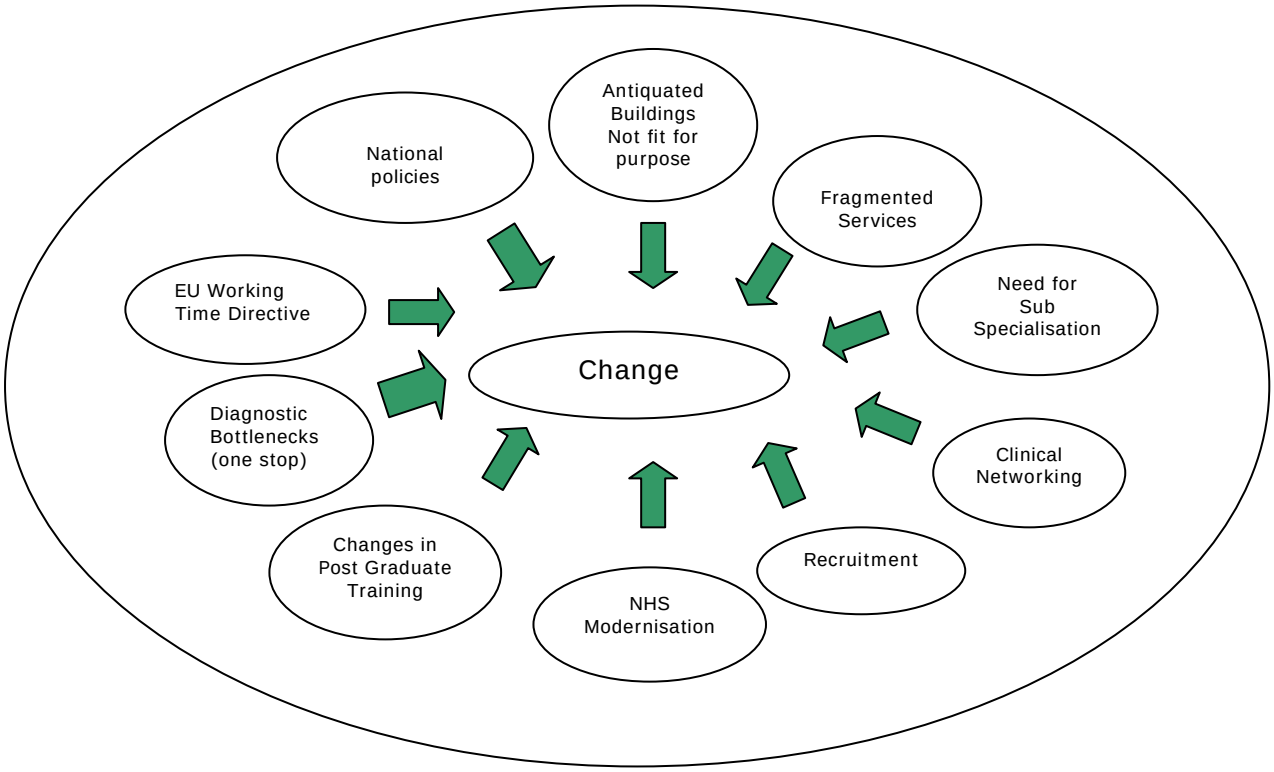
*"This has been a long and extensive process taking many views from people across Glasgow. In those three years there has been a range of views put forward during the consultation, but the common strand running through the consultation is that maintaining the status quo is not an option. It is time to move onto provide high quality, modern healthcare for patients in Glasgow. It is time to move on from the outdated buildings which are unsuitable for modern healthcare" Malcolm Chisholm 2002.*

NHS Greater Glasgow and Clyde recognise that the need to ensure that patients who require access to hospital care can be seen, fully investigated and treated as quickly as possible within the appropriate facilities. For patients presenting as an emergency there should be access to specialised care of the highest quality, with access to state of the art investigations and treatment facilities on a 24 hour /7days a week basis. For elective care, patients should be seen, investigated and leave the hospital with a diagnosis and treatment plan wherever possible on the first visit /same day visit. Underpinning this should be effective information and computer systems which allow GPs, Specialists and patient access to all relevant information needed to deliver high quality and effective patient care.

In 2002 Greater Glasgow Health Board described the case for change, which identified that the status quo was not an option as there was significant challenge to the sustainability of the configuration of services and to their ability to improve patient pathways and create more efficient and effective care pathways. All of the factors identified remain relevant today with additional challenges and pressures resulting in even greater need to reduce hospital sites and duplication of services.

In brief, the pressures for radical change in the way Acute Services are delivered in Glasgow are shown in the diagram below.

**PRESSURES FOR CHANGE**




The following describes these pressures in more detail.

The main drivers for changes are this

- **Policy Imperatives** - 'Better Health, Better Care' drives: reductions in waiting times; fast track access to rapid diagnosis and treatment; the provision of services designed around the needs of patients; modernisation of health care through better use of technology; and improved integration with primary and secondary care and reducing inequalities in health. To achieve these objectives a major programme of redesign of services, investment in buildings and information technology is required, making services smoother, more accessible, enhancing the quality of the outcome for the patient and achieving the objectives advocated by Better Health, Better Care" and other national policy initiatives.

- **Fragmented services** – there is a requirement for patients to move within and around sites and different buildings with an inevitable loss of continuity of patient care. Important co-locations of services are not possible and there are difficulties in transferring information between services to support patient care.

- **Increasing sub-specialisation in medicine and surgery** - there is a move towards larger teams to ensure all patients can get access to the appropriate specialist treatment; whereas in the past a single surgeon may have performed a wide variety of operations, now more procedures are available and specialties increasingly deal with particular morbidities and parts of the body. Diagnosis can also be a multi-disciplinary task often requiring patients to be seen by a number of expert staff before diagnosis can be made. Having expert staff together and closely integrated facilities this process allowing treatment to commence as soon as possible

- **Pressures on Staffing and Rotas** – currently there are too many inpatient sites each requiring emergency on-call rotas resulting in pressures on staff. Modernising Medical

Careers and the European Working Time Directive impact upon the availability of medical staff and therefore the sustainability of rotas. In short, the fundamental redeployment of staff, Glasgow is facing an over-stretched workforce with patterns of working, which are difficult to sustain and are unaffordable.

- **Outdated buildings** - many of which are Victorian, dating from 1870's and are unfit for modern healthcare. It is significant to note that many of the original buildings still in clinical use today were contemporary with Joseph Lister. This causes difficulties in providing an efficient, smooth running service. The Victorian buildings provide unsuitable diagnostic and imaging facilities which restrict capacity, create bottle-necks and inhibit the provision of one stop/ rapid access diagnosis and treatment models. Some refurbishment has taken place but there are still several limitations and inflexibility to: change in use, access to and within the buildings and the ability to increase capacity. Patient transport within the sites and around the sites and different building inevitably delays patient care, causes patient discomfort and increases risk of patient safety and discontinuity of patient care. In addition, co-location of interdependent services is often not possible. The existing labyrinthine circulation complicates way finding for members of the public and greatly reduces general and security efficiency.

In summary, the status quo is not an option, as it will result in the following:

- A failure to provide a safe clinical service in accordance with nationally recognised standards;
- A failure to provide good clinical services with enhanced outcomes through sub-specialisation and redesign.
- Failure to sustain services. For example, many of the existing clinical teams are too small to sustain rotas across multiple sites. In some cases it may be possible to continue the service with significant use of external staff agencies but with a corresponding knock on affect to quality and expenditure.
- An increased incidence of elective cancellations to cope with the rising emergency workload. The consequence of this trend will be a reduced ability to deliver elective activity with a shift towards an 'emergency only' service;
- Failure to attract and compete for staff, especially in areas of acute shortages;
- Failure to provide a modern service with sub-specialisation and up to date technology;
- Rising cost of maintaining Victorian building estate

## 5.2 OVERVIEW OF THE ACUTE SERVICE REVIEW (ASR)

To address the pressures discussed above the Health Board have developed a dynamic strategy of reconfiguration and investment. The key components of the acute strategy are as follows: -

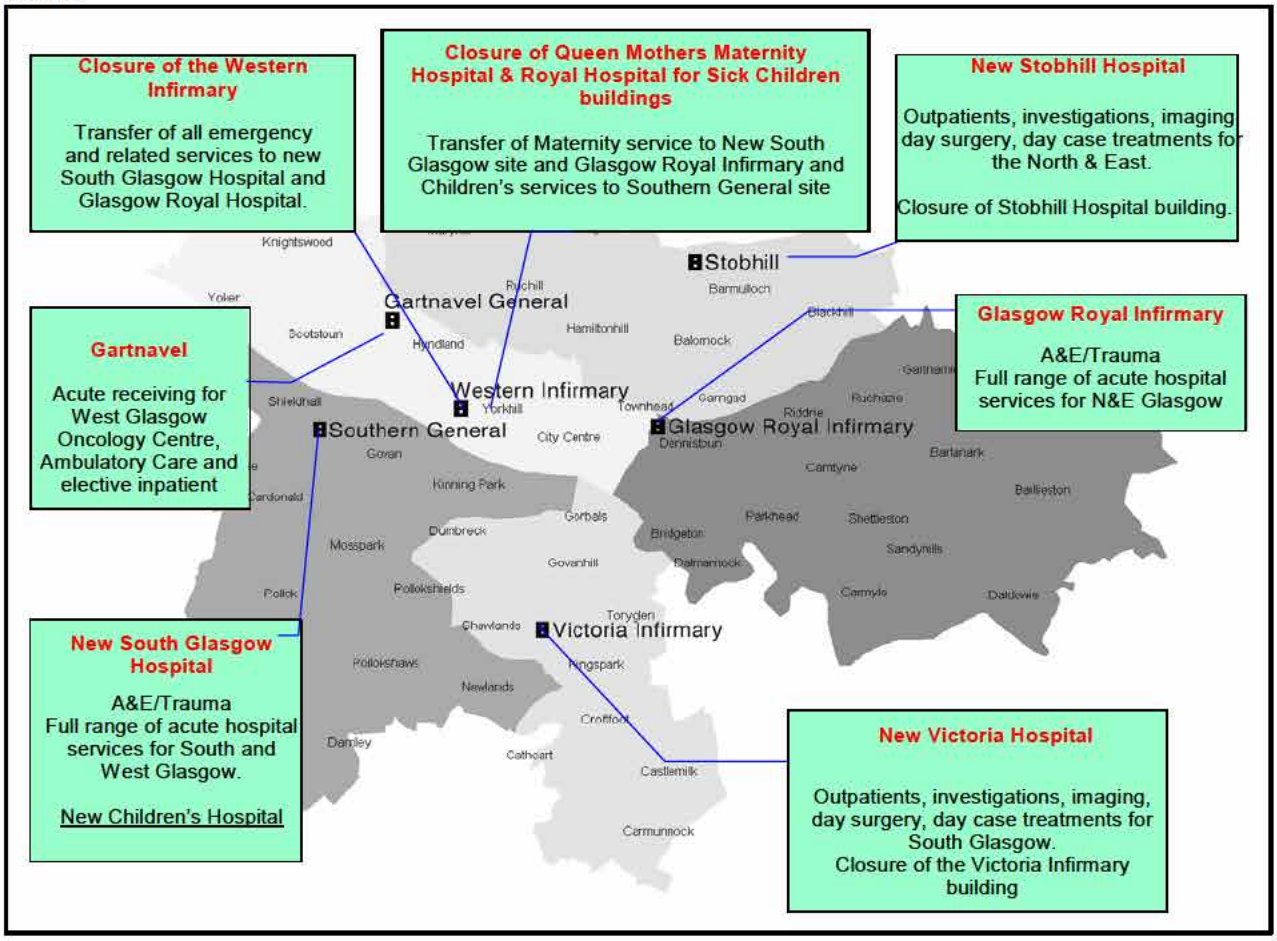
- A new build West of Scotland Cancer Centre on the Gartnavel site.
- Transfer of Cardiothoracic and Interventional Cardiology Services to the Golden Jubilee National Hospital (2008).

- Two new ambulatory care hospitals (ACH's) on the Stobhill site and the site adjacent to the Victoria Infirmary to support the future reduction from 6 to 3 adult in-patient sites. The three inpatient acute sites will be the Glasgow Royal Infirmary, the Southern Glasgow site and Gartnavel General Hospital.
- The number of maternity units in Glasgow will change from 3 to 2, these being at the Southern General Hospital and Glasgow Royal Infirmary.
- The number of Accident and Emergency Departments will be reduced from 4 units and a casualty to two A&E Trauma units, which will be based at Glasgow Royal Infirmary and the Southern General site. Trauma and orthopaedic in-patient services will be provided from these two A&E sites.
- There will be 5 Minor Injuries Units located at Glasgow Royal Infirmary, Southern General Hospital, the New Stobhill and Victoria Hospitals and at Gartnavel General Hospital.

The redesign and redevelopment of Glasgow's acute services will address many of the pressures currently facing the hospital service. The new services will be provided in modern facilities rather than in 19th century buildings. The purpose-designed facilities will enable the one-stop/rapid diagnosis and treatment models required for the future. Concentration of services will allow the requirements of junior doctors' hours and issues arising from increasing sub-specialisation of medicine to be addressed through the creation of larger teams and sustainable rotas for both junior and senior staff.

The formation of larger clinical teams will ensure that programmes of work, including the need to cover emergencies without interfering with waiting list and ambulatory care sessions, can be planned effectively. The concentration of in-patient services on fewer sites will help strengthen specialist services and maximise the capacity of the service.

The planned future configuration of acute hospital services in Greater Glasgow is illustrated below.




## Description of the 4 ASR Phases

### *The phased Implementation of the Acute Services Review*

The implementation of the Acute Services Review Strategy is planned over four phases, these are described below:

The first phase is well underway and involves the two new build Ambulatory Care Hospitals currently under construction at the site adjacent to the Victoria Infirmary and Stobhill Hospital site, the centralisation of cancer services at the new Beatson West of Scotland Cancer Centre built at Gartnavel General Hospital and the development of the West of Scotland Heart and Lung Services at the Golden Jubilee National Hospital, replacing facilities currently at the Western and Glasgow Royal Infirmaries.

This first phase of investment will see these new facilities commissioned over the period late 2007 to summer 2009, which will result in not only significant modernisation of Glasgow's healthcare facilities and creation of single centres of excellence but will also result in 4 of Glasgow's major adult hospital sites operating below capacity.

Phase 2 of the Acute Strategy involves the development of the new South Glasgow Hospital campus which not only sees the single biggest phase of modernisation and rationalisation of Glasgow's adult clinical services, but incorporates the creation of a new Children's Hospital for the Greater Glasgow and West of Scotland populations and the completion of Glasgow's Maternity Services modernisation.

On completion of the development of the new adult hospital in 2014, the Board will be able to enact the following:

- inpatient services in the Victoria Infirmary to transfer to the new development thus vacating the Victoria Infirmary site;
- inpatient services at the Mansion House Unit (MHU) to transfer allowing closure of the MHU;
- inpatient services housed in outdated buildings on the southern site to be relocated;
- transfer of Accident and Emergency services and associated beds at the Western Infirmary enabling closure of the Western Infirmary.

By 2014, following some major refurbishment and new build works within the existing estate at Glasgow Royal Infirmary and Gartnavel General Hospital, sufficient capacity will be created, following the opening of the new South Glasgow Hospital, to allow the 3 site inpatient configuration of adult services to be implemented.

Phase 3 of the Acute Services Strategy sees the major redevelopment and modernisation of the Glasgow Royal Infirmary campus and this work will be developed with a view to being brought forward for funding consideration in the period beyond 2015 followed by the final phase, which would see the redevelopment and modernisation of the retained adult inpatient services required on the Gartnavel General Hospital campus undertaken.

The key milestones of the Acute Services Review to date can be found in Appendix 3.

Further detail about the Acute Services Review and the reconfiguration of services is available in the document 'The Clinical Strategy for Glasgow's Acute Services 2006/7-2013/14'. This is available from the Health Board website.

## 5.3 DESCRIPTION OF THE CURRENT SERVICE AT SOUTHERN GENERAL

This section describes the current patient services based at the Southern site, the current buildings and use, site constraints and opportunities.

### 5.3.1 Patient Services

The Southern General Hospital is a large teaching hospital with an acute operational bed complement of 900 beds. The hospital is sited in the south-west of Glasgow and provides a comprehensive range of acute and related clinical services.

District General Hospital services are provided for the south-west of the city, with some services provided for the whole city. Services include Accident and Emergency, Dermatology, ENT, General Medicine (including sub-specialities), Assessment, Rehabilitation and Day Services), Gynaecology, Neonatal Paediatrics, Obstetrics, Ophthalmology, Orthopaedic Surgery, Urology, Physically Disabled Rehabilitation and Continuing Care. The Obstetrics, Urology, Ophthalmology and Dermatology Departments provide the single in-patient location for the whole population of South Glasgow.

The Maxillofacial Department for the city was centralised at the hospital in the autumn of 2002 providing trauma and elective surgery and specialist provision for head and neck cancer. South and West Glasgow's in-patient Gynaecology service was centralised at the Southern General Hospital in late 2003/early 2004. The Assessment and Rehabilitation service for the Physically Disabled is provided for the whole city from the Southern General Hospital. There is also a wide range of diagnostic and therapeutic services including Audiology, Clinical Psychology, Dietetics, Occupational Therapy, ECG, Physiotherapy, Radiology (including MRI and CT provision for the general hospital service) and Speech Therapy.

The Institute of Neurological Sciences

The Institute of Neurological Sciences is based on the Southern General campus and provides Neurosurgical, Neurological, Clinical Neurophysiology, Neuroradiological and Neuropathology facilities for the West of Scotland. The Institute is equipped with 2 Magnetic Resonance Imaging Suites, SPECT Scanner, two Computerised Axial Tomography Scanners, and angiography facilities. The Institute has recently undergone a major upgrade to incorporate ENT and Oral & Maxillofacial and is now equipped with additional facilities including the development of a new ward, four additional theatres, intensive care and a new out-patient department.

Westmarc

The Westmarc unit houses the clinical services for prosthetics and orthotics, including the Artificial Limb and Appliance Centre, within a purpose-built facility. The centre is staffed jointly by hospital and university personnel from the National Centre for Training in Prosthetics and Orthotics of Strathclyde University.

Podiatry

The Department of Podiatry has a purpose built 24-chair clinic including a minor procedure theatre.

Spinal Injuries Unit

The Queen Elizabeth National Spinal Unit for Scotland provides a spinal injuries service to the whole of Scotland. This is housed in a purpose-built facility attached to the Institute of Neurological Sciences.

### 5.3.2 Buildings

The Southern General site extends over 28.9 hectares and is located in Govan, South West of the City Centre. The site and the buildings within it are owned by NHS Greater Glasgow and Clyde on behalf of the Scottish Ministers and incorporates the area of land earmarked for the development of the new Children and Adult hospitals and lab build.

The facilities which make up the Southern General consist of a mix of buildings of varying ages, architectural style and quality spread across the site. The buildings date from 1872 when the original hospital was built. In 1902-05 a facility accommodating a further 700 beds was built as the hospital continued to expand its services. A new maternity unit was opened in 1970 and the Institute of Neurology Sciences was completed 2 years later. Both of these buildings have been subject to a major external and internal refurbishment to improve patient, clinical and support accommodation. There has been a number of more modern additions to the campus over the last 5 years including the Department of Medicine for the Elderly, the Westmarc building (rehab) and extensions to both the biochemistry and pathology buildings.

There are two listed buildings within the site. These date from the mid/late 19$^{th}$ century and constitute a two storey hospital block with iron-crested French roofed pavilions and a small square foyer and a 3 storey hospital block with a distinctive clock tower.

The current Southern General Campus has evolved over 130 years. A large capital investment has been made in the site over the last 15 years; rationalising the sprawling Victorian layout into a more cohesive densely packed site to better meet the demands of a modern Adult Acute hospital. Despite this investment the constraints imposed by the current mix of buildings precludes further development of the estate to deliver 21$^{st}$ century Adult Acute care without major redevelopment.

The suitability of remodelling a large portion of the current site to meet future Healthcare demands is unfeasible. Some 30% of the existing site was constructed pre 1910, these buildings house the general medical, general surgical, orthopaedic, urology and ophthalmology inpatient accommodation for the site together with the main site Imaging department. These Victorian buildings have been refurbished many times over the last few decades in an attempt to accommodate changing demands of healthcare delivery, Best Practice and statutory legislation. At present, the majority of these buildings do not meet accepted standards for Statutory Compliance or Functional Suitability. It is doubtful, that given the constraints of the buildings, whether even with extensive Capital Investment these buildings can comply with legislation for the current clinical functions in the short term.

As with all hospital sites of this vintage piecemeal development throughout the lifespan of the site has resulted in the fragmentation of clinical facilities across the campus, resulting in a number of very poor clinical adjacencies and departmental relationships. Theatres are spread throughout a number of locations on site with each theatre suite dedicated to an individual specialty. Rather than being co-located with the Regional Neurosciences and National Spinal Injuries facilities the A&E department is located next to the main rehabilitation facility for the site. At present given the sprawling layout of the site there are two imaging departments one co-located with the neurosciences/spinal complex and the other at the north of the site to service the main general medical and surgical inpatient facilities. The latter imaging facility however is not co-located but at some distance from A&E and the main outpatients department. The Condition Survey of the Southern General estate is enclosed in appendix 4. It can been seen that there are some buildings which are physically in reasonable condition but collectively not suitable to provide an efficient redesigned service.

The total square meterage of the buildings within the southern site is approx 89,000m$^2$ and the following illustrates the main usage of the buildings:-

| MAJOR CLINICAL AREAS | | MAJOR NON-CLINCAL AREAS | |
|---|---|---|---|
| Inpatient areas | 29% | Clinical & Non-clinical support | 12% |
| Outpatient clinics | 10% | Training & Education | 2% |
| Day case facilities | 3% | Staff facilities | 4% |
| Theatres | 8% | Facilities Support | 3% |
| Diagnostic - Imaging | 5% | Research facilities | 2% |
| Diagnostic – Laboratories | 6% | | |
| Rehabilitation Facilities | 7% | Car parking | 1500 |
| Emergency Medicine (A&E) | 2% | | |
| Other areas constitute a further 7% | | | |

### 5.3.3 Site Constraints and Opportunities

The Southern General site is bordered and accessed from the north by Govan Road and on its west side off Hardgate Road.

The eastern boundary is formed by the Clyde Tunnel approach and Moss Road. The southern boundary is bordered by residential property. Road access is not currently available along either of these edges.

The north-western corner of the site between Govan Road and Hardgate Road is bordered by existing industrial land and Sheildhall Water Treatment Works. At present Hardgate Road does not extend beyond the Treatment Works and therefore does not link with Govan Road. Aerial photographs showing the boundaries of the site are shown in the Appendix 5.

The existing hospital buildings are spread out over a large area of the site and in a number of cases require elevated bridge links across the spine road. Surface car parking is distributed sporadically adjacent to the numerous entrances arising from the existing fragmented site layout.

A number of bus services pass close to, or through, the site.

Emergency blue light traffic use the same spine road network to access A+E, Maternity and Neuro/Spinal Injuries.

An area within the site, which is 15.5 acres or 6.3 hectares, can be released by the end of 2009. This land will form the development area for the new Royal Hospital for Sick Children (RHSC), Adult Acute Hospital and new laboratory block and allows these new facilities to be built in one continuous phase while the existing SGH services continue to operate.

The potential for interruption to day-to-day services and facilities within the site during construction has been carefully analysed, and will be managed by a series of enabling works to decentralise the main hospital boiler plant by isolating the construction site from the remainder of the hospital with materials and construction traffic accessing the site from a discreet entrance off Hardgate Road and a link road to Govan Road that presently exists within the site. It is envisaged that the hospital will continue to operate uninterrupted on a day-to-day basis construction and commissioning of the new facilities.

## 5.4 PROPOSED FUTURE DEMAND - BED MODELLING

Plans for the adult hospital include 1109 beds and an Emergency Department with the capacity for 110,000 attendances per annum. The hospital will function as an acute 'hot' site with an outpatient department serving the local population and a small medical day area. The surgical day case activity will take place at the New Victoria Ambulatory Care Hospital opening in 2009.

The following section describes the bed modelling work which has informed the size and scope of the new hospital.

**Benchmarking with Peer Hospitals**

NHS Greater Glasgow and Clyde (GGC) appointed CHKS (an independent clinical activity analysis service which the Board has worked with for a number of years) to undertake bed modelling exercises for acute adult services across Glasgow. The objectives of the review was to:

- Provide an objective assessment as to the current performance of the acute adult hospitals across Glasgow relative to their peers;
- Identify the potential for improving efficiency in terms of use of beds and patient throughput;
- Provide a projection of future demand in 2015;
- Provide an indication as to the potential bed requirements.

The bed model also takes cognisance of better clinical adjacencies, more efficient patient pathways, projected demographics and national policy adjustments.

Within the core specialties covered by the Adult Bed Model there are currently 3047 inpatient beds across the 6 acute sites, against which the future bed provision is considered. The bed model for the Acute Services was updated during 2007 using the 2005/6 activity, and performance information to identify the currently proposed bed model supporting the outline business case. In considering the Adult Bed Model 2005/06 data was used to consider the

efficiencies to be delivered through improved performance of Glasgow's hospitals compared to the inner city peer hospitals across the UK.

By incrementally applying the impact of,

a) operating at best peer performance rates across each specialty;
b) achieving occupancy rates of 85% for elective work and 82% for non-elective activity;
c) growth in medicine and the impact of demographic changes;
d) performance targets on current and future activity such as waiting times;

the number of beds required for the core specialties for implementation of the Acute Services Review suggests a bed model of 2912. This number excludes beds associated with the following services:- clinical haematology, oncology, plastic surgery and burns, oral surgery, neurosurgery, homeopathy, spinal and physical disabilities.

Further detail of the bed modelling work is given at Appendix 6.

Modelling work has been undertaken to consider patient flows and the extant strategy position of single site specialties in relation to the number of beds required in light of the future plan of 3 inpatient sites for the city at Glasgow Royal Infirmary, Gartnavel General Hospital and at the Southern General Hospital site. In addition, consideration has been given to potential developments to specialist services in Glasgow and changes to patient flows from Clyde in understanding the inpatient bed capacity required across the Glasgow Acute Hospitals.

At the time of undertaking the latest bed modelling exercise for the ASR it was recognised that there might be future changes to bed numbers as the result of changes to regional services provision such as neurosciences, oral-maxillofacial services, renal services, gynae-oncology services. With the exception of renal services, which has already been factored into the new South Glasgow Adult Hospital bed requirement other potential changes to requirements in relation to beds do not affect the new South Glasgow Adult Hospital current proposals and would be accommodated beside existing services.

Similarly the requirements for South of the River Strategy for Clyde, consulted on during 2006/7, indicated that changes to inpatient service provision for Vascular Surgery, ENT, Dermatology and Haematology. This work has informed the potential bed configuration that supports the 1109 beds in the New South Glasgow Adult Hospital.

As this is an iterative process the bed modelling work will continue and will be updated with a 2006/7 benchmarked position, which is currently being explored to consider the further levels of efficiency that could be implemented. This will be ongoing in the months and years ahead to ensure a continued focus on efficiency.

**New South Glasgow Hospitals**

The in-patient bed numbers used for planning purposes for the New South Hospital are as follows:

***Table 7 – Planned bed numbers for the New South Glasgow Hospital.***

| Specialty | In-patient Beds |
|---|---|
| General Medicine (Includes MHDU) | 407 |
| Haemato- Oncology | 14 |
| Dermatology | 18 |
| Nephrology (Includes Surgery) | 80 |
| Geriatric Medicine | 93 |
| CCU | 18 |
| ITU | 20 |
| SHDU | 23 |
| General Surgery & Vascular | 169 |
| Urology | 51 |
| Orthopaedic & Ortho Rehab | 141 |
| ENT | 37 |
| Clyde beds * | 38 |
| **Total In-patient Beds** | **1,109** |

* Clyde Beds

In line with the South of the River Strategy for Clyde, consulted and agreed on during 2006/07, the in-patient bed requirements for the following services have been included within the bed model for the new South Glasgow Adult Hospital – Vascular Surgery, ENT, Dermatology and Haematology.

The total number of in-patient beds planned for the New South Glasgow Hospital is 1109. In addition, a small 12 trolley medical day case unit is proposed for the New South Hospital, this takes into account the activity which will be seen at the new Victoria Hospital.

**Retained Beds**

There will be approximately 630 beds retained on the Southern Campus associated with care of the elderly, maternity, neurosciences, neurology and spinal services.

## 5.5 SERVICE RE-DESIGN

Service redesign will be crucial in underpinning the new hospitals. The focus of this work will be around achieving a balance of care to ensure that patients are treated in the most appropriate setting. This concept will be underpinned by the interface between Acute Services and Community Health (and Care) Partnerships (CH(C)Ps), providing new models of care to improve pathways and support other redesign initiatives.

As well as this, these new models of care will look to maximise the full potential of the new Hospitals. Key National guidance and good practice will be incorporated in the models of care, including:

- Patient centred care
- Maximising the co-operation between primary, secondary and tertiary care
- Investing in the latest Information Technology (IT)
- Extending the roles of nurses, Allied Health Professionals and other non-medical personnel
- Fully utilising the most modern healthcare equipment and technology in patient care
- Improved links with Community Health (and Care) Partnerships.

The New Victoria and Stobhill Hospitals will be commissioned in 2009, and will set the scene for the new post ASR reconfiguration of services. The separation of planned and emergency care and the anticipated increase in day surgery rates will require major redesign in relation to how care is delivered. Much of the redesign work required at the new hospitals is already underway and is supported by the development of new roles; for example, the Emergency Nurse Practitioners role will be further developed to support new service models, such as the Minor Injury Units in the new Ambulatory Care Hospitals.

Currently work is underway through the Ambulatory Care Hospital planning groups in terms of service redesign. The redesign process will also be closely linked to the development and implementation of the Health Information and Technology (HIT) strategy and its phased rollout across the acute division. The methodology and templates being put into place to take this work forward will also be applied to the New South Glasgow Hospital ensuring consistency in care models and a streamlined, joined up flow of service provision within Glasgow.

The sections below highlight the mechanisms for taking forward redesign in relation to scheduled care, unscheduled care and diagnostics.

***Planned Care***

The major thrust of the redesign of services required for elective care will be focused on improved day surgery rates, the development of integrated care pathways, which promote pre-assessment, pre-admission planning and improved discharge and follow-up procedures. A Planned Care Collaborative was established in 2006, led by the Acute Division with CH(C)P input. The workstreams that form the collaborative are being used to drive the modernisation agenda and to determine key priorities for change.

This Planned Care Improvement Programme is tasked with improving and actively managing admissions to hospital or planned care.

Integral to delivering these improvements will be the implementation of 5 changes, these are to:

- Improve referral and diagnostic pathways;
- treat day surgery (rather than inpatient surgery) as the norm;
- actively manage admissions to hospital;
- actively manage discharge and length of stay;
- actively manage follow up.

In implementing ‘Better Health Better Care’ Boards have been tasked with achieving a shift in the balance of care and ensuring improvements are made in productivity and capacity, whilst sustaining improvements in waiting times and reducing the need for hospital admissions.

The Planned Care Improvement Programme reviews the flow across the whole system and will include implementation of support processes such as Patient Focussed Booking and Referral Management Services. The “New Ways” initiative to define and measure waiting times became operational in December 2007. This redesign concept sees patients being offered three appointments or admission dates within strict criteria and ensures that patients are tracked within the system or referred back to the primary referrer.

Work has begun towards the Government's 18 week referral to treatment commitment which has to be met by December 2011. The 18 week referral to treatment target sets out a whole journey waiting time target of 18 weeks from General Practitioner referral to treatment by 2011. This 18 weeks standard is different from previous waiting times targets as it will not focus on a single stage of treatment but rather the whole patient pathway. Meeting this ambitious target will be challenging and will require NHS organisations to carefully consider issues of service redesign, improved efficiency and, where indicated, extra activity and capacity. New approaches will be considered, developed and extended throughout the Scottish healthcare system to ensure the NHS succeeds in delivering this standard. Getting the appropriate workforce to achieve this significant change in service delivery and improvement will be key to achieving success. This will be an iterative process considering the workforce requirements both in the short term, in terms of addressing the backlog to bring us into line with the new target, but also in the longer term in relation to the ongoing service requirements. This will be delivered through existing staff working differently in redesigned services but also through a competency based approach to planning the capacity. This will help in expanding roles and avoid restricting the way services are delivered as currently in traditional roles and existing ways of working.
Strong links will be required with the Unscheduled Care Collaborative. Equally, the whole system approach will require close collaboration and joint working with CH(C)Ps in order to effect the desired changes and ensure long term sustainability of performance improvements such as impact on access and waiting time targets, day case rates, length of stay, patient journey time and whole system capacity.

***Unscheduled Care***

In the area of Unscheduled Care, work is currently underway through the Unscheduled Care Collaborative, established in 2006 and due to end in March 2008. The implementation of the Acute Receiving Project within Glasgow has modernised and transformed the front-end of the acute hospitals. This has allowed improved triage for patients, the introduction of streaming, separating patient flows and allowing minor injuries to be assessed and treated by Emergency Nurse Practitioners separate to the main A&E/Acute Receiving areas within Glasgow's hospitals. The Collaborative has reporting links both locally through the Project Sponsor and nationally through CCI.

The remit of the group is to:

- Support the achievement of the four hour A/E waiting time target through the Collaborative Programme and methodology application;
- Collate and monitor updates from the local hospital operational groups;
- Agree and implement future action plans;
- Ensure that a co-ordinated approach to change ties in with both local and national strategic direction
- Ensure adherence to unscheduled care performance milestones indicated in the Local Development Plan

Work is also ongoing around out of hospital care (Unscheduled Care Flow Group 5) to support the development of alternatives to acute hospital attendance and admission and to facilitate timely discharge for patients ready to leave acute care. The recently launched Long Term Conditions Strategy Framework is also focussed on the above outcomes and there are specific workstreams which will work towards minimising unnecessary hospital admissions through a planned care strategy

**Diagnostics**

Strategic Reviews of Imaging and Laboratory Medicine Services resulted in a range of service redesign initiatives. NHS Greater Glasgow and Clyde will put in place high-volume, no-wait services which support rapid diagnosis and treatment for all patients. The separation of emergency and elective flows will support the work towards the new targets. The modernisation strategies have resulted in automation of haematology and biochemistry laboratory services and in new medical technologies such as CT/PET in Imaging. Major redesign of the workforce for Diagnostic services will include a transition to full shift working, moving away from the traditional on-call arrangements currently in place. To support the delivery of the bed model for Glasgow, Imaging Services will be provided in A&E and Acute Receiving 24/7. This redesign strategy will achieve radical increases in capacity allowing NHS Greater Glasgow and Clyde to achieve a high volume no-wait service. Much of this work has been undertaken through the Diagnostics Collaborative, providing a good foundation on which to take forward further redesign.

## 5.6 PROPOSED FUTURE NEW ADULT HOSPITAL SERVICES (NEW SOUTH GLASGOW HOSPITAL)

The new hospital will be zoned into hot and cold zones with inpatient and day attendances within one section of the hospital and A&E resuscitation, majors, critical care, acute assessment, within another zone.

The Health Board have considered two scenarios with regard to adult single room provision. These are a base case with single room provision at 57% and an alternative with a 100% single room provision. The results of the appraisal of these 2 scenarios is given in the Financial Appraisal section in Chapter 9.

The will be separation of patient and staff routes through the building from visitor and facilities management flows. The schedules of accommodation reflect the opportunity for both new hospitals to share facilities such as a local pharmacy dispensing facility, aseptic suite, estates maintenance, waste compound, supplies delivery and distribution, kitchen, dining and other FM services.

Finally, a helipad is required with a rapid access route into the resuscitation area within A&E. The feasibility of a rooftop helipad is currently being explored.

### 5.6.1 Service Profile

The profile of specialties/services that will be provided at the new South Glasgow Hospital is set out in table 8 below. All specialties will be providing inpatient care; some, but not necessarily all, will be providing outpatient clinics and medical day-care services on-site.

**IN-PATIENTS**
The New South Glasgow Hospital will be a hot acute in-patient site. The proposed in-patient services are shown in table 8 below:

*Table 8: New South Glasgow Hospital - Proposed Service Profile – Inpatient Services*

| Surgical Specialties | Medical Specialties | Other Specialties/Services |
|---|---|---|
| General Surgery | General Medicine | A & E |
| Urology | Cardiology | Acute Receiving |
| Vascular Surgery | Dermatology | Minor Injuries Unit |
| Trauma & Orthopaedics | Diabetes & Endocrinology | Critical Care |
| ENT | Gastroenterology | Rehabilitation Services |
| Renal Transplant Surgery | Haemato-Oncology | (Complex Elderly, Surgical |
| | Medicine for the Elderly | Rehab, Orthopaedic Rehab & Vascular Surgery Rehab) |
| | Nephrology | |
| | Respiratory Medicine | |
| | Rheumatology | |
| | Stroke Medicine & Rehabilitation | |

## OUTPATIENTS

There will be a single outpatient department on the Southern site; the only exceptions to this will be:

- Children's Services (based in the New Children's Hospital)
- Obstetrics & gynaecology (located in the newly refurbished maternity building)
- Neurosciences (provided from within the Neurosciences Institute)
- Care of the elderly (provided from Langlands building)

The New South Glasgow outpatients department will provide local access to patients within the South West of the City.

The anticipated profile of outpatients clinics is shown in table 9 below:

*Table 9: New South Glasgow Hospital - Proposed Outpatients Clinics*

| Surgical Specialties | Medical Specialties | Other Specialties/Services |
|---|---|---|
| ENT | Cardiology | A & E |
| General Surgery | Dermatology | Rehabilitation |
| Ophthalmology | Endocrinology | |
| Orthopaedics | General Medicine | |
| Urology | Medicine for the Elderly and Stroke Services | |
| Vascular Surgery | Haematology | |
| | Respiratory Medicine | |
| | Rheumatology | |

**Principal Themes of the New Model of Care**

The key themes underpinning the new model of care are described below:

- Patient-focussed services
- Systematic and managed services providing
  - Single assessment of patients
  - Use of formally agreed pathways, guidelines and protocols
  - Shared objectives of care by different teams, professionals and parts of the organisation
- Services designed and planned on the basis of a 'flow system' to prevent queuing and waiting for diagnosis or treatment.
- Separation of emergency and elective pathways of care.
- Single portal of entry for emergency admissions, through A & E and the Emergency Medical Complex
- Central emergency and elective operating theatres department.
- Rapid access to diagnostic services.
- Patients requiring rehabilitation will move through a care pathway defined by their needs not by their age or disability. Early access to rehabilitation will be a feature of medical and surgical pathways and will include transfer to dedicated rehabilitation facilities.
- Discharge planning will commence at the earliest opportunity including pre-assessment.
- Maximum use made of extended evening and weekend working to provide diagnostic services.
- Modern career framework with both a multi-skilled and a specialist workforce.
- On site facilities for education, research and study.
- Separation of staff and patient, public and facilities management routes.

These key themes will be central to the design and operation of the new South Glasgow Hospital and will be at the core of the required service modernisation and new ways of working.

**Scheduled Care**

The majority of scheduled care at the new South Glasgow Hospital will be undertaken on an inpatient basis. The development of unscheduled care requires the separation of programmed and un-programmed care streams with the protection of capacity in relation to key facilities such as inpatient beds, operating theatres and post-operative recovery.

Elective admissions to be screened pre-admission, especially those undergoing high-risk surgery

There will be no elective day surgery at the new hospital; therefore no day surgery facilities will be required.

There are 12 medical day care beds planned within the building.

The majority of haemo-oncology day cases and all outpatient chemotherapy for lung, cancer, breast and colorectal will be provided at the Victoria Ambulatory Care Hospital for the South Glasgow population and the West of Scotland Cancer Centre for the West Glasgow population.

The majority of day-case endoscopies and therapeutic endoscopy, will be provided at the Victoria Ambulatory Care Hospital and Gartnavel Hospital, with the exception of ERCPs, which will be carried out at the new South Glasgow Hospital.

**Unscheduled Care**

Unscheduled care services will be provided in an identified 'emergency care zone', which will house the Emergency Department, Acute Assessment and Critical Care.

It is essential for patients with a high risk of being a source of infection to others to be managed "separately" to avoid the risk of infecting other patients while in the Acute Assessment Area or an Acute Admissions Ward. This will include; influenza, Norovirus, gastroenteritis, SARS, MRSA etc. This will require isolation facilities. The Infection Control Team have been fully involved in the planning of hospital to address and reduce the risk of spread infection through the design of the facilities).

There will be an 'Emergency Medical Complex', consisting of the following four components:

- An Acute Assessment Area (AAA)
- A Protocolised Management Facility (PMF)
- An emergency outpatient clinic
- An Acute Admissions Ward (AAW)

These units will all be co-located, alongside the A & E Department, and will be the focal point of unscheduled care provision for all patients.

Although this model has been developed for emergency medicine, it will also be applied to emergency surgery and trauma.

**Diagnostics**

It is anticipated that the majority of routine diagnostic tests for patients from South and West Glasgow will be undertaken at the Victoria Ambulatory Care Hospital and Gartnavel Hospital respectively. Investigations carried out at the new South Glasgow Hospital are therefore likely to be of a specialist nature, with the exception of support provided for out-patient attendances.

Imaging services will be providing support for A&E, out-patients and in-patients. Rapid Access imaging is particularly important for A&E, critical care beds and theatres.

To achieve this, the exemplar design arranges imaging over 2 floors. On the ground floor the diagnostic facilities can easily be accessed by both out-patients and A&E while the diagnostic services located on the first floor are adjacent to critical care and theatres but can also be easily accessed by the in-patient wards in the tower block.

Haematology, biochemistry and mortuary services will be provided in the new laboratory building at the Southern site, which will be linked to the New South Hospital via an underground passage and pneumatic tubes

**Critical Care**

There will be six discrete critical care units, as follows:

- Intensive Care
- Medical High Dependency
- Surgical High Dependency
- Coronary Care

- Acute Stroke Unit
- Renal High Dependency Unit

The intensive care and high dependency units will be located together. The only exception to this is renal HDU which will be located within the renal unit with close access to both the critical care zone and the theatres department.

The Coronary Care Unit will be in close location to the critical care beds.

The Acute Stroke Unit will be designated and managed as a high dependency unit.

**Theatres**

The theatre department will consist of 20 theatres with appropriate designation and separation of elective and emergency theatres.

**Rehabilitation**

There are 179 rehabilitation beds within the new South Glasgow Hospital.

In addition to the Rehabilitation beds in the new build, some beds will be provided in the Langlands Building.

Amputee patients may have up to 6 weeks lengths of stay. On average after 2 weeks these patients no longer require an acute hospital environment. It is therefore planned to transfer amputee patients who are 2 weeks post operation, to a step down facility at the Westmarc facility which provides the patient's daily physiotherapy. The 22 beds will provide a less clinical, more appropriate environment for patients while they recover. The Westmarc Centre will continue to provide limb fitting, wheelchair provision and the regional prosthesis and orthotic service.

The School of Podiatry at Govan Road entrance to the site, will continue to provide the podiatry service for South Glasgow.

Therapy areas will be located alongside the rehabilitation beds, in order to enhance service integration.

The exemplar design of the hospitals has been developed in liaison with a wide range of user groups and the Community Engagement Team has undertaken a comprehensive programme of consultation with patients and carers, patient groups such as 'Better Access To Health', and local community organisations.

## 5.7 PROJECT OBJECTIVES

The need to modernise patient care, speed up the patient journey, make more effective use of clinical time and to ensure patients are seen by the specialist team are at the core of the service redesign and changes within NHS Greater Glasgow and Clyde.

The fundamental aim of this project is to provide modern state of the art facilities that will deliver the redesigned patient pathways which streamline patient care, delivering improved efficiency and more effective service models, as we implement the Acute Services Strategy for Glasgow and Clyde. This will ensure that Glasgow's Hospitals are providing the best level of patient care to the highest standard, which is as good as any to be found throughout Europe.

The key objectives to achieving this are:

- Provision of local access to core medical and surgical services and consolidated specialist and tertiary services that ensure patients all get access to the appropriate level of specialist services they require.

- Bringing together clinical teams to concentrate clinical expertise that will support meeting the European Working Time Directive and Modernising Medical Careers and will create sustainable expert teams. This will ensure 24 /7 access for patients to specialist care

- To make the best use of the workforce and reduce the number of on-call rotas across the city;
- Provision of modernised accommodation and improved facilities which meet the needs of patients, visitors and staff and are appropriate to the provision of modern health services, promoting a healing environment and improved patient access;
- Increased clinical capacity, improving access to services including diagnostics and reducing waiting times for treatment;
- Improved efficiency by separating elective from emergency care where possible, so routine elective work is not interrupted by the calls of emergencies arriving in the Hospital or arising on the wards;
- Uniform access for routine services across Glasgow;
- Provision of highly specialised services provided by skilled staff facilitated through the centralisation of specialties and through improved retention and recruitment due to a radically better working environment.
- Enhanced University links through co-location of an academic centre with the new hospitals on the Southern General Campus. This will enhance teaching, and research and play a significant role in attracting and retaining high quality staff in all disciplines

The overall aim is to provide a hospital service that offers the most up-to-date treatment quickly using specialist skills in settings that are modern, friendly and convenient. The facilities must be readily adaptable to changing clinical practice as the future unfolds, and allow related diagnostic and treatment to be close to each other.

The new builds will provide a catalyst for:-

- New ways of working and so improved patient services with effective clinical adjacencies;
- Increased flexibility to changing demand for services;
- Facilitating the development of new staffing arrangements that closely reflect national best practice;
- Facilitating the development of the hospital site and services in a manner which enhances departmental and functional relationships.
- Creating capacity in the right place with the appropriate co-locations to deliver the challenges of all the targets and imperatives of health policy, “Better Health, Better Care”.

## 5.8 BENEFITS

The benefits expected from this project are listed below:

| Objective | Benefit |
|---|---|
| **Strategic Fit -Consolidation of Services** | • Acute Adult Inpatient services consolidated onto 3 sites<br>• Specialisation and sub- specialisation models supported 24/7 with specialist cover<br>• Focuses specialist/ experienced staff in fewer sites supporting delivery of most effective care<br>• Achieve new directives e.g. Modernising Medical Careers.<br>• Reduce the number of medical rotas.<br>• Improved co-location of services to support unscheduled care including A&E, Theatres, Critical Care and Imaging<br>• Maximises use of dedicated facilities such as trauma theatres<br>• Optimises use of resources |
| **Clinical Quality** | • Improved occupancy reducing the clinical risks / delays in patient care due to boarding patients out with specialty<br>• Improved Hospital Acquired Infection rates due to single room facilities and improved space within facilities<br>• Appropriate levels of specialist staff to provide and sustain clinical services with 24/7 access to specialist services<br>• Specialist teams working together supporting redesigned services to allow new techniques to be used and developed<br>• New service models supporting the reduction in unnecessary admissions<br>• Patient Safety Initiative input to designing safety issues out of new facilities and models of service<br>• Improved utilisation of facilities as purpose built with improved co-locations<br>• *Full Benefits Realisation plan to be developed as part of Clinical Transition to identify specific key performance indicators.* |
| ***Performance Improvement in Patient Services*** | • Facilities that support improved ways of working, creating more effective patient pathways to provide timely and fit for purpose unscheduled care<br>• Improved capacity created and waiting time guarantees met within GGC facilities<br>• Facilities that support achievement of the balance between Unscheduled and planned care pathways to safeguard targets being met<br>• Appropriate bed numbers by specialty that support improved occupancy levels eliminating the requirements to board patients out with the specialty caring for patient<br>• Number of one-stop clinics increased. – Reducing unnecessary follow-up appointments.<br>• Throughput of patients increased to support earlier access to treatment |
| **Quality Environment** (Meeting patient, visitors and staff needs) | • State of Art new buildings<br>• Better environment for patients and staff – purpose built facilities supporting effective patient pathways and enhancing |

| | |
|---|---|
| | the quality of patient experience<br>• Stimulating buildings through art and design<br>• 100% Single room provision, reduced hospital acquired infection.<br>• Increased opportunity for patients and the public to be involved in decisions around patient services and design of facilities<br>• Targets for carbon emissions and energy consumption met |
| **Information Management and Technology** | • Improved access to patient information electronically supporting increased continuity of patient care<br>• New systems supporting paper light services |
| **Staff Facilities and Motivation** | • Purpose built facilities<br>• Modern amenities<br>• Support recruitment and retention<br>• Increased opportunity for staff to be involved in decisions around patient services and design of facilities |
| **Accessibility to Hospital and Compliance with Travel Plan** | • Better co-location of services reducing patient transport within hospital<br>• Easy transport links to support both patient and visitors attending the hospital<br>• Improved cycling and walking routes |
| **Enhanced Links with University** | • University academic centre co-located with acute services on the southern General campus<br>• Improved recruitment and retention<br>• Consolidated services better supporting the training of junior staff |

# 6. DESCRIPTION OF OPTIONS

## 6.1 BACKGROUND TO THE APPRAISAL PROCESS AND FORMAT OF THIS CHAPTER

The option appraisal considered the magnitude of service and physical change being planned. Given the scale and complexity of the project there were only two options that could cope with a development this size. In 2006, this became even more relevant when agreement was reached to build the children's Hospital on an acute site within Glasgow. The two options were as follows. The first option was to build a 1900 bedded new hospital facility on a Greenfield site (this includes replacing the Neurosciences, the Spinal Unit, Maternity and Langlands buildings. The second option was to construct a new 1349 bedded facility (1109 adult beds and 240 children's beds) on the southern site which allows the retention of the Neurosciences, the Spinal Unit, Maternity and Langlands buildings in the current retained state.

While the Greenfield option had the potential to offer good benefits in terms of achieving excellent clinical adjacencies it was an extremely high cost option and therefore considered unaffordable.

The new build option on the new southern site therefore became the preferred option allowing reuse of existing estate.

Continuing with the appraisal process to build a new children's and adult hospital on the southern campus two further elements were appraised to determine the best design configuration. These were:

a) to build separate or integrated hospitals
b) to identify the optimal building shape to achieve the critical clinical co-locations, future expansion space and links into Maternity and Neurosciences. Potential building shapes fell along a spectrum ranging from tall thin to low and flat

A tall thin integrated building was identified as the preferred option. This option was further adapted to enhance the clinical adjacencies and from this an exemplar design was developed.

The capex cost of the new adult and children's Hospital is based upon this exemplar design.

Two sub-options were developed around the preferred option. These are option 1 which incorporates new builds for a 17,000 $m^2$ laboratory facility and for clinical support and other services. The second sub-option, Option 1a, makes better use of the existing estate and provides a smaller 5,200$m^2$ laboratory build.

A benefits appraisal of the two sub-options was undertaken.

The final part of the option appraisal process was to determine the option (Greenfield, Option 1 or 1a) offering the best Value for Money and, from this the best method of purchasing the preferred option.

The results of the financial appraisal is given in Chapter 9. This chapter describes the site and design option appraisals and is laid out in the following sections.

6.2 The review of an option to build the new hospitals on a Greenfield site in the South of Glasgow;
6.3 The key criteria considered in positioning the new hospitals on the Southern site;
6.4 The factors considered in deciding whether to build the hospitals as separate buildings or an integrated facility;
6.5 The preferred design configuration for an integrated facility;

6.6 The development of the exemplar design;
6.7 Design quality;
6.8 Future proofing;
6.9 Sustainability and energy conservation;
6.10 Options for delivering the New South Glasgow and Children's Hospitals and associated works on the Southern Site
6.11 Benefits appraisal

## 6.2 GREENFIELD SITE – (RE-PROVISION OF SOUTHERN GENERAL HOSPITAL SERVICES ON ANOTHER GLASGOW SITE)

As described above, Phase 2 of the Acute Services Review involves the development of a new adult and new children's hospital at the Southern General site. The New Children's Hospital site has already been determined through the work carried out by the Calder Group in 2006 who identified the Southern General site as the preferred option. An option appraisal process was carried out in 2002 for the New Adult Hospital, the Southern General site was chosen as the preferred site compared to another site within Glasgow (a Greenfield site located at Cowglen).

It should be noted however that, for the purposes of comparison for the Outline Business Case, the option of building the New Hospitals on a Greenfield site was also revisited. The option to build on a Greenfield site was first explored in 2002 and dismissed by the Health Board because of cost, (Reference Health Board Paper, 18th January 2002).

The Greenfield would involve the construction of the new adult and children's hospital at a Greenfield site located in the south of the city. However as the planned retained services cannot be left in isolation these would also have to be transferred to the Greenfield site. This represents approximately 630 beds which currently constitute the Institute of Neurological Sciences, Maternity and Spinal Injuries and Langlands buildings.

There would also be a need to relocate smaller capital works associated with the new hospitals such as a new build clinical support block, new laboratory build, a facility for post acute amputees and two multi-storey carparks.

The Greenfield site option would therefore involve new build of approx 1900 beds and comprehensive support services along with considerable investment in transport infrastructure required by the city planning.

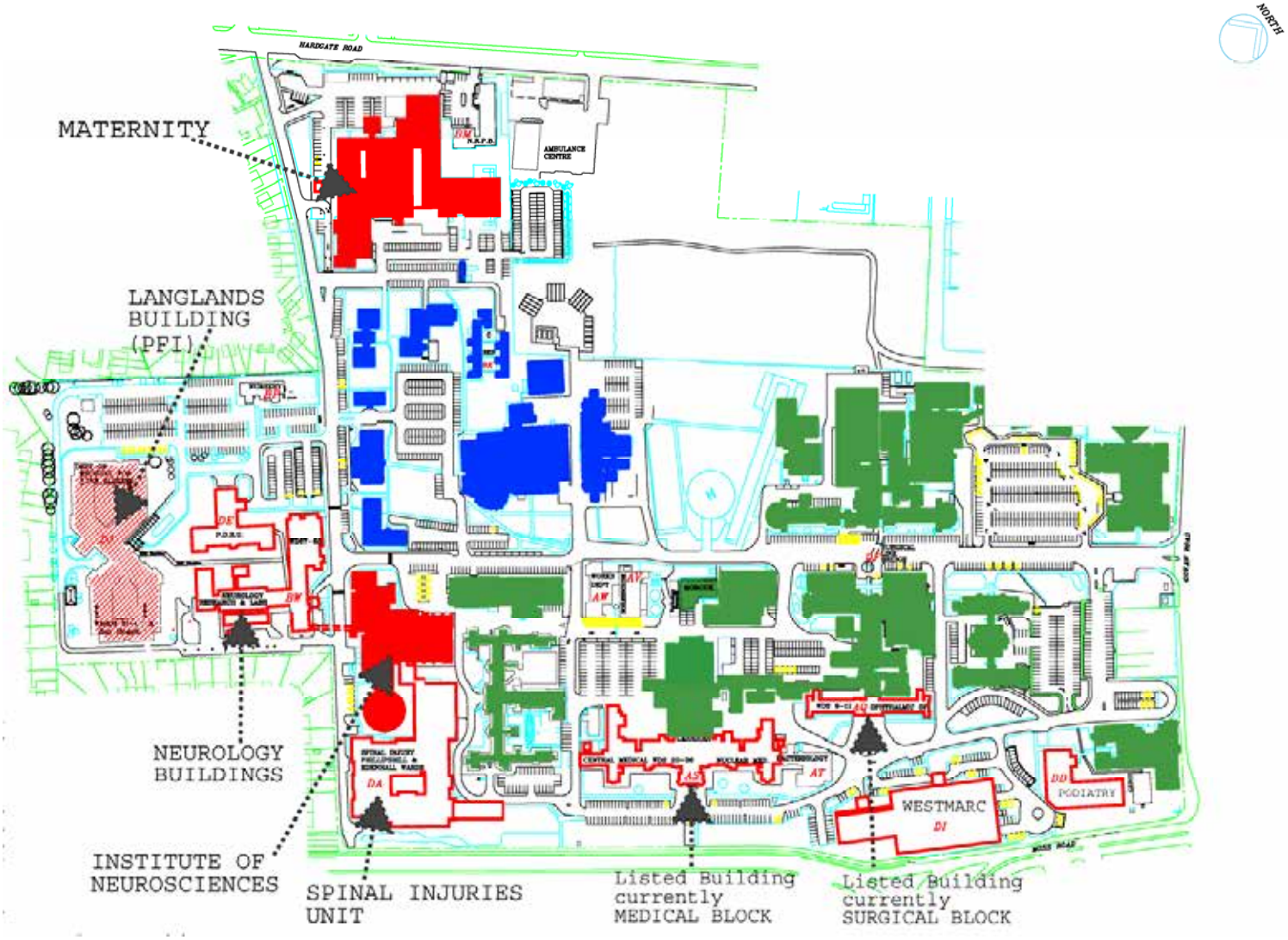
An area of land approximately 20 hectares (49.5 acres), with good road and public transport links would need to be identified and purchased. When the Greenfield option was first explored in 2002 the land identified at that point was the Cowglen area of Glasgow, this is no longer available.

In reviewing this option the capital cost has been developed on the basis of the new hospital build costs and a pro-rata calculation of the cost of replacing the retained estate. The estimated cost of the Greenfield option is £1.8 billion. This excludes land purchase on the Greenfield site and land sale of the Southern General Hospital. It is estimated that it will cost £6 million more to buy the Greenfield land than for the sale of the Southern site. However the £1.8 billion cost also excludes the development of road infrastructure and public transport network to and from the site, which would need to be capable of carrying 725,000 patients plus their visitors and 10,000 staff, and meet other planning conditions and Section 75 agreements.

The economic appraisal of this option is given in Section 9.

## 6.3 POSITION OF THE NEW HOSPITALS ON THE SOUTHERN SITE

One of the key criteria in considering the site of the new hospitals on the southern site is the need to physically link the new adult and new children's hospitals into both the maternity and neurosciences buildings to allow ready access to a full range of paediatric services for both foetus in utero and new born babies, and to enable pregnant mothers access to critical care and other acute services. The link between Neurosciences Building and the New South Glasgow Hospital will also allow rapid access for staff between both buildings, in particular the two critical care units




The Neurosciences and Maternity buildings are blocked in red and can be seen situated at the top and bottom of the plan.

All the buildings marked in red will remain on the site long term. These include, amongst others, the aforementioned Maternity building and Institute of Neurosciences, the Spinal Injuries Unit, Neurology buildings, the front section of the Medical and Surgical Block and the Langlands building. These buildings are either relatively modern, subject to extensive refurbishment or are listed. The Langlands building is a 240 bedded PFI building completed in 2001 which houses care of the elderly beds, young physically disabled and dermatology.

The buildings marked in blue are within the site designated for the New Adult and Children's Hospitals and the New Laboratory build. This site will allow the new hospitals to achieve the links into the neurosciences and maternity buildings.

There is a comprehensive plan to re-locate all the services within the blue buildings to other locations to allow demolition and clearance of the site by 2010, more detail can be found in Appendix 7.

The buildings marked in green house patient services which will transfer the New South Hospital upon completion.

## 6.4 BUILD OPTIONS FOR THE NEW HOSPITALS – SEPARATE BUILDINGS OR INTEGRATED BUILDINGS?

An option appraisal was undertaken looking at a number of scenarios amongst them being an option to build the hospitals separately or as an integrated building. The benefits, risk, costs and deliverability were explored. The preferred option identified was an integrated build to capitalise upon: the clinical synergies around A&E and radiology; the lower risk of fewer contractors on site; decreased complexity of interface issues between the two buildings with better patient flows and streamlining of processes; better deliverability and lower build and running costs due to operational synergies.

## 6.5 PREFERRED DESIGN CONFIGURATION OF THE INTEGRATED BUILDING

This section details the key criteria of the design brief, desired clinical adjacencies, design configuration, option appraisal and preferred option.

### 6.5.1 Design Brief and Design Option Appraisal

**a) Design Brief**

As discussed in the previous section the preferred option is an integrated build for the Children and Adult hospital. In developing the exemplar design several key criteria were considered, these were as follows:-

- the critical clinical co-locations required within the new building
- the need to maintain distinct and separate identities for both hospitals through separate public entrances and distinct public faces
- the desirability of minimal travel times throughout the hospital
- linkage into the new laboratory build
- the requirements to link the new hospitals with the existing neurosciences and maternity buildings which sit at opposite ends of the site
- the need to maintain existing hospital services during construction of the new development
- desirability of future expansion space on the campus
- impact of the new build upon surrounding neighbours (residences to the south of the site)

**b) Design Option Appraisal**

A range of five options were developed in response to the design brief outlined above. A high level appraisal involving technical advisors and NHS Stakeholders resulted in a de-selection of two options which did not meet the full design requirements.

The remaining three designs did meet the full brief. In addition all 3 options:

- facilitate the Board's preferred phasing strategy that allows the Adult and Children's hospital and labs to be built in one continuous operation.
- place the New Children's hospital on the west of the site where it can link to both the existing maternity block and the New Adult Acute hospital to create the "Triple Gold Standard" of clinical care.
- provide a first floor link to the existing theatres and critical care areas in the Neurosciences Block.
- allow for the new Fastlink services to pass through the site entering from Govan Road and exiting via new entrance onto Hardgate Road.
- have a common location for the new laboratory facility and FM block in the northwest corner site.

An option appraisal was undertaken involving the design team, technical advisers, and NHS stakeholders.

The weighted criteria against which the options were scored included:-

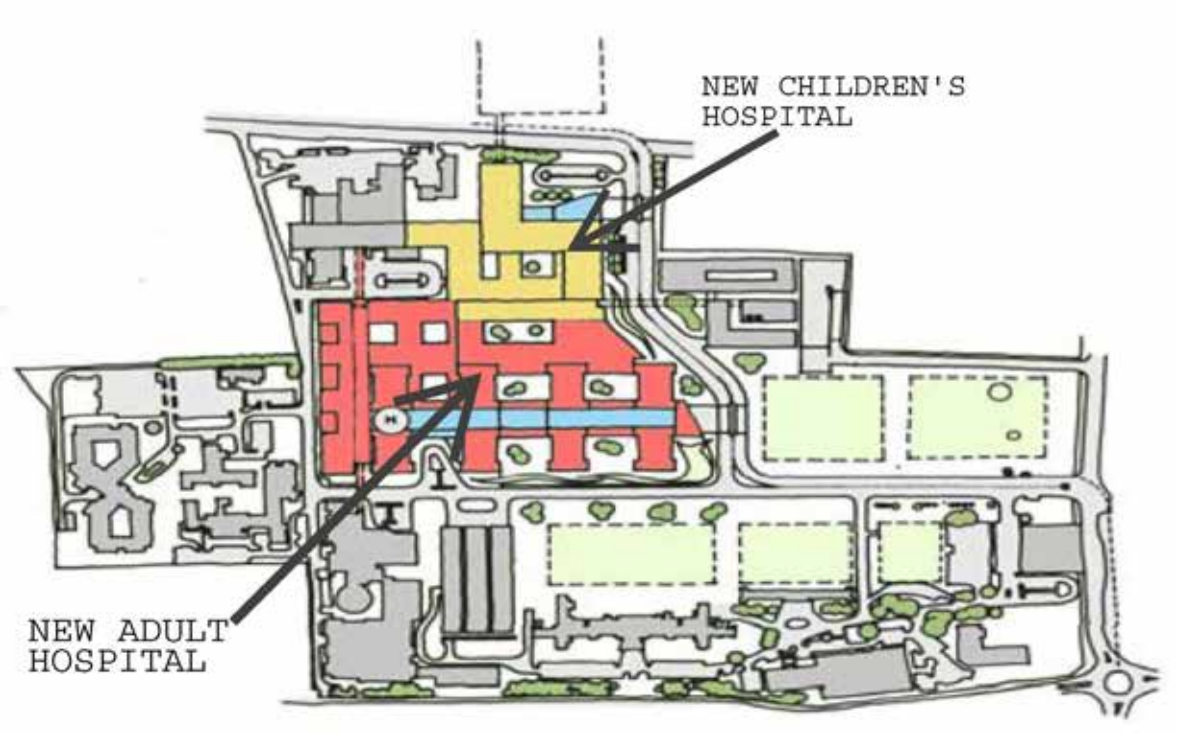
- access
- achievement of departmental adjacencies including journey times
- Flexibility and future expansion abilities
- External environment *(e.g. impact upon residencies, separate identities for children and adults hospital, landscape opportunities)*
- Internal environment *(e.g. views out of building for patient, public and staff; ease of way-finding; clear segregation of visitors, patients; and Facilities Management circulation)*
- Deliverability

The following section describes the options and the results of the option appraisal.

**6.5.2 Description of the 3 Options**

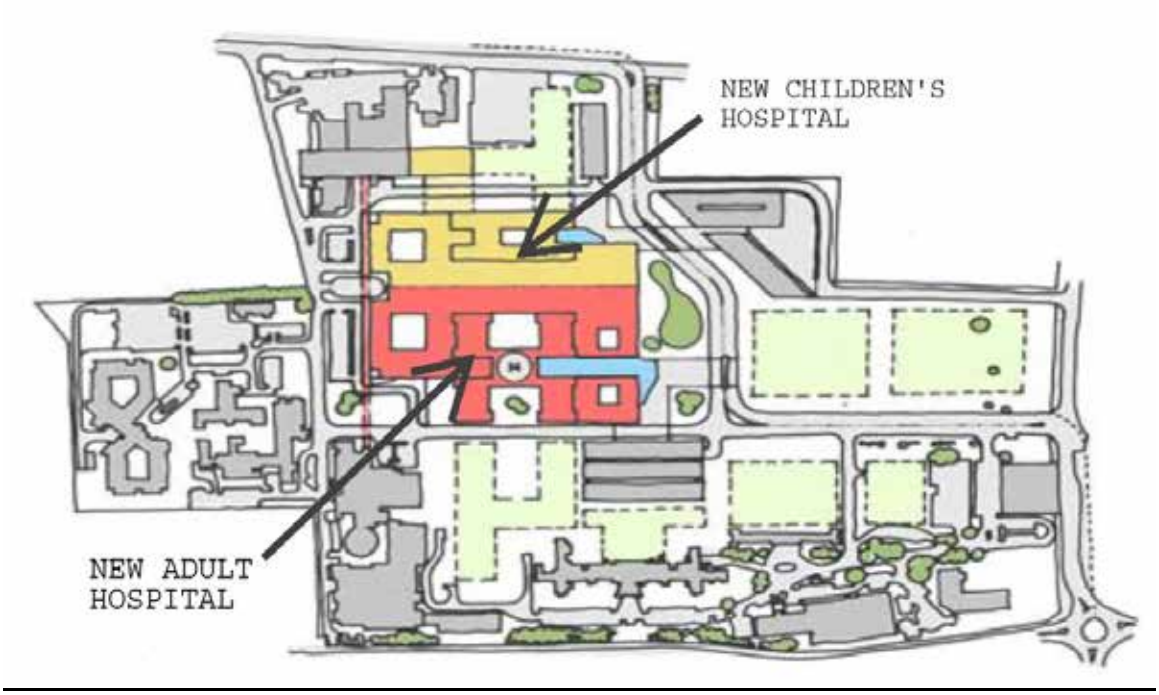
The three options are shown below along with a description of each. In brief they lie along a spectrum ranging from a lower flatter building with 8 floors to a progressively taller, thinner building shape with 14 floors.

Option A: lower, flatter style building - This option requires the largest ground floor foot print. It proposes an adult acute block containing the emergency department (ED), theatres and critical care beds at the southern end linking the existing neuro and maternity buildings. An 8 storey block with 8 adult wards per floor engages with the acute block on the east side. The children's hospital sits to the west and assumes inclusion of the Scottish Ambulance Service (SAS) site to provide sufficient site and direct frontage onto Hardgate Road.




Option B (Shown below) This option represents the middle option and arranges the general wards above the acute facilities containing the Emergency Department, theatres and critical care beds. This results in a 10 storey built form with 6 adult wards per floor.

Option C: This option represents the tallest option but in doing so places the height element further into the middle of the site. As with Option B, the wards sit above the acute facilities but the reduction to 4 wards per floor reduces the impact of the taller element on facilities below. This results in a 14 storey structure concentrated in the centre of the site.



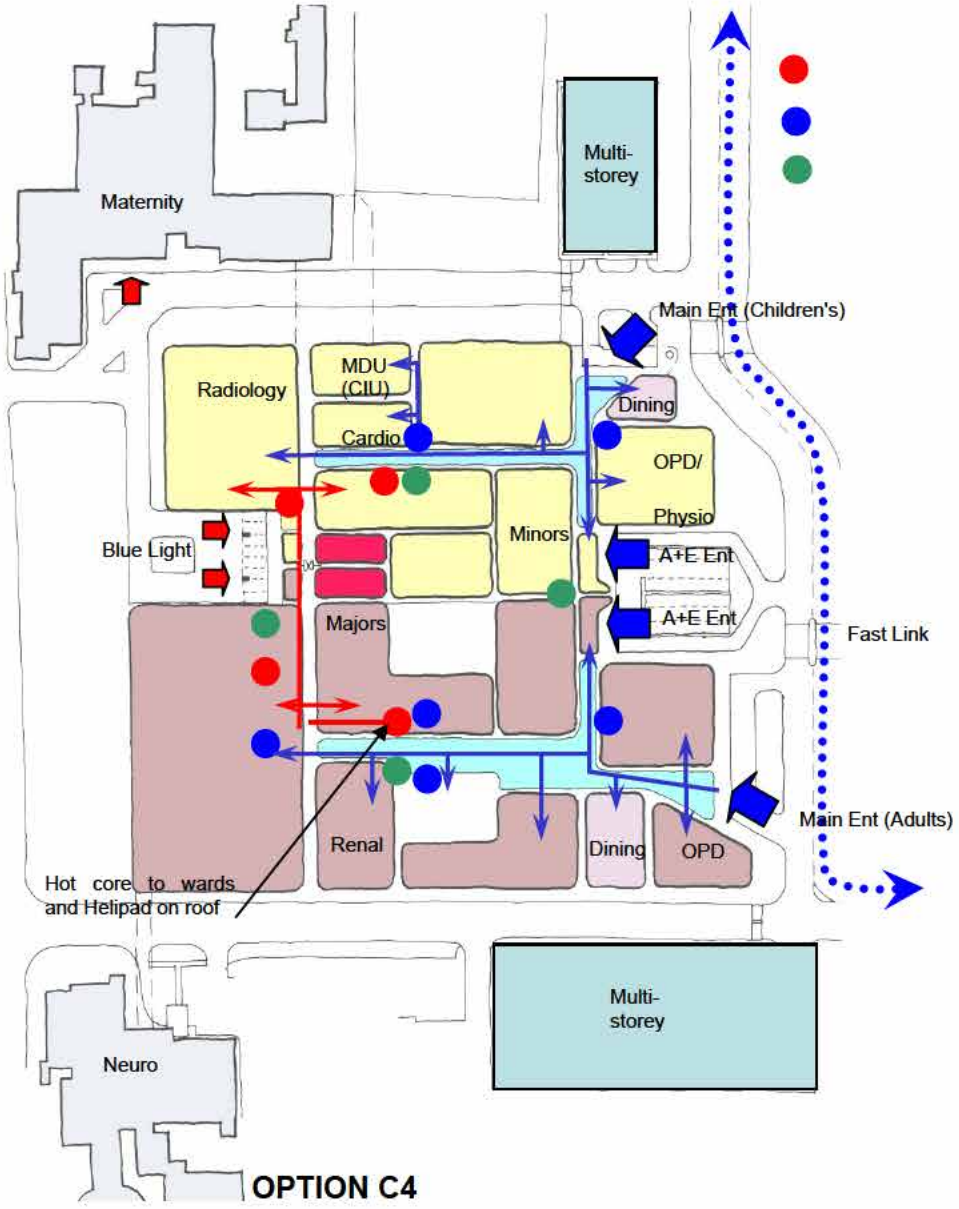

### 6.5.3 Results of the Design Appraisal Process

The appraisal process identified Option C, the tall thin building as being the preferred configuration as it was most able to meet the above criteria. The results can be found in appendix 8.

In more detail Option C facilitates the desired co-locations, the vertical structure reduces travel time to less than 4 minutes between the furthest points in the building (Option A has a calculated travel time of 17 minutes between the furthest points in the building). Finally, although the building is much taller, because it has a smaller foot print, it allows for expansion space and does not over shadow residential neighbours (along the southern boundary) as the build can be placed more centrally on the site than a low flat building.

Further work took place looking at alternative arrangements within the preferred Option C configuration. This was in response to concerns expressed by users at the previous appraisal with regard to the positioning of entrances, and in particular the locations of the adult's and children's public Emergency (walk in) entrances. Four variants were shown to a smaller Board group which concluded that Option C4 should be developed as a preferred option. This option offered separate and distinct entrances to both hospitals, it offered a shared blue light entrance and it gave separate ambulatory entrances to the A&E departments of both hospitals, however, these were co-located in the event that if a user presented at the wrong entrance they can be redirected very quickly without jeopardising patient care.

Option C4 is shown below




**ADJACENCY DIAGRAM**

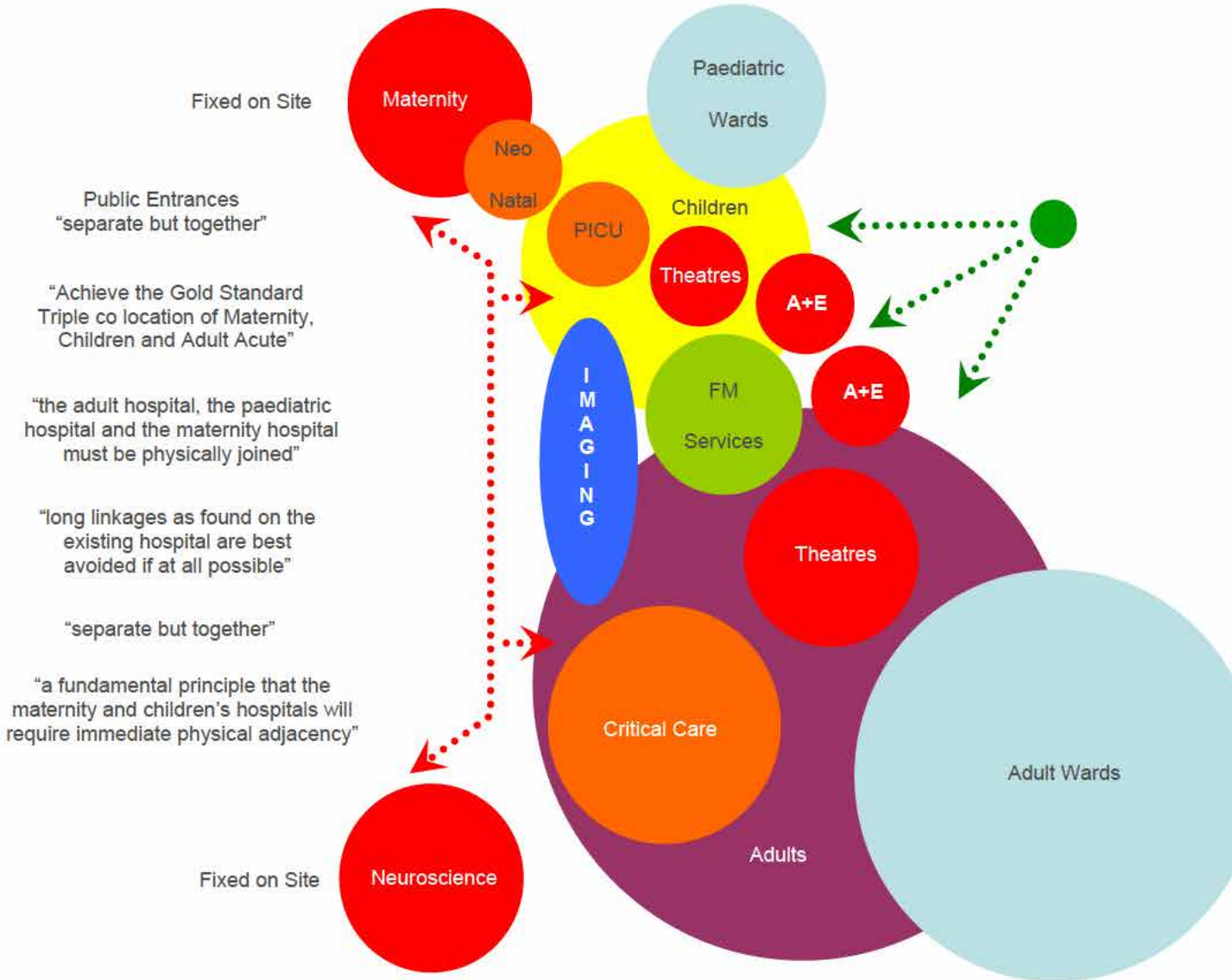
## 6.6 EXEMPLAR DESIGN

An exemplar design based on option C4 has been prepared by the Board to test the project brief and provide a benchmark for Outline Business Case costing. The capex cost for the new adult and children's hospital is based upon the exemplar design. 1:500 layouts have been designed for all hospital areas and 10 key departments (5 in the new Children's Hospital and 5 in the new Adult Hospital) have been developed further to 1:200 designs, these are contained in appendices 9, 10 and 11. The key departments are A&E, Radiology, Wards, Critical Care and Public Concourse/Entrance for each hospital. The PSC also provides future development partners with a Design Exemplar when preparing their own detailed proposals.

In developing the exemplar design one of the key aspects considered was the critical clinical adjacencies. The section below describes these in more detail.

The critical clinical co-locators are shown in figure 1 and described below.

**Figure 1 – Visual Representation of the Physical Adjacencies**




One of the areas identified for potential clinical synergies between the adult and children's hospital is Accident and Emergency. Therefore, the two A&E departments are required to be side by side. The A&E departments need ready access to diagnostics, theatres, critical care and acute assessment.

The maternity building must be linked to the children's new build to allow ready access to a full range of paediatric services for both foetus in utero and new born babies. The maternity building must also be linked to the new adult hospital to allow pregnant mothers access to critical care and other acute services.

There must be a link between the Critical Care in the Neurosciences building to Critical Care in the New South building to allow staff rapid access between both units.

Another key co-location is the labour suite and obstetrics theatres to the neonatal unit which, in turn, needs to be co-located with the paediatric intensive care unit. Paediatric and Intensive Care must be close to the theatres and radiology. These clinical co-locators set the parameters for the development of a 1:500 departmental relationship drawings of the new hospitals.

## 6.7 DESIGN QUALITY

There has been concern that many design solutions for public buildings were previously not of a sufficient high quality to meet hospital and public aspirations. Much work has been undertaken on design visioning, such that quality aspirations can be successfully built into the output specifications and objectively assessed when bids are being compared.

In line with HDL 58 'A Policy on Design Quality for NHS Scotland' published in 2006 the Board appointed two Design Champions and approved a Design Action Plan in October 2007. The Design Action Plan reinforces the Board's commitment to achieving high quality design which promotes good well-being environment within the New Children, Adult hospitals and new labs build. This aspiration applies to both the internal and external environment of the buildings through the use of good design, light, colour, building materials and landscaping with user needs a priority. User needs have been identified through a programme of meetings with clinical sub-groups for each hospital overseen by a Clinical Advisory Board and a series of focus groups held with patient and carer groups representatives (for more detail see section 17).

It is the Board's wish to deliver an iconic development that will contribute positively to the local context and be viewed with pride by the people of Glasgow.

## 6.8 FUTURE PROOFING

In designing the new hospitals the Board will take into account the need to future proof the buildings, for example, the consideration of the potential inclusion of 100% single rooms, the positioning of 'soft spaces' throughout the building and location of the diagnostic department to the outside of the building, adjacent to land which could be utilised for future expansion should it be necessary

The clinical areas of the hospital are likely to change more quickly and radically than any other area as new technology is developed and advanced treatment methods become available. To allow future flexibility it is proposed that the hospital services infrastructure is distributed in a well structured way, based on risers in vertical transport areas, adjacent to lift and stair areas. This should minimise any disruption due to internal reconfiguration of hospital departments.

## 6.9 SUSTAINABILITY AND ENERGY CONSERVATION

### 6.9.1 Sustainability

In developing the new hospitals the Board will promote economic, social and environmental sustainability, for example, increasing energy efficiency, maintaining biodiversity and encouraging green travel through walking, cycling and public transport. Also action will be taken to minimise noise and dust as much as possible during construction.

### 6.9.2 European Trading Emissions Scheme (ETS)

The New South Glasgow and new Children's Hospitals development will not be complete until 2014 and therefore is likely to fall under Phase 3 of the ETS, details of which are not yet agreed. The project will be reviewed in the light of these once available.

### 6.9.3 Carbon Trust and Waste and Resources Action Programme

The Board are working with the Carbon Trust to increase energy efficiency of the new hospital building design. The Board are also working with Waste and Resources Action Programme (WRAP) to enable more efficiency in use of building materials for the new hospitals and recycling (minimising landfill, reducing carbon emissions and improving the environment.

### 6.9.4 Energy Targets and Use

NHS Guidelines are that Energy use should be within range of 35-55GJpa per 100cm.

The view has been taken that the new hospitals Design Solution should at least meet the NHS and Building Regulation standards with regard to energy use current at the time the buildings are built or that are economically and technically viable to include.

The design priority is to invest in the highest quality building fabric and envelope design to reduce the demand for energy to the lowest economically possible level as these have, in general, the lowest technical risk associated with them and are often the least easy to substantially change over the building life. The energy systems within the buildings have a much shorter life, are easier to adapt and will be regularly replaced and upgraded over time based on their own life cycle and the changing technical, economic, regulatory and social pressures at the time of replacement. The building infrastructure is to be arranged to facilitate as far as is possible the likely changes that will be made.

A target of 55GJpa per 100cm at completion is proposed for the new adult and children's hospitals.

### 6.9.5 On Site Renewable Energy Targets

Currently neither Section 6 of the Scottish Building Regulations or Glasgow Planning Guidance require low or zero carbon (LZC) systems to be included with the building design.

It is likely that Glasgow Planning Guidance will require up to 20% Low or Zero Carbon (LZC) energy systems to be included within the scheme before the hospitals are built. It is likely that the development will require 20% of the total energy supply to the hospital to be from LZC systems.

A central energy centre with centralised boilers and electrical supply will provide a distribution infrastructure which is adaptable to future technologies and opportunities. The fuel source can be changed relatively easily as new technology becomes resilient and economic.

### 6.9.6 NHS Environmental Assessment Tool

NEAT (NHS Environmental Assessment Tool) has been used to identify the environmental impact created during day-to-day operational activities. Buildings assessed using NEAT are rated as excellent or very good. The exemplar design for the New Adult and Children's Hospital includes measures required to achieve an excellent rating. The design will invest in quality building fabric to reduce the demand for energy to the lowest economically possible.

### 6.9.7 Architecture And Design Scotland (A&DS)

The Board is working with A&DS to improve both the design quality of the new facility and the impact on the environment through better and more appropriate design. NHSGG&C have entered into an agreement with A&DS to provide enabling support to the project to assist in securing the optimum level of design quality.

### 6.9.8 Renewable Energies

The Board is also exploring the use of renewable energies as possible options for inclusion in the new build, for example, wind turbines, solar and thermal energy and bio-mass fuelling.

## 6.10 OPTIONS FOR DELIVERING THE NEW SOUTH GLASGOW AND CHILDREN'S HOSPITALS AND ASSOCIATED DEVELOPMENTS ON THE SOUTHERN SITE

For the purposes of the Outline Business Case two options around the Southern General site have been developed, these are Option 1 and Option 1a. Option 1 has a higher percentage of new build for the associated developments and Option 1a utilises more of the existing estate.

The section below describes each option in detail.

### 6.10.1 Option 1

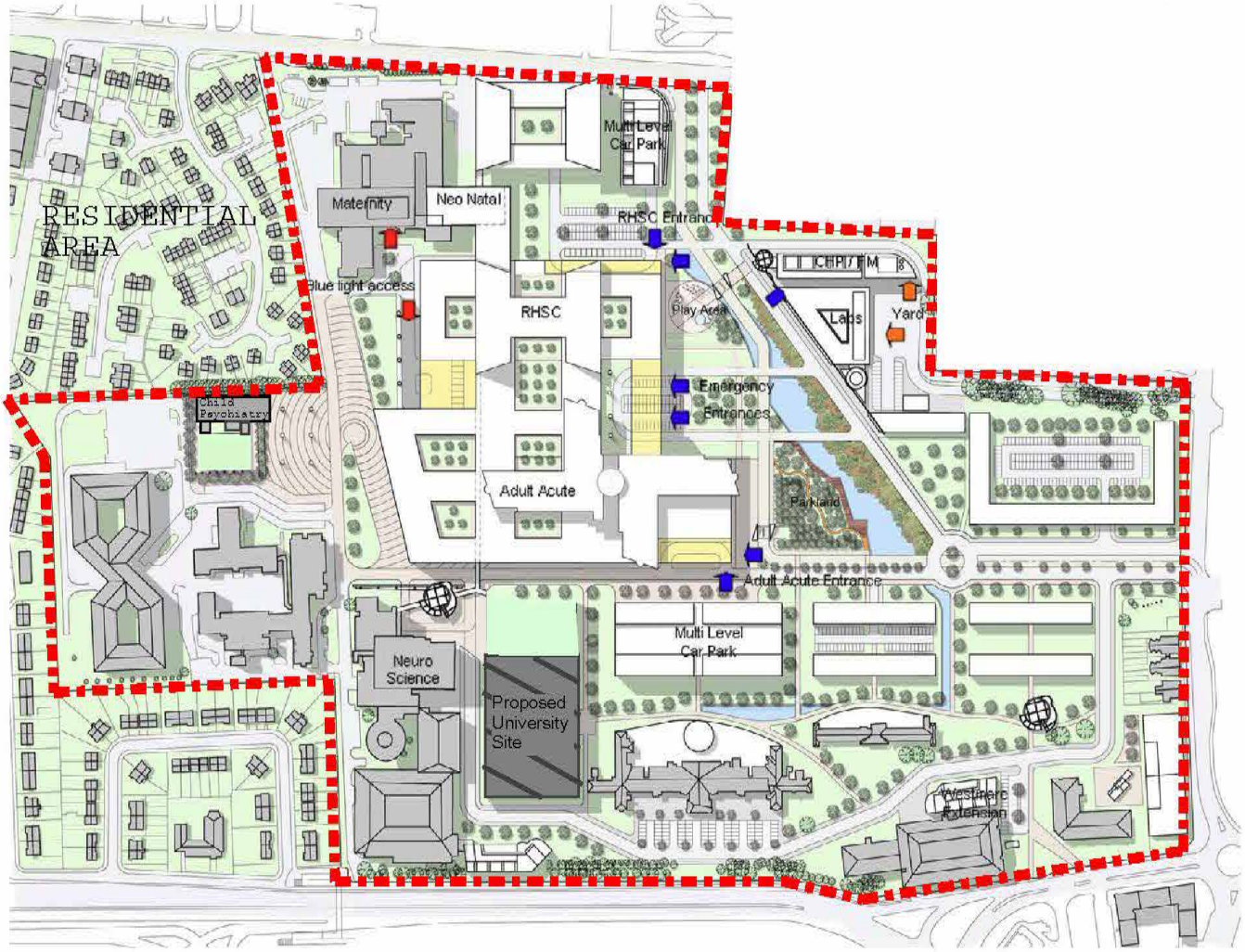
Option 1 consists of an adult and children's hospital integrated within a single building to capitalise upon the clinical and facilities management synergies. The building will physically link into both the maternity and neurosciences buildings.

A new 17,000m$^2$ purpose built, multi-disciplinary laboratory facility is also planned. This will link into the new hospitals via an underground link and pneumatic tubes.

There are a series of smaller capital works associated with the new hospitals these are as follows :- a number of enabling works, development of two new multi-storey car parks, a new build facility for clinical support services (such as offices, facilities management and clinical administration), and a new 22 bedded extension onto the Westmarc rehabilitation centre for post acute amputee patients.

It should be noted that Glasgow University have plans for a new build academic centre near the new hospital development and an area of land on the Southern Campus has been identified by the Health Board for this purpose.

An illustration of how the southern site will look under Option 1 is given below.




The following section describes Option 1a.

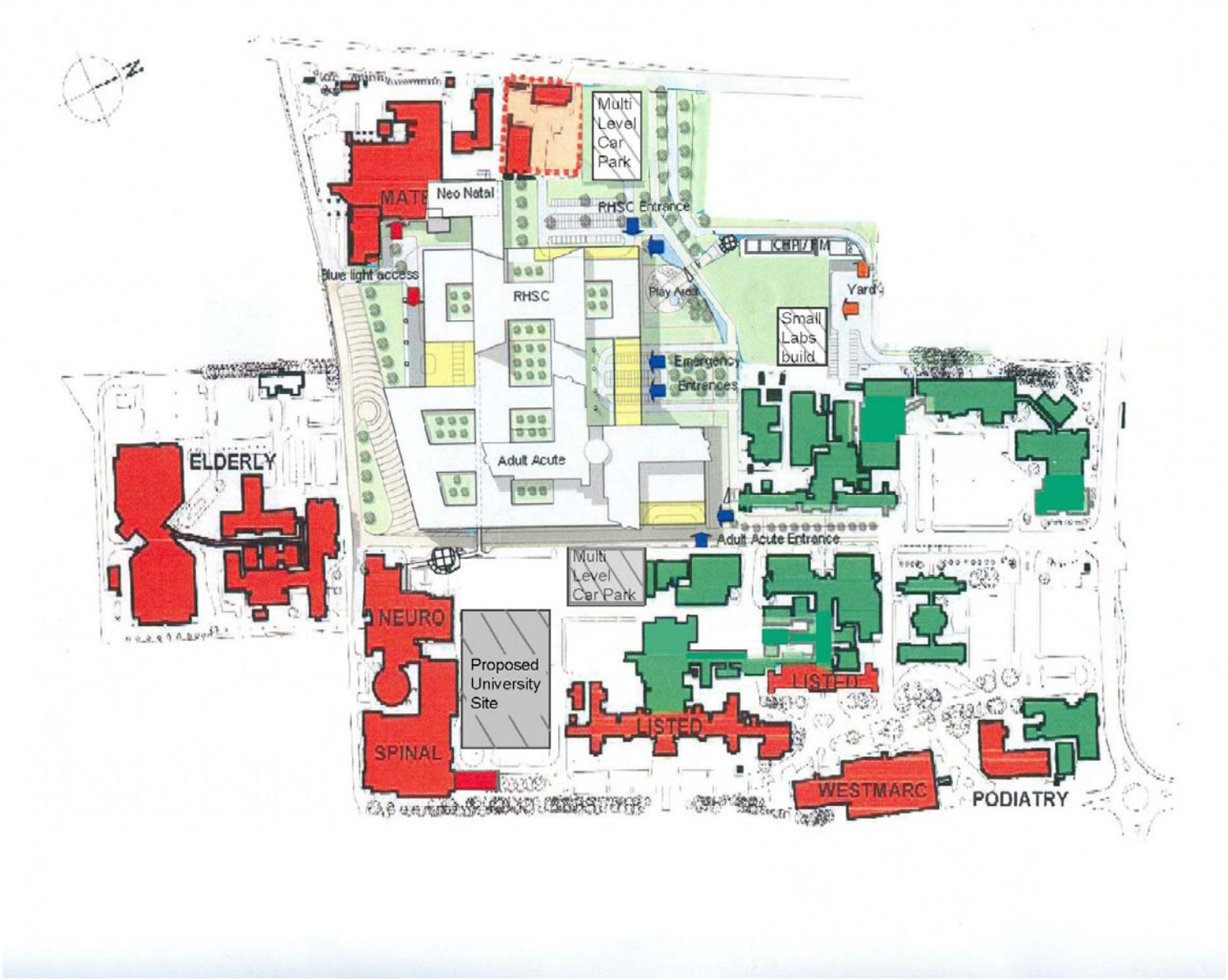
### 6.10.2 Option 1a

Option 1a consists of the planned integrated adult and children's hospital as described above. In this option however those associated works for which new builds were planned will now be incorporated into the existing estate.

In other words the green buildings shown in the plan above, which under Option 1 will be demolished will, under Option 1a be retained and reused.

In brief, the services which will be re-housed in the existing estate include, the 22 beds for post acute amputee patients and the facilities for clinical support (e.g. training, offices) and part of the laboratory services. There are plans for a smaller labs 5,200m$^2$ build housing haematology, biochemistry and the mortuary services. This will link into the new hospitals via an underground link and pneumatic tubes.

The diagram below illustrates the southern site under Option 1a.




## 6.11 BENEFITS APPRAISAL

The benefits criteria were derived from the project objectives. The criteria were weighted and scored against each of the options. This produced scores in a very tight band, those options involving an increased percentage in new build producing slightly higher scoring. Detailed results can be found in appendix 18.

# 7. NEW LABORATORY BUILD

A Glasgow wide Laboratory Services Strategic Review was established to advise on the optimum model for the provision of laboratory services, taking into account the clinical linkages between the laboratories, the main clinical specialties and the services which require to be provided to support the clinical services profile on each site.

The key objectives of the laboratory services review process were determined as follows:

- To define and develop an agreed configuration of provision of lab services across the city which reflects the ASR strategy – consolidating from six to two major emergency and in-patient acute sites at GRI and SGH, an elective inpatient site including the regional cancer centre at GGH, new Ambulatory Care Hospitals at Stobhill and the Victoria Infirmary, and the co-location of paediatric with obstetrics on an adult site.

- To modernise the provision of laboratory services.

- To create a network of laboratory services working Pan-Glasgow, operating within a single integrated management structure.

The working principles that underpinned the review focussed on a whole systems approach to the modernisation and reconfiguration of laboratory services, with a decision-making process that reflected clinical consensus and strong partnership working

## 7.1 SUMMARY OF THE SHORTLISTED OPTIONS

The summary of the short listed options are illustrated in table 9 below.

Table 9

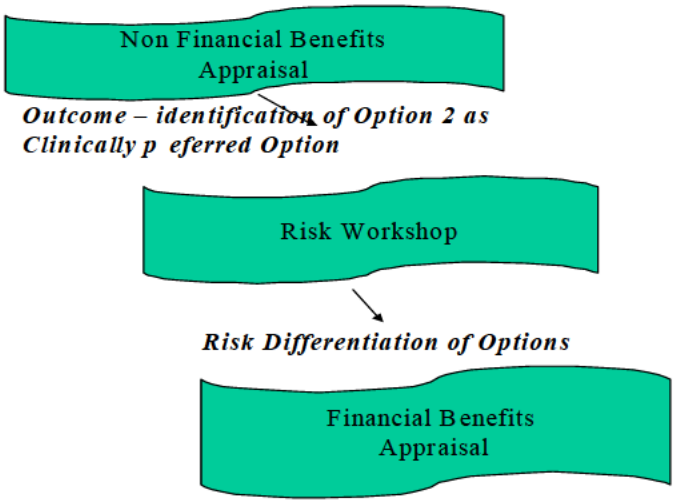
| Option | Description |
|---|---|
| Option 1 | Minimum Change: Laboratories on all acute sites, reconfigured in line with Acute Services Review (ASR) only |
| Option 2* | Laboratories on all acute sites, with significant reconfiguration |
| Option 3* | Laboratories at Glasgow Royal Infirmary (GRI) and Southern General Hospitals |
| Option 4 | One Large Laboratory at Southern General Hospital with significant Essential Services Labs (ESL) at GRI and a small ESL at GGH to service the immediate and emergency needs of the respective sites. |

* The difference between options 2 and 3 is based on sizing and on the ultimate distribution of GP and specialist activity.

## 7.2 ECONOMIC AND FINANCIAL APPRAISAL

The Option Appraisal was a fully inclusive process, led by the then ASR Director and had a robust project structure which included chairs of Specialty Reference Groups and Working Groups supporting the review, along with representatives of the partnership forum and other key stakeholders.

The Option Appraisal process involved three main components, as illustrated in diagram 1 below.




The outcome of the non financial benefits appraisal was the identification of Option 2 as the clinically preferred option. This decision was then ratified by a Risk and Financial Benefits appraisal, which confirmed Option 2 as being the most advantageous from a clinical and financial perspective.

Description of Option 2 Configuration of Laboratory Services

The description of Option 2, Configuration of Laboratory Services is illustrated in table 10 below.

*Table 10*

| Specialty | Description of Configuration of Service |
|---|---|
| Pathology | Reduce from 4 sites to 1 – centralised near the Southern General, Rapid Results Laboratories (RRL) at ACAD and Essential Services Laboratories (ESL) at GRI & GGH |
| Biochemistry | Reduce from 6 sites to 2 main labs at SGH, GRI, with an ESL at GGH (& RRL at ACAD) |
| Haematology | Reduce from 6 sites to 2 main labs at SGH, GRI, with an ESL at GGH & RRL at ACAD. |
| Microbiology | Reduce from 5 sites to 2 main labs at SGH and GRI. In addition Virology and Mycology will be located alongside Microbiology to create the basis for joint working and some elements of cross cover. |

In addition:

- Immunology, Tissue Typing, Stem Cell lab work and all other laboratory services related to leukaemia research and Haemato-Oncology will consolidate from the WIG and GRI to one single site in the new Leukaemia Research Lab at GGH. To provide a state of the art laboratory facility on the same site as the Regional Cancer Centre and SNBTS.

- The Paediatric labs at Yorkhill including Genetics will co-locate with adult laboratory services onto the new South Glasgow Hospital Campus.

A key part of Option 2 is the construction of a 5,200m$^2$ purpose built laboratory building at the Southern General hospital site for the provision of Biochemistry, Haematology, blood Transfusion and mortuary services incorporating the City Mortuary on behalf of Strathclyde Police and the Crown Office Procurator Fiscal Service. The cost of this development forms part of this business case.

Further detail regarding the New Laboratory Build can be viewed in Appendix 12.

# 8. RISK MANAGEMENT STRATEGY

## 8.1 INTRODUCTION

A risk is defined as an event which affects the cost, quality or completion time of a project that may or may not occur. There are a number of such events that could arise during the design, construction, commissioning and operation of the new facilities to be built.

There are two core principles that should govern risk transfer in building projects:

- Risk should be allocated to whoever is best able to manage and control it
- The aim is to secure optimal risk transfer (optimal risk transfer is not maximum risk transfer)

**Risk analysis objectives are to:**

***Allow the Board to understand the project risks and put in place mitigation measures to manage those risks.***

In order to fulfil this objective the project team has established a risk register in order to identify and mitigate any or all project risks and developed a risk management plan.

***Assess the likely total cost to the public sector of the investment option(s) under consideration and to demonstrate value for money***

The estimate of capital cost to complete the works required to achieve the construction objectives are assessed through utilisation of the optimism bias process to enable non attributable risks to be accounted for within the costs and programme plan.

Risks are assessed and reduced to ensure that the CPAM can be compared with a PFI option on a like for like basis ensuring that the value of risk retained by the Board under both options is understood (see Chapters 9 and 10).

***To ensure that the risk allocation is adequately considered, i.e. arriving at selected procurement strategy.***

# 9. FINANCIAL APPRAISAL

## 9.1 VALUE FOR MONEY EVALUATION

### 9.1.1. Introduction

The quantitative assessment which is contained within Section 9.1, seeks to compare the risk adjusted cost of the project, in net present value terms, for 3 alternative procurement routes.

### 9.1.2. Background

Three options have been considered by the Board for implementing the projects. These are:

1. Greenfield Option – A new build whole site solution for all facilities currently provided at the Southern General site, together with a new Adult Acute and Children's Hospitals, plus related facilities. Land for a Greenfield site would be required under this option.
2. **"**Option 1**"** – This option represents an entire new build solution on the current Southern General site for the Adult Acute and Children's Hospitals, plus new build Laboratories, and other related services.
3. **"**Option 1A**"** – A new build provision on the Southern General site for the Adult Acute and Children's Hospitals, plus the refurbishment of some existing facilities on the Southern General site to provide Laboratories and other related services.

For Options 1 and 1A, two scenarios have been considered. These are: 1) base case with single room provision at 57% within the Adult Hospital and; 2) alternative case with a 100% single room provision within the Adult Hospital.

In carrying out its VFM evaluation, the Board has considered three potential procurement routes:

1. Traditional Procurement – also referred to as the Conventionally Procured Asset Model ("CPAM")
2. Private Finance Initiative ("PFI")
3. Not for Profit Distribution Model ("NPD"). This model provides for the redistribution to the Board of any excess profit which may arise, in the form of "charitable surplus".

### 9.1.3. Overview of results of Value for Money Assessment

For both the "base case" and "100% single rooms" scenarios, Option 1A represented the preferred option, when compared to the Greenfield site and Option 1, in terms of risk adjusted net present value. On this basis, a full value for money appraisal was carried out on Option 1A, examining the relative costs of each alternative procurement route.

When assessed in risk adjusted net present value terms the three procurement routes produced very similar results, the variation between the options being only 1.1%. In terms of ranking the NPD model ranked first, followed by CPAM then PFI.

The PFI and NPD options are based on a senior bank debt funding solution. For a project of this scale, it might be that funders would examine the use of a funding solution based on bond finance as this approach may offer the possibility of lower cost funding. We have tested this sensitivity and the results indicate that this approach could potentially lower the risk adjusted cost for both the PFI and NPD by 2.2% to 2.5%. However at this time there are a number of difficulties in securing this form of funding, notably the state of international credit markets together with the fact that no NPD project has to date actually used this form of funding.

### 9.1.4. Quantitative Value for Money Assessment – inputs and assumptions

This section provides details of the main inputs and assumptions used in the VfM analysis.

#### (i) Capital costs

The table below includes the capital costs of the new Adult and Children's Hospitals, Laboratories, Administration, Westmarc and YPD. This is adjusted for VAT and equipment to reach the adjusted capital costs to be included in the shadow bid model.

| | Greenfield<br>£'000 | Option 1<br>£'000 | Option 1A<br>£'000 |
|---|---|---|---|
| Input for Shadow Bid Model | 1,472,169 | 759,158 | 676,782 |

**(ii) Optimism Bias**

A provision for optimism bias is incorporated into capital cost estimates to mitigate against the possibility of cost under estimation on capital projects. As such, a provision for optimism bias is designed to capture, in financial terms, the likely additional costs associated with the crystallisation of key risks. The level of provision is based on historical experience within the Public Sector and reflects advice received from the Board's Technical Advisors.

**(iii) Lifecycle and Facilities management costs**

The financial model incorporates provision for lifecycle and facilities management costs.

The lifecycle and hard facilities management costs, which will be incurred over a 30 year period commencing April 2010, are discounted to present values.

Hard FM costs for the Adult and Children's Hospitals were provided by our Technical Advisors. For the other facilities the Board has based its costings on the adjusted floor areas of the additional facilities.

The Adult and Children's Hospitals Lifecycle costs inputs from Technical Advisors have been indexed from the base date of Jan 2007 to the construction start date April 2010. The lifecycle costs for the other facilities have similarly been indexed to April 2010.

**(iv) Risk Adjustment**

As different procurement methods bring different risks which require to be managed, it is necessary to identify and quantify relative risk impact in carrying out VFM assessments.

Incorporated into the value for money analysis are risk adjustments based on the outcomes of risk workshops carried out by the Board. These take account of the relative impact which a wide range of different risks might be expected to have on every cost element within each of the alternative procurement routes. For the CPAM procurement model, the risk adjustment for the base case scenario equates to 19.6% of the value of the CPAM, of this 12.1% could be transferred under the NPD or PFI procurement models with 7.5% retained under all procurements.

**(v) Tax Adjustment**

It is necessary to take account of the relative impact of taxation applicable to each procurement route in carrying out VFM assessments. This has been provided for as required by existing Green Book Guidance at 6%.

**(vi) Shadow bid (i.e. PFI and NPD) model funding assumptions**

The shadow bid model is based on a senior bank debt funding solution. Funding terms have been estimated by Finance Advisors on the basis of current market conditions.

A LIBOR rate of 5.5% has been used, representing current market rates plus a buffer of c50bps. As the Board retains the risk of movements in swap rates the use of this buffer is recommended by guidance for projects at this stage of developments.

A fully indexed unitary charge has been applied.

**(vii) Discount rates**

The net present value calculations have been performed to a base date of 1 May 2010.

The Treasury discount rate of 3.5% real (6.0875% nominal) has been used for all cash flows except for any charitable surpluses (NPD model only)

Charitable surpluses are discounted at 6.0% real (8.65% nominal) reflecting the fact that the surplus cash flows are at risk. This methodology is consistent with previous NPD projects.

**(viii) Capital Funding Option, including appraisal of potential for bond finance**

The assessment of quantitative value for money between the procurement routes was based on a senior bank debt funding solution for both the PFI and NPD options. For a project of this scale funders might be expected to examine a capital markets based funding solution based on bond finance as this may offer lower cost funding. Accordingly, this funding option has been the subject of further work.

The results of this further work are consistent for both the PFI and NPD options, indicating that bond finance could potentially lower the risk adjusted NPV for both the NPD and the PFI option. In net present value terms the cost would reduce by 2.2% to 2.5%

Ranking of the procurement routes on this basis shows NPD representing the lowest risk adjusted value for money, followed by the PFI and thirdly the CPAM option.

The results of the sensitivity analysis indicate that a bond option within the NPD procurement could be the option that provided the largest quantitative value for money benefit. However it is important to note that a bond has not been used to date to finance any NPD project that has closed in Scotland. Were the project to be the first to use this structure there would be a number of challenges to be overcome, these would include:

- Developing a governance and contractual structure that was acceptable to the private sector partner, funders and the Board.
- The requirement to obtain investment grade status from appropriate rating agencies, this would cover an assessment of the financial strength of both the private sector partner and also the Board.
- Securing a financial arrangement that would guarantee payments to the bond holders

If not satisfactorily resolved, the above factors in addition to movements in the cost of market funds would impact on the pricing of the bond solution and could erode the relative value for money benefits of this potential funding solution.

### (ix) Comparison of net present values of alternative procurement routes

Value for money analysis
Base Case Scenario

| NPV | | Greenfield CPAM £'000 | Option 1 CPAM £'000 | Option 1a CPAM £'000 | Option 1a PFI £'000 | Option 1a NPD £'000 |
|---|---|---|---|---|---|---|
| NPV of CPAM/Unitary charge payments | | 1,618,210 | 892,053 | 788,936 | 939,443 | 937,963 |
| Retained estate Lifecycle | | | | 9,538 | 9,538 | 9,538 |
| Refurbishment costs | | | | 12,956 | 12,956 | 12,956 |
| | | 1,618,210 | 892,053 | 811,430 | 961,936 | 960,457 |
| Risk Transferred | 12.0% | 194,817 | 94,980 | 94,980 | 0 | 0 |
| Risk Retained | 7.5% | 120,974 | 58,979 | 58,979 | 58,979 | 58,979 |
| Total risk Adjustment | 19.5% | 315,790 | 153,959 | 153,959 | 58,979 | 58,979 |
| **Risk Adjusted NPV** | | **1,934,000** | **1,046,012** | **965,389** | **1,020,915** | **1,019,436** |
| Tax Adjustment | 6% | 97,093 | 53,523 | 47,336 | 0 | 0 |
| Charitable distributions | | | | 0 | 0 | (9,742) |
| Risk Adjusted Net Present Value | | 2,031,093 | 1,099,535 | 1,012,725 | 1,020,915 | 1,009,694 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Value for Money | | | | | 8,190 | (3,032) |
| | | | | | 0.8% | -0.3% |

Value for money analysis
100% Single Room Scenario

| NPV | | Greenfield CPAM £'000 | Option 1 CPAM £'000 | Option 1a CPAM £'000 | Option 1a PFI £'000 | Option 1a NPD £'000 |
|---|---|---|---|---|---|---|
| NPV of CPAM/Unitary charge payments | | 1,653,713 | 918,852 | 815,736 | 969,621 | 968,030 |
| Retained estate Lifecycle | | | | 9,538 | 9,538 | 9,538 |
| Refurbishment costs | | | | 12,956 | 12,956 | 12,956 |
| | | 1,653,713 | 918,852 | 838,230 | 992,115 | 990,524 |
| Risk Transferred | 11.7% | 193,872 | 95,632 | 95,632 | 0 | 0 |
| Risk Retained | 7.3% | 121,249 | 59,809 | 59,809 | 59,809 | 59,765 |
| Total risk Adjustment | 19.1% | 315,121 | 155,441 | 155,441 | 59,809 | 59,765 |
| **Risk Adjusted NPV** | | **1,968,833** | **1,074,294** | **993,671** | **1,051,924** | **1,050,289** |
| Tax Adjustment | 6% | 99,223 | 55,151 | 48,944 | 0 | 0 |
| Charitable distributions | | | | 0 | 0 | (10,140) |
| Risk Adjusted Net Present Value | | 2,068,056 | 1,129,425 | 1,042,615 | 1,051,924 | 1,040,150 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Value for Money | | | | | 9,308 | (2,466) |
| | | | | | 0.9% | -0.2% |

## 9.2 AFFORDABILITY APPRAISAL

This information has been removed due to commercial sensitivity.

### 9.2.1 Capital Costs for Option 1a

This information has been removed due to commercial sensitivity.

### 9.2.2. Revenue costs

This information has been removed due to commercial sensitivity.

## 9.3 AFFORDABILITY OF PROPOSAL FOR NEW ADULT AND CHILDREN'S HOSPITALS IN CONTEXT OF NHSGG&C 10 YEAR FINANCIAL PLAN

### 9.3.1. Revenue Consequences

A top level 10 year financial plan is set out in the table below with a more detailed summary provided in Section 9.4. This projects the Board's anticipated sources of additional revenue funds and likely expenditure commitments over the forthcoming 10 year period, including the additional cost commitment associated with developing new Adult and Children's Hospitals on the Southern General site.

Table 13: Top Level Financial Plan : 2008/09 – 2017/18

| | 08/09 £'M | 09/10 £'M | 10/11 £'M | 11/12 £'M | 12/13 £'M | 13/14 £'M | 14/15 £'M | 15/16 £'M | 16/17 £'M | 17/18 £'M |
|---|---|---|---|---|---|---|---|---|---|---|
| Forecast additional funding | 74.7 | 77.6 | 79.4 | 73.4 | 75.3 | 77.3 | 79.4 | 81.6 | 83.7 | 86.1 |
| Forecast expenditure commitments | | | | | | | | | | |
| Unavoidable expenditure growth / existing commitments | 92.3 | 105.2 | 80.4 | 78.0 | 74.3 | 76.7 | 79.5 | 83.9 | 86.5 | 88.8 |
| New adult/children's hospitals | - | - | - | - | - | 13.0 | 46.5 | - | - | - |
| General provision for new expenditure commitments | - | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| Total expenditure commitments | 92.3 | 113.2 | 88.4 | 86.0 | 82.3 | 97.7 | 134 | 91.9 | 94.5 | 96.8 |
| Cost Savings plan (excluding Clyde) | (26.2) | (27.0) | (33.4) | (12.0) | (13.1) | (10.0) | (25.6) | (18.3) | (14.0) | (9.0) |
| Projected in year surplus/deficit) | 8.6 | (8.6) | 24.4 | (0.6) | 6.1 | (10.4) | (29.0) | 8.0 | 3.2 | (1.7) |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Recurring surplus/deficit) brought forward | - | 8.6 | - | 24.4 | 23.8 | 29.9 | 19.5 | (9.5) | (1.5) | 1.7 |
| Projected recurring surplus/deficit) | 8.6 | - | 24.4 | 23.8 | 29.9 | 19.5 | (9.5) | (1.5) | 1.7 | - |
| Provision for transitional costs associated with establishing new adult/children's hospitals | (8.6) | - | (24.4) | (23.8) | (29.9) | (8.5) | 11.0 | 1.5 | - | - |
| Projected net surplus/deficit | - | - | - | - | - | 11.0 | 1.5 | - | 1.7 | - |
| | | | | | | | | | | |

**Notes** :

1. Forecast additional funding includes additional funding related to general funding uplift and excludes anticipated funding related to specific ring fenced funding provisions set aside by SGHD. The only exception to this is the specific provision established in respect of "Access to Services" where it is assumed that NHSGG&C will receive £23m over the 3 year period to 2010/11. It is assumed that this funding will be fully committed during this period.

2. Unavoidable expenditure growth/existing commitments comprises anticipated additional expenditure on pays, prescribing, non-pays, capital charges, and all unavoidable service commitments already entered into for the period to 2017/18.

3. The financial plan anticipates that the existing funding deficit related to Clyde is managed to a recurring financial breakeven position over a 3 year period by a combination of recurring and non-recurring cost savings and transitional funding provided by SGHD. The financial summary contained within Section 9.4 provides further details of the Clyde financial position, showing how this features within the context of the 10 year financial plan.

4. A high level cost savings summary is provided within Section 9.4. A summary of the key assumptions which underpin the financial projections shown in table 13, including an overview of the Board's financial strategy and appraisal of financial risk, is provided below.

i) **Key Assumptions**

- A general funding uplift of 3.1% per annum has been assumed. This is set below the recently announced general funding uplift for 2008/09 of 3.2% to allow for the potential impact which NRAC implementation might have on the Board's level of general funding uplift in future years.

- A general pay uplift of 2% per annum is provided for. This is reasonable in the light of current UK government policy and reflects the significant reduction in general funding uplift which will apply from 2008/09 onwards.

- An overall annual growth rate of 6% in prescribing costs is assumed across primary care and acute care. This allows for an average annual growth rate of 5.25% in primary care prescribing costs and 8.5% in acute prescribing costs,

before cost savings and other cost containment measures. This gives an overall annual rate of growth of 6% and approximates closely to the average annual growth rate experienced in past years. This can be regarded as a reasonable basis for projecting future average cost growth over a future period which extends to 10 years.

- A provision of 1.5% per annum is made for the general growth of non-pay costs (excluding prescribing costs), with the exception of years 1-3 where a reduced provision equivalent to 1% is made. This reduced level of provision in years 1-3 years is linked with the development of a major cost savings programme by the Board aimed at driving out cash releasing savings of 2% per annum on an annual basis in line with Government targets. The sustainability of this level of provision over a period extending beyond 3 years is considered unlikely and so a higher level of provision is set for the years beyond 2010/11.

- The financial plan includes all known existing financial commitments related to clinical and other services. These are presented within the section "Existing Programme Commitments". The projected step up in revenue costs associated with the new Adult and Children's Hospitals is shown within this section. This shows a revenue cost commitment of £59.5m per annum, which is the revenue cost commitment associated with the new Adult and Children's Hospitals and those related capital schemes which are funded by the Board's general capital funding allocation. Provision is also made for prospective new service commitments for 2009/10 onwards at a level of £8m per annum, split 50:50 between Acute and Non Acute Services. This level of provision will require to cover all new changes/developments which the Board is required to commit to over a ten year period, including all those national, regional and local changes/developments/initiatives which are unable to be funded by the specific ring fenced funding allocations which SGHD establishes annually to fund service change/development. This represents, in broad terms, a reduction of approximately 20-30% on the equivalent level of provision in 2008/09, however is considered realistic in the light of increasing levels of centrally managed ring fenced funding allocation, and a reduced level of general funding uplift. It should be noted that £8m per annum is regarded as a maximum provision, and may be scaled back, as required, to offset unforeseen cost pressures which may arise.

- The financial plan assumes that the Board will succeed in developing a cost savings plan which is capable of delivering 2% recurring cash releasing savings per annum during the period 2008/09 to 2010/11. This is in line with the SGHD targeted level of savings for the 3 year period to 2010/11. The cost savings plan includes restoring Clyde to a position of financial breakeven within the 3 year period.

The Board is currently engaged in the process of developing a detailed cost savings plan for 2008/09, which is aimed at delivering £33m of recurrent cost savings, with the objective of completing this by June 2008. Thereafter the process of developing plans for 2009/10 and 2010/11 will commence. For the years beyond 2010/11, a reduced level of cost savings is assumed, with annual targets set within a range of 0.5% and 1% per annum. This comprises a number of specific areas of cost saving associated with implementation of those changes related to the establishment of new Adult and Children's Hospitals, supplemented by a general annual savings programme which equates to 0.4% per annum.

At this stage, the Board has already identified £45m within its 10 year cost savings plan, specifically related to its existing Acute Services cost base, which is capable of being released to fund an anticipated step up in annual revenue cost of £59.5m associated with the establishment of New Adult and Children's Hospitals. During 2008/09, it will work at bridging the residual "gap" in parallel with developing an overall cost savings plan for 2009/10 and 2010/11.

(ii) **Overview of financial strategy**

The cornerstone of the Board's financial strategy, and the most significant individual feature of the Board's financial plan for the forthcoming 10 year period is its cost savings programme. This dominates its financial planning for the 3 year period to 2010/11, with cost savings/containment/reduction initiatives requiring in total to generate an average of £35m per annum. This level of saving is required in 2008/09 and 2009/10 to ensure that the step up in revenue cost associated with commissioning 2 ACAD's at Stobhill/Victoria in 2009/10 is fully funded, and continues into 2010/11 as the process of building up sufficient revenue funding capacity to fund the two new hospitals, in the lead up period to their commissioning, gets underway. The scale of additional cost commitment associated with the two new hospitals, £59.5m, demands that the volume of revenue funding which is required to pay for them, is built up over a number of years leading up to the commissioning of the hospitals…otherwise the Board would be unable to accommodate the running costs of these hospitals within the envelope of its available funds, while maintaining its commitment to achieve financial breakeven.

By commencing this process in 2010/11 and continuing to target further cost savings in the years beyond 2010/11 the Board's strategy is to amass an adequate reserve of revenue funding which will match the additional cost commitment which the new hospitals will bring. The financial plan shows the build up of this funding reserve over a 5 year period commencing in 2010/11. By building up revenue funding in this way, the Board will also be able to generate in the interim period the level of transitional funding it requires on a non-recurrent basis to manage through the process of establishing the new hospitals. This is capable of being covered year on year by the build up of revenue funding identified within the financial plan. The deployment of these funds year on year will be managed within the context of the Board's financial plan so that it complies with its statutory requirement to contain expenditure within its overall revenue resource limit.

(iii) **Appraisal of Key Risks**

The key areas of risks are identified below:

(a) **Funding uplift reduces below 3.1%**

The 10 year plan projects that NRAC implementation will impact on the Board to the extent of restricting its annual general funding uplift by 0.1% or £2m per annum. This assumes that a measured approach will continue to be taken by SGHD to the implementation of formulaic changes affecting Health Board funding levels, mirroring the approach taken to the implementation of the Arbuthnott formula in recent years.

It is reasonable to assume that SGHD will continue to adopt this approach in order to avoid the potential for financially destabilising Health Boards, particularly at a time when the level of general funding uplift has been set at 3.2%, a much reduced level than in recent years. Accordingly, a 0.1% funding adjustment is provided for in preparing the Board's financial plan. This is equivalent to a cumulative reduction in revenue funding of £20m over a 10 year period, a significant reduction in funding availability in the context of an overall annual general funding uplift of 3.2%. On this basis it is not considered likely that SGHD would seek to implement a further restriction on funding unless the level of future general funding uplift exceeded 3.2%, in which case it is reasonable to assume that a proportionate approach would be taken.

(b) **Annual General Pay Uplift Exceeds 2%**

This is clearly a key area of risk. For any year where the rate of general pay uplift exceeded 2% by 0.5%, without any corresponding elevation of the rate of general funding uplift, a cost pressure of £6.5m - £7m would emerge.

The Board would seek to manage the potential impact of this within the context of its 10 year financial plan by scaling back the level of funding set aside for prospective new funding commitments. This would offer scope for containing an increased level of general pay uplift of up to 2.5% for 3 years out of the 10 covered by the 10 year plan. Beyond this, the Board would have little room for manoeuvre, however it is reasonable to assume that a more frequent incidence of annual general pay uplift exceeding 2% might lead to a review of approach on pay awards which is likely to produce an equivalent change to the level of general funding uplift so that its impact was cost neutral within the context of the Board's 10 year financial plan.

(c) **2% cost savings target is not achievable in 2009/10 – 2010/11**

The sustainability of a cost savings programme, aimed at generating recurring savings of 2% per annum, over an extended period of 3 years is also a key area of risk. It is recognised that the Board is entitled to include non-recurring cost savings and credit these towards the achievement of its 2% cost savings target over the 3 year period to 2010/11, however the generation of recurring cost savings during this period is necessary on two counts:

1) The requirement to fund the step up in recurring cost commitment associated with commissioning 2 new ACAD's in 2009/10.

2) The requirement to release sufficient funds to provide transitional funding cover during the lead up period to commissioning the new Adult and Children's Hospitals.

Nevertheless, there remains the possibility that a challenge of 2% recurring cost savings per annum proves unsustainable over a period of 3 years. In the event that this proves to be the case, with up to 50% of the target proving unachievable in years 2 and 3, the Board would face a "gap" of some £30m within its 10 year financial plan. It's strategy for addressing this would be as follows:

1) Spread the recurrent cost savings challenge across a longer period than 2009/10 and 2010/11.

2) Identify and plug in non-recurrent cost savings to "fill the gap" in each of 2009/10 and 2010/11, thereby securing the achievement of SGHD's cost savings target for each of these years and preserving the required level of transitional funding.

3) Reduce the level of provision set aside for prospective new programme commitments by up to £3m per annum over a 9 year period. This particular funding provision might also serve as form of contingency fund to cover for the potential of reduced/delayed achievement of cost savings target(s) in future years beyond 2010/11.

By following the above strategy, the Board would seek to manage the risk of its cost savings programme either not delivering the targeted level(s) of cost savings or experiencing delay(s) in achieving specific targets within individual years. Indeed, the same strategy would also be applied, albeit more comprehensively, in the event that the Board is confronted by a combination of pay pressure and delay to the achievability of its cost saving programme.

### 9.3.2 Capital Consequences

A top level capital plan is set out in table 14 below. This reflects the Board's preferred option for procuring its new Adult and Children's Hospitals, which envisages these being funded by Public Capital.

Table 14: Top Level Capital Plan : 2008/09 – 2015/16

| | 08/09 £'M | 09/10 £'M | 10/11 £'M | 11/12 £'M | 12/13 £'M | 13/14 £'M | 14/15 £'M | 15/16 £'M | Total £'M |
|---|---|---|---|---|---|---|---|---|---|
| Forecast Capital Funding | | | | | | | | | |
| General funding allocation | 97.6 | 97.6 | 97.6 | 97.6 | 97.6 | 97.6 | 97.6 | 97.6 | - |
| Specific funding : medical equipment | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | |
| : other schemes | 14.6 | 11.0 | 4.0 | 3.0 | | | | | |
| SGHD agreed brokerage | 26.9 | 11.4 | | | | | | | |
| Total Capital Funding | 148.1 | 129.0 | 110.6 | 109.6 | 106.6 | 106.6 | 106.6 | 106.6 | |
| | | | | | | | | | |
| Allocation of Funding | | | | | | | | | |
| Committed schemes | 112.4 | 80.8 | 47.2 | 14.0 | 9.0 | 9.0 | 9.0 | 9.0 | |
| Provision for schemes not yet committed | 5.8 | 13.3 | 0.5 | 40.9 | 37.6 | 30.5 | 39.3 | 75.6 | |
| Provision for minor/local schemes | 15.0 | 15.0 | 15.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | |
| New adult/children's hospitals – enabling Schemes | 14.9 | 39.4 | 28.0 | 7.7 | 13.0 | 15.1 | 6.3 | - | |
| Less : slippage/brokerage to be identified | - | (19.5) | (5.1) | - | - | - | - | - | |
| | 148.1 | 129.0 | 85.6 | 84.6 | 81.6 | 76.6 | 76.6 | 106.6 | |
| Residue of available capital funds | - | - | 25.0 | 25.0 | 25.0 | 30.0 | 30.0 | - | 135.0 |
| Add : Capital Receipts | - | 10.0 | 15.0 | 25.0 | 30.0 | 18.0 | 18.0 | 19.0 | 135.0 |
| : Endowment Funding | - | - | - | 10.0 | 10.0 | - | - | - | 20.0 |
| NHSGG&C : total available funding | - | 10.0 | 40.0 | 60.0 | 65.0 | 48.0 | 48.0 | 19.0 | 290.0 |
| Proposed supplementary allocation of capital funds by SGHD (specific allocation) | - | 17.5 | 100.8 | 176.3 | 170.4 | 94.9 | 10.8 | (19.0) | 551.7 |
| | - | 27.5 | 140.8 | 236.3 | 235.4 | 142.9 | 58.8 | - | 841.7 |
| Capital expenditure... new adult / children's hospitals | - | 27.5 | 140.8 | 236.3 | 235.4 | 142.9 | 58.8 | - | 841.7 |

The total capital funding requirement associated with the provision of the new Adult and Children's Hospitals is £841.7m. It is planned that this will be funded by combining the following sources of capital funds to create the required funding pot:

| | | £'M | £'M |
|---|---|---|---|
| 1. | Specific provision within Board's 10 year capital plan, set aside from annual general capital resource allocations. | | 135 |
| 2. | Capital receipts generated from disposal of sites declared surplus | | 135 |
| 3. | Allocation from Board's general endowment funds | | 20 |
| 4. | SGHD – specific allocations of capital funds for<br>a) children's hospital<br>b) adult hospital | <br>205<br>346.7 | <br><br>551.7 |
| | Total | | 841.7<br>==== |

The Board's capital plan provides for the capital contribution identified at (1) above to be made available out of its routine annual allocation of capital funding. This is projected to remain static over the 10 year period and so has been fixed at the 2008/09 level of £97.6m per annum. It also provides for further expenditure on enabling (preparatory) schemes totalling £88m to be funded from general capital funding….this is part of the expenditure provision shown within the "enabling schemes" category within table 14 above. Because of the heavy concentration of enabling (preparatory) schemes in the first 3 years of the plan, it has been necessary for the Board to restrict the amount(s) of capital which it is able to set aside for prospective new commitments in the first 3 years of the plan to an absolute minimum, with only £20m set aside for new schemes over a 3 year period. In addition, the amount which the Board routinely sets aside to cover minor local schemes/health and safety related schemes etc has been scaled back to £15m per annum, representing 70% of existing expenditure levels.

Even after having carried out such an aggressive process of prioritisation, the Board's capital plan is over-committed by almost £25m in total over an initial 3 year period, with the bulk of this arising in 2009/10. It is assumed that this can be managed through a combination of slippage/brokerage in conjunction with SGHD on a year by year basis, over the 3 year period. On the basis of previous experience and recognising the scale of the over-commitment, which equates to 8% of total available capital funding for the 3 year period, this should be both manageable and achievable.

It is further assumed that the Board is capable of generating £135m over a 10 year period from the disposal of sites declared surplus. This is based on a series of projections carried out by the Board's Property Advisors, based on the potential disposal of a wide range of sites including Victoria, Mansionhouse, Yorkhill, Gartnavel (part), Stobhill (part), Dykebar (part), Broomhill, among others, which are forecast to produce capital receipts during the forthcoming 10 year period. The wide range of sites which will become available for disposal during the forthcoming 10 year period provides the necessary level of reassurance that this level of targeted receipts can be achieved.

It is further assumed that the Board will be able to source up to £20m from its general endowment funds to contribute towards the capital costs of the new Adult and Children's Hospitals. With the total amount of endowment funds, currently standing at in excess of £80m, and over £30m within general endowment funds, this can be considered to be a realistic and reasonable assumption.

The final part of the capital funding package £551.7m represents the specific allocation of funding which is sought from Scottish Government Health Department (SGHD) and which is an integral part of the proposal contained within this outline business case. If SGHD is able to approve this specific allocation of capital funding, in line with the timescales identified within the capital plan, this will provide the balance of capital funding which is required to make the provision of the new Adult and Children's Hospitals affordable within the context of the Board's capital plan.

## 9.4 10 YEAR FINANCIAL PLAN

Table: 10 Year Financial Plan

| | A | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | **2008/09** | **2009/10** | **2010/11** | **2011/12** | **2012/13** | **2013/14** | **2014/15** | **2015/16** | **2016/17** | **2017/18** |
| 3 | **A** | | **Opening Financial Position** | | | | | | | | | | |
| 4 | | | Clyde Deficit brought forward | (19 0) | (12.0) | (4.0) | - | | | | | | |
| 5 | | | less Planned Recurring Cost Savings (Clyde) | 7 0 | 8.0 | 4.0 | - | | | | | | |
| 6 | | | less Planned Non Recurring Items | 4 0 | - | - | - | | | | | | |
| 7 | | | less Transitional SGHD funding (assumed) | 8 0 | 4.0 | - | | | | | | | |
| 9 | **Adjusted Opening Financial Position** | | | - | - | - | - | - | - | - | - | - | - |
| 11 | **B** | | **New Funding** | | | | | | | | | | |
| 12 | 1 | | SEHD general funding uplift | 54 0 | 55.7 | 57.4 | 59.2 | 61.0 | 62.9 | 64.8 | 66.8 | 68.9 | 71.1 |
| 13 | 2 | | Waiting Times | 7 0 | 8.0 | 8.0 | - | - | - | - | - | - | - |
| 14 | 3 | | Other | 13.7 | 13.9 | 14.0 | 14 2 | 14.3 | 14.4 | 14.6 | 14.8 | 14.8 | 15.0 |
| 16 | **Total New Funding** | | | 74.7 | 77.6 | 79.4 | 73.4 | 75.3 | 77.3 | 79.4 | 81.6 | 83.7 | 86.1 |
| 18 | **C** | | **Expenditure Commitments** | | | | | | | | | | |
| 19 | 1 | | Pay costs inflation | 35 5 | 30.4 | 27.9 | 28.3 | 28.8 | 29.3 | 30.0 | 31.1 | 31.5 | 31.8 |
| 20 | 2 | | Prescribing costs growth | 19 5 | 20.7 | 21.9 | 23.2 | 24.6 | 26.1 | 27.7 | 29.3 | 31.1 | 32.7 |
| 21 | 3 | | Other supplies costs inflation | 5.6 | 5.7 | 5.8 | 8 8 | 8.9 | 9.0 | 9.2 | 9.5 | 9.6 | 9.7 |
| 22 | 4 | | Energy | 3 5 | - | - | - | - | - | - | - | - | - |
| 23 | 5 | | Capital charges inflation | 2 0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 |
| 24 | 6 | | PMS & PCS | 5 3 | 5.5 | 5.6 | 5.7 | 5.8 | 5.9 | 6.0 | 6.2 | 6.3 | 6.4 |
| 26 | 7 | | Other Providers | 4.4 | 4.6 | 4.8 | 5.0 | 5.2 | 5.4 | 5.6 | 5.8 | 6.0 | 6.2 |
| 27 | 8 | | Existing Programme Commitments | | | | | | | | | | |
| 28 | | (i) | Brought Forward | 7 0 | 5.0 | 5.0 | 3 0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| 29 | | (ii) | Acute Capacity Plan / Waiting Times | 7 0 | 8.0 | 8.0 | - | - | - | - | - | - | - |
| 30 | | (iii) | Acute ASR Programme | 0 3 | 21.0 | 2.0 | - | - | 13.0 | 46.5 | - | - | - |
| 31 | | (iv) | Other Acute | 4 3 | 5.7 | 0.4 | 5 0 | - | - | - | - | - | - |
| 32 | | (v) | CHCP / CHP / MH / O her | 2 9 | 2.6 | 1.0 | 1 0 | - | - | - | - | - | - |
| 33 | | (vi) | In-Year Commitments c/f | (5 0) | (5.0) | (3.0) | (3.0) | (3.0) | (3.0) | (3.0) | (3.0) | (3.0) | (3.0) |
| 35 | | | | 92 3 | 105.2 | 80.4 | 78 0 | 74.3 | 89.7 | 126.0 | 83.9 | 86.5 | 88.8 |
| 40 | **9** | | **Prospective Programme Commitments** | | | | | | | | | | |
| 42 | | (i) | Acute | - | 4.0 | 4.0 | 4 0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| 43 | | (ii) | CHCP / CHP / MH / O her | - | 4.0 | 4.0 | 4 0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| 45 | **Total Prospective Programme Commitments** | | | - | 8.0 | 8.0 | 8 0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| 48 | **Total Expenditure Commitments** | | | 92 3 | 113.2 | 88.4 | 86 0 | 82.3 | 97.7 | 134.0 | 91.9 | 94.5 | 96.8 |
| 54 | **Cost Savings Plans (exc Clyde)** | | | (26 2) | (27.0) | (33.4) | (12 0) | (13.1) | (10.0) | (25.6) | (18.3) | (14.0) | (9.0) |
| 57 | **Projected In-Year Surplus / (Deficit)** | | | 8.6 | (8.6) | 24.4 | (0.6) | 6.1 | (10.4) | (29.0) | 8.0 | 3.2 | (1.7) |
| 59 | Recurring Surplus / (Deficit) brought forward | | | | 8.6 | - | 24.4 | 23.8 | 29.9 | 19.5 | (9.5) | (1.5) | 1.7 |
| 61 | **Projected Recurring Surplus / (Deficit)** | | | 8.6 | - | 24.4 | 23 8 | 29.9 | 19.5 | (9.5) | (1.5) | 1.7 | - |
| 63 | Provision for Transitional Costs Associated wi h Establishing new Adult / Children's Hospitals | | | (8.6) | - | (24.4) | (23 8) | (29.9) | (8.5) | 11.0 | 1.5 | - | - |
| 65 | **Projected Net Surplus / (Deficit)** | | | - | - | - | - | - | 11.0 | 1.5 | - | 1.7 | - |

Table: 10 Year Financial Plan – Cost Savings Plan

| | A | B | C | D | E | F | G | H | I | J | K | R | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | **2008/09 £m** | **2009/10 £m** | **2010/11 £m** | **2011/12 £m** | **2012/13 £m** | **2013/14 £m** | **2014/15 £m** | **2015/16 £m** | **2016/17 £m** | **2017/18 £m** | **Total £m** | |
| 4 | **ASR Cost Savings** | | | | | | | | | | | | |
| 5 | Capital Charges | | 2.4 | | | 3.1 | 1.0 | 3.7 | 3.9 | 2.4 | | 16.5 | |
| 6 | Nursing | | | 3.0 | 3.0 | | | 4.5 | | | | 10.5 | |
| 7 | Medical | | | | | | | 3.0 | 1.6 | | | 4.6 | |
| 8 | Other | | 0.5 | | | 1.0 | | 5.4 | 3.8 | 2.6 | | 13.3 | |
| 10 | **ASR Cost Savings** | | 2.9 | 3.0 | 3.0 | 4.1 | 1.0 | 16.6 | 9.3 | 5.0 | | 44.9 | |
| 12 | **Other Cost Savings** | | | | | | | | | | | | |
| 13 | Clyde Cost Savings | 7.0 | 8.0 | 4.0 | | | | | | | | | |
| 14 | Other Savings | 26.2 | 24.1 | 30.4 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | | |
| 16 | **Other Cost Savings** | 33.2 | 32.1 | 34.4 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | | |
| 19 | **Total Savings** | 33.2 | 35.0 | 37.4 | 12.0 | 13.1 | 10.0 | 25.6 | 18.3 | 14.0 | 9.0 | | |
| 21 | less Clyde Savings separately disclosed | (7.0) | (8.0) | (4.0) | | | | | | | | | |
| 23 | **Total Savings (exc Clyde)** | 26.2 | 27.0 | 33.4 | 12.0 | 13.1 | 10.0 | 25.6 | 18.3 | 14.0 | 9.0 | | |

# 10. PROCUREMENT

## 10.1 PROCUREMENT OF BUILDING – PUBLIC FINANCE PROCUREMENT ROUTE

The business case considers the best way of meeting the business objectives while achieving best value for money, the optimum balance of risk and control and funding.

There was little to differentiate the alternative procurement routes in terms of their capacity to deliver Value For Money, however a publicly funded capital route offers the potential to deliver an affordable solution. The preferred procurement route is therefore through public finance. There are a range of contract options that are available to the Board, some of these transfer programme , design and cost risks better than others and the Board need to carefully consider the pro's and con's of each before making a final decision.

Ideally, the procurement route should try to integrate design, construction, operation and ongoing maintenance into the mix as the design develops, even if operation is not part of the service delivery. To assist the Board to consider and select the most appropriate contract form, a procurement workshop has been set up for 19th February 2008 to review options, evaluate and select a preferred route. The workshop will be attended by the Acute Division's Chief Operating Officer, the Director of Finance, the Project Owner, the Project Director, Project Team members plus technical, legal and financial advisers.

The workshop will focus on the Board's key requirements in respect of cost and programme risk transfer, robust and tested procurement route, value for money and whole life cost, expenditure and programme requirements. Key to the selection process is the requirement to select a process that sees a start of construction work in the 2nd quarter 2010, with completion of the new Children's Hospital 1st qtr 2013 and the new adult acute hospital in 2nd qtr 2014.

The preferred public finance option will be submitted to the Health Board and Scottish Government for consideration and ratification as part of the outline business case. It will also be independently assessed though the OGC Gateway Review process to provide assurance to the Board and the Scottish Government that the method shown has been scrutinised and confirmed. [1]

The contract form will dictate the timescales for following tasks and timetable, however it is anticipated that following market sounding and preparation of more robust design and project requirements (brief and specification) that a competitive process will follow involving at least three contracting teams over a 9-12 month process, culminating in the selection of a preferred partner completion of Full Business Case by mid 2010. The detail of the process will be expanded on completion of the workshop and confirmation of the preferred route.

## 10.2 PROCUREMENT OF EQUIPMENT

The retention, transfer, procurement and commissioning of new and existing equipment will be a complex project requiring detailed and effective management.

The financial appraisal includes provision of new equipment. This includes Group 1 and specified Group 2 equipment including CT scanners, MRI scanners and Gamma cameras.

Within the contract for constructing the new hospitals it will specify the services requirement for all Group 2 equipment (large and small) in order that the specialist equipment contractors will be able to supply and fit required equipment.

It is the intention of the Board to procure all identified group 2, 3 and 4 equipment from public capital via the NHS Greater Glasgow & Clyde procurement department.

## 10.3 PROCUREMENT OF IT

- The project includes for the provision, maintenance of structured wiring. These elements will need to be able to support both the current and future applications.

- It will remain the Board's responsibility to support existing and to procure new application hardware and software through separate contracts.

# 11. WORKFORCE ISSUES

## 11.1 INTRODUCTION

The development of the new South Glasgow Hospitals will be supported by a workforce, which has the skills and competencies to provide modern, quality health care of the 21st century.

The Health Board's workforce development plan is set within the context of the NHS Careers Framework, and over the next few years, will shift the balance of the workforce to enhance the role of support staff at levels 1-4 to allow professionally qualified staff to use their skills in the most effective way.

At the same time, significant economies of scale will be achieved in the use of medical, nursing, allied health professions and support staff, as the number of inpatient sites reduce.

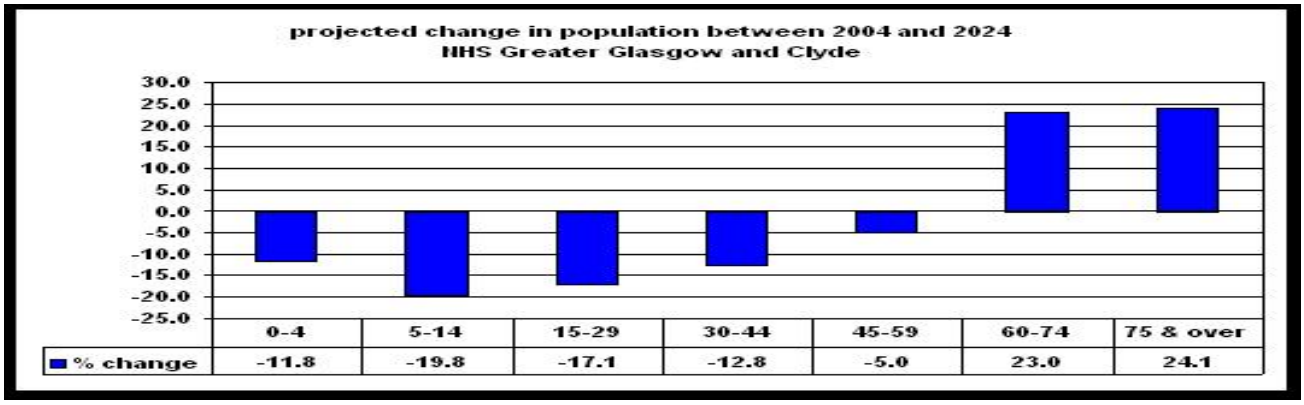
## 11.2 CONTEXT

The latest national workforce planning report, "Better Health, Better Care*:* Planning Tomorrow's Workforce Today" was published in December 2007. This strategic document sets out the direction of travel for future workforce planning, with a particular focus on integration with financial planning and service delivery. The workforce plan to support the new South Glasgow Hospital is therefore fully integrated with the service and bed model, and the affordability model. It is also set with the Board's overarching workforce plan, which supports the Local Delivery Plan.

The "Careers Framework" was formally launched in Scotland in October 2006. It supports NHS Boards and regions to articulate the future workforce development needs through alignment with workforce planning and modelling, the implications of service redesign as well as to support robust succession planning. The "Careers Framework" is also linked to the Knowledge and Skills Framework (KSF) and to the use of national occupational standards in producing development plans for new as well as existing roles. With the support of the Scottish Government and NHS Education for Scotland, the Board are using the Careers Framework to plan the competences required in the future workforce.

## 11.3 THE POPULATION PROFILE

Achieving the workforce needed in the future will be challenging given the shrinking labour market. There will be a fall in the number of young people entering the labour market and an increase in those approaching retirement. At the same time, the increased proportion of the population aged over 60 and, particularly, over 75 will increase demand for health care. The following chart shows changes in the age distribution of the NHS Greater Glasgow population up to 2024.




Population trends suggest that there will be a 17.1% fall in the number of young people entering the labour market and a 5% decrease in those approaching retiral age. There will be a 23% increase in those having just reached retiral age and an 19.8% decrease in school children. This constitutes a major shrinkage of the local labour market.

However, at the same time there has been a significant shift in the fortunes of the resident working age population of the city. At the end of the 1990s, just over half of the city's working age resident population were in employment. By the end of the present decade, this will have risen to over seven in ten.

To better prepare NHS Greater Glasgow and Clyde to meet this challenge, the Community Health and Care Partnerships and the Community Health Partnerships are working within their local communities on employability. A significant element of this is to ensure recruitment into NHS Greater Glasgow and Clyde from a wider pool of people who would not normally access NHS employment. The Board's pre-employment training programme, Working for Health in Greater Glasgow will continue to play a critical role in this, ensuring that people from the local communities surrounding the new hospitals are ready for employment.

In planning for the future workforce, the Board are working in partnership through a "Strategic Alliance"; with the Further and Higher Education sector; and with other NHS Boards – the Golden Jubilee National Hospital and NHS Education for Scotland in particular. This will ensure that further education in particular is placed to assist in developing skills necessary for the new hospital environments

## 11.4 WORKFORCE PLANNING

The future workforce envisaged in the workforce plan is based on the principles of **affordability, availability and adaptability**.

Affordability

The workforce plan is based on the Financial Plan. This assumes that pay rates increase by no more than the inflationary uplift received by the Health Board in its weighted capitated funding. It is assumed that, over the next few years, the consolidation of new contractual arrangements (Consultant Contract, GMS Contract and Agenda for Change) will lead to productivity gains. Development of new services will require to be balanced with "efficient government" gains in some backroom function (supplies, pharmacy, finance and human resources for example.) This will allow a shift from indirect to direct care within the overall resource envelope. Planning for this will involve setting indicative targets for direct care/support staff ratios.

Availability

Using the Careers Framework the Board is developing a career pathway for the whole workforce.

The significant demographic changes in the available workforce in Glasgow over the next decade has led NHS Greater Glasgow and Clyde to focus on a series of strands of work to ensure future recruitment to the Board by widening the pool of labour available to us.

NHS Greater Glasgow & Clyde is committed to the "Welfare to Work" agenda in Glasgow. "Working For Health" currently has 260 trainee places per year with a target of bringing 75% of these into employment. Working for Health is a generic pre-employment training programme but it is focused on the NHS and is demand-led in that we guarantee permanent employment on successful completion of the training programme. It started off as a six week "one size fits all" programme but has been redesigned as a flexible two, six or twelve week programme. Working for Health will provide one-third of NHS Greater Glasgow and Clyde's non-professional recruits.

While the Board currently provide continuing professional development for professional staff, and in the future more than induction and job-related skill training for the non-professional workforce will be need to be provided. There will be new roles designed to provide career opportunities for non-professional employees.

Greater Glasgow has the largest Black and Minority Ethnic population in Scotland (4.5% or 39,318 people)[1]. 38.7% of the total Scottish black and minority ethnic population live in the Greater Glasgow area, and 45.7% of all black and minority ethnic people in Greater Glasgow are Pakistani. The black and minority ethnic population is younger than the White population (29.5% under 16 compared to just under 19% for the White groups). These figures are based on the 2001 census and, therefore, do not include the majority of asylum seekers and refugees presently residing in Greater Glasgow as they arrived after the census date. Evidence indicates that the black and minority ethnic population is under-represented in the Board's workforce. It is important that the black and minority ethnic population is drawn on, not just in order that the workforce more fairly represents the local population, but also because the young black and minority ethnic population is likely to already be more than 5% of the population and to become a more significant proportion of the population in the future.

Asylum seekers are not allowed to take up employment but can be encouraged to undertake voluntary work or training which will prepare them, if successful in seeking right to remain in the United Kingdom, for NHS employment. With the support of the Scottish Government, the Board have appointed a Refugee Workforce Development Officer to encourage and facilitate professional and non-professional refugees to join the workforce. A training programme has been developed to prepare refugees for participation on the pre-employment training programme.

[1] Ethnic Group Profile From The 2001 Census - NHS Greater Glasgow Area, NHS Greater Glasgow Information Services September 2005

Adaptability

The key to success will be in how the current workforce adapts to new roles and new ways of working. It is recognised that this will require an increased investment in education, training and development. There will be a shift of resources from indirect to direct care in rationalising and rebuilding the estate and as other efficiency savings are achieved in backroom functions. The workforce of the future will be better supported by more highly-trained but not, necessarily, professionally qualified staff.

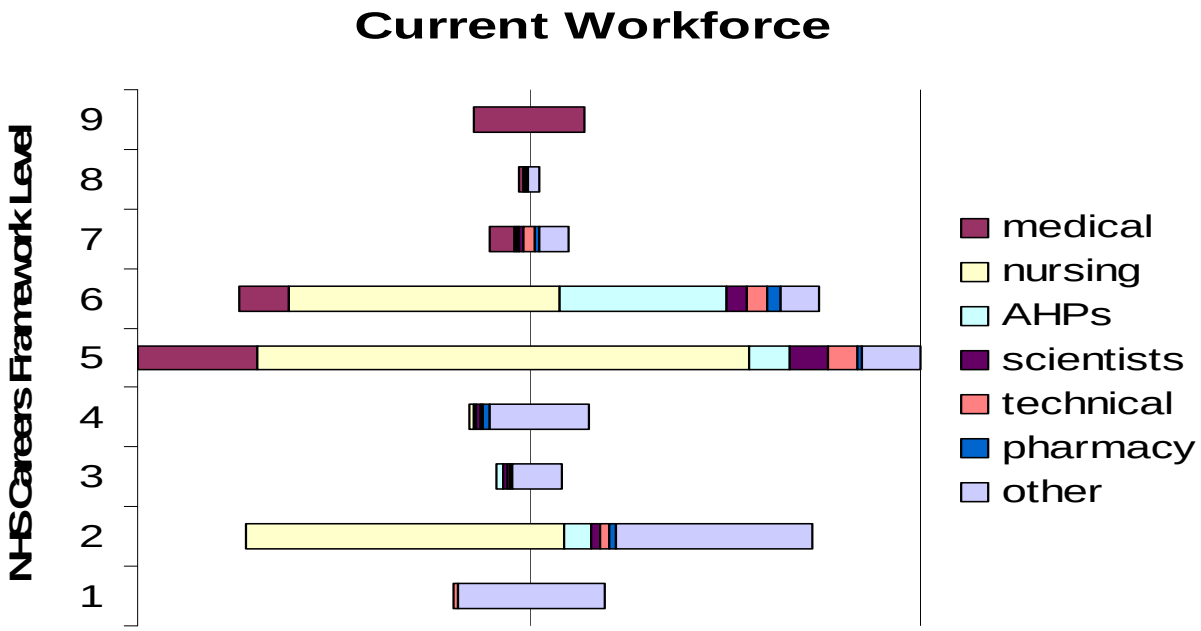
Agenda for Change and the associated Knowledge and Skills Framework allows the reduction in demarcation between professionals and to develop new roles around the patient. A number of career framework based projects are in place across NHS Greater Glasgow & Clyde. NHS Education for Scotland is funding a project aimed at level 2/3 in nursing and across allied health professions working in rehabilitation and assessment. The Scottish Government is supporting a national project aimed at level 4 for nursing, AHPs and social work within acute services and partnerships. A further project aimed at level 6/7 is also being funded by the Scottish Government for nurses in Care of the Elderly services.

These projects will inform the development of the competences profiles required to enable staff to provide appropriate care. While some of this change will be achieved by replacing staff who choose to leave and are replaced by staff performing different roles, much of the change will involve existing staff adapting to new roles.

## 11.5 FUTURE WORKFORCE PROFILE

The NHS Greater Glasgow and Clyde workforce has over 40,000 substantive staff currently in post and approximately one in four of the NHS workforce in Scotland works for NHS Greater Glasgow and Clyde. Acute services including children's services account for the majority of the workforce. The acute services workforce is deployed at Stobhill Hospital, the Victoria Infirmary, the Western Infirmary, Glasgow Royal Infirmary, Gartnavel General Hospital, the Royal Hospital for Sick Children and Queen Mother's Hospital at Yorkhill and at the Southern General Hospital.

The current workforce against the levels within the Careers Framework is set out below.



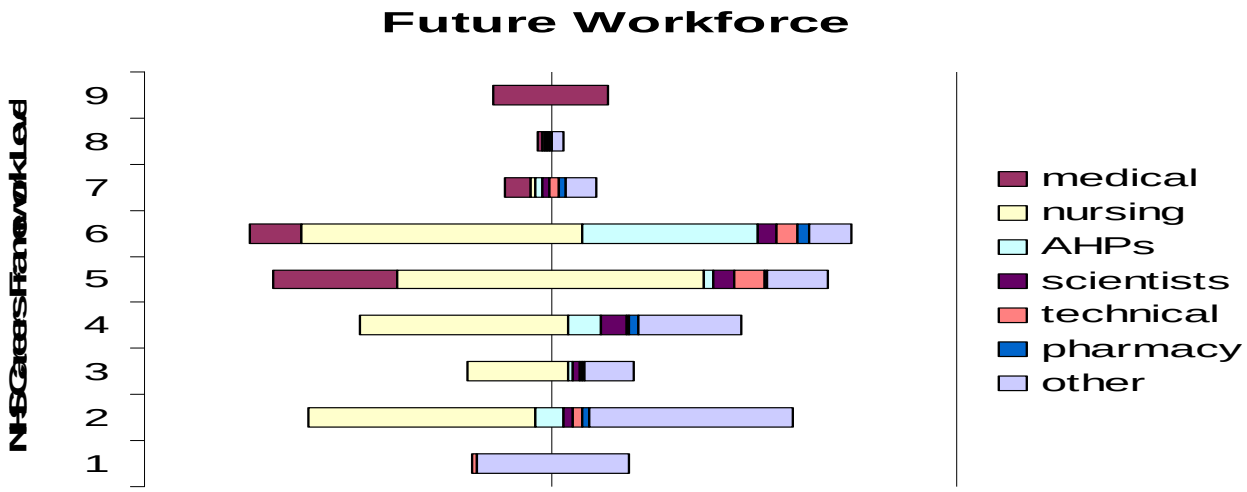

This shows a wide variance in the distribution of staff across the competency levels, with the largest groups of staff currently mapped to levels 6, 5 and 2. (Level 9 equates to very senior roles; Level 5 would predominantly represent new graduates entering the workplace; Level 1 equates to support worker roles.) It highlights that there are currently limited opportunities for career progression. It also demonstrates that there are two workforces: those from level 1 to level 4 and those who enter as newly qualified staff/ graduates at level 5 and have the opportunity to progress up to level 9.

The Acute Services Review will result in the following pattern of services,

- two new ambulatory care hospitals providing day surgery and outpatients at the Stobhill and Victoria sites
- closure of the Western Infirmary, Victoria Infirmary, Stobhill Hospital, Queen Mother's Hospital and Royal Hospital for Sick Children
- movement of inpatient services to the new South Glasgow Hospital, Glasgow Royal Infirmary and Gartnavel General

The opportunities for redesign offered by the new investment in facilities and the consolidation of workforce onto fewer sites will result in a significant re-profiling of the workforce.

The Board's new workforce set against the levels in the Careers Framework is set out below.




This graph suggests that in the future there will be a requirement for a more even distribution of staff across the competency levels with particular investment in levels 3 and 4. This would allow for greater flexibility and career progression underpinned by an appropriate suite of training and development opportunities.

The Medical Workforce

With the reduction in the number of acute in-patient sites, there will an impact on the medical workforce, particular in Anaesthesia, Medicine, Accident and Emergency and Surgery. At the same time the impact of Modernising Medical Careers will be working its way through. In these specialties, there will be a reduction in the rotas required to provide cover, and this will mean the loss of some training posts, which will be reflected in the training programmes in the West of Scotland. However, the impact will mainly be on PAs and availability supplements paid to Consultant medical staff reflecting a reduced burden of on-call. Similarly, as junior doctors rotas become less onerous, there will be further improvements to working hours and this will reflect in lower banding payments to junior doctors. These changes in combination are of the order of 1.7% of the overall medical staffing budget within acute care.

The Nursing and Midwifery Workforce

Nursing and Midwifery constitute the largest element of the workforce. The majority - but not all - of the workforce is ward based and their workload relates to factors such as the number of beds, the dependency of patients and the layout of the ward.

An exercise has been undertaken to measure the potential impact on the nursing workforce. This work is predicated on the development of the agreed bed model for acute services and a bed model for children's services in anticipation of the movement to the SGH site. Workforce data and future scenario assumptions have been considered with professional leads and service directors, and these have subsequently been used to inform future workforce modelling. In this way it has been possible to work at individual directorate level as well as at a service wide level. This has allowed for due consideration as to where future efficiencies may lie.

Further work needs to be done to refine an appropriate grade mix. This will also be informed by the recommendations from the Nursing and Midwifery Workload and Workforce Planning Report. Account will also have to be taken of the workload implications of developing standards set by the Nursing and Midwifery Council.

Specifically there will be a reduction in the number of ward manager posts, with a realignment of resources to Agenda for Change Band 5. With staff spread across fewer sites there will be a requirement for less senior managerial capacity and this will provide an opportunity to look at the way practice education and development support is deployed.

There will in addition to the re-profiling of the nursing workforce be a reduction in overall headcount related to a reduced number of beds. The combination of all of these changes comprises 2.6% of the current nursing complement. These changes will be managed in line with the Boards "Managing Workforce Change Policy". Over the next six years there will be regular review of workforce capacity. Currently, just over 11,000 nurses and midwives work within the Acute Sector, with a turnover rate of just under 7% annually. Therefore achieving the appropriate workforce profile will require the Board to carefully match demand and supply while at the same time rebalancing the skill mix, but is eminently manageable within the timescale available

The Allied Health Professions Workforce

The Allied Health Professions workforce is diverse including dieticians, occupational therapists, orthoptists, physiotherapists, speech and language therapists, podiatrists, radiographers, prosthetists and orthotists.

New models of care will be developed – particularly within rehabilitation and assessment services – and this will impact on the make-up of the workforce. Assistant practitioners, advanced practitioners and consultant Allied Health Professionals posts will be developed to provide a more balanced workforce to contribute to the new models of care. The need to use staff efficiently coupled with concerns about the future availability of certain graduate Allied Health Professionals and the impact of a shrinking labour market on student numbers and on recruitment of non-professionally qualified staff, has led to consideration of new roles and routes to professional qualification. Work has commenced on the development of competences for (generic) support worker and assistant practitioner roles.

The Administrative and Clerical Workforce

The staff groups outlined above are supported by a range of administrative and clerical staff – some working directly with clinical staff (e.g. medical secretaries) and some, indirectly, in backroom functions. Such staff make a significant provision to patient services. Backroom functions will benefit from developments in the automation of information (e.g. the introduction of a filmless x-ray service, electronic dictation and the electronic health record).

Facilities Management Workforce

The size of the facilities workforce will relate directly to benchmarked norms taking account of cost per square metre of estate. This will therefore lead to reduction in overall headcount, which will similarly be managed through the Board's 'Managing Workforce Change' Policy over the next few years.

## 11.6. CONCLUSION

NHS Greater Glasgow and Clyde has taken account of the requirements to develop the Outline Business Case and ultimately the Full Business Case and has invested in appropriate additional resource to support this. In developing the Board's Workforce Development Plan, there will be a continued commitment to ensure that work is undertaken in partnership with a range of internal stakeholders, including Trade Unions, as well as external stakeholder organizations in light of anticipated service change and re-design.

# 12. FACILITIES MANAGEMENT (FM)

This section outlines the Board's approach to Facilities Management.

## 12.1 BACKGROUND

The proposed new Southern Campus will consist of both new build and retained estate. Part of the retained estate includes a PFI building, the Langlands building, which houses in patient beds for care of the elderly, young physically disabled and dermatology. This is located on the extreme southern end of the site.

The Hard and Soft FM Services which are currently provided on the Southern site are shown in table 15 below.

**Table 15 – FM services provided to the Southern campus site by NHS Greater Glasgow and Clyde**

| Soft FM | Hard FM |
|---|---|
| Sewing Room | Grounds Maintenance |
| Portering Services | Estates Maintenance |
| Domestic Services | Estates MC Works |
| Waste Management | Energy Management |
| Linen Service | Boilerhouse |
| Supplies and logistics | Estates Workshop |
| General Services | Estates Helpdesk |
| Telecommunications | |
| Deceased Patient Movement | |
| Staff Changing | |
| Green Transport Management | |
| Catering Services | |
| Car Parking | |
| Pest Control | |

Within the PFI building there is a FM commercial contractor providing a small number of services, these are listed in table 16 below.

**Table 16 – FM services provided to the Langlands PFI building by commercial FM contractor.**

| Soft FM | Hard FM |
|---|---|
| Catering | Grounds Maintenance |
| Porter Services internal to building | Estates Maintenance |
| Domestic services internal to building | Estates MC Works |
| Internal Waste | Help desk |
| Staff Changing | Boilerhouse |
| Security | Estates Workshop |

## 12.2 THE HEALTH BOARD'S APPROACH TO FM

In planning the FM strategy for the site the new and retained configuration of the estate have been taken into account.

It is the Board's intention to provide all hard and soft FM services to the Southern Campus from within NHS Greater Glasgow and Clyde's facilities pool (with the exception of those currently provided by the commercial FM provider to Langlands). To ensure that the greatest efficiencies are achieved a benchmarking and value for money exercise will be undertaken to explore and identify the most effective methods of service delivery. In addition, work is taking place to identify any innovation that would assist the delivery of services and provide long term efficiencies. These will be investigated in more detail during the next stage of the project

# 13. INFORMATION TECHNOLOGY

## 13.1 OVERVIEW

Health Information Systems, and the underpinning Information Technologies will be key elements in support of Patient Care in the new hospitals.

At the present time, work is ongoing to develop a National eHealth Strategy for NHS Scotland, and whilst this work is as yet incomplete, there is a set of eHealth Aims that the evolving strategy will set out to achieve. These are as follows:-

- Patient and carer involvement and experience
- Evidence – based and safe care
- Integrated Healthcare
- Support for community based care
- Support for scheduled hospital care
- Support for unscheduled care
- Improved information intelligence
- Advanced eHealth
- Effective systems to improve productivity

Certain specific objectives will be required to be put in place in order to achieve the above aims. These sets of objectives fall into four main categories:-

- Information Strategy

The information strategy focuses on the needs of patients - both in terms of information clinicians require, to provide the best possible standards of care, and easy access for patients to information about their care.

- Software Applications Strategy

An Electronic Health Record (EHR) exists to support sharing of patient information, with strictly governed access. The founding principle is that receipt and delivery of NHS care implies acceptance by patients and their clinicians that information needs to be collected to high quality standards and accessed where appropriate to ensure best possible care.

The goal of EHR does not mean a single all-encompassing software application. Even if such a product existed, which is not the case at present, the strategy is founded on progressively making progress rather than ‘rip and replace’. This meaning of ‘EHR’ is therefore the umbrella term used to describe the key software applications which together make up support for all aspects of patient care. EHR in this sense will therefore be achieved through incrementally putting in place and connecting the necessary components.

- Delivery Strategy

Delivering the national eHealth Strategy must balance the need to deliver the long-term objectives and service improvements, whilst realising real service benefits from the outset and throughout the programme.

Planning for the delivery of the national eHealth Strategy will also recognise that NHS Boards are at different stages of maturity, in terms of integrating their existing eHealth services. In addition, there are a number of differing local priorities. The Delivery Programme will therefore include a degree of flexibility in recognition of the different baseline positions of NHS Boards.

- Infrastructure Strategy

The Infrastructure strategy will embrace technologies and services associated with the enabling, operating and management of technical resources appropriate to the delivery of the eHealth Strategy.

The approach to strategy development has been to identify the elements that contribute to the strategy together with their interrelationship with other aspects of the wider strategy, define the relevant and appropriate standards, align these to the wider strategic context and validate them against prevailing cornerstone activities and prospective procurement opportunities.

Each Health Board will require to establish its own roadmap of how to progress from its current baseline systems and technologies to achieve ultimate convergence with the National objectives.

For the purposes of the Outline Business Case, this section reviews:-

- IT requirements for the future
- The projects and work in progress towards achieving the above objectives
- The envisaged technical and environmental infrastructures that the new hospitals will require to house to support the evolving Information systems

## 13.2 REQUIREMENTS FOR THE FUTURE

### a) National Strategy

From a national perspective, *'Better Health, Better Care'* promotes a comprehensive health information system built around an Electronic Health Record. The eHealth strategy is concerned with delivering that comprehensive system and NHS GG&C will work towards this goal through all of its developments.

Detail of the strategy is still under development, but the ultimate objectives are to have:-

- Access to a personal Electronic Health Record, for each individual patient ultimately replacing paper records.
- All healthcare professionals connected to a secure health information network supporting integrated community, acute and inter-agency care services.
- Support for integrated healthcare services through sharing of patient information while maintaining the confidentiality of patient information.
- Data sharing between the health service and its partners, based on a framework of informed consent, supporting Community Health Partnership working
- Information systems able to support the three functions of assessment of need: care planning and co-ordination, and evaluation of quality of care.
- Healthcare professionals able to access best practice information and to participate in clinical networks.

- Clinical staff record their interventions directly into Electronic Health Records, rather than transcribe to written records.
- Convergence over the next 5 years towards common and mandatory arrangement of IT systems across NHS Scotland.

With regard to the latter point, it is proposed that a national procurement is undertaken for a new Patient Management System that will embrace both Patient Administration functions plus a kernel of clinical functions that will include at least Order Communications, but may potentially also include A&E, Theatres, Electronic Prescribing etc. The full scope of what will be included is out for consultation.

**b) Projects and Work in Progress**

There are a number of initiatives that are ongoing or have recently been completed within NHSGGC which are closely aligned with the national objectives. These include:-

- Implementation of the national PACS system, commencing in Southern General hospital with subsequent roll out which has included Victoria Infirmary, Yorkhill and progress within RAH and Gartnavel Hospitals.
- Implementation of the national A&E system initially in the Clyde and North Glasgow hospitals.
- Extended availability of the ECS (Emergency Care Summary) to A&E Departments.
- Implementation of the National system for GEMS Out of Hours service.
- Improved resilience and support arrangements for further consolidation of the Laboratory and Radiology Information Systems.
- Implementation of the SCI DC and Diabetic Retinopathy system in Clyde.
- Implementation of the NHSGGC Theatre Management system (ORSOS) in Clyde.
- Implementation of a new Community Nursing System.
- Creation of a stable environment for the Glasgow SCI Store so that services can be restored to GPs regarding provision of laboratory results and other clinical letters.
- Merging of the Glasgow and Clyde SCI Stores.
- Preliminary work on the development of a Data Warehouse to support the Information Services within the enlarged Board Area.
- Continued roll out of SCI Gateway availability for the communication of referral letters from GPs to Acute Care services.
- Continued progress on the usage of CHI throughout the Health Board area.
- Adaptation of existing systems to comply with the requirements of “New Ways of Measuring Wait Times”.
- Implementation of the National Scottish Cervical Call Recall System (SCCRS).
- Implementation of improved communications infrastructure via N3 (NHS Net version 3).
- Rationalisation of the e-mail service within the enlarged Board.
- Commencement of convergence of voice and data communications via IP Telephony.
- Improved CHP connectivity through Boards strategy, joined up services and sharing information.
- Commenced implementation of a Clinical Portal that will facilitate clinical access to the current range of disparate systems.
- Development of Chronic Heart Disease and Stroke electronic Health Records.

- Replacement of Clinical systems within Surgical and Orthopaedics.
- Review of how we can best move to a 24 x 7 support model through internal and external agencies.
- Development of a strategy to support the information requirements for the new Ambulatory Care Hospitals.

**c) Technical and Environmental Infrastructures Required by the New Project to Support the Evolving Information Systems**

In considering the environments required to host a range of modern systems and services, there are a number of standards and facilities that will need to be established.

An IT infrastructure backbone, which will support any software, was considered a key factor in looking at requirements for the new project. The need for cabling, wireless and active communications infrastructure was reviewed along with requirements for telephone infrastructure, computer rooms, IT training rooms, patient internet services and other dependant/related services such as building management and security services interaction with medical/diagnostics equipment, and educational suites and video conferencing application software.

- **Infrastructure**

*Application Software*

Major Application Systems (e.g. PAS / HIS, Labs., Radiology, PACS and other major clinical systems) used within the new hospitals will be part of the National / NHSGGC strategies, and consequently will be funded either centrally or via the NHSGGC IT capital and revenue sources.

*IT Support Services*

IT Support Services will be Pan Glasgow/ Clyde and will be independent of site, therefore the reconfiguration of beds will not affect the support services and any increase in support connected with the roll out of National /NHSGGC software strategies will be funded either centrally or via the NHSGGC IT revenue budget.

*PC and Peripheral Equipment*

The new adult build and children's build will require some investment in PC and peripheral equipment. Although it may be assumed that on ongoing replenishment programme will take place in the coming years, and that it will be possible to transfer a high percentage of the prevalent stock at the time, it is estimated that approximately 10% will require to be replaced at the time of commissioning. Additionally, the configuration of the new builds in clinical areas will require new equipment.

*Active Communications Equipment*

There will be a cost associated with the purchase and installation of the active components of the communications equipment. This will include core switches, distribution switches, wireless controllers, wireless access points, node racks and UPSs.

The PC and active communications equipment is included in the projects cost plan.

# 14. CAMPUS DEVELOPMENT PLAN

## 14.1 THE "DO-ABILITY"

This section describes the current site, the enabling works to release the site designated for the new hospital and laboratory facility, the smaller works associated with the new hospitals and the phasing.

### 14.1.1 Enabling Works

There is a comprehensive plan to re-locate all the services within the site designated for the new build to other locations to allow demolition and clearance of the site by the end of 2009.

Details of both the enabling works and phasing are given in Appendix 7.

The potential for interruption to day-to-day services and facilities within the site during construction has been carefully analysed and will be managed by:-

(a) a series of enabling works to decentralise the main hospital services and utilities and

(b) isolating the construction-site from the remainder of the hospitals, with materials and construction traffic accessing the site from a discreet entrance off Hardgate Road and an existing but currently disused link road to Govan Road.

With the construction-site sealed off and separately accessed from the rest of the hospital site it is envisaged that the hospital will continue to operate uninterrupted during the building and commissioning of the New Hospitals and Laboratory builds.

### 14.1.2 Associated Works

As described under Option 1a there are a series of smaller capital works associated with the Southern Campus. These are:

- Development of two multi-storey car parks. These are to be completed in two phases with an initial car park, phase 1, prior to the main hospital construction to relieve potential parking pressures on the site. The second car park, phase 2, will be constructed alongside the children's hospital build.

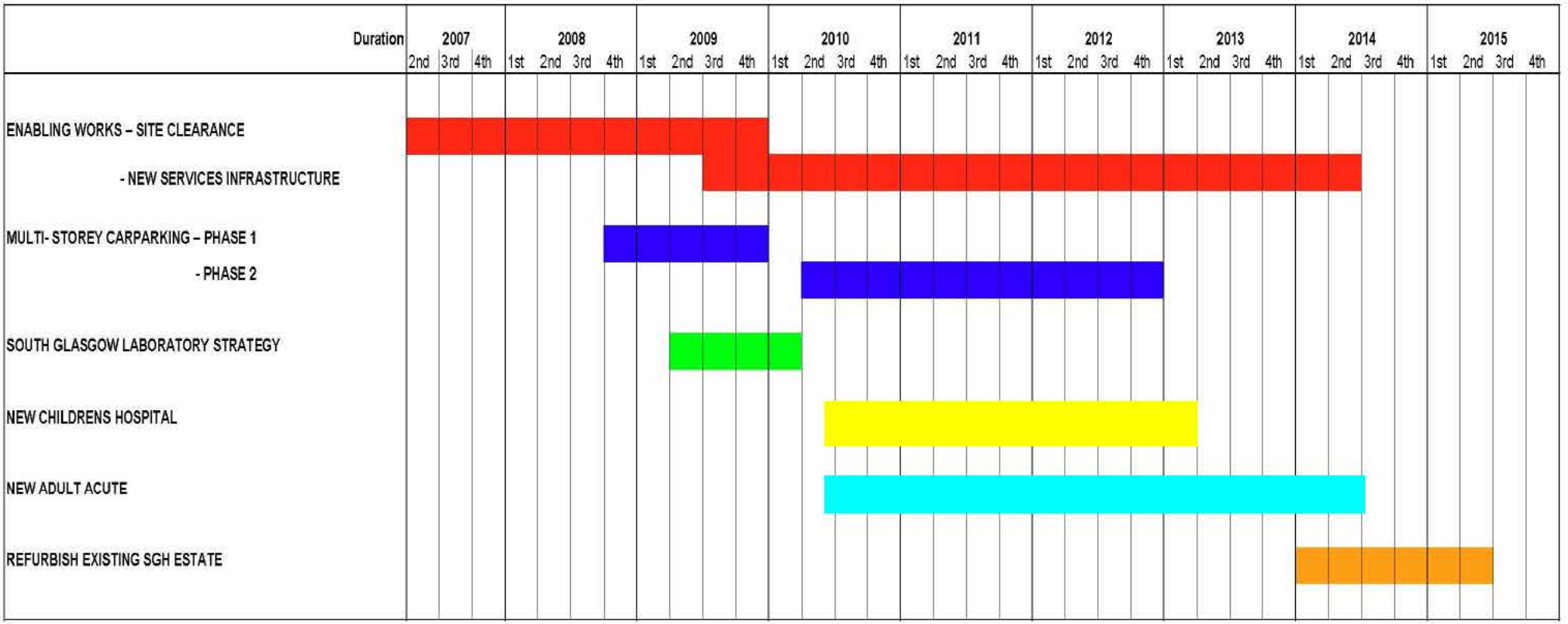
- Refurbishment of some of the existing buildings to provide clinical support and other services

The enabling works, phases 1 and 2 multi-storey car park and the refurbishment of the existing buildings will be funded through the Health Board's capital plan.

### 14.1.3 Phasing Of The Developments

The graph below shows the phasing of the main hospitals enabling and associated works described above.

## NEW SOUTH GLASGOW HOSPITALS
## SUMMARY of PROJECT TIMELINES



In brief, the enabling works to clear the site designated for the new hospitals commenced in the 2nd quarter of 2007. These are part of a rolling programme with completion by the end of 2009.

Work to provide the new services infrastructure to support the new buildings is planned to commence in the second half of 2009 and complete by mid 2014.

The first multi-storey car park, Phase 1, is anticipated to be constructed over a 15 month period from the 4th quarter of 2008. The second multi-storey car park, Phase 2, will sit next to the Children's Hospital and will be constructed during 2010 to 2102.

The new laboratory build construction is anticipated to commence in Spring 2009 with completion the following year in Spring 2010.

The New Children's Hospital construction is planned to take place second quarter 2010 to 1st quarter 2013. The New South Glasgow Hospital is anticipated to take just over four years to complete, commencing in the 2nd quarter 2010 with completion in second quarter 2014.

Finally, refurbishment of the existing estate is planned to commence at the beginning of 2014, and continue for 18 months with completion in mid 2015.

All of these projects will be planned and co-ordinated through the Site Programme Co-ordinating Group, ensuring that all potential risks that may occur in delivering a multi-construction project environment are appropriately managed. Further details about this group are given in the Project Management section (Section 15).

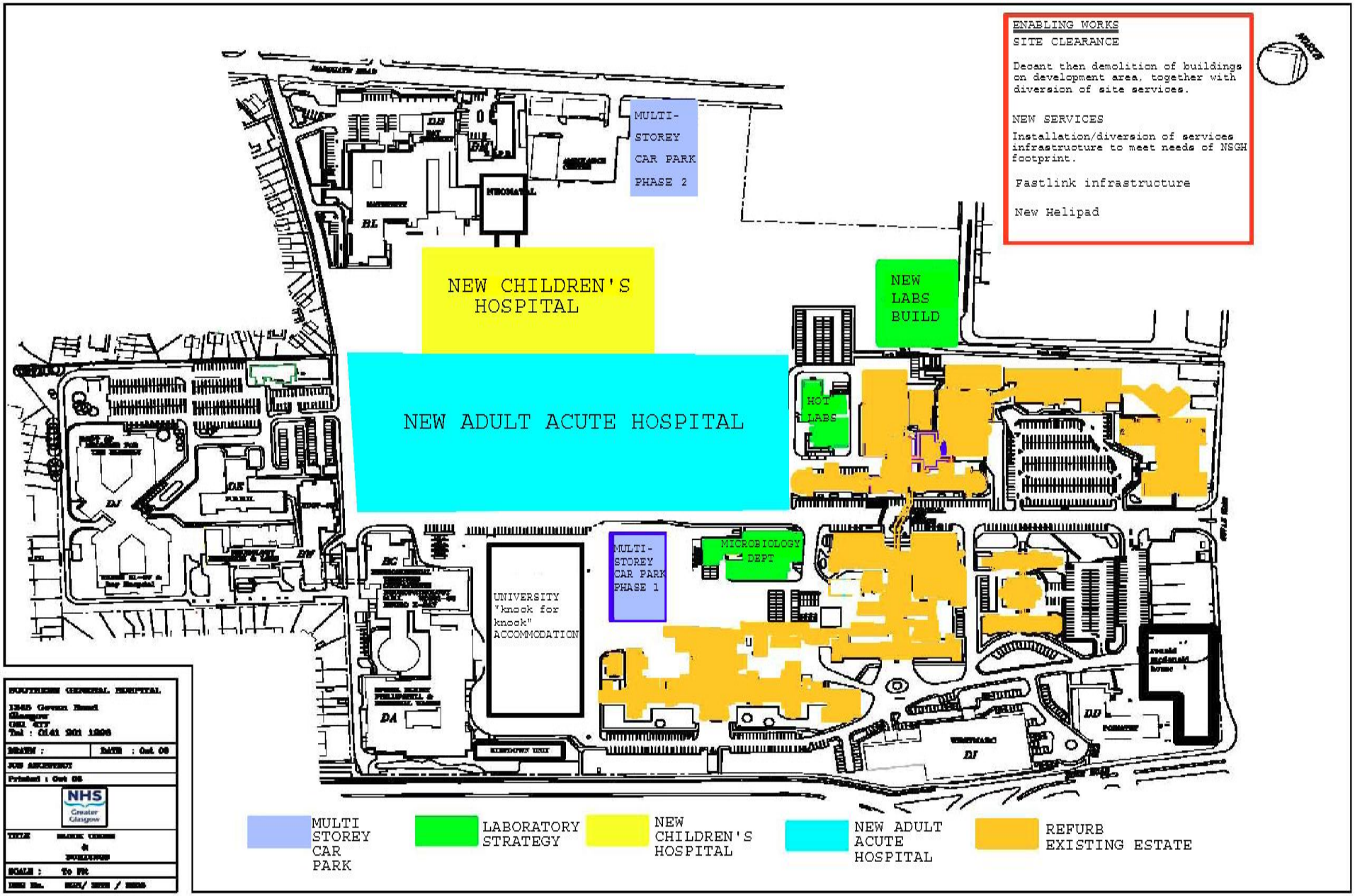
The plan below shows the position of each of the developments on the campus.

The two multi-story car parks are shown in dark blue.

The laboratory build is shown in green and located in the far north of the site, the other green buildings indicate the two refurbished areas providing the hot lab and microbiology.

The site of the adult and children's hospitals are shown in turquoise and yellow respectively.

Finally, the existing estate which will be refurbished is shown in orange.


ENABLING WORKS
SITE CLEARANCE
Decant then demolition of buildings on development area, together with diversion of site services.
NEW SERVICES
Installation/diversion of services infrastructure to meet needs of NSGH footprint.
Fastlink infrastructure
New Helipad
MULTI-STOREY CAR PARK PHASE 2
NEW CHILDREN'S HOSPITAL
NEW LABS BUILD
NEW ADULT ACUTE HOSPITAL
HOT LABS
MULTI-STOREY CAR PARK PHASE 1
MICROBIOLOGY DEPT
UNIVERSITY "knock for knock" ACCOMMODATION
MULTI STOREY CAR PARK
LABORATORY STRATEGY
NEW CHILDREN'S HOSPITAL
NEW ADULT ACUTE HOSPITAL
REFURB EXISTING ESTATE

A49342285

## 14.2 TRANSPORT

a) Traffic Impact Assessment

A traffic impact assessment has been undertaken in accordance with the guidance contained within Scottish Planning Policy (SPP 17) - Planning for Transport, the results of which have been submitted to Glasgow City Council. A copy of the Transport Assessment and Travel Plan is available from the Board.

In discussion with GCC, SPT, First Bus, Arriva and other transport providers and operators, the Board is planning to improve new and improved bus routes to the site. It will build upon the work undertaken in recent years to improve routage, frequency and quality of bus services. A number of activities that will improve access to healthcare have also been developed with SPT and a five year access to healthcare facilities has been developed.

b) Proposed Clyde Fast Link

Discussions are currently taking place with Glasgow City Council and SPT (Strathclyde Public Transport) to look at options to route the proposed state of the art public transport facility, the Clyde Fastlink, from the city centre, through the Southern General site. To accommodate this, the Campus plan incorporates a dedicated Fastlink route through the site with passenger bus stops at the Adult, Children's and A&E entrances.

c) Travel Plan

A Travel Plan is being developed to outline the Board's Strategy to encourage people to access the site through greener, cleaner travel choices for example, walking, public transport, cycling and car share will be promoted.

The design and layout of the site will improve the ease of access by non-car modes for example pedestrian and cycle routes throughout the site, bus stops near the main entrances, facilities for cyclists such as bike sheds, lockers and showers.

There are 2 multi storey car parks proposed one to service the Adult hospital in the East of the site and on in the west to service the children's hospital.

d) Scottish Ambulance Service (SAS)

The Board has been in liaison with SAS over the proposed changes associated with the campus.

## 14.3 ZONING OF THE CAMPUS AND LANDSCAPING

In developing the campus plan thought has been given to the following:

- Zoning of the site as a whole such that there is separation between the new hospital zone, the FM, labs and energy centre zone and the area around the listed buildings both in terms of the scale of the development and the activities associated with each zone.

- The links through the site and beyond e.g. traffic movement around and through the site, including the separation of public access, service access and emergency access and the establishment of clear way-finding strategy for building entrances, car parks and through traffic. Connection of the site to the surrounding urban fabric both in terms of car access and the fast link.

- The opportunities and constraints of the site, e.g. the land available for build, crucial service co-locations, the creation of a landscape strategy for the centre of the site at the public face of the new hospital and the areas to the rear of the new hospital and the administrative and Academic zone around the listed buildings.

## 14.4 PLANNING APPLICATION

The Outline Planning Application was submitted to Glasgow City Council on 13th April 2007. The application was considered at the Glasgow Planning Committee meeting held on 15th January 2008 and received conditional approval subject to the Section 75 legal agreements.

## UNIVERSITY – FUTURE PROPOSALS

Glasgow University are intending to support the development of the Southern General campus by building an academic centre on the site. This will provide a modern academic facility to support teaching and research. An area of land on the Southern Campus has been identified by the Health Board for this purpose.

A new multidisciplinary Skills and Education Centre is also proposed. Partners in this include the Royal College of Physicians and Surgeons of Glasgow, the University of Glasgow and NHS Education for Scotland. A site adjacent to the new hospitals has been identified as a possible location.

## ART AND WELLBEING

A campus wide art group is being developed to provide and oversee an arts strategy for the campus and new buildings within. It is envisaged that implementation of the arts strategy will be supported through soft funding and will include the following key aspects:-

1. **Core Integrated Art, Architecture and Landscaping**: ambient art and design solutions to reduce anxiety and promote sense of well-being, assist way-finding, in waiting areas, rehabilitation zones, staff rest and dinning areas, car parks, bus shelters, entrances, external landscaping and reception areas.

2. **Special Procurement and commissioning of furnishings**

3. **Provision of programmable spaces**: suitable for exhibition of Creative (Visual Art and Creative writing) and Performing Arts (music, dance, drama and theatre), art and health work.

4. **Provision of specific architectural elements**: for physical and mental rehabilitation e.g. ramps and bridges in courtyards, musical sculptures.

## 14.7 REGENERATION OF THE AREA

The New South Glasgow Hospitals development promotes an opportunity to support regeneration on both the site and across the wider Govan area.

The Board's principal role is as a core health provider but the Board is talking to other partners to ensure the proposals for the Southern site are compatible with other plans for the area.

The Health Board securing Outline Planning Approval for the new development provides other partners with confidence that a critical mass of health provision is coming to the area. The Board is aware of various bodies interested in acquiring space both on and around the site

This includes the potential to work with local housing associations and other providers to explore provision of affordable housing for key workers in the local area and the potential to develop joint working around childcare provision.

The Board also recognises that this development has the potential to contribute substantially to the local economy not only in terms of attracting investment but also through direct and indirect training and employment opportunities. Subsequently, the Board is pro-actively engaged with partners to ensure the development maximises employment and training opportunities.

In addition to the substantial economic benefits to Shieldhall, South West Glasgow and the City, the opportunity also exists to create a new urban centre with its own distinct identity that not only fits within the local context and contributes positively to the immediate physical environment but also takes its place in the sequence of regenerated areas coming west along the river (i.e. Govan Town Centre, Pacific Quay, Science Centre etc) and contributes positively to the emerging townscape along the waterfront.

Further detail regarding the potential of the New South Glasgow Hospitals to contribute to regeneration of the area is given in Chapter 19.

# 15. PROJECT MANAGEMENT

## 15.1 INTRODUCTION

The Board has formally established robust project management structures to ensure that Stage 1 of the project, submission of the Outline Business Case, is delivered within projected timescales, cost and is of high quality.

In planning for the second stage of the project the Health Board undertook a review in August 2007 with input from Partnerships UK. This was to determine additions to the project team structure and governance in recognition of the workload likely to be involved from OBC authorisation to submission of Full Business Case.

The Project Management Structure and governance arrangements for Stage 1 and proposals for Stage 2 are described below.

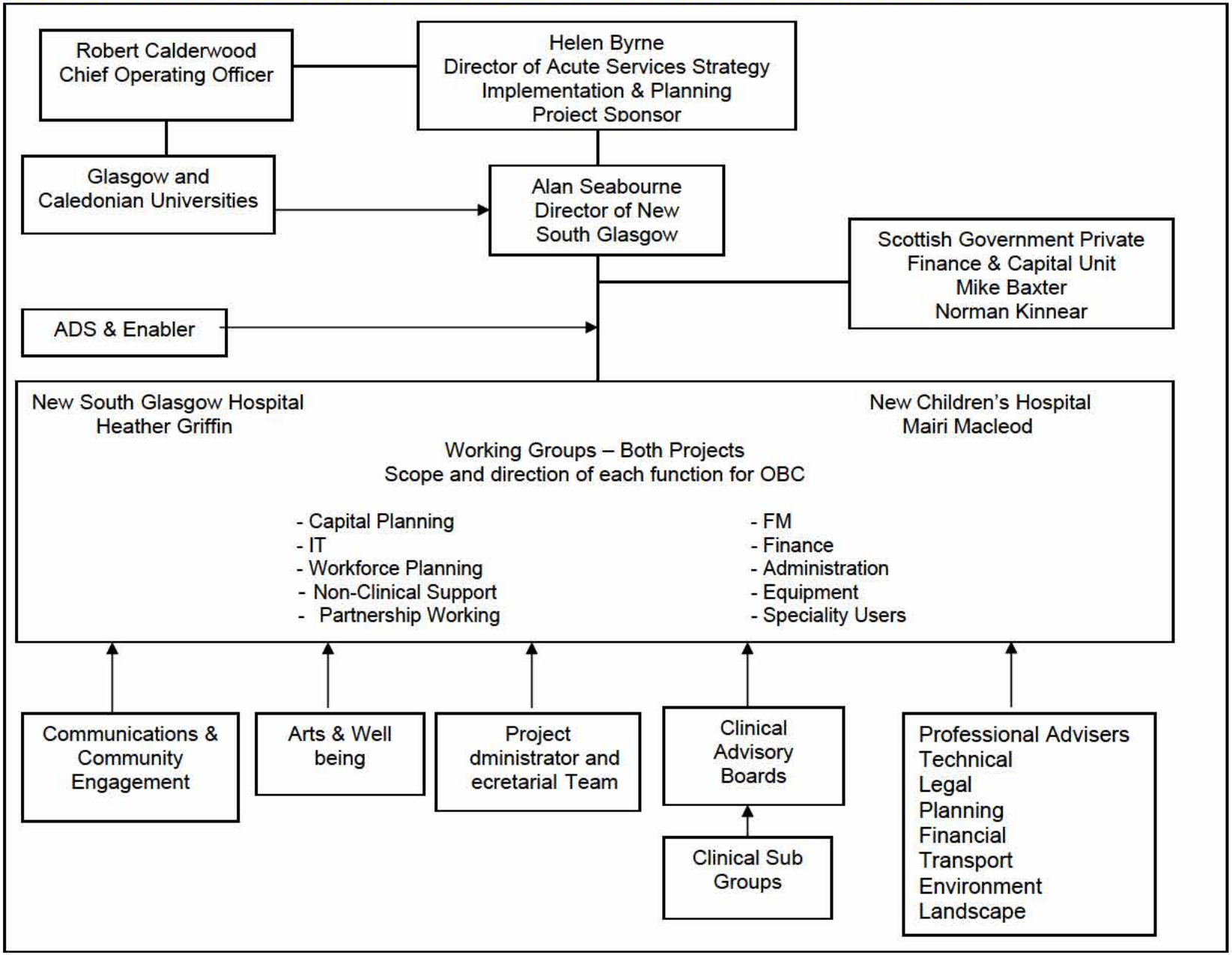
## 15.2 PROJECT MANAGEMENT & GOVERNANCE ARRANGEMENTS FOR STAGE 1

The following diagram shows the key roles and input in delivering the project, these are described over page. Diagram 2 illustrates the structure of the project groups and control mechanisms.

## 15.3 PROJECT STRUCTURE – PROJECT MANAGEMENT ARRANGEMENTS – STAGE ONE

***Diagram 1***

Diagrammatic representation of Project Structure



Project Roles

Within the Management structure outlined above, there are a number of key designated roles. Each of the key roles is defined below identifying responsibilities and reporting mechanisms.

Project Sponsor

The Project Sponsor chairs the Project Executive Group and reports to the Chief Executive of the Board and the ASR Programme Board. (NB the ASR Programme Board is described in more detail later in this section).

The sponsor's role is to:

- Appoint a Project Director to manage the project
- Ensure adequate resources are made available to the project
- Facilitate and resolve difficult issues
- Provide overall internal and external leadership for the project

Project Director

The Project Director reports to the Project Sponsor. The role of the Project Director is to:

- Oversee the component parts of the scheme, these being the new Children's and Adult's hospitals and the new laboratory build
- Oversee the development of the Southern Campus (involving for example development of the University facilities, mental health, crèche, road infrastructure etc)
- Manage stakeholders interests in the project, providing clearness and direction on their behalf, embracing direction from the Project Executive Group (Project Board)
- Appoint consultants and contractors to undertake work within the project budget, and as a direct link to the Board Executive Group, Project Board and all external organisations
- Lead the evaluation of bids and the external negotiating teams up to financial close
- Regularly inform the Project Sponsor and Project Board of the project status and liaise with other external bodice's such as the Scottish Government

Project Managers

The Project Managers report to the Project Director. The scheme has two Project Managers, one to oversee the new Adult hospital and the other to oversee the Children's development. Both work together as a team with shared responsibility for the overall campus and elements within it e.g. pharmacy, university, transport, office accommodation etc.

In more detail the Project Managers role encompasses:-

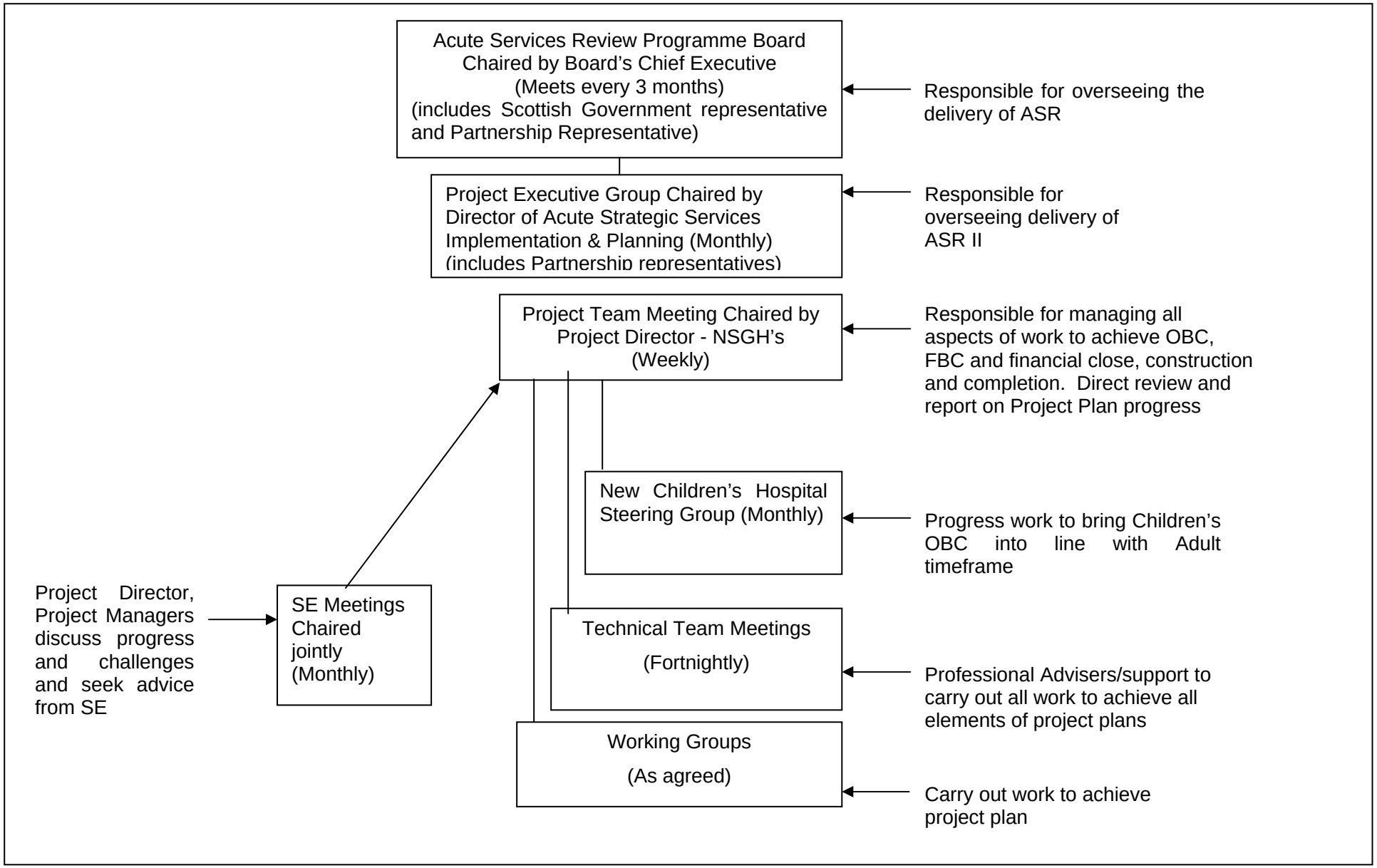
- Preparation of the Project Initiation Document
- Identification of resources required for the Project (skills and cost)
- Recruitment and management of the Project Team
- Management and Leadership of the various clinical sub groups in the development of design brief, Schedules of Accommodation, 1:200's designs and development of the clinical output specification
- Development of the Outline and Full Business Case
- Monitoring progress against the project plan and budget for the scheme
- Oversee project monitoring procedures and documentation
- Report progress to Project Director
- Ensure stakeholder and partnership involvement

Clinical Advisory Boards (CAB)

A Clinical Advisory Board has been established for both the Adult and Children's hospitals. The CAB provides clinical advice and guidance with regards to clinical issues (such as design brief, aspects models of care).

The following diagram shows the structure of the Project Groups and control systems in place for Stage 1 of the project.

***Diagram 2 PROJECT GROUPS IN PLACE FOR STAGE ONE***



Project Executive Group

The Project Executive Group meets monthly and is chaired by the Project Sponsor. Membership of the group includes the Chief Operating Officer, Project Director, Directors of Nursing, Medicine, HR, Acute Director reps and staff side representation.

The role of the Project Executive Group is to:-

- Take responsibility for decision making, strategic vision and leadership
- Approve the project construction document and project plans
- Monitor and approve any changes to the programme
- To determine the most appropriate procurement strategy and co-ordinate the procurement processes to maximise benefits and minimise all associated risks
- Ensure the scheme delivers expected clinical benefits, is robust and offers good public value for money, meets the risk transfer and accounting criteria
- To ensure the necessary senior managers, clinicians and staff maintain regular and on-gong involvement in the project ensuring the necessary ownership at the most senior levels in the organisations
- To ensure integration with other elements of ASR planning and other service plans and developments including national and regional planning

ASR Programme Board

The ASR Programme Board (ASRPB) is responsible for overseeing the delivery of the Acute Services Review. This includes the planning and implementation of the individual elements identified as necessary to achieve the strategic change and also the quantification of outcomes to ensure they are in line with the agreed aims and objectives of the Acute Services Strategy.

NHS HEALTH BOARD

In its role of delivering the overall healthcare strategy for Glasgow, the Health Board will retain the overall decision – making authority. It's role will include:-

- Approval of the Outline Business Case
- Approval of appointment of bidders
- Confirmation of the preferred bidder
- Approval of the Full Business Case (FBC)
- Award of contract

## 15.4 GOVERNANCE STRUCTURE – STAGE TWO, POST OBC TO SUBMISSION OF FULL BUSINESS CASE (FBC)

With the finalisation of the Outline Business Case the project is now coming to the end of Stage 1; the project team have developed proposals for the project management structure to facilitate the next stage, from Outline Business Case authorisation to Full Business Case through the appropriate procurement process.

A review of the breadth of skills and tasks required to complete this stage of the project has highlighted 3 key areas, these being, organisational change and procurement and financial. It is proposed that the generic Project Executive Group be replaced with 2 specialist project groups reflecting the key areas. The 2 groups will feed into a new group, the New South Glasgow Hospitals' Executive Board which in turn will report to the ASR Programme Board. An outline of their remit is given below.

### 15.4.1 The ASR Programme Board

The ASR Programme Board will oversee the project work and progress against the stated outputs and timescale. As described this is an existing group chaired by the Board's Chief Executive. Given that the project is moving forward to stage 2 the terms of reference and membership have been reviewed, these are given in Appendix 19 and 20.

### 15.4.2 New South Glasgow Hospitals' Executive Board

The New South Glasgow Hospitals' Executive Board will have delegated authority to make executive decisions on critical points in the project process. The role of the Board will be to oversee the overall process of the project and to co-ordinate the work streams of the two groups. The Board will meet bi-monthly or more frequently depending upon the stage of the project and will report into the ASR Programme Board.

### 15.4.3 ASR Systems Redesign Group

The development of the New South Glasgow Hospitals will result in a number of radical changes not just in reconfiguring clinical services across Glasgow but also in working practices and the way in which patients receive their treatment. A comprehensive and co-ordinated process will be developed to take forward the re-design aspects and work hand in glove with staff, human resources and workforce planning to ensure both staff involvement and that the right number of staff and skills are available to support the new ways of working.

### 15.4.4 Procurement and Finance Group

There will be a requirement for specialist skills in relation to taking the procurement process forward with regard to the funding, affordability and value for money aspects. A high level of risk management and scrutiny will be needed to assure the Health Board of appropriate delivery.

### 15.4.5 Site Programme Co-ordination Group

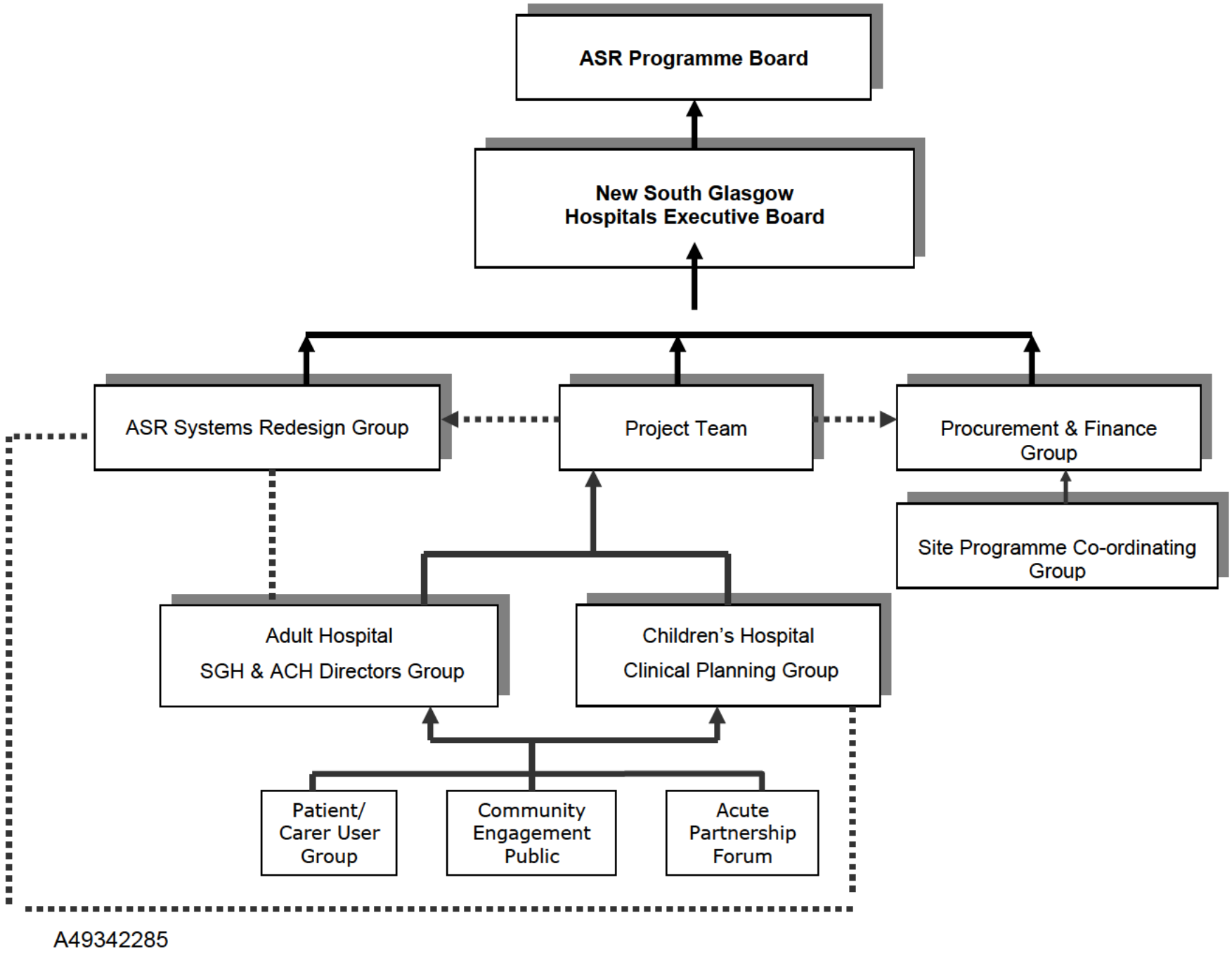
There is a very substantial construction programme planned over the next 6 years at the Southern General Hospital. The site will continue to operate during the full construction programme and therefore there is a requirement to establish a group to monitor, co-ordinate and control all on-site works.

### 15.4.6 Structure, Remit and Membership

Please see Diagram 1 below, which illustrates the project management structure and remit. The remit of each group is given in more detail in Appendix 19.

Membership of the groups will reflect both skills in the specialist area and also previous experience in delivering large capital builds. Membership will also reflect a high level of Board scrutiny in all aspects of delivering this project. Detail of the membership of the main groups is given in Appendix 20.

Governance Structures – Stage 2

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# 16. LEGAL AND ACCOUNTING ISSUES & ROLE OF EXTERNAL ADVISORS

## 16.1 LEGAL AND ACCOUNTING ISSUES

Legal and financial advisers will provide the Board with guidance on the most appropriate form of contract to meet the Board's procurement strategy. The legal advisers will provide key input into the procurement documentation including the development of the OJEU advert and tender documentation.

## 16.2 ROLE OF EXTERNAL ADVISORS

Various advisors will be required to provide an advisory role to the project. These are most likely to be in the following capacities:-

- Service Specification: To provide healthcare planning advice and manage a process to define service models, departmental and operational policies and to draft output specifications for clinical and non-clinical support specifications.

- Finance and Management Consultancy: To provide specialist corporate finance support to the procurement process together with management consultancy input to secure OBC and FBC approval.

- Design and Technical: The technical team will develop and provide accommodation and building specification for the tender package and help to evaluate the full tender responses.

- Legal: To provide legal support/advice and to deliver contract documentation in line with latest guidance.

# 17 STAKEHOLDER INVOLVEMENT

## 17.1 PARTNERSHIP INVOLVEMENT

Throughout the planning process of the new hospitals there has been a high degree of involvement with staff side through their staff partnership representatives.

The staff partnership are represented on all planning groups including Acute Services Review Project Board (ASRPB), Project Executive Group (PEG), New Children's Project Group and a range of working groups.

The staff are also kept fully briefed through regular meetings with the Southern General Project Team and they have been involved in many of the appraisal and assessment processes.

NHS Greater Glasgow & Clyde Employee Director has also been involved in key debates and discussions through the Board's committee structure.

Presentations on the progress of the new development at the Southern General Hospital have been made to many fora including the Health Board Partnership Forum.

The new governance structure being proposed for the delivery stage of the project culminating in the completion of the Full Business Case (FBC) will have staff partnership members throughout the structure and involved in all discussions and decision making.

## 17.2 COMMUNITY ENGAGEMENT

### OVERVIEW

Following Scottish Government approval of NHS Greater Glasgow and Clyde's Acute Services Strategy in 2002 a Community Engagement Team was established to inform and involve patients and the public in the Acute Services Strategy. The role of the team is to:

- manage public and patient stakeholder involvement in service change and re-design
- ensure patient and public views are central to planning and design structures
- ensure compliance with statutory responsibilities for public and patient participation
- build and maintain relationships with stakeholders
- support the diversity agenda

### COMMUNITY ENGAGEMENT STRATEGY

NHS Greater Glasgow and Clyde's Community Engagement team have put in place a strategy that focuses on three distinct engagement strands. These are:

- the New South Glasgow Adult Acute Hospital
- the New Children's Hospital; and
- the New Hospitals Campus

Two dedicated Community Engagement Managers have been allocated to manage these projects. One is responsible for the New Hospitals Campus and New South Glasgow Adult Acute Hospital while another is the named lead for the New Children's Hospital.

The process has also helped establish the foundations for long term and meaningful engagement structures to ensure the continued engagement of stakeholders and communities throughout the development, build and commissioning phases of the projects.

In brief the following lists the work undertaken under each of these key strands. This is described in further detail in appendices 21, 22 and 23.

***NEW SOUTH GLASGOW HOSPITAL***

- Initial scoping exercise with patients and carers to determine their views on the design of the new Adult Hospital. This exercise involved over 242 individuals and consisted of 6 focus groups, questionnaires and an audit of complaints.
- A series of presentations and inputs into local community organisations including Govan Community Council, Govan Craigton Housing Forum, Greater Govan Social Inclusion Partnership, South Glasgow Business Club.
- Establishment of a Community Engagement Advisory Group for the New South Glasgow Hospital.
- Establishment of a Renal Services Engagement Group to support the redesign of renal services in the new Adult Hospital.
- Participation in local community events including the annual Govan Fair and Govan Gathering.

***NEW CHILDREN'S HOSPITAL***

- Extensive programme of consultation with families, support groups, charities and voluntary organisations - over 150 groups and individuals involved.
- Development of a Community Engagement Advisory Panel with representatives from clinical and nursing staff; the Project Team; Community Health & Social Care Partnerships; family support services; families and young patients to guide the community engagement strategy and to integrate this within the existing PFPI and redesign structures within the Royal Hospital for Sick Children.
- Establishment of a Youth Panel to ensure the needs of young people are included in the design of the New Hospital and a Family Panel to facilitate the influence of families, parents and carers. Training and support is provided to facilitate the work of these Panels.
- Scoping work on the Outline Business Case involved 315 children, young people and families in focus groups, surveys and a photography project. A series of meetings with the Planning and Design teams provided feedback to families, children and young people on how their contribution had influenced the OBC.
- Regular newsletters and a website provide information, communication access to the planning process for a wide range of stakeholders.
- Joint work with children and young people's groups in Govan has begun to build relationships between the Children's Hospital communities and the local community in Govan.
- A network of regional and national perspectives on the new Children's Hospital has been developed and partnerships established with the new Children's Hospital projects in Edinburgh, Queensland and Toronto.

**FUTURE ENGAGEMENT**

The dedicated Community Engagement Managers will continue to lead on a programme of activity with patients, carers and community groups to ensure that their views inform the design, construction and processes associated with the building and services of the new hospitals.

The Community Engagement Team will continue to build and maintain relationships with partners in the city to develop strategic partnerships on key projects that provide additionality to the New Hospitals Campus and support partners wider regeneration objectives. This will include developing strong relationships with Scottish Enterprise Glasgow and the Local Economic Development Companies in developing the economic potential of the Campus and working closely with Land Services and Strathclyde Partnership for Transport to support joint planning around transport.

They will take responsibility for the management of the established community engagement structures ensuing their on-going maintenance and relevance to the planning process.

They will also be responsible for ensuring that the on-going community engagement processes meet Scottish Government guidance and legislation on Patient Focus and Public Involvement and Planning Guidance on Community Engagement, best practice on Community Engagement and, with the support of the Board's Corporate Inequalities Team, championing the diversity agenda.

In line with "Better Health, Better Care" we will use the engagement process to strengthen public involvement in the NHS Services in Glasgow by improving participation in the development of both hospitals and services. This will further strengthen the collaborative and integrated approach to service improvement, building on the work currently being set up in relation to the Ambulatory Care Hospitals.

Hospitals consume over half the total NHS budget and treat 25% of the population every year, in addition they are major employers and businesses within the local economy. The opportunity to maximise health improvement through health promotion, disease prevention and protection is a key aspiration of the new development.

The team will continue to pro-actively meet members of the public who otherwise might not express an interest in the new hospitals via an on-going programme of outreach in public spaces i.e. supermarkets, libraries, community facilities and transport interchanges.

## 17.3 COMMUNICATIONS

Effective communications will be vital throughout the major redevelopment of the Southern General campus.

### 17.3.1 Aims and Objectives

The communications plan will aim to:

- Raise awareness of the plans for the new hospital and the wider redevelopment of the Southern General Campus;
- Build and maintain enthusiasm for the project amongst the local community;
- Ensure staff, patients, the general public and other key stakeholders are kept updated as plans progress – including key milestones and decisions;

- Highlight benefits for patients, staff and the local community – including new or improved facilities and services, economic impact and contribution to the wider regeneration of the Govan area.

The main methods which are, and will be used to keep stakeholders involved are:-

**17.3.2 Internal Communications**

NHSGGC Core Brief – an electronic bulletin, which is used to brief staff across the organisation on key developments, decisions and achievements.

NHSGGC Staff News - the bi-monthly NHSGGC staff magazine, which is circulated to 40,000 staff across the organisation and available online via the intranet. This has already carried several features on plans for the new Southern General Campus.

NHSGGC Intranet - work is underway to create a single NHSGGC intranet that will reflect the new organisational structure and provide a key tool for communicating with staff. Each of the new acute directorates and partnerships will have the ability to populate their own local pages with details of latest news and events, key documents and reports and updates on key projects including the redevelopment of the Southern General Campus.

Staff Briefings – in recognition that there is no substitute for face-to-face briefings, all the above will be underpinned and supported by a regular programme of staff briefings and open drop-in sessions to update staff on the development of the new South Glasgow and Children's Hospitals.

**17.3.3 External Communications**

NHSGGC Website receives around 10,000 hits a month and is currently being redesigned to create a more attractive and user-friendly site. A new section has been created for the Southern General Campus with links to the latest news and information on the two new hospitals and the refurbishment of the maternity unit.

Health News – the bi-monthly NHSGGC newspaper that is circulated as an insert in the Daily Record and widely distributed across Greater Glasgow and Clyde, is a key vehicle for updating patients, the general public and other key stakeholders on the latest health news. It has already carried a series of articles on the hospital modernisation programme and will be used to provide regular updates on the redevelopment of the Southern General Campus as plans progress.

Media Relations – the communications directorate will work with project leads to identify promotional opportunities to maximise media coverage on the redevelopment of the Southern General Campus. To-date there have been major features in the Govan Press, the Evening Times and key business publications. This proactive work will inform the development of an action plan of activities to promote the new hospitals on an ongoing basis. Communications will also explore opportunities to develop campaigns and joint initiatives with key media partners.

Stakeholder Briefings – regular one-to-one briefings with key stakeholders such as local MSPs, business leaders and university colleagues will also be arranged to ensure they are kept updated on the development of the Campus.

# 18 IMPROVING HEALTH & HEALTH INEQUALITIES

NHS Greater Glasgow and Clyde is committed to promoting health improvement and reducing health inequalities.

In planning the new builds, opportunities will be sought to promote health and reduce inequality through the delivery of key actions identified within the Design Action Plan 2007 and the Health Promoting Health Service ASR Action plan 2008. For example, the potential exists to:

- Incorporate a 'shop front' for the voluntary sector, encouraging patients to utilise the range of specialist support and counselling services in cases of disease diagnosis and bereavement.
- Improve the internal and external environment through an arts strategy.
- Create a hub for health promotion services supporting both staff and patients to address health behaviours in relation to smoking, physical activity, alcohol and weight management.
- Define areas of retail space through policy to ensure support for health living through initiatives such as a Fruit Shop, healthy vending options and considering the opportunities presented by community enterprise.
- Maximise the use of facilities where possible for staff and community use through community lets and out of hours access to rehabilitation gyms, staff training facilities etc.
- Promote accessible green space within the hospital design for use by patients and staff including well lit and clearly marked walk ways across the campus
- Develop within the contractual process social economy policies to promote local regeneration through employment and procurement.
- Promote accessibility across the campus through sufficient disabled designated parking spaces and drop-off points closely located to key departments/buildings, ensure provision for on-site transport to help less able patients move across the campus.
- Undertake to develop a broad range of accessible facilities within the building to address the range of patient needs particularly in relation to toilet and bathroom facilities.
- Maximise accessibility through design and input from those living with disabilities.
- Minimise the impact of construction on the environment through consideration of sustainable technologies, waste recycling, renewable materials and renewable energy sources.
- Undertake Equality Impact Assessments through the different stages of the development.

**Benefits**

There are benefits for NHSGGC in developing the Health Improvement Agenda as described above include:

- **Staff benefits** from improved access to services and opportunities.
- **Civic and social benefits** for the local community associated with the role of NHSGGC as a purchaser and employer within the community as well as the role of a community planning partner in social regeneration.

- Evidence based **employer benefits** in relation to increased employee commitment, staff performance and productivity and reduced staff absenteeism and turnover.
- NHS **service delivery benefits** as a wider support is provided for patients to avoid, manage or cope with medical conditions and their implications.

# 19 WIDER SOCIAL ECONOMIC BENEFITS

NHS Greater Glasgow and Clyde secured funding from the following partners to commission SQW consultants to identify potential socio-economic benefits and inform future joint working around the proposed redevelopment of the Southern General site.

- Communities Scotland
- Scottish Enterprise Glasgow
- Linthouse Housing Association
- Glasgow Centre for Population Health
- Glasgow South West Regeneration Agency
- South West Community Health and Care Partnership
- Glasgow City Council – Development and Regeneration Services
- Community Planning

In identifying the potential impacts and anticipated benefits, the analysis focussed on three geographically defined levels, namely:

- the immediate local area of South West Glasgow
- the City of Glasgow
- The Glasgow Metropolitan City Region.

The analysis sought to identify potential benefits at each of the geographic levels in the following areas:

- economic
- human and social
- knowledge
- place

**Economic Benefits**

SQW have estimated that the future service configurations on the Southern General site will have a combined direct, indirect and induced economic impact of between £30 and £40 million on the South West Glasgow economy; between £110 and £140 million on City economy and between £240 and £290 million on Glasgow city region by 2012/13.

The capital projects commissioned to build the new hospitals site will support between 1,300 and 1,700 construction jobs per year for the six years between 2008/09 and 2013/14. Capital projects will support between 260 and 340 jobs per year in South West Glasgow and between 650 and 850 jobs per year in the rest of the City.

**Human and Social Capital**

The New South Glasgow Hospitals development has the potential to impact significantly on the local housing market. Housing providers need to consider future provision and incentives for NHS workers to relocate to South West Glasgow and retain future wage expenditure in the local economy.

Opportunities for training and employment are significant; partners may wish to tailor existing and new training/ employment schemes to meet future labour demands created by the NSGH development.

There exist a number of opportunities that should be explored further with local partners to identify potential joint developments and/ or shared use of local community facilities. For example the potential to work collaboratively with local childcare providers to develop nursery/ childcare provision accessible to NHS staff.

**Knowledge**

The significance of the New Hospitals Campus as a catalyst to support collaboration between academic, public and private sector partners to realise opportunities in research and development, bio-medical and life sciences has yet to be fully articulated, although they are potentially significant at all three levels.

Acknowledging the importance of working at City Region, SQW argue the merits of implementing a focused set of initiatives to fully exploit the benefits from the new co-location of professionals at the NSGH site. They propose that a site specific commercialisation plan is implemented, albeit nested with a wider City Region strategy.

The Southern General development is seen as a catalyst for wider social and regeneration activity contributing to the creation of higher aspirations for the physical development of the local area.

A comprehensive master planning exercise encompassing the Southern General site and the wider area is required. The masterplan should encompass potential development opportunities (including public/ private investment) future land use and public realm works to facilitate investment, connectivity with existing regeneration programmes, linkages and integration to the to the green network and transport infrastructure.

To support this, a comprehensive communication and marketing strategy is required. This should aim to raise awareness of the development and opportunities with partners and communities.

**Partnership Working**

The analysis identifies a number of potential benefits linked to the development of the Southern General site. However, the analysis is also clear that NHS Greater Glasgow and Clyde is not in a position to deliver many of the benefits identified. The potential impact of the new South Glasgow Hospitals Campus will only be realised through effective collaboration between partner organisations. Significant progress has been made in building effective partnerships, for example, with Scottish Enterprise Glasgow in exploiting the economic potential and Glasgow City Council and SPT in identifying opportunities for improving transport and accessibility.

The analysis reinforces the need to maintain this momentum. Therefore, in consolidating existing working relationships and developing synergies with partners planning processes and investment programmes, NHS Greater Glasgow and Clyde will establish a New Hospitals Engagement Forum. This Forum's remit will be to provide strategic leadership, act as a mechanism to inform and co-ordinate partner planning mechanisms, strategies and investment to bring added value to the new hospital projects.

The Community Engagement Manager leading on the campus will service the work of this Forum and is also the Project Team's representative on, or link with, South West Glasgow and Glasgow City working parties and organisations.

# 20. GATEWAY REVIEW

## 20.1 BACKGROUND

The New South Glasgow Hospitals project is subject to Office of Government and Commerce (OGC) Gateway Review. Projects which are commissioned critical or deemed to be high risk projects are required to go through the six stages of the OGC Gateway Review Process.

The review is an independent assessment of the robustness of the business case, that it meets business needs, is affordable, achievable with appropriate options explored and likely to achieve value for money. In doing this, the review outcome highlights whether aspects of the project are red, amber or green (traffic light system).

- Red means that the project cannot proceed to the next milestone until the issues identified as identifies red are addressed.

- Amber means that the recommendations identified must be completed before the next Gateway Review stage.

- Green means that the programme or project is in good shape but may benefit from uptake of any green recommendations to enhance the project.

The Southern General development has completed the Gateway Review Stage 1 which was carried out from 8th to 10th of January 2008. The review was carried out by a review team consisting of 2 Office of Government and Commerce Consultants, and two senior technical NHS Scotland managers. During the three days of the review interviews were undertaken with 18 members of staff including clinicians, senior managers, project team, staff side representatives and finance colleagues.

This is the first time the Office of Government and Commerce Gateway Review has been used to assess a Scottish National Health Project although it has been used in non-health infrastructure projects.

## 20.2 OUTCOME OF THE GATEWAY REVIEW

In their report, the Office of Governance and Commerce Gateway Review Team identify a number of positive aspects about the project and these are listed below.

The review confirms that:

1. The business case is
   - robust,
   - likely to be affordable,
   - achievable,
   - with the appropriate options explored,
   - and likely to achieve value for money.

2. The Project team is well established and has demonstrated an ability to draw on
   - internal skills and experience,
   - other projects throughout the UK.

3. There is considerable internal experience of major project delivery.

4. The Gateway reviewers were impressed by the consistent positive messages on the level of clinical engagement and commitment to new ways of working.

5. Project has maintained close communications with the Scottish Government at all levels.

6. There has been an open and inclusive approach to staff-side communication.

7. The project benefits from significant community engagement through the Community Engagement team.

8. There was an acknowledgment that Community Health and Care Partnerships are engaged.

9. There was recognition of the considerable effort expended in engaging with and developing support from the clinicians affected by the project.

**Recommendations**
The outcome of the Gateway Review was that there were no red recommendations, hence the project may proceed to the Board and the Scottish Capital Investment Group with the Outline Business Case.

There were a number of amber recommendations which were identified as follows:-

**Amber Recommendations**:

- *The project team should ensure that the consequences of delays to decisions are made clear in all communications with the Scottish Government.*
- *The project team should take appropriate time to consider the full implications of a decision to adopt a traditional (design and build) procurement route.*
- *The project team should ensure the communications with staff-side representatives are fully understood.*
- *The project should produce a consolidated risk management register with regular review and reporting.*
- *The project team should review their draft plans for the project governance and management of the next phase.*

**Green Recommendations** - there was one recommendation here which will be fully adopted by the project team.

The five amber recommendations and one green recommendation will be addressed before the Gateway 2 review. Immediate plans include:

- A workshop organised for mid February 2008 attended by the Boards legal and financial advisers supported by a number of technical advisers to determine the optimum conventional procurement model
- More detailed information and communication with staff side representations including continuing with internal meetings between the project managers and staff side, input into the Project Groups and involvement in how information should be more widely communicated to staff.

- Development of a fully consolidated risk register. This will amalgamate the current risk register held by the Project Team, the project risk management strategy (as detailed in Appendix 13) and the technical risk register developed by the technical advisers which focuses specifically on building risks.
- The governance structures for the next phase of the project are being developed with draft proposals reflected in this document which will be subject to revision in line with the preferred Design and Build procurement model which will be identified through an option appraisal at the mid February workshop.

# 21. BENEFITS REALISATION PLAN

The following table summarises how the anticipated benefits of the project, which are detailed in Chapters 4 and 5, will be measured:

| Benefit | Lead Responsibility | Measures | Timescales |
|---|---|---|---|
| **STRATEGIC FIT - CONSOLIDATION OF SERVICES** | Helen Byrne, Director of Acute Services Strategy Implementation and Planning<br><br>Dr Brian Cowan, Medical Director | • Acute Adult Inpatient services consolidated onto 3 sites<br>• Improved co-location of services to support unscheduled care including A&E, Theatres, Critical Care and Imaging<br>• Evidence of specialisation and sub-specialisation models supported 24/7 with specialist cover<br>• Achieve new directives e.g. Modernising Medical Careers.<br>• Reduce the number of medical rotas.<br><br>• Maximises use of dedicated facilities (such as trauma theatres and CEPOD theatres) to deliver targets<br>• Focuses specialist/ experienced staff in fewer sites supporting delivery of most effective care | 3 months post operation<br><br>1 year post operational and annual review<br><br>1 year post operational and annual review<br><br>1 year post operational<br><br>6 months post operational<br><br>Monitored at quarterly intervals to review performance |
| **CLINICAL QUALITY/ CLINICAL SERVICES** | Dr. Brian Cowan, Medical Director<br>Eunice Muir, Acting Nursing Director, Acute Division<br>Rory Farelly, Head of Nursing – Women and Children's Directorate | • Improved occupancy reducing the clinical risks / delays in patient care due to boarding patients out with specialty<br>• Improved HAI rates due to single room facilities and improved space between patients<br>• Appropriate levels of specialist staff to provide and sustain clinical services with 24/7 access to specialist services<br>• Specialist teams working together supporting redesigned services to allow new techniques to be used and developed<br>• New service models supporting the reduction in unnecessary admissions<br>• Patient Safety Initiative input to designing safety issues out of new facilities and | Monitored under commissioning programme and as part of Boards ongoing performance review process. |

| | | | |
|---|---|---|---|
| | | models of service<br>• Improved utilisation of facilities as purpose built with improved co-locations<br>• *Full Benefits Realisation plan to be developed as part of Clinical Transition to identify specific key performance indicators.*<br>• | |
| **PERFORMANCE IMPROVEMENT IN PATIENT SERVICES** | Dr. Brian Cowan, Medical Director<br><br>Eunice Muir, Acting Nursing Director, Acute Division<br><br>Rory Farelly, Head of Nursing – Women and Children's Directorate | • Facilities that support improved ways of working, creating more effective patient pathways to provide timely and fit for purpose unscheduled care<br>• Improved capacity created and waiting time guarantees met within GGC facilities<br>• Waiting time guarantees for inpatient treatment.<br>• Achieve balance between Unscheduled and planned care pathways to safeguard targets being met<br>• Appropriate bed numbers by specialty that support improved occupancy eliminating the requirements to board patients out with the specialty caring for patient<br>• Number of one stop clinics increased.<br>• Reduction in follow-up appointments.<br>• Reduction in the number of cancellation of procedures.<br>• Patient and staff feedback.<br>• Throughput of new patients increased. | One year after fully operational; Annual reviews<br><br>Ongoing monitoring of targets through management information |
| **QUALITY ENVIRONMENT** (meeting patient, visitors and staff needs and meeting building guidelines) | Tony Curran, Head of Capital Planning & Procurement<br>Eunice Muir, Acting Nurse Director – Acute Division<br>Rory Farelly, Head of Nursing – Women and Children's Directorate | • Board Construction Requirements met<br>• Art in Hospital Working Group Objectives met.<br>• Patient and staff feedback.<br>• Health and Safety Record of accidents/incidents related to uneven surfaces etc.<br>• Co-located services ensuring smoother patient pathways | Six months after opening; Annual review processes |

| | | | |
|---|---|---|---|
| **ENVIRONMENTAL CONSIDERATIONS** | Tony Curran, Head of Capital Planning & Procurement<br><br>Eunice Muir, Acting Nursing Director, Acute Division<br>Rory Farelly, Head of Nursing – Women and Children's Directorate<br><br>Alex McIntyre, Director of Facilities | • Board Construction Requirements met<br>• Condition of building surveys.<br>• Art in Hospital Working Group Objectives.<br>• Patient and staff feedback.<br>• FM services monitoring.<br>• Targets for energy consumption met.<br>• Targets for carbon emissions met.<br>• Reduced Health Acquired Infections | One year from operational. Annual reviews. |
| **INFORMATION MANAGEMENT & TECHNOLOGY** | Richard Copland, Director of IM&T | • ICT Strategy Plan implemented.<br>• Improved access to patient information electronically supporting increased continuity of patient care<br>• New systems supporting paper light services | 3 months post completion review as part of Board's ongoing performance review monitoring. |
| **STAFF FACILITIES & STAFF MOTIVATION** | Anne McPherson,<br>Director of Human Resources | • Staff feedback.<br>• Recruitment and retention analysis, lower staff turnover. | One year from operational plus annual performance reviews. |
| **ACCESSIBILITY TO HOSPITAL AND COMPLIANCE WITH TRAVEL PLAN (i.e. decreased journey times to site, less sole car occupancy, improved cycling walking routes with greater uptake of these)** | Tony Curran, Head of Capital Planning & Procurement<br>Eunice Muir, Acting Nursing Director, Acute Division<br>Rory Farelly, Head of Nursing – Women and Children's Directorate<br>Alex McIntyre, Director of Facilities | • Board Construction Requirements met.<br>• Patient and staff feedback.<br>• FM services monitoring of maintenance regime.<br>• Complaints monitoring.<br>• Travel plan monitoring, assessing mode of travel, time taken, experience<br>• Accessibility study – decreased journey times, higher quality travel experience | 6 months post completion review as part of Board's ongoing performance review monitoring. |
| **ENHANCED LINKS WITH UNIVERSITY** | Dr. Brian Cowan, Medical Director | • University academic centre co-located with acute services on the southern General campus<br>• Student feedback<br>• Recruitment and retention analysis, lower staff turnover<br>• Consolidated services better supporting the training of junior staff | 1 year after fully operational |

# 22. POST PROJECT EVALUATION

A post project evaluation (PPE) will be prepared. The appraisal will be complete within 6 months of project completion and before the break up of the design team. The focus of PPE will be the evaluation of the procurement process and the lessons to be learned made available to others. The report will review the success of the project against its original objectives, its performance in terms of time, cost and quality outcomes and whether it has delivered value for money. It will also provide information on key performance indicators.

The PPE review for this project will include the following elements:

## 22.1 PROJECT AUDIT

The project audit will include those elements shown below.

- Brief description of the project objectives
- Summary of any amendments to the original project requirements and reasons
- Brief comment on the project form of contract and other contractual / agreement provisions. Were they appropriate?
- Organisation structure, its effectiveness and adequacy of expertise/skills available
- Master schedule – project milestones and key activities highlighting planned v actual and where they met?
- Unusual developments and difficulties encountered and their solutions.

Brief summary of any strengths, weaknesses and lessons learned, with an overview of how effectively the project was executed with respect to the designated requirements of:

- Cost
- Planning and scheduling
- Technical competency
- Quality
- Functional suitability
- Safety, health and environmental aspects - eg energy performance
- Functional suitability
- Was the project brief fulfilled and does the facility meet the service needs? What needs tweaking and how could further improvements be made on a value for money basis?
- Added value areas, including identification of those not previously accepted
- Compliance with NHS requirements
- Indication of any improvements, which could be made in future projects.

## 22.2 COST AND TIME STUDY

The cost and time study will involve a review of the following:

- Effectiveness of:
    - cost and budgetary controls, any reasons for deviation from the business case time and cost estimates
    - claims procedures
- Authorised and final cost
- Planned against actual cost and analysis of original and final budget.
- Impact of claims
- Maintenance of necessary records to enable the financial close of the project.
- Identification of time extensions and cost differentials resulting from amendments to original requirements and/or other factors.
- Brief analysis of original and final schedules, including stipulated and actual completion date; reasons for any variations.

## 22.3 PERFORMANCE STUDY

The performance study will review the following:

- Planning and scheduling activities.
- Were procedures correct and controls effective?
- Were there sufficient resources to carry out work in an effective manner?
- Activities performed in a satisfactory manner and those deemed to have been unsatisfactory.
- Performance rating (confidential) of the consultants and contractors, for future use.

## 22.4 PROJECT FEEDBACK

Project feedback reflects the lessons learnt at various stages of the project. Project feedback is, and will be, obtained from all participants in the project team at various stages or at the end of key decision-making stages.

The feedback includes:

- Brief description of the project
- Outline of the project team
- Form of contract and value
- Feedback on contract (suitability, administration, incentives etc)
- Technical design
- Construction methodology
- Comments on the technical solution chosen
- Any technical lessons learnt
- Comments on consultants appointments
- Comments on project schedule
- Comments on cost control
- Change management system
- Major source(s) of changes/variations
- Overall risk management performance
- Overall financial performance
- Communication issues
- Organisational issues
- Comments on client's role/decision-making process

- Comments on overall project management
- Any other comments

It is the intention that the project feedback not only identifies what went wrong and why, but also highlights what has been accomplished and if (and how) that can be improved in future projects.

## 23. TIMETABLE

A detailed project plan is shown in Appendix 24 and is summarised in the table shown below.

Please note that these timescales are indicative and will be reviewed following the Procurement Workshop to be held on 19th February 2008. As described the outcome of the workshop will be to determine the preferred conventional procurement model.

The contract form will dictate the timescales for following tasks and timetable. However it is anticipated that, following market sounding and preparation of more robust design and project requirements (brief and specification), a competitive process will follow involving at least three contracting teams over a 9-12 month process, culminating in the selection of a preferred partner completion of Full Business Case by mid 2010. The detail of the process will be expanded on completion of the workshop and confirmation of the preferred route.

The outcome of the workshop will be submitted to the Health Board and Scottish Government for approval and will be independently assessed though the OGC Gateway Review process to provide assurance to the Board and the Scottish Government that the method shown has been scrutinised and confirmed.

Table 17: The indicative timescale is as follows:

| **Description** | **Target Date** |
|---|---|
| Outline Planning Approval | January 2008 |
| Gateway Review | January 2008 |
| Final OBC to NHS Greater Glasgow & Clyde Board | 19th February 2008 |
| Final OBC considered at Scottish Government Capital Investment Group | 26th February 2008 |
| Submit OBC to Cabinet | March 2008 |
| Final OBC Approval | April 2008 |
| Full Business Case Submission | 2nd quarter 2010 |
| Construction Starts | 2nd quarter 2010 |
| Completion – Children's Hospital | 1st quarter 2013 |
| Completion – Acute Hospital | 2nd quarter 2014 |

Prior to placing an OJEU advert a number of tasks will be undertaken in order to optimise the marketability of the scheme. These are as follows:

- A market sounding exercise will be undertaken.
- Matching of clinical and non-clinical output based specifications to design
- Development of a Memorandum of Information (MOI) to act as a project summary and brief for potential bidders
- Formal presentations to potential bidders

# 24. CONCLUSION

This Outline Business Case presents the proposals for a new integrated Adult and Children's Hospital. The proposals represent the largest investment in health services undertaken in Scotland and form a key part of the NHS Greater Glasgow & Clyde's Acute Strategy to modernise health services.

# NHS GREATER GLASGOW & CLYDE

# ASR PHASE II

# NEW SOUTH GLASGOW HOSPITAL, NEW CHILDREN'S HOSPITAL AND NEW LABORATORY BUILD

# OUTLINE BUSINESS CASE APPENDICES

## FEBRUARY 2008

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# Appendix 1
# Summary of NHS Greater Glasgow and Clyde Services

# APPENDIX 1 – Summary of NHS Greater Glasgow & Clyde Services and Activity

## a) Current Activity

The current disposition of services across the sites is shown in the table below :

| | Acute Hospitals within Glasgow City | | | | | | Acute Hospitals outwith Glasgow City | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Specialty** | **Southern General Hospital** | **Glasgow Royal Infirmary** | **Gartnavel General Hospital** | **Western Infirmary** | **Victoria Infirmary** | **Stobhill Hospital** | **RHSC** | **Inverclyde Royal Hospital** | **Royal Alexandra Hospital** | **Vale of Leven DGH** |
| Accident and Emergency | ✓ | ✓ | | ✓ | ✓ | Casualty | ✓ | ✓ | ✓ | Nurse Led Minor Injuries/ Medical Assessment Unit 24/7 |
| Acute Medical Receiving | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Acute Surgical Receiving | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | | | |
| Bone Marrow Transplant | | ✓ | | | | | ✓ | | | |
| Burns | | ✓ | | | | | ✓ | | | |
| Cardiology | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Cardiothoracic surgery | | ✓ | | ✓ | | | ✓ | | | |
| Critical Care | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | | | |
| Dermatology | ✓ | | | ✓ | | | ✓ | OP | ✓ | OP |
| ENT | ✓ | ✓ | ✓ | | | | ✓ | | | |
| General Medicine | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| General Surgery | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| ITU | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | | | |
| SHDU | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | | | |

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| | Acute Hospitals within Glasgow City | | | | | | Acute Hospitals outwith Glasgow City | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Specialty** | **Southern General Hospital** | **Glasgow Royal Infirmary** | **Gartnavel General Hospital** | **Western Infirmary** | **Victoria Infirmary** | **Stobhill Hospital** | **RHSC** | **Inverclyde Royal Hospital** | **Royal Alexandra Hospital** | **Vale of Leven DGH** |
| MHDU | | | | | | | ✓ | | | |
| CCU | ✓ | | ✓ | | ✓ | ✓ | | ✓ | ✓ | ✓ |
| Gynaecology | ✓ | | ✓ | | | ✓ | | OP | ✓ | OP |
| Haematology | | | | | | | ✓ | ✓ | ✓ | ✓ |
| Maxillo-facial Surgery | ✓ | | | | | | ✓ | | | |
| Medicine for the Elderly | ✓ | | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Neurology & Neuro Surgery | ✓ | | | | | | ✓ | | | |
| Obstetrics | ✓ | | ✓ | | | | ✓ | ✓ | ✓ | ✓ |
| Oncology | | | ✓ | ✓ | ✓ | | ✓ | | | |
| Ophthalmology | | | ✓ | ✓ | | | ✓ | | | |
| Oral Surgery | | | | | | | ✓ | | | |
| Orthopaedics | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| Plastic Surgery | | | ✓ | | | | ✓ | OP | OP | OP |
| Renal Medicine | | | ✓ | ✓ | ✓ | | ✓ | ✓ | OP | ✓ |
| Renal Transplant | | | | | ✓ | | ✓ | | | |
| Respiratory | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| Rheumatology | | | ✓ | ✓ | | | ✓ | | | |
| Urology | ✓ | | ✓ | ✓ | | | ✓ | | | |
| Vascular Surgery | | | ✓ | ✓ | | | ✓ | | | |
| Rehabilitation | ✓ | | ✓ | ✓ | ✓ | Assessment beds | ✓ | ✓ | ✓ | ✓ |

# Appendix 2
# Activity Figures

## APPENDIX 2 – Activity Figures - Adult Acute

### SMR1: Discharges GG&C locations - 2006/07

| Hosp type | Spec group | Spec | Elect IP | Emerg | Trans IP | Emerg + Trans | Inp Total | Day | Total |
|---|---|---|---|---|---|---|---|---|---|
| Adult | Medical | General Medicine | 1779 | 67031 | 11526 | 78557 | **80336** | 5301 | **85637** |
| | | Cardiology | 1696 | 328 | 3103 | 3431 | **5127** | 2151 | **7278** |
| | | Communicable Dis | 200 | 741 | 284 | 1025 | **1225** | 1584 | **2809** |
| | | Dermatology | 451 | 192 | 42 | 234 | **685** | 8 | **693** |
| | | Endocrinology | 97 | 6 | 4 | 10 | **107** | 352 | **459** |
| | | Gastroenterology | 167 | 68 | 359 | 427 | **594** | 15684 | **16278** |
| | | Geriatric Medicine | 400 | 2657 | 13221 | 15878 | **16278** | 6 | **16284** |
| | | Homoeopathy | 439 | 1 | 3 | 4 | **443** | 0 | **443** |
| | | Oncology | 4262 | 632 | 335 | 967 | **5229** | 19651 | **24880** |
| | | Medical Paeds | 172 | 3289 | 37 | 3326 | **3498** | 34 | **3532** |
| | | Nephrology | 473 | 1108 | 458 | 1566 | **2039** | 155 | **2194** |
| | | Neurology | 1346 | 344 | 294 | 638 | **1984** | 709 | **2693** |
| | | Palliative Medicine | 0 | 0 | 0 | 0 | **0** | 2 | **2** |
| | | Haematology | 1125 | 645 | 242 | 887 | **2012** | 11571 | **13583** |
| | | Immunology | 0 | 27 | 0 | 27 | **27** | 330 | **357** |
| | | Rehabilitation | 5 | 37 | 164 | 201 | **206** | 0 | **206** |
| | | Rehabilitation - Spinal Injuries | 39 | 24 | 200 | 224 | **263** | 12 | **275** |
| | | Rehabilitation - Young Phys Dis | 166 | 2 | 137 | 139 | **305** | 1 | **306** |
| | | Respiratory | 857 | 1004 | 2437 | 3441 | **4298** | 2034 | **6332** |
| | | Rheumatology | 548 | 138 | 67 | 205 | **753** | 3366 | **4119** |
| | | CCU | 133 | 3406 | 2404 | 5810 | **5943** | 88 | **6031** |
| | | HDU | 2 | 351 | 383 | 734 | **736** | 0 | **736** |
| | | ITU | 0 | 49 | 82 | 131 | **131** | 0 | **131** |
| | Surgical | General Surgery | 15964 | 21457 | 4783 | 26240 | **42204** | 17958 | **60162** |
| | | Acc & Emerg | 1 | 1799 | 18 | 1817 | **1818** | 0 | **1818** |
| | | Anaesthetics | 27 | 3 | 8 | 11 | **38** | 1820 | **1858** |
| A49342285 | | Cardiothoracic | 64 | 162 | 86 | 248 | **312** | 0 | **312** |
| | | ENT Surgery | 2967 | 1256 | 192 | 1448 | **4415** | 2151 | **6566** |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Neurosurgery | 1290 | 744 | 701 | 1445 | **2735** | 108 | **2843** |
| | | Ophthalmology | 2255 | 557 | 29 | 586 | **2841** | 7412 | **10253** |
| | | Orthopaedic | 7438 | 10526 | 1113 | 11639 | **19077** | 4421 | **23498** |
| | | Plastic Surgery | 3243 | 942 | 456 | 1398 | **4641** | 3257 | **7898** |
| | | Urology | 6287 | 1633 | 1716 | 3349 | **9636** | 11905 | **21541** |
| | | Oral Surgery | 328 | 210 | 13 | 223 | **551** | 914 | **1465** |
| | | Gynaecology | 5964 | 3009 | 226 | 3235 | **9199** | 7480 | **16679** |
| | | Diag Radiology | 7 | 1 | 4 | 5 | **12** | 2842 | **2854** |
| | | CCU | 0 | 6 | 19 | 25 | **25** | 0 | **25** |
| | | HDU | 10 | 476 | 3722 | 4198 | **4208** | 1 | **4209** |
| | | ITU | 1 | 695 | 1291 | 1986 | **1987** | 1 | **1988** |
| | **ALL** | **TOTAL** | **60203** | **125556** | **50159** | **175715** | **235918** | **123309** | **359227** |

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# Appendix 3
# Key Milestones of the Acute Services Strategy

# APPENDIX 3 – Key Milestones of the Acute Services Strategy

| Date | Milestone |
|---|---|
| 1999 | Health Boards approval of the Maternity Strategy to reduce the number of delivery units in Glasgow from three to two. |
| 2000- end of 2001 | Public consultation on the rationalisation of services to 3 acute inpatient sites. |
| April – June 2001 | Public consultation on specific proposals to strengthen clinical capacity at the Victoria and Southern sites. |
| June 2001 | Public consultation regarding changes to the smaller specialties:- ENT, Gynaecology, Urology, ophthalmology. |
| January 2002 | Health Board approval for the Acute Services Strategy |
| September 2002 | Ministerial approval for the Acute Services Strategy |
| 2003- 2004 | Pre – consultation and public consultation of the detailed plans within the Maternity Strategy |
| September 2004 | Ministerial agreement on the Maternity Strategy and the decision to provide triple co-location of paediatric, maternity and adult services |
| February 2005 | Retesting and confirmation of the A&E model by the Health Board |
| June 2005 | Health Board agreement on the Pan Glasgow bed model |
| March 2006 | Report and Recommendations of the Clinical Advisory Group appointed by the Minister for Health and Community Care |
| Spring 2006 | Ministerial decision to co-locate the New Children's Hospital with obstetric and other adult services on the Southern site. |
| 2005 - 2006 | Presentation to the Health Board of work carried out by the Bed Services and Capacity Subgroup regarding the disposition of Cardiothoracic surgical services and investigative and interventional cardiology and the disposition of smaller specialties and sub specialties. These were: Vascular surgery, colorectal surgery, upper gastro-intestinal surgery, breast services, renal, Ear Nose and Throat (ENT) services, ophthalmology, dermatology and pathology. |
| 2002-2006 | Progress in implementing the Acute Services Review:<br>The New Beatson West of Scotland Cancer Centre build complete and commissioned 2007<br>New Victoria and Stobhill Hospital – financial close in summer 2006. To be commissioned 2009<br>Work begins on developing the OBC for the New South and New Children's hospitals. |

Further detail about these milestones can be found in the 'Clinical Strategy for Glasgow's Acute Services 2006/07 – 2013/14.

# Appendix 4
# Condition Survey Report

# APPENDIX 4 – Condition Appraisal of Existing Site

| Code | Block | area | PC | STAT | FUNCT | SPACE | ENERGY |
|---|---|---|---|---|---|---|---|
| AD | CHEST CLINIC | 1351 | C | C | C | 3 | C |
| AE | MANAGEMENT BUILDING | 3616 | C | C | B | 4 | B |
| AG | MAIN OUTPATIENTS | 2868 | B | B | B | 3 | B |
| AI | THERAPY CENTRE | 1840 | B | B | B | 3 | B |
| AK | ACCIDENT & EMERGENCY | 1691 | B | B | B | 3 | B |
| AL | SURGICAL | 3982 | C | C | C | 4 | C |
| AN | BIOCHEMISTRY | 972 | B | B | B | 3 | C |
| AO | UROLOGY | 517 | B | C | C | 4 | C |
| AP | ACUTE MEDICAL W | 4059 | C | C | C | 3 | C |
| AQ | ACUTE MEDICAL E | 2824 | C | C | C | 4 | C |
| AR | LONG CORRIDOR OFFICES | 360 | C | C | B | 3 | C |
| AS | CMB | 7780 | C | C | C | 3 | C |
| AT | BACTERIOLOGY | 516 | C | C | B | 3 | C |
| AU | Central Hall Area | 1176 | C | C | C | 3 | C |
| AX | MORTUARY | 315 | B | B | B | 3 | B |
| AZ | PATHOLOGY | 1283 | B | B | B | 3 | C |
| BB | PHARMACY | 1146 | C | C | C | 3 | C |
| BC | NEUROSURGERY | 13999 | B | B | B | 3 | B |
| BL | MATERNITY UNIT | 10479 | B | B | B | 3 | B |
| BP | HOPSCOTCH NURSERY | 376 | C | B | C | 3 | C |
| BW | NEUROLOGY | 6627 | B | B | A | 3 | B |
| CH | NURSING OFFICES | 116 | C | C | B | 3 | C |
| CL | TELEPHONE EXCHANGE | 120 | C | B | B | 3 | C |
| DA | SPINAL INJ. UNIT | 4992 | B | B | A | 3 | B |
| DB | DAY SURGERY | 505 | B | B | A | 3 | B |
| DC | SURGICAL I.T.U. | 535 | B | B | A | 3 | B |
| DD | PODIATRY | 1275 | B | B | A | 3 | B |
| DE | PDRU | 1345 | B | B | B | 3 | B |
| DF | LINK BRIDGE (surgical - AMB) | 500 | B | B | A | 3 | A |
| DG | ORTHOPAEDIC THEATRES | 1113 | B | B | A | 3 | A |
| DH | ORTHOPAEDIC CLINIC | 468 | B | B | A | 3 | A |
| DHA | OPD LINKS | 170 | B | B | A | 3 | A |
| DI | WESTMARC | 3876 | B | B | A | 3 | A |
| DJ | MEDICAL RECORDS @ OPD | 321 | B | B | B | 3 | C |
| DK | ESTATES OFFICES | 248 | B | B | B | 3 | C |
| DL | HAEMATOLOGY LAB | 282 | B | B | B | 3 | C |

# Appendix 5
# Aerial View Showing the Boundaries of the Site Pan Glasgow Bed Model

## APPENDIX 5 – Aerial View Showing Boundaries of the Site

# Appendix 6
# Pan Glasgow Bed Model

## APPENDIX 6 - Pan Glasgow Adult Bed Model

### 1. Background and Context

1.1 In July 2005, a paper from the Beds, Services and Capacity Subgroup was submitted to the Board which set out the planning assumptions for the inpatient bed numbers to underpin the capital procurement and service planning for the Acute Service Review. The subgroup had been established to pull together the programme of work to conclude the final siting of inpatient services and the scale and clinical design of the new inpatient facilities. The aim of the paper was to support the establishment of a process to debate its conclusions and inform the final proposals on the bed numbers.

**2.** At that time, it was recognised that the bed numbers would be subject to further iterations as outline business cases were developed and worked through to final business case.

2.1 Work has continued since that time in updating the efficiency projections with CHKS. More recently, work has taken account of the need to address waiting times targets introduced since the earlier work was undertaken, in addition to as the requirement to deliver ASC codes.

### 3. Process

3.1 This section describes the processes undertaken to arrive at the proposed Pan Glasgow adult inpatient bed numbers based on 2005/6 activity.

3.2 Two processes have been in train to continue the work in relation to the bed model:

- The first process has continued with the previous work through CHKS, modelling the efficiencies as well as the additional factors of 5 day beds, demography, activity growth, waiting times, ASC codes. In developing the latest iteration of the bed model, the 2005/6 CHKS position was obtained for the inner city peer, which enabled refreshment of the model in relation to further improvements in the efficiency parameters to apply to Glasgow's data.
- The second process was established in response to the audit report on the bed model by Price Waterhouse, which recommended that independent work to validate the bed model be undertaken. To achieve this, ISD was commissioned to work with the Head of Acute Service Planning and the Directors for Emergency Care and Medicine, and Surgery and Anaesthetics to consider the bed requirements

3.3 In undertaking this work, the conclusions of the previous work of the Beds, Services and Capacity Subgroup in relation to the number of sites and the clinical service requirements and relationships remain as the extant position.

## 4. Bed Number and Adjustments

4.1 For the proposes of this paper, the starting point for this work was the July 2005 inpatient bed model agreed by NHS Greater Glasgow Board. In comparing the baseline then to the current baseline position (as set out in table 1 below), it would suggest an overall increase in beds since that time. This reflects the renewed focus to capture the information on the current bed numbers more accurately and also agreed bed changes in recent years. This was undertaken initially in December 2006 and has been reconfirmed in November 2007.

4.2 Table 1 identifies the current baseline for the bed model, against the July 2005 baseline.

*It should be noted that this table excludes Obstetrics, Paediatrics and Elderly Continuing Care as these specialties are being progressed under extant strategies.*

**Table 1. November 2007 baseline comparison to July 2005**

| NHSGG TOTAL | | | | | |
|---|---|---|---|---|---|
| | | CURRENT INPATIENT BED NUMBERS | | | |
| CORE SPECIALTIES INCLUDED IN THE BED MODEL | BASELINE JULY 2005 | North | South | GG Total | Change |
| General Medicine inc A&E beds | 919 | 593 | 300 | 893 | -26 |
| CCU | 43 | 26 | 17 | 43 | |
| Dermatology | 21 | 0 | 21 | 21 | |
| Infectious Diseases | 30 | 30 | 0 | 30 | |
| General Surgery | 456 | 303 | 146 | 449 | -7 |
| Urology | 121 | 84 | 50 | 134 | +13 |
| Orthopaedic Surgery | 280 | 161 | 125 | 286 | +6 |
| ENT | 46 | 24 | 22 | 46 | |
| Ophthalmology | 28 | 18 | 10 | 28 | |
| ITU Facility | 31 | 20 | 10 | 30 | -1 |
| Surgical HDU Facility | 40 | 28 | 14 | 42 | +2 |
| | | | | | |
| Gynaecology | 79 | 32 | 47 | 79 | |
| | | | | | |
| Elderly Care | 767 | 467 | 328 | 795 | +28 |
| GORU Facility | 92 | 60 | 47 | 107 | +15 |
| | | | | | |
| Nephrology | 69 | 69 | 0 | 69 | |
| Clinical Haematology | 18 | | 18 | 18 | |
| **Sub-total** | **3,040** | **1,915** | **1,155** | **3,070** | **+30** |
| **SPECIALTIES NOT INCLUDED IN BED MODEL** | **BASELINE July 2005** | **North** | **South** | **GG Total** | **Difference** |
| Clinical Haematology | 39 | 39 | | 171 New Beatson | 1 |
| Oncology | 131 | 132 | | | |
| Plastic Surgery inc. Burns | 79 | 79 | 0 | 79 | |
| Cardiothoracic Surgery | 91 | 91 | 0 | 91 | |
| Oral Surgery | 12 | 0 | 12 | 12 | |
| Neurosurgery | 69 | 0 | 69 | 69 | |
| Neurology | 38 | 0 | 38 | 38 | |
| Neurosurgery HDU/ITU | 15 | | 15 | 15 | |
| Homeopathy | 15 | 15 | | 15 | |
| Spinal | 48 | | 48 | 48 | |
| PD | 24 | | 24 | 24 | |
| PDRU | 26 | | 26 | 26 | |
| Sub-total | 587 | 356 | 232 | 588 | **1** |

| | | | | | |
|---|---|---|---|---|---|
| **Total Beds** | **3,627** | **2,271** | **1,387** | **3,658** | **+31** |

## 5. Principles Agreed

5.1 In revisiting the bed model it was agreed that work should be updated and 2005/6 outturn considered against the inner city peer.

5.2 The key principles applied to the bed model are as follows:

- Benchmark comparators – CHKS 2005/6 performance of the Inner City Peer against Glasgow activity considering the efficiency drivers **of day case rates and length of stay** – see Tables 2 and 3.
- If Glasgow's performance is better, then it will be used instead of CHKS indicators.
- Actual Activity Outturn for 2005/6 has been used to develop the bed number.
- The occupancy rate used – 82% for emergencies
  85% for elective.
- Demographic Change: The population of Glasgow will change over the next 10 years and impact on the hospital services. The impact of this has been factored into the model.
- Emergency Activity Growth: Previous work has agreed the growth rate within emergency medicine at 0.7%. This has been assumed for the purpose of the current modelling.

5.3 The day case comparison rate is set out in table 2.

**Table 2. Day Case Rate Comparison**

| **Specialty** | **2005/6** | | |
|---|---|---|---|
| | **Actual %** | **CHKS%** | **Difference** |
| General Medicine | *65.1* | *79* | *-13.9* |
| Cardiology | *62.3* | *66* | *-3.7* |
| Infectious Diseases | *92.2* | *94* | *-1.8* |
| Gastroenterology | *99.3* | *99* | *0.3* |
| Respiratory Medicine | *70.5* | *73* | *-2.5* |
| Rheumatology | *88.2* | *90* | *-1.8* |
| General Surgery | *57.3* | *67* | *-9.7* |
| ENT | *54.1* | *56* | *-1.9* |
| Ophthalmology | *76.1* | *85* | *-8.9* |
| Orthopaedic Surgery | *40.9* | *47* | *-6.1* |
| Urology | *66.3* | *72* | *-5.7* |
| Gynaecology | *66.9* | *72* | *-5.1* |

5.4 The length of stay comparison is set out in table 3

| SPECIALTY | 2005/6 | | |
|---|---|---|---|
| | Actual | CHKS | Difference |
| General Medicine | *5.1* | *5.0* | *0.1* |
| Cardiology | *4.4* | *4.0* | *0.4* |
| Infectious Diseases | *7.9* | *7.6* | *0.3* |
| Dermatology | *13.9* | *13.1* | *0.8* |
| Gastroenterology | *9.8* | *10.4* | *-0.6* |
| Respiratory Medicine | *7.1* | *7.1* | *0* |
| Rheumatology | *8.5* | *8.6* | *-0.1* |
| General Surgery | *5.1* | *4.7* | *0.4* |
| ENT | *2.9* | *2.7* | *0.2* |
| Ophthalmology | *2.3* | *2.4* | *-0.1* |
| Orthopaedic Surgery | *6.3* | *6.2* | *0.1* |
| Urology | *3.6* | *3.6* | *0* |
| Gynaecology | *3.19* | *3.15* | *0.04* |

5.5 Table 4 below identifies the output of this benchmarking of NHSGGC's performance against the inner city peer group comparing it against both the baseline bed number agreed in 2007 and the proposed bed model put forward in July 2005, based on 2002/03 activity.

**1.1 Table 4. Bed Numbers**

| NHSGG TOTAL | | | | | |
|---|---|---|---|---|---|
| | PROJECTED INPATIENT BED NUMBERS | | | | |
| | BASELINE Nov 2007 | 0506 model | Difference 05/06 model against -Nov 07 baseline | July 05 Bed model | Difference 05/06 Model against July 05 Model |
| Core specialties | | | | | |
| General Medicine Elderly Care beds | 1671 (-17) | 1718 (-17) | 47 | 1582 | 136 |
| CCU | 37 (-6) | 41 (-6) | 4 | 45 | -4 |
| Dermatology | 21 | 19 | -2 | 19 | 0 |
| Infectious Diseases | 30 | 26 | -4 | 26 | 0 |
| GORU Facility | 107 | 92 | -15 | 94 | -2 |
| | | | | | |
| General Surgery | 449 | 415 | -34 | 395 | 20 |
| Urology | 134 | 86 | -48 | 94 | -8 |
| Orthopaedic Surgery | 286 | 259 | -27 | 261 | -2 |
| ENT | 46 | 37 | -9 | 36 | -1 |
| Ophthalmology | 28 | 16 | -12 | 19 | -3 |
| ITU Facility | 30 | 30 | 0 | 33 | -3 |
| Surgical HDU | 42 | 42 | 0 | 40 | 2 |

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| | | | | | |
|---|---|---|---|---|---|
| Facility | | | | | |
| | | | | | |
| Gynaecology | 79 | 51 | -28 | 41 | 10 |
| | | | | | |
| Nephrology | 69 | 66 | -3 | 65 | 1 |
| Clinical Haematology | 18 | 14 | -4 | 16 | -2 |
| **Total** | **3047** | **2912** | **-135** | **2766** | **146** |

Figures have been adjusted to remove cardiology and CCU beds transferred to GJNH

*N.B. In considering the above it is expected that some of the inpatient bed capacity will be reprovided in the form of increased day case facilities to support the transfer of activity to day case treatment. This will be considered and factored into the financial model in terms of affordability.*

5.6 In considering the revised the bed model position in relation to 2005/6, the number of beds currently being projected indicates an increase from the proposed bed model in the July 2005 paper. To set this in context it is important to remember that the 2005/06 bed number supports the additional waiting times activity, the delivery of the ASC codes and the GJNH activity not previously included in the bed model. It also includes an adjustment to the occupancy level to accommodate the variation in emergency admission to meet A&E waiting time targets. As mentioned previously, this is an iterative approach and work is currently underway to assess the implications of the bed model using 2006/07 data.

5.7 In considering the physical design and space requirements it is important that the following potential developments identified in bed models previously projected by Greater Glasgow are highlighted at this stage. These developments are identified in table 5 below.

5.8 Table 5 sets out developments identified as part of previous service modelling. Funding has not yet been identified for these developments.

**Table 5 – Proposed service developments**

| | | | | | |
|---|---|---|---|---|---|
| **HDU development** | | **8** | **+8** | **10** | **+10** |
| **ITU development** | | **10** | **+10** | **7** | **+7** |
| **Nephrology development** | | **14** | **+14** | **15** | **+15** |
| **Total incl. developments** | | **32** | **+32** | **32** | **+32** |


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It should be noted that the bed modelling work is an iterative process and, it is intended, will be updated with the 2006/7 benchmarked position, which is currently being explored to consider the further level of efficiency that could be implemented. It will be necessary to continue this work in the months and years ahead to ensure a continued focus on efficiency.

5.9 The Pan Glasgow bed Model was used as a basis to derive the high level bed numbers, for planning purposes, for the New South Glasgow Hospital. The following describes this process in more detail.

Specialities highlighted in the Clinical Strategy as being centralised onto the Southern site include ENT, Vascular, Clinical Haematology, Dermatology and Nephrology. The number of beds required for each specialty was derived from the Pan Glasgow bed model.

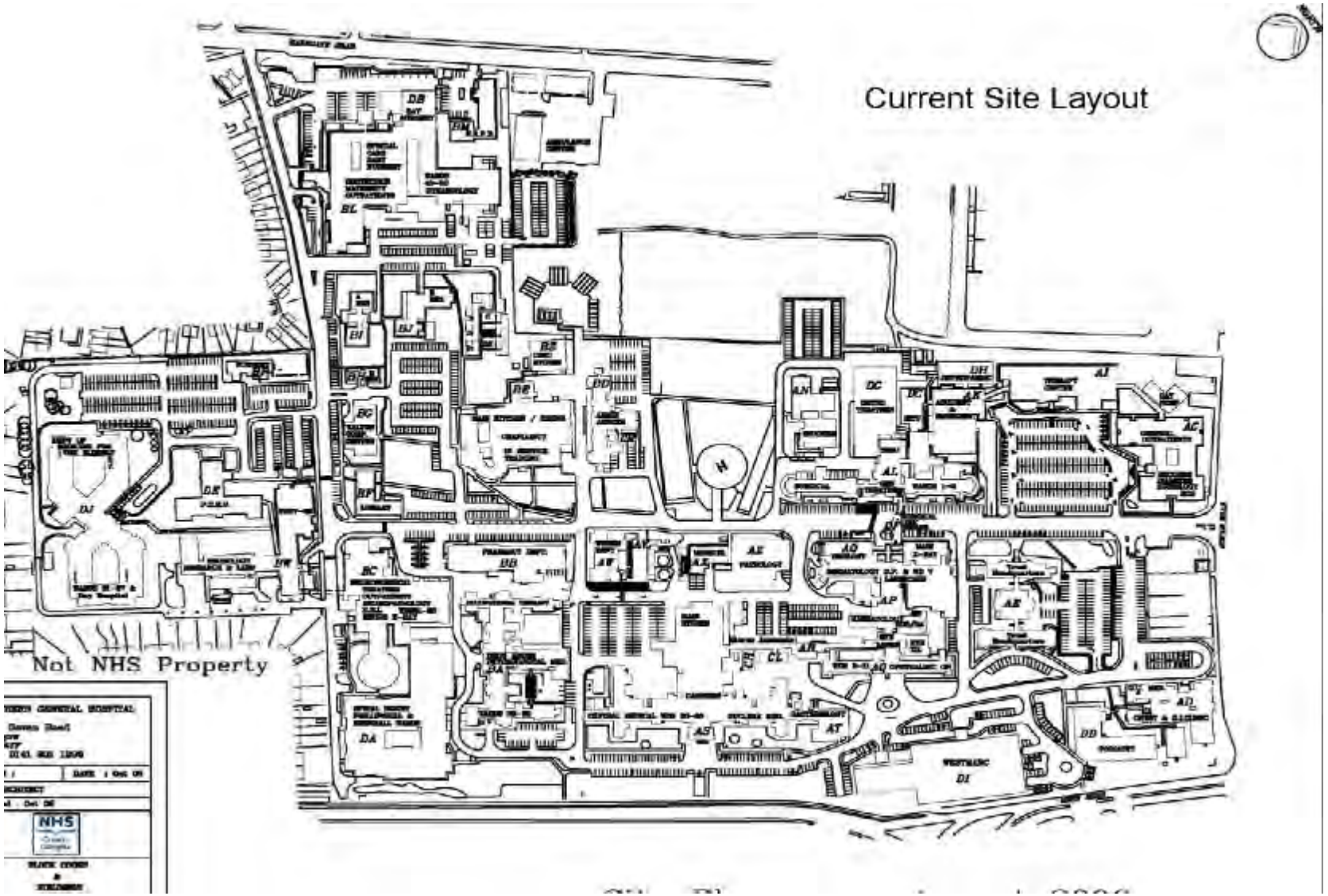
Where a specialty was spit between two sites it was assumed that elective work would reflect the expected flow from the respective Southern and Glasgow Royal catchment areas. It was assumed that the emergency work would be split 50/50 given the equal sizing of the A&E at Glasgow Royal and New South. In reviewing each specialty any known subspecialty deviations from asumptions was taken into account, for example within general surgery all breast surgery will be centralised at Gartnavel General while complex pancreatic work will be undertaken at Glasgow Royal. Where specialities were split between three sites the catchment area was used as a guide.

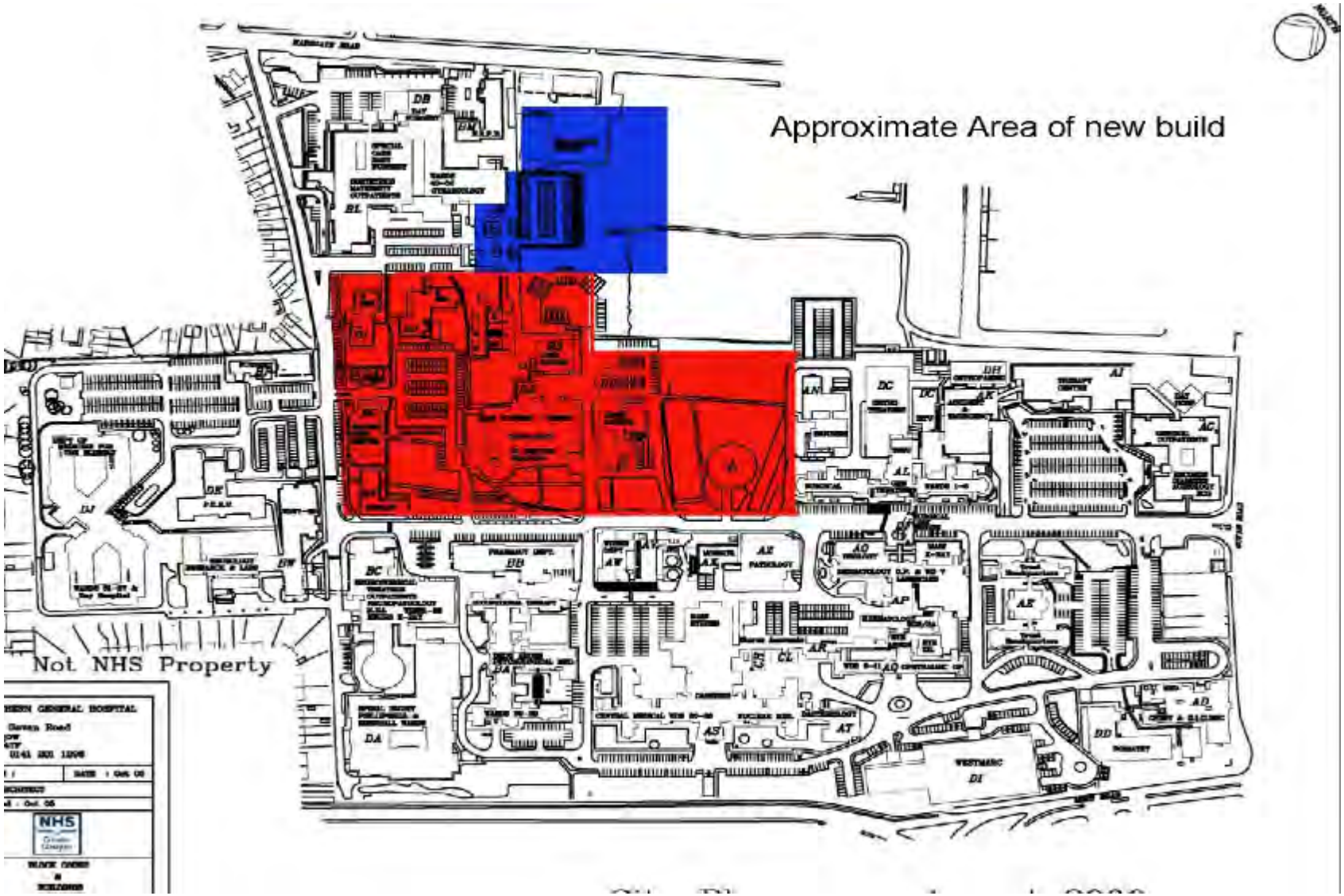
The assumptions resulted in a percentage split of beds north and south using the Pan Glasgow bed model to derive the bed numbers.

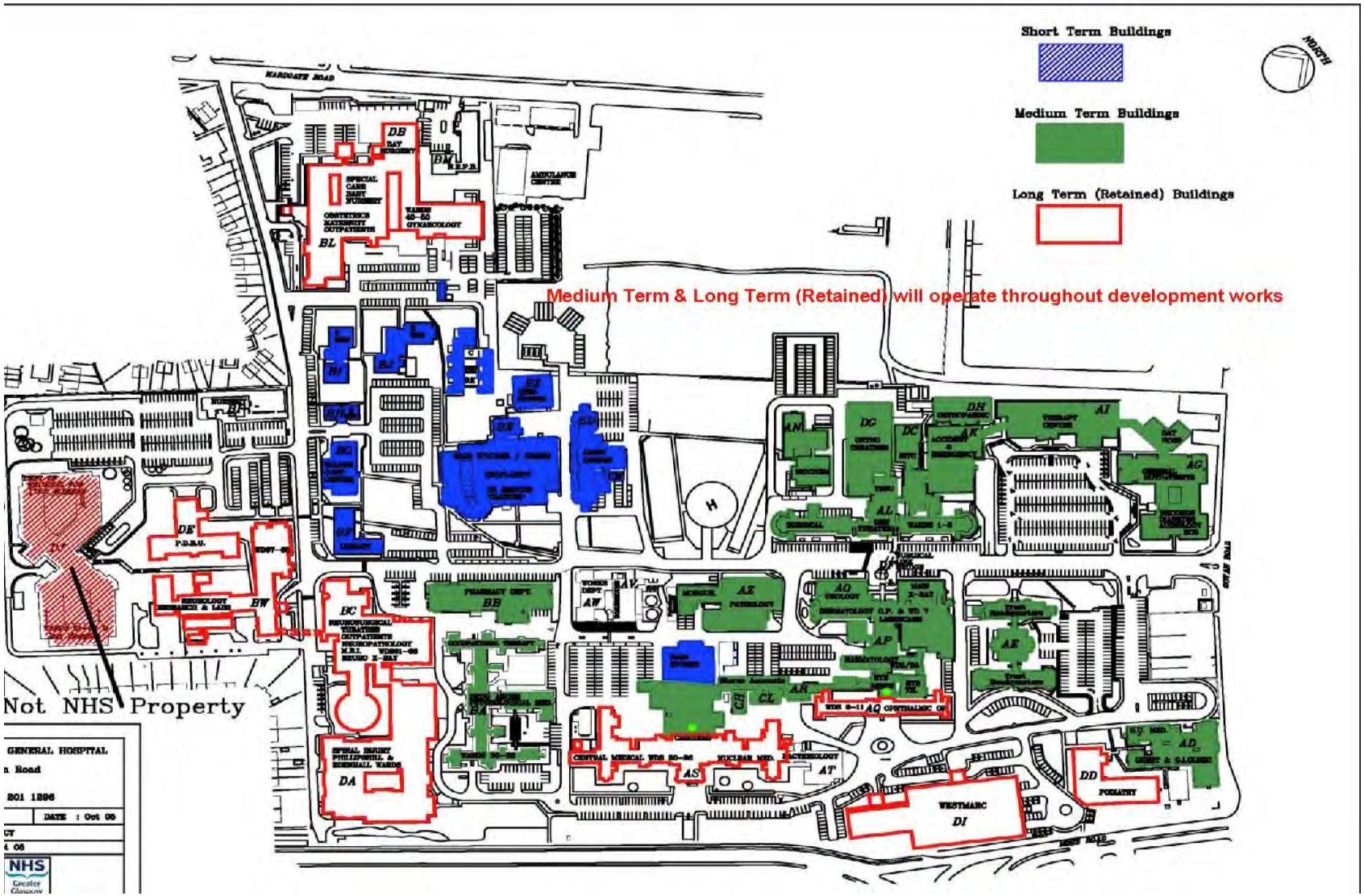
The resulting bed split and bed numbers were discussed and agreed with the Chief Operating Officer for Greater Glasgow and Clyde Hospitals and also presented to the Health Board.

The bed numbers will be further reviewed during the second stage of the project - development of the Full Business Case.

# Appendix 7
# Enabling Works and Phasing

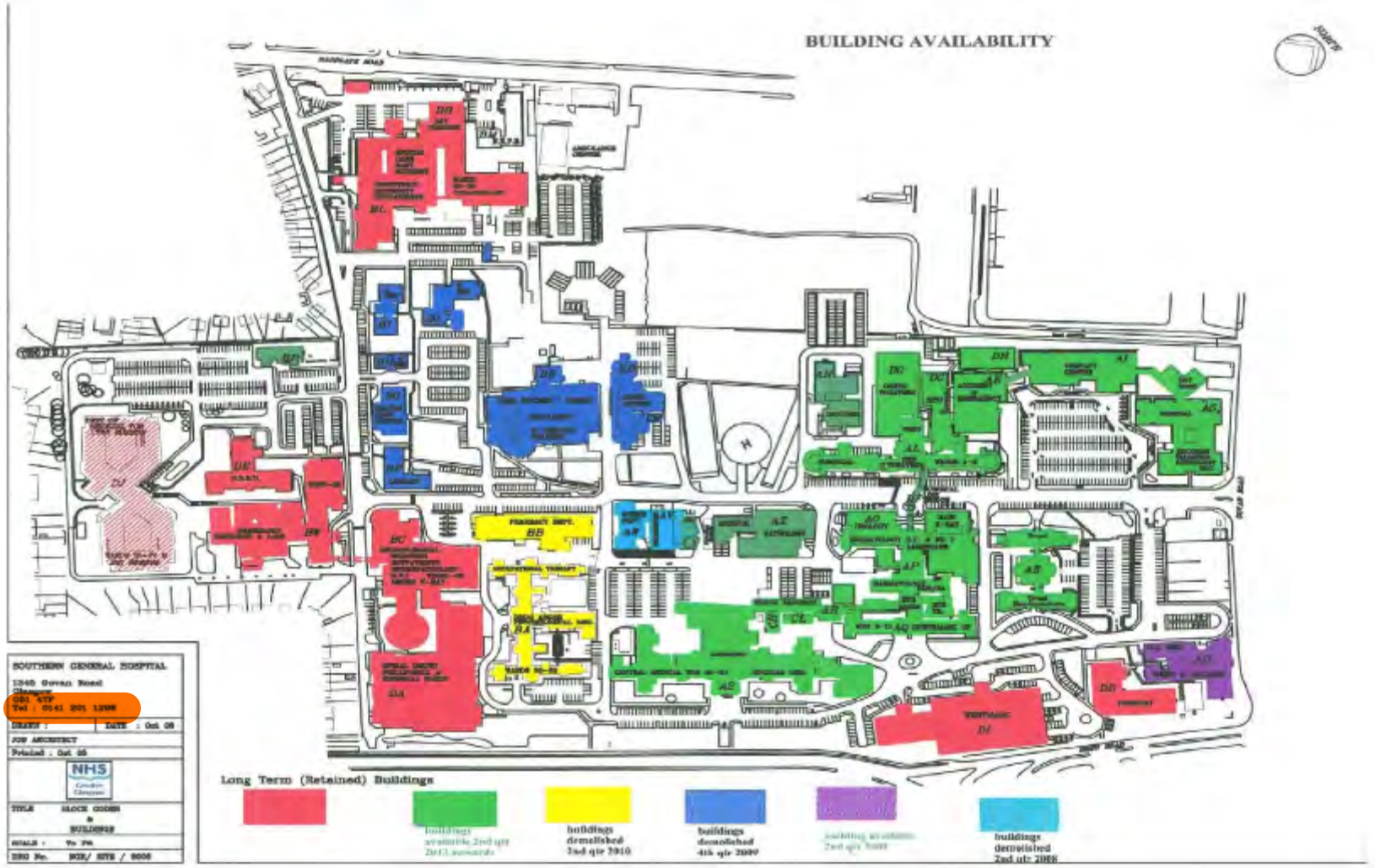

Current Site Layout
Not NHS Property
NHS


Approximate Area of new build
Not NHS Property


Short Term Buildings
Medium Term Buildings
Long Term (Retained) Buildings
NORTH
Medium Term & Long Term (Retained) will operate throughout development works
Not NHS Property
GENERAL HOSPITAL
DATE : Oct 05
NHS
Greater Glasgow
WESTMARC
DI

# PROJECT CRITICAL TIME ISSUES

- ACADS OPEN END 2ND QTR 2009
- INTERIM DECANTS OFF SGH – TO FREE UP DEVELOPMENT LAND – 4TH QTR 2009
- 1ST MULTISTOREY CAR PARK COMPLETE 3RD QTR 2009
- NEONTANAL COMPLETE – QMH TRANSFERS 4TH QTR 2009
- START CONSTRUCTION NSGH/NCH 2 QTR 2010
- LABORATORY STRATEGY COMPLTE – 1ST QTR 2010
- NCH COMPLETE – 1ST QTR 2013
- NSGH COMPLETE 2ND QTR 2014
- COMMISSIONING NSGH 2ND QTR 2014 – 1ST QTR 2015
- REFURBISHMENT OF EXISTING ESTATE 3RD QTR 2014 – 2ND QTR 2015


BUILDING AVAILABILITY
SOUTHERN GENERAL HOSPITAL
Long Term (Retained) Buildings
buildings demolished 3rd qtr 2010
buildings demolished 4th qtr 2009
buildings demolished 2nd qtr 2008

# INTERIM DECANTS
# SGH SITE

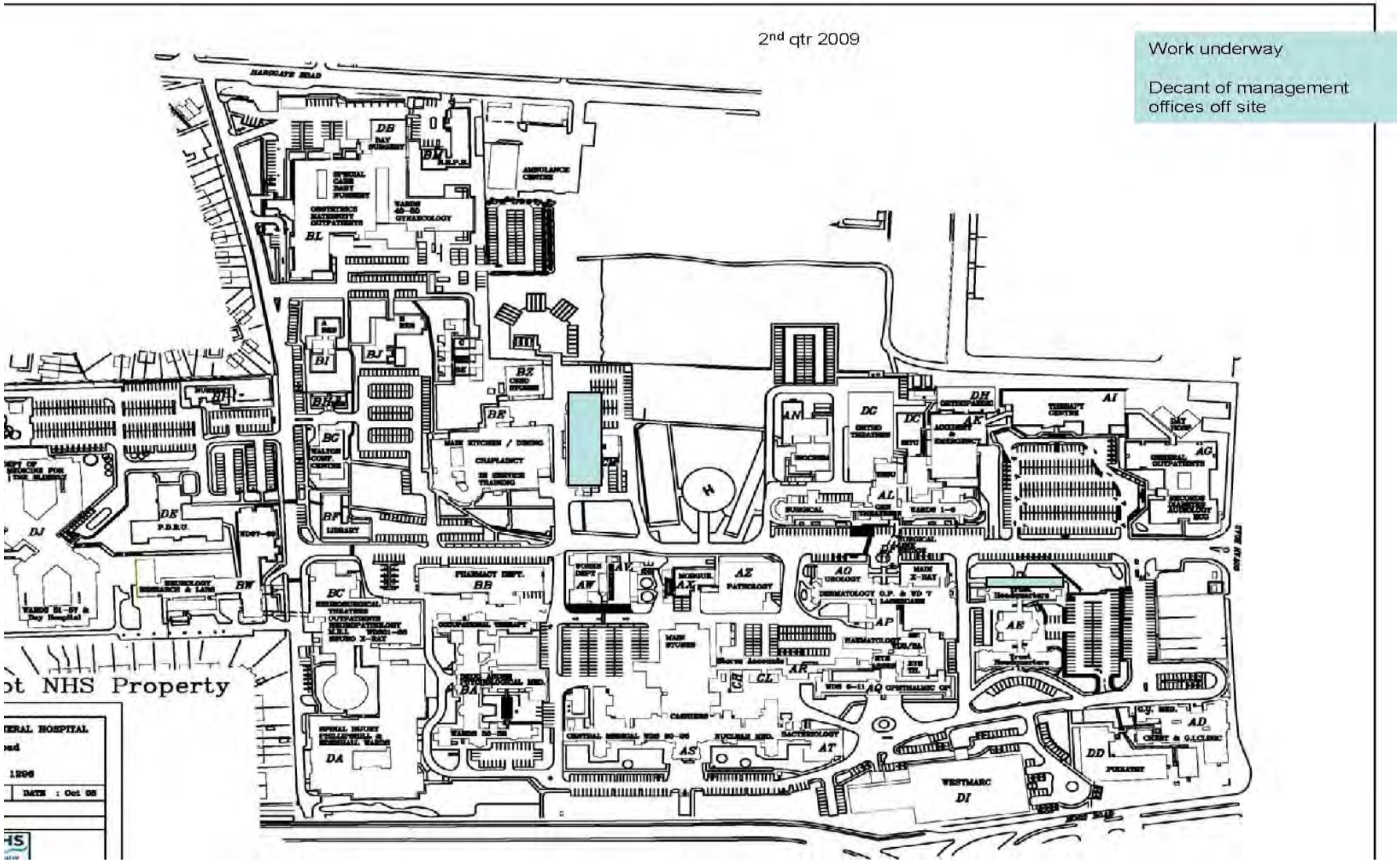
# ASR ENABLING WORKS

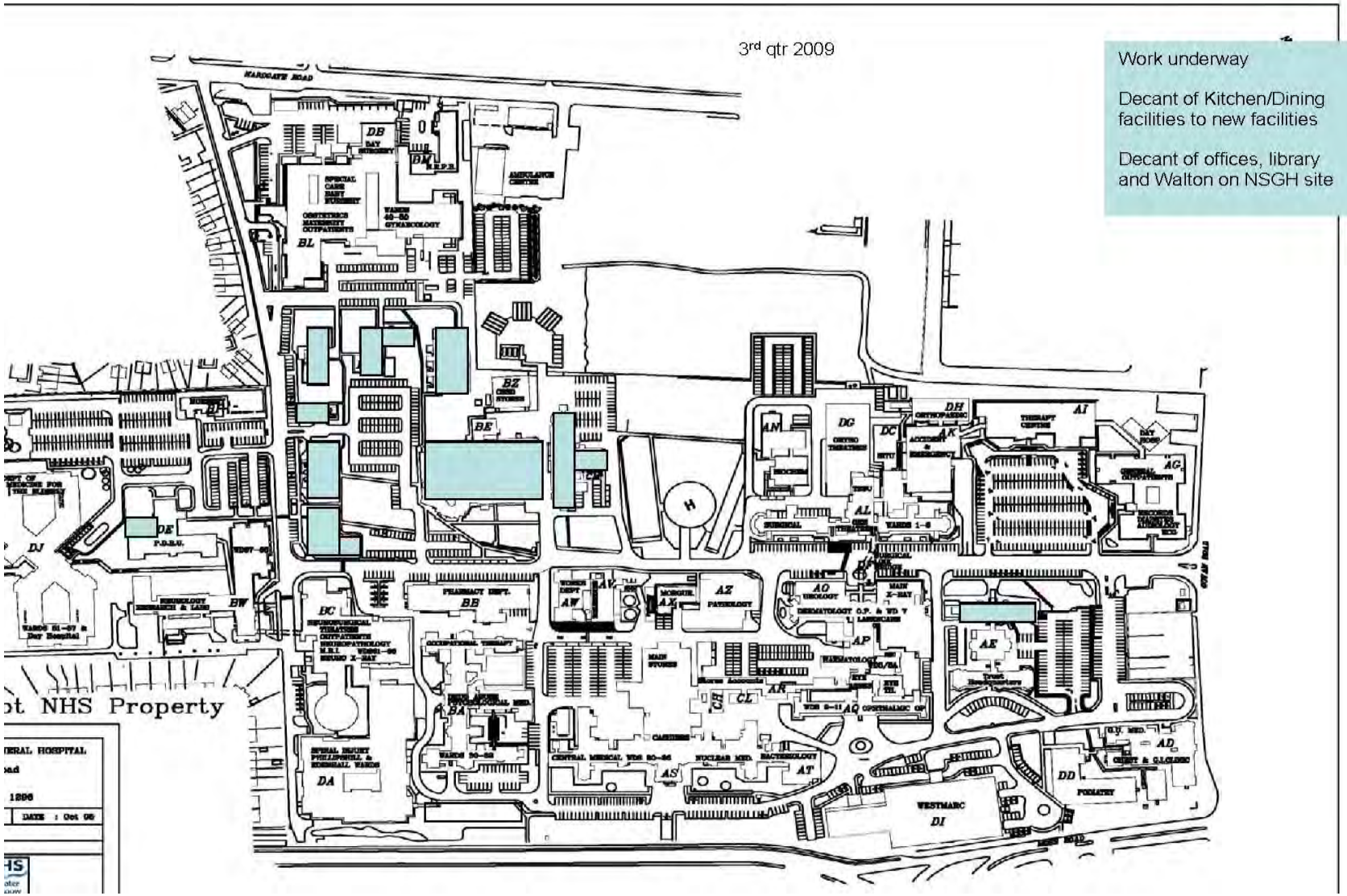
- Work scheduled for completion 07/08:
  - Stores demolition
  - Decentralisation of Boilers
  - Installation of new VIE at maternity and installation of new oxygen mains
  - Phase 1 of new HV ring mains together with installation on new HV plant.
  - Maternity Drainage diversion

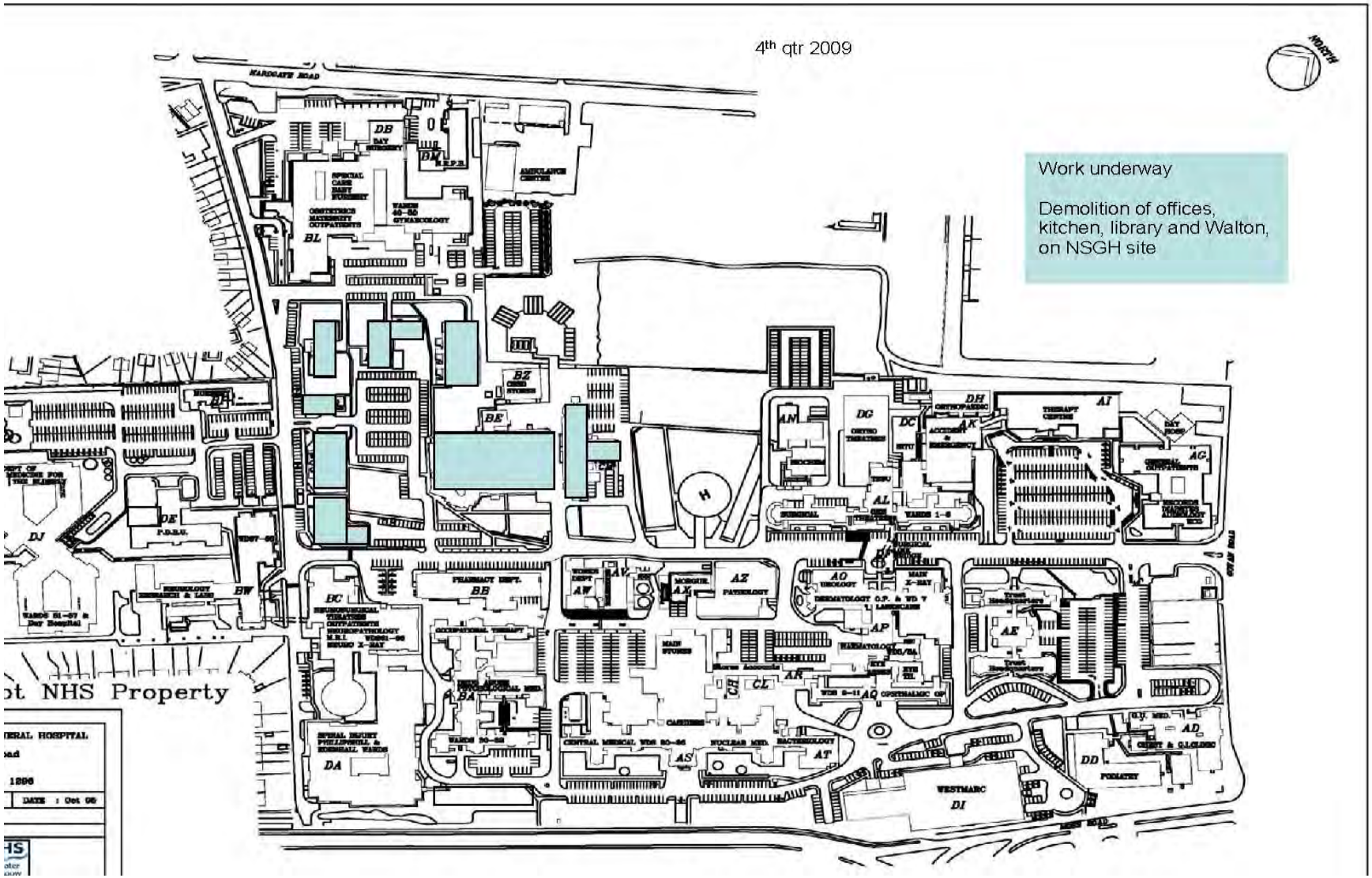
- Work to be undertaken 08/09:
  - Diversion of Burn and Sewer through site
  - Phase 2 HV installation
  - Decant of residences ,walton ,library, kitchen and management annexe
  - Commence demolition of buildings on development site

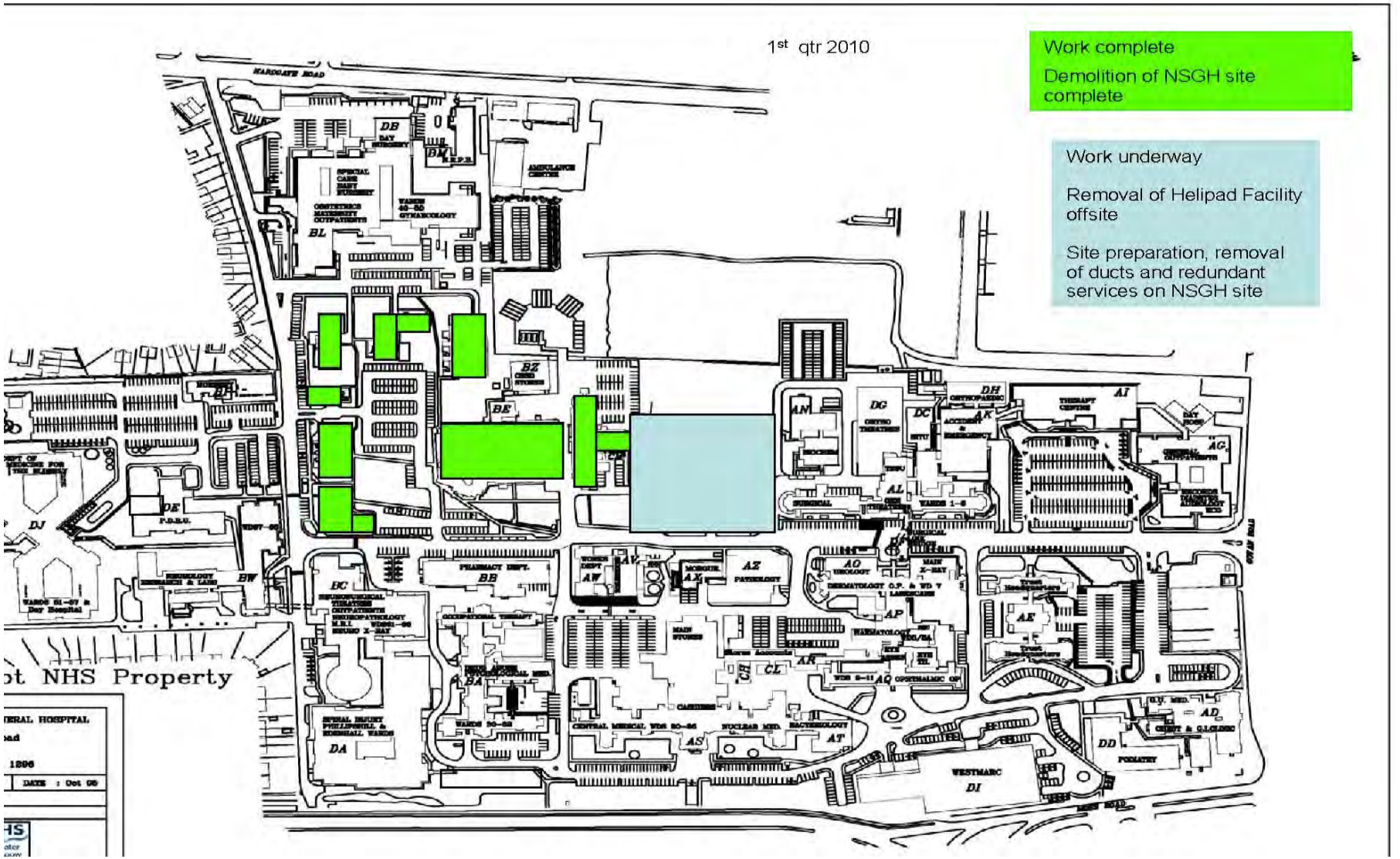
- Work to be undertaken 09/10
  - Demolition of buildings on development site
  - Site investigation works
  - Helipad moved off site

8


2nd qtr 2009
Work underway
Decant of management offices off site
HARDGATE ROAD
AMBULANCE CENTRE
MAIN KITCHEN / DINING
CHAPLAINCY
PHARMACY DEPT.
MAIN STORES
CASHIERS
WESTMARC
DI
ot NHS Property


3rd qtr 2009
Work underway
Decant of Kitchen/Dining facilities to new facilities
Decant of offices, library and Walton on NSGH site
HARDGATE ROAD
WESTMARC
DI
NHS Property


4th qtr 2009
NORTH
Work underway
Demolition of offices, kitchen, library and Walton, on NSGH site
HARDGATE ROAD
WESTMARC
DI
t NHS Property


1st qtr 2010
Work complete
Demolition of NSGH site complete
Work underway
Removal of Helipad Facility offsite
Site preparation, removal of ducts and redundant services on NSGH site
HARDGATE ROAD
t NHS Property
WESTMARC
DI

# Appendix 8
# Design Option Appraisal

NEW SOUTH GLASGOW (ACUTE AND RHSC) - COMBINED DEVELOPMENT OPTIONS APPRAISAL - TABLE 1 RELATIVE PERFORMANC

| Input Scores against headings between 1 - Very Poor and 6 - Excellent | | Option A | Option B | Option C | Max unweighted | Option A weighted | Option B weighted | Option C weighted | Max weighted | Option A Average | Option B Average | Option C Average | Max Average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ACCESS** | | | | | | | | | | | | | |
| | Access to main hospital entrances from Govern Road and Hardgate Roa | 0 | 0 | 0 | | | | | | | | | |
| | Blue light routes into hospital | 0 | 0 | 0 | | | | | | | | | |
| | Public transport access through site | 0 | 0 | 0 | | | | | | | | | |
| | Separate service vehicle entrance and FM deliverie | 0 | 0 | 0 | | | | | | | | | |
| | Access to car parks from Govan Road and Hardgate Roa | 0 | 0 | 0 | | | | | | | | | |
| | Access to other buildings on the site | 0 | 0 | 0 | | | | | | | | | |
| | Clarity of site layout for external wayfindin | 0 | 0 | 0 | | | | | | | | | |
| | Separation of Ambulance A&E entrance and Ambulatory A&E entranc | 0 | 0 | 0 | | | | | | | | | |
| | FM, labs and Morgue connected by basement circulation to Acute and Children's | 0 | 0 | 0 | | | | | | | | | |
| Removed from Scoring | Location of A&E entrances | 0 | 0 | 0 | 0 | | | | | | | | |
| | Is available parking well placed in relation to entrances | 3 | 5 | 5 | 6 | | | | | | | | |
| | Relation of bus stops to main entrance | 3 | 6 | 6 | 6 | | | | | | | | |
| | Location of Main Adult Entrance | 3 | 5 | 5 | 6 | | | | | | | | |
| | Location of Main Children's Entrance | 5 | 5 | 5 | 6 | | | | | 3.5 | 5.25 | 5.25 | 6 |
| | | | | | | | | | 20% max | | | | |
| Total | | 14 | 21 | 21 | 24 | 2.8 | 4.2 | 4.2 | 4.8 | 0.117 | 0.175 | 0.175 | 0.200 |
| | | 0.583333 | 0.875 | 0.88 | | | | | | | | | |
| | 20% Weighting | 16.1 | 24.15 | 24.15 | | | | | | | | | |
| **DEPARTMENTAL ADJACENCIES** | | | | | | | | | | | | | |
| Shared | | | | | | | | | | | | | |
| | Relationship of helipad to Acute and Children's Resus | 0 | 0 | 0 | | | | | | | | | |
| | Relationship between Children's and Maternity | 0 | 0 | 0 | | | | | | | | | |
| | Relationship between Children's and Acute | 0 | 0 | 0 | | | | | | | | | |
| | Relationship between Maternity and Acute | 0 | 0 | 0 | | | | | | | | | |
| | Relationship between Neurosciences and Acute CCU | 0 | 0 | 0 | | | | | | | | | |
| | Relationship between Children's and Neurosciences | 0 | 0 | 0 | | | | | | | | | |
| | Relationship between Acute Radiology and Children's Radiology | 0 | 0 | 0 | | | | | | | | | |
| | Relationship between Acute Resus and Children's Resus | 0 | 0 | 0 | | | | | | | | | |
| | Journey times between key departments | 0 | 0 | 0 | | | | | | | | | |
| | Relationship between Neo Natal and PICU | 0 | 0 | 0 | | | | | | | | | |
| | Split of Critical Care and Theatres across two floors | 0 | 0 | 0 | | | | | | | | | |
| | FM, Labs and Morgue located together with dedicated service access yard | 0 | 0 | 0 | | | | | | | | | |
| | Basement viewing for bodies for Acute and Children's with visitor access | 0 | 0 | 0 | | | | | | | | | |
| | Kitchen and Dining on ground floor accessible to Acute and Children's | 0 | 0 | 0 | | | | | | | | | |
| Acute | | | | | | | | | | | | | |
| | Relationship of A&E to Radiology | 0 | 0 | 0 | | | | | | | | | |
| | Relationship of Critical Care to Radiology | 0 | 0 | 0 | | | | | | | | | |
| | Relationship between A+E to Critical Care/Theatres | 5 | 4 | 4 | 6 | | | | | | | | |
| | Separation of daytime and 24 hr areas | 4 | 3 | 5 | 6 | | | | | | | | |
| | Grouping of wards for shared facilities and staffing costs | 6 | 4 | 5 | 6 | | | | | | | | |
| Children | | | | | | | | | | | | | |
| | Relationship between A&E and Radiology | 0 | 0 | 0 | | | | | | | | | |
| | Relationship between Critical Care and Radiology | 0 | 0 | 0 | | | | | | | | | |
| | Relationship of A&E to Critical Care and Theatres | 0 | 0 | 0 | | | | | | | | | |
| | Relationship of A&E and Assessment beds | 0 | 0 | 0 | | | | | | | | | |
| | Grouping of wards for shared facilities and staffing costs | 4 | 5 | 5 | 6 | | | | | | | | |
| | | 0 | 0 | 0 | | | | | | | | | |
| | Separation of daytime and 24 hr areas | 3 | 4 | 4 | 6 | | | | | 3 | 2.2 | 2.8 | 6 |
| | | | | | | | | | 20% max | | | | |
| Total | | 15 | 11 | 14 | 30 | 3 | 2.2 | 2.8 | 6 | 0.100 | 0.073 | 0.093 | 0.200 |
| | | 0.50 | 0.37 | 0.47 | | | | | | | | | |
| | 20% Weighting | 13.8 | 10.12 | 12.88 | | | | | | | | | |
| **FLEXIBILITY AND EXPANSION** | | | | | | | | | | | | | |
| | Inclusion of soft space adjacent to key departments for future expansion | 0 | 0 | 0 | | | | | | | | | |
| | Space for other developments such as Education, Training and Research | 0 | 0 | 0 | | | | | | | | | |
| | Space for car parking in the longer term | 0 | 0 | 0 | | | | | | | | | |
| | Space for car parking in the shorter term | 0 | 0 | 0 | | | | | | | | | |
| | Is the building designed to be adaptable in response to change? | 4 | 3 | 2 | 6 | | | | | | | | |
| | Does the site layout allow for future extension of Acute Hospital? | 3 | 3 | 3 | 6 | | | | | | | | |
| | Does the site layout allow for expansion of Children's Hospital? | 1 | 4 | 5 | 6 | | | | | 2.67 | 3.33 | 3.33 | 6.00 |
| | | | | | | | | | 15% max | | | | |
| Total | | 8 | 10 | 10 | 18 | 1.2 | 1.5 | 1.5 | 2.7 | 0.067 | 0.083 | 0.083 | 0.150 |
| | | 0.44 | 0.56 | 0.56 | | | | | | | | | |
| | 15% Weighting | 9.20 | 11.50 | 11.50 | | | | | | | | | |
| **EXTERNAL ENVIRONMENT** | | | | | | | | | | | | | |
| | Overshadowing of neighbouring properties | 0 | 0 | 0 | | | | | | | | | |
| | Does the scheme provide separate identities for Acute and Children's? | 0 | 0 | 0 | | | | | | | | | |
| | Impact of massing and height in planning and environmental terms | 3 | 5 | 5 | 6 | | | | | | | | |
| | Landscape opportunities | 2 | 4 | 4 | 6 | | | | | 2.5 | 4.5 | 4.5 | 6 |
| | | | | | | | | | 12% max | | | | |
| Total | | 5 | 9 | 9 | 12 | 0.6 | 1.08 | 1.08 | 1.44 | 0.050 | 0.090 | 0.090 | 0.120 |
| | | 0.42 | 0.75 | 0.75 | | | | | | | | | |
| | 12% Weighting | 6.9 | 12.42 | 12.42 | | | | | | | | | |
| **INTERNAL ENVIRONMENT** | | | | | | | | | | | | | |
| | Is there clear segregation of inpatient, visitor and FM circulation | 0 | 0 | 0 | | | | | | | | | |
| | Views for patients and staff (Children's) | 0 | 0 | 0 | | | | | | | | | |
| | Does the design support internal wayfinding | 3 | 4 | 5 | 6 | | | | | | | | |
| | Views for patients staff and public (Acute) | 4 | 5 | 5 | 6 | | | | | 3.5 | 4.5 | 5 | 6 |
| | | | | | | | | | 13% max | | | | |
| Total | | 7 | 9 | 10 | 12 | 0.91 | 1.17 | 1.3 | 1.56 | 0.076 | 0.098 | 0.108 | 0.130 |
| | | 0.58 | 0.75 | 0.83 | | | | | | | | | |
| | 13% Weighting | 10.465 | 13.455 | 14.95 | | | | | | | | | |
| **DELIVERABILITY** | | | | | | | | | | | | | |
| | Single phase of construction for both hospitals | 0 | 0 | 0 | | | | | | | | | |
| | Land take and impact of working area | 2 | 3 | 3 | 6 | | | | | | | | |
| | SAS Site | 1 | 4 | 4 | 6 | | | | | | | | |
| | Implementation of phased handover of adults and children's hospitals | 3 | 3 | 3 | 6 | | | | | | | | |
| | Civil Engineering Impact | 2 | 3 | 4 | 6 | | | | | | | | |
| | Structural Engineering Impact | 4 | 4 | 3 | 6 | | | | | | | | |
| | M&E Engineering Impact | 4 | 3 | 4 | 6 | | | | | | | | |
| | Cost impact (larger footprint, more cores, ????) | 3 | 3 | 5 | 6 | | | | | | | | |
| | | | | | | | | | | 2.714 | 3.286 | 3.714 | 6.000 |
| | | | | | | | | | 20% max | | | | |
| Total | | 19 | 23 | 26 | 42 | 3.8 | 4.6 | 5.2 | 8.4 | 0.090 | 0.110 | 0.124 | 0.200 |
| | | 0.45 | 0.55 | 0.62 | | | | | | | | | |
| | 20% Weighting | 12.49 | 15.11 | 17.09 | | | | | | | | | |
| **TOTALS** | | | | | | | | | | | | | |
| | | 68 | 83 | 90 | | 12.31 | 14.75 | 16.08 | | 0.500 | 0.629 | 0.674 | |
| | 100% Weighted totals | | | | | | | | | | | | |
| | | | Max | Total | 138 | | Weighted | Total | 24.9 | | | | 1.000 |
| | | 69.0 | 86.8 | 93.0 | | | | | | | | | |
| | Percentage Results | 49.3% | 60% | 65% | | 49% | 59% | 65% | | 50% | 63% | 67% | |
| | | | | | 100% | | | | 100% | | | | 00% |

A49342285

# Appendix 9
# 1:500 Design Layouts

notes

| rev | date | drawn by | checked by | description |
|---|---|---|---|---|
| A | 05.06.07 | CA | IS | General Amendments |

| | |
|---|---|
| date of first issue | status |
| 23.03.07 | PRELIMINARY |
| scale | size |
| 1:1000 | A2 |
| drawn by | checked by |
| CA | IS |

| | |
|---|---|
| project | NEW SOUTH GLASGOW HOSPITALS |
| drawing | OBC Scheme Adjacency Plan Basement Level |

| drawing number | revision |
|---|---|
| 05017-GA–01 | A |

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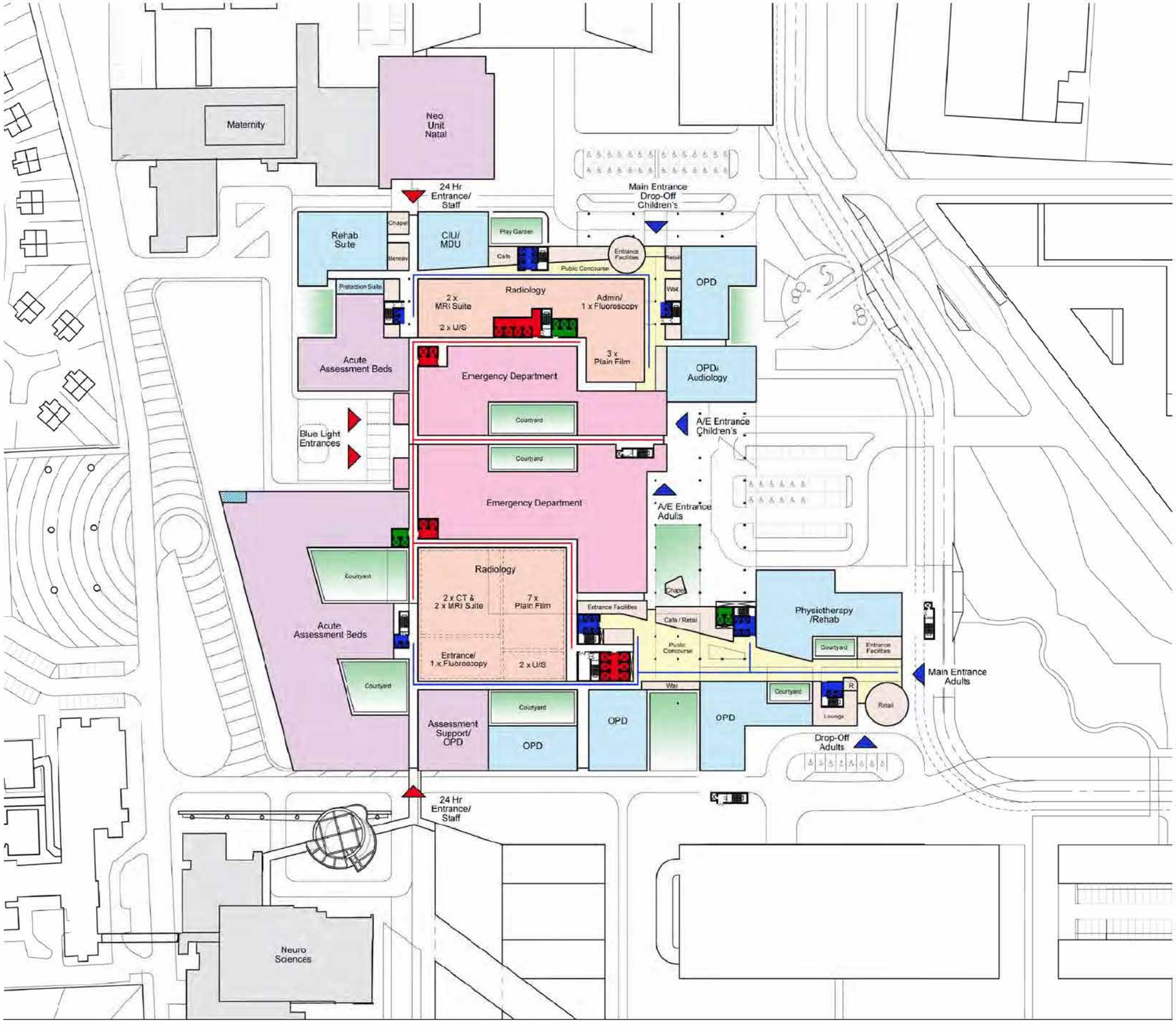


notes

| rev | date | drawn by | checked by | description |
|---|---|---|---|---|
| A | 05.06.07 | CA | IS | General Amendments |

| | |
|---|---|
| date of first issue | status |
| 23.03.07 | PRELIMINARY |
| scale | size |
| 1: 1000 | A2 |
| drawn by | checked by |
| CA | IS |

| | |
|---|---|
| project | NEW SOUTH GLASGOW HOSPITALS |
| drawing | OBC Scheme Adjacency Plan Ground Floor |

| drawing number | revision |
|---|---|
| 05017-GA-000 | A |

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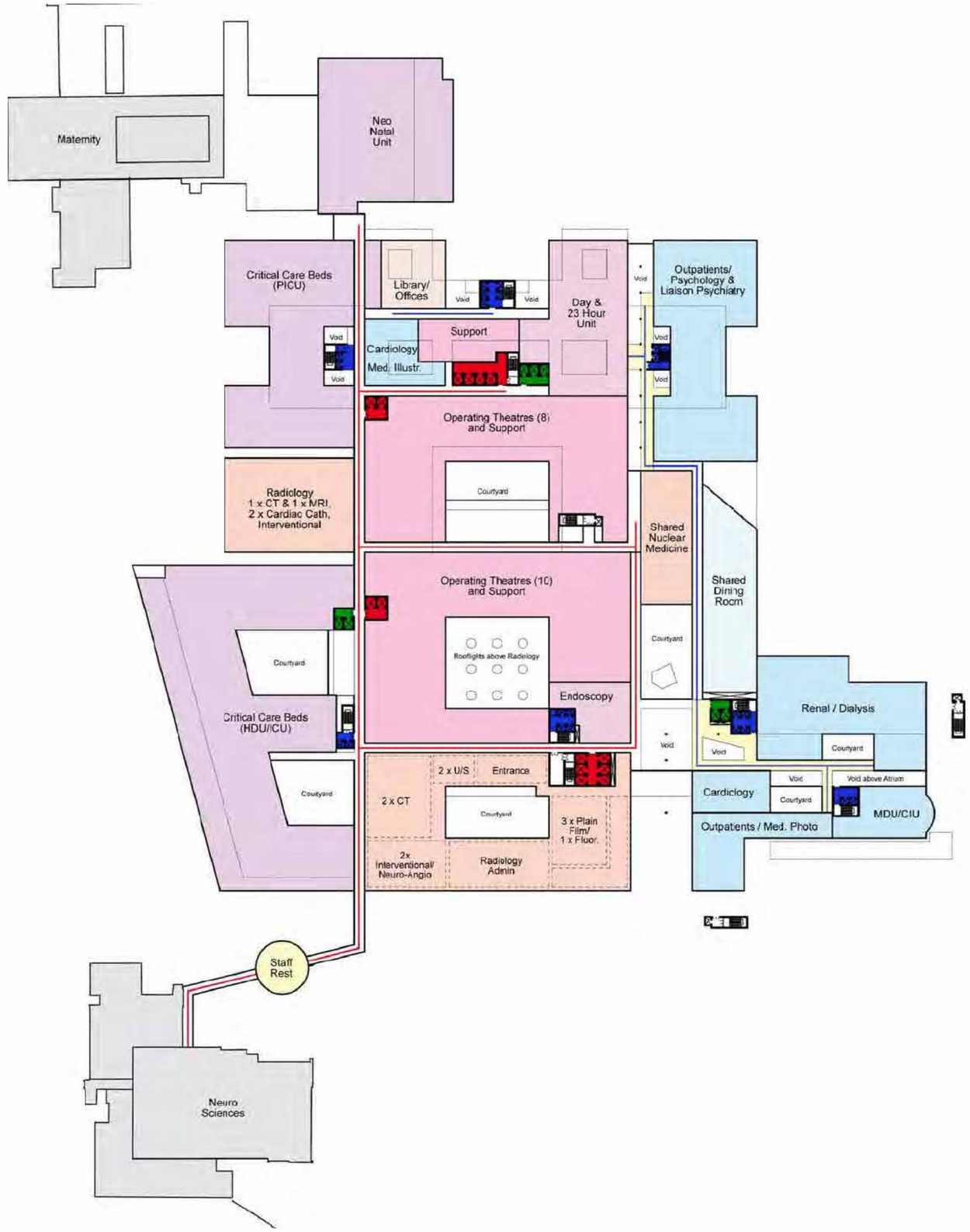


notes

| rev | date | drawn by | checked by | description |
|---|---|---|---|---|
| A | 05.06.07 | CA | IS | General Amendments |

| | |
|---|---|
| date of first issue | status |
| 23.03.07 | PRELIMINARY |
| scale | size |
| 1: 1000 | A2 |
| drawn by | checked by |
| CA | IS |

project: NEW SOUTH GLASGOW HOSPITALS

drawing: OBC Scheme Adjacency Plan First Floor

drawing number: 05017-GA-001

revision: A

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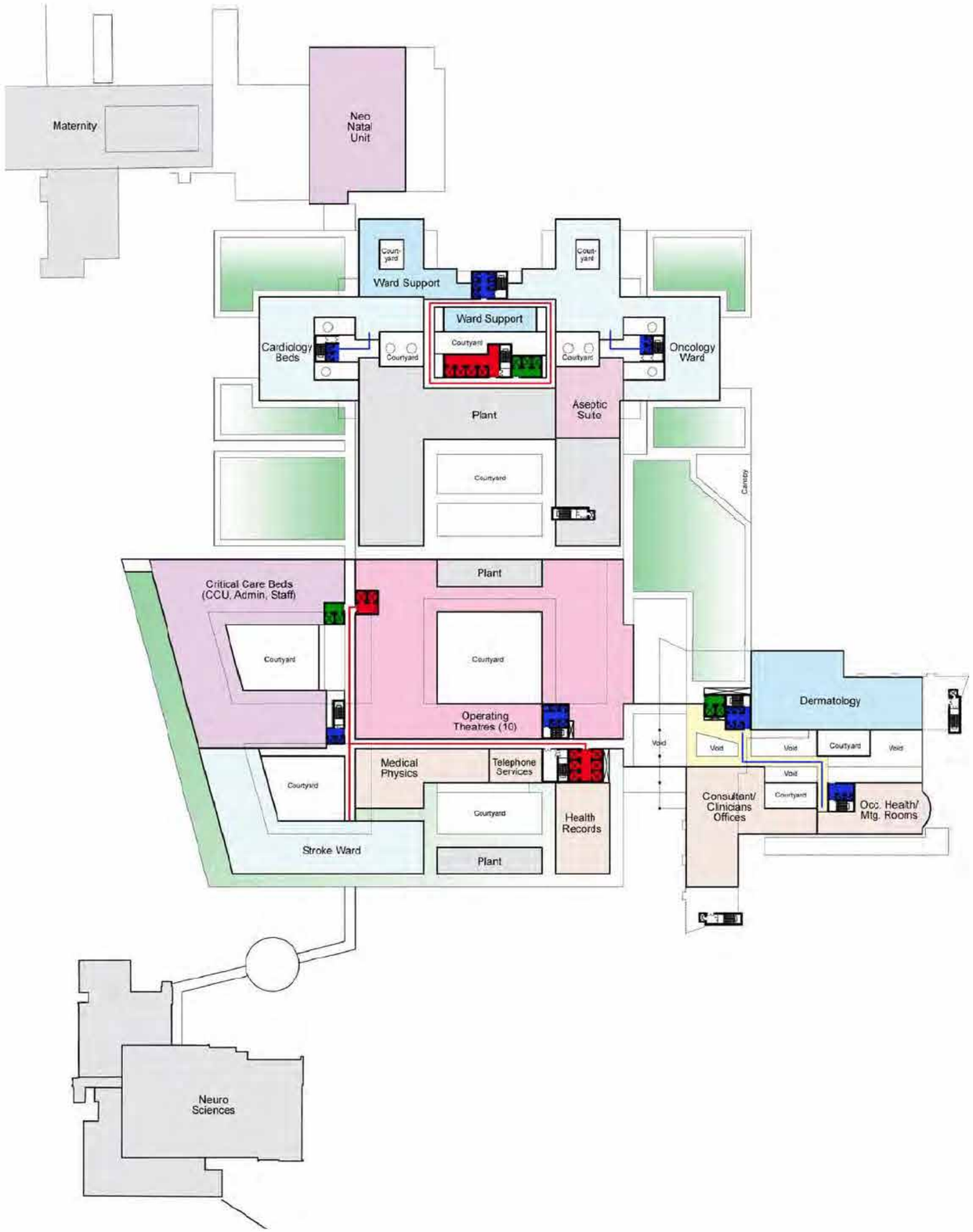


notes

| rev | date | drawn by | checked by | description |
|---|---|---|---|---|
| A | 05.06.07 | CA | IS | General Amendments |

| | |
|---|---|
| date of first issue | status |
| 23.03.07 | PRELIMINARY |
| scale | size |
| 1: 1000 | A2 |
| drawn by | checked by |
| CA | IS |

| | |
|---|---|
| project | NEW SOUTH GLASGOW HOSPITALS |
| drawing | OBC Scheme Adjacency Plan Second Floor |

| drawing number | revision |
|---|---|
| 05017-GA-002 | A |

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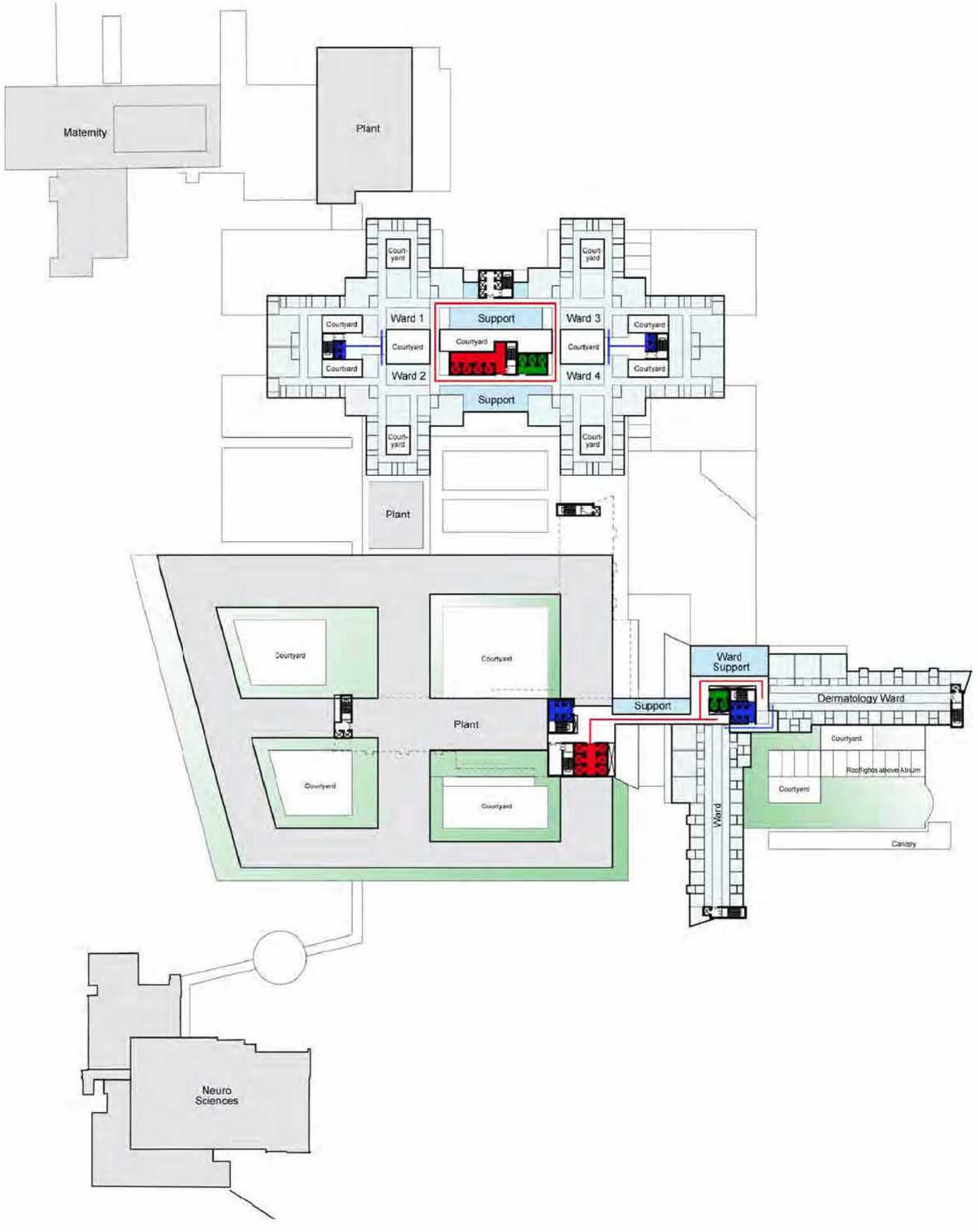


notes

| rev | date | drawn by | checked by | description |
|---|---|---|---|---|
| A | 05.06.07 | CA | IS | General Amendments |

| | |
|---|---|
| date of first issue | status |
| 23.03.07 | PRELIMINARY |
| scale | size |
| 1:1000 | A2 |
| drawn by | checked by |
| CA | IS |

| | |
|---|---|
| project | NEW SOUTH GLASGOW HOSPITALS |
| drawing | OBC Scheme<br>Adjacency Plan<br>Third Floor |

| drawing number | revision |
|---|---|
| 05017-GA-003 | A |

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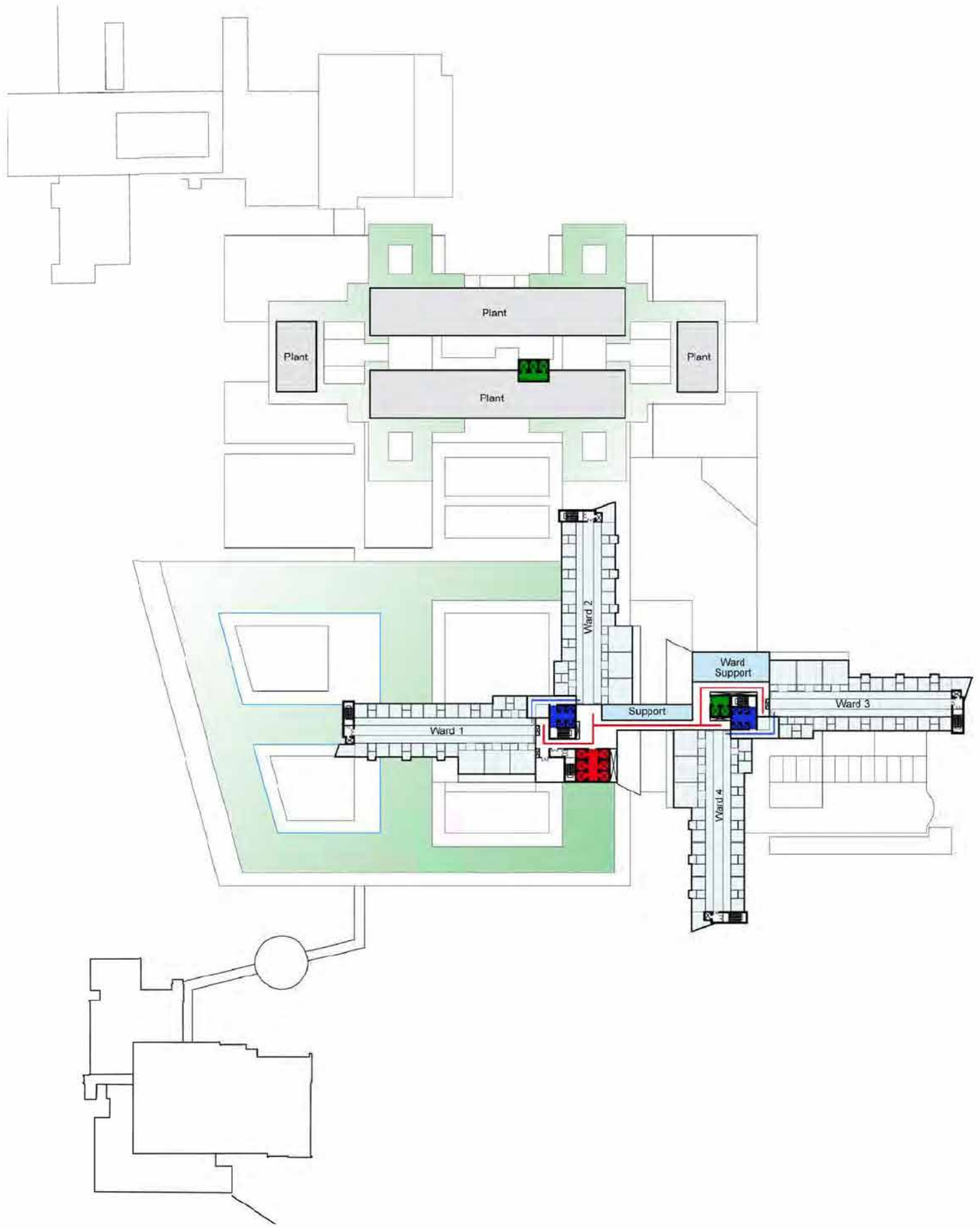


notes

| rev | date | drawn by | checked by | description |
|---|---|---|---|---|
| A | 05.06.07 | CA | IS | General Amendments |

| | |
|---|---|
| date of first issue | status |
| 23.03.07 | PRELIMINARY |
| scale | size |
| 1:1000 | A2 |
| drawn by | checked by |
| CA | IS |

| | |
|---|---|
| project | NEW SOUTH GLASGOW HOSPITALS |
| drawing | OBC Scheme Adjacency Plan Fourth Floor |

| drawing number | revision |
|---|---|
| 05017-GA-004 | A |

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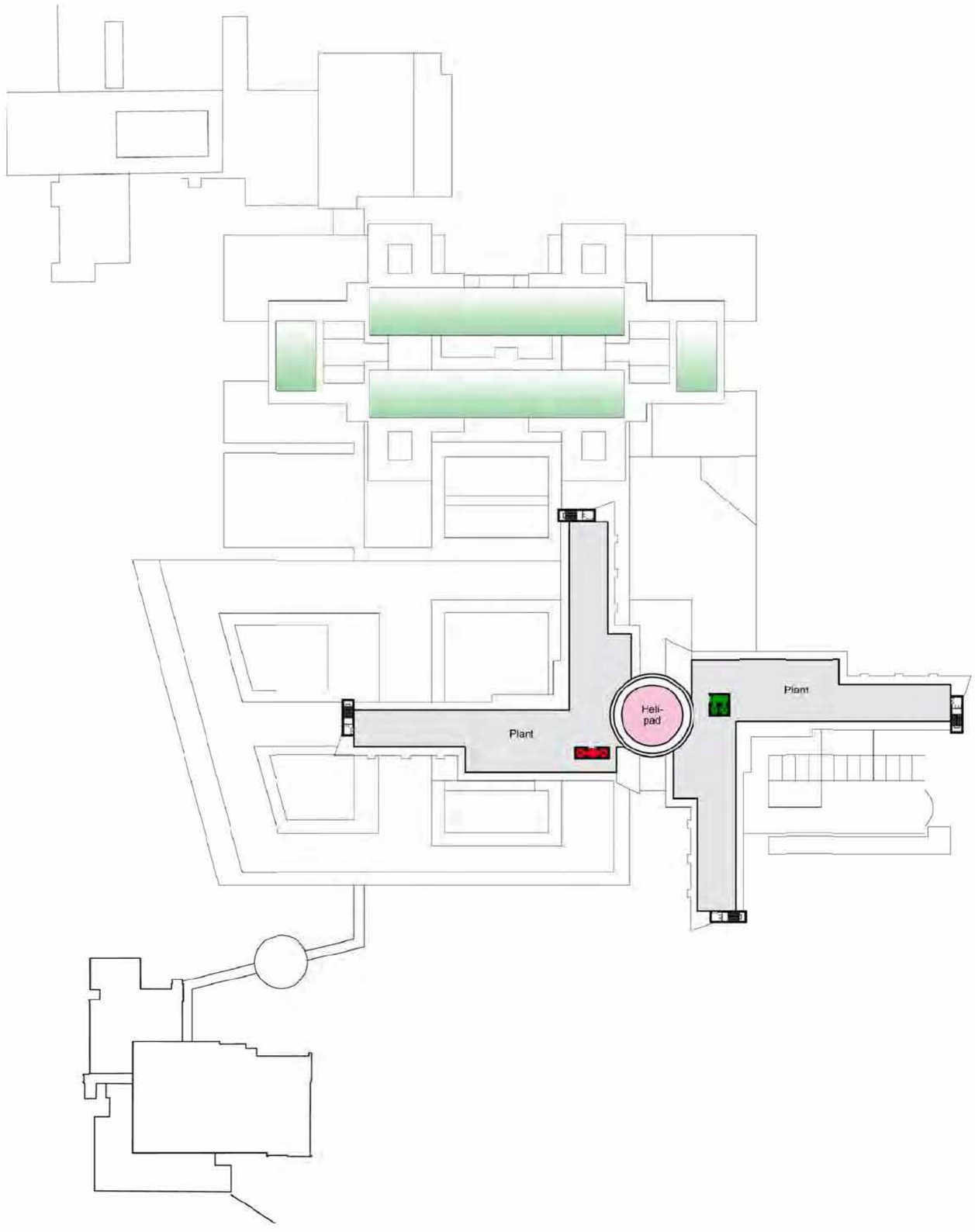


notes

| rev | date | drawn by | checked by | description |
|---|---|---|---|---|
| - | dd.mm.yy | - | - | See amendment log |

date of first issue: 05.06.07

status: PRELIMINARY

scale: 1:1000

size: A2

drawn by: CA

checked by: IS

project: NEW SOUTH GLASGOW HOSPITALS

drawing: OBC Scheme Adjacency Plan Roof Level

drawing number: 05017-GA-005

revision: -

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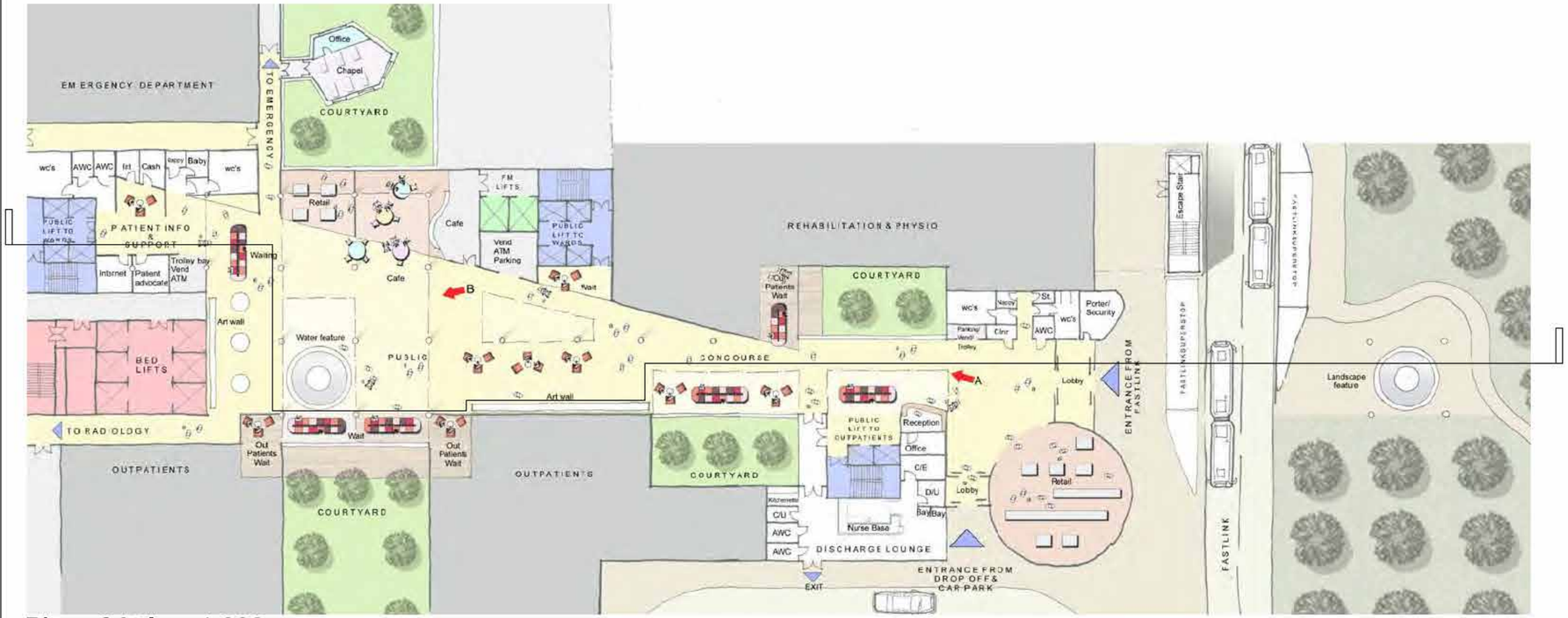
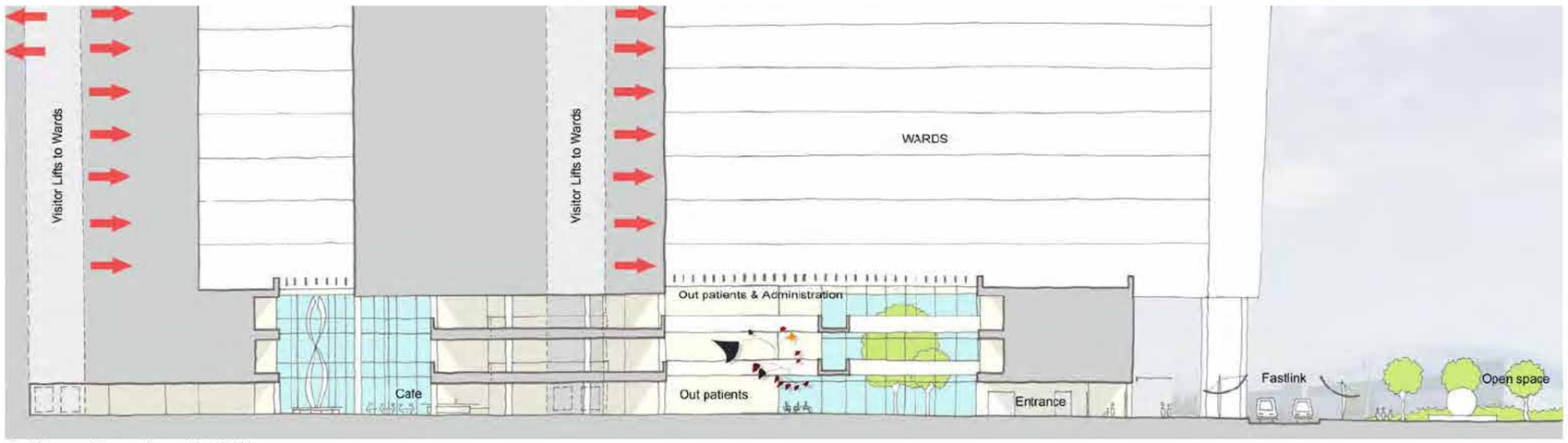
# Appendix 10
# 1:200 Design Layouts for New Adult Hospital

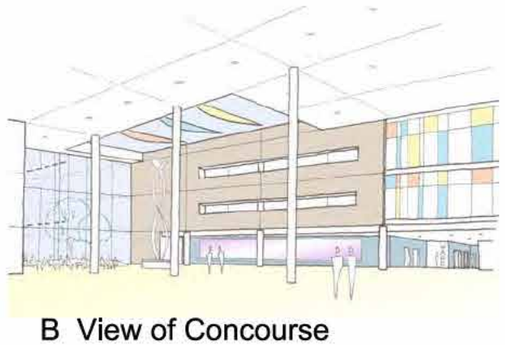



Plan of Atrium 1:200

A View from Main Entrance




Atrium Section1:200



B View of Concourse

| | | | | |
|---|---|---|---|---|
| A | view | ra | 04 | title |
| rev | date | drawn by | checked by | |

date of first issue: 09.08.07
status: PRELIMINARY
scale: 1:200
size: A0
drawn by: JP
checked by: BS

project: New South Glasgow Hospital
drawing: Adults Atrium

drawing number: 05017-GA-ATR-001
revision: -

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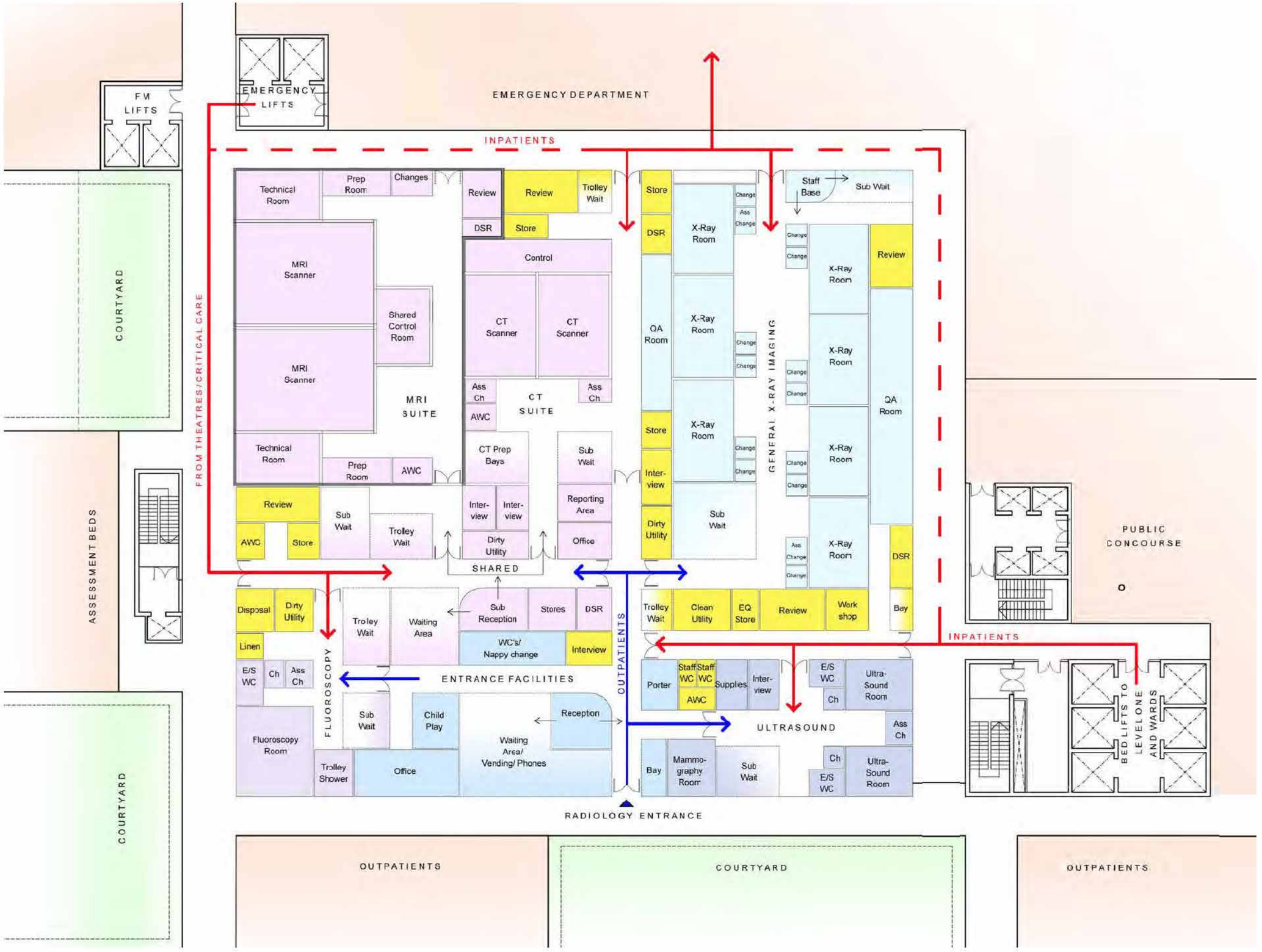
A49342285




notes

| rev | date | drawn by | checked by | description |
|---|---|---|---|---|
| A | 23.05.07 | CA | IS | User comments Incorporated |

| | |
|---|---|
| date of first issue | status |
| 16.05.07 | PRELIMINARY |
| scale | size |
| 1: 200 | A2 |
| drawn by | checked by |
| CA | IS |

| | |
|---|---|
| project | New South Glasgow Hospitals |
| drawing | Adults Radiology Outpatients Ground Floor |

| drawing number | revision |
|---|---|
| 05017-GA-RAD-003 | A |

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| rev | date | drawn by | checked by | description |
|---|---|---|---|---|
| A | 06.06.07 | CA | IS | User comments incorporated |

date of first issue: 18.04.07
status: PRELIMINARY
scale: 1:200
size: A1
drawn by: CA
checked by: IS

project: New South Glasgow Hospital
drawing: Adult Emergency Department

drawing number: 05017-GA-ED-001
revision: A

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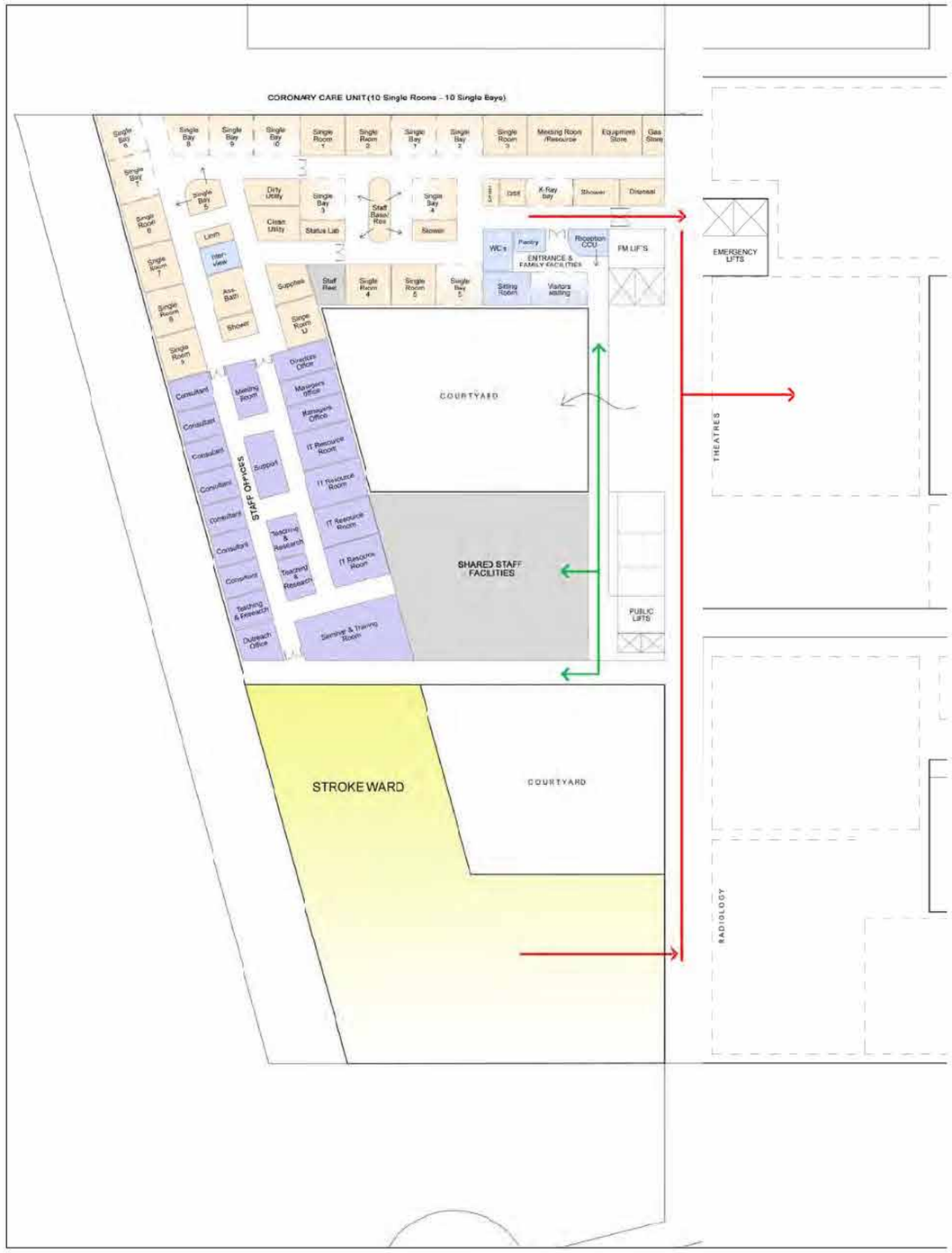


| | | | | |
|---|---|---|---|---|
| A | 17.04.07 | CA | BI | new comments incorporated |
| rev | date | drawn by | checked by | description |

date of first issue: 17.04.07
status: PRELIMINARY
scale: 1: 200
size: A0
drawn by: CA
checked by: BI

project: New South Glasgow Hospital
drawing: Adults Critical Care Option A

drawing number: 05017-GA-CCU-001
revision: A

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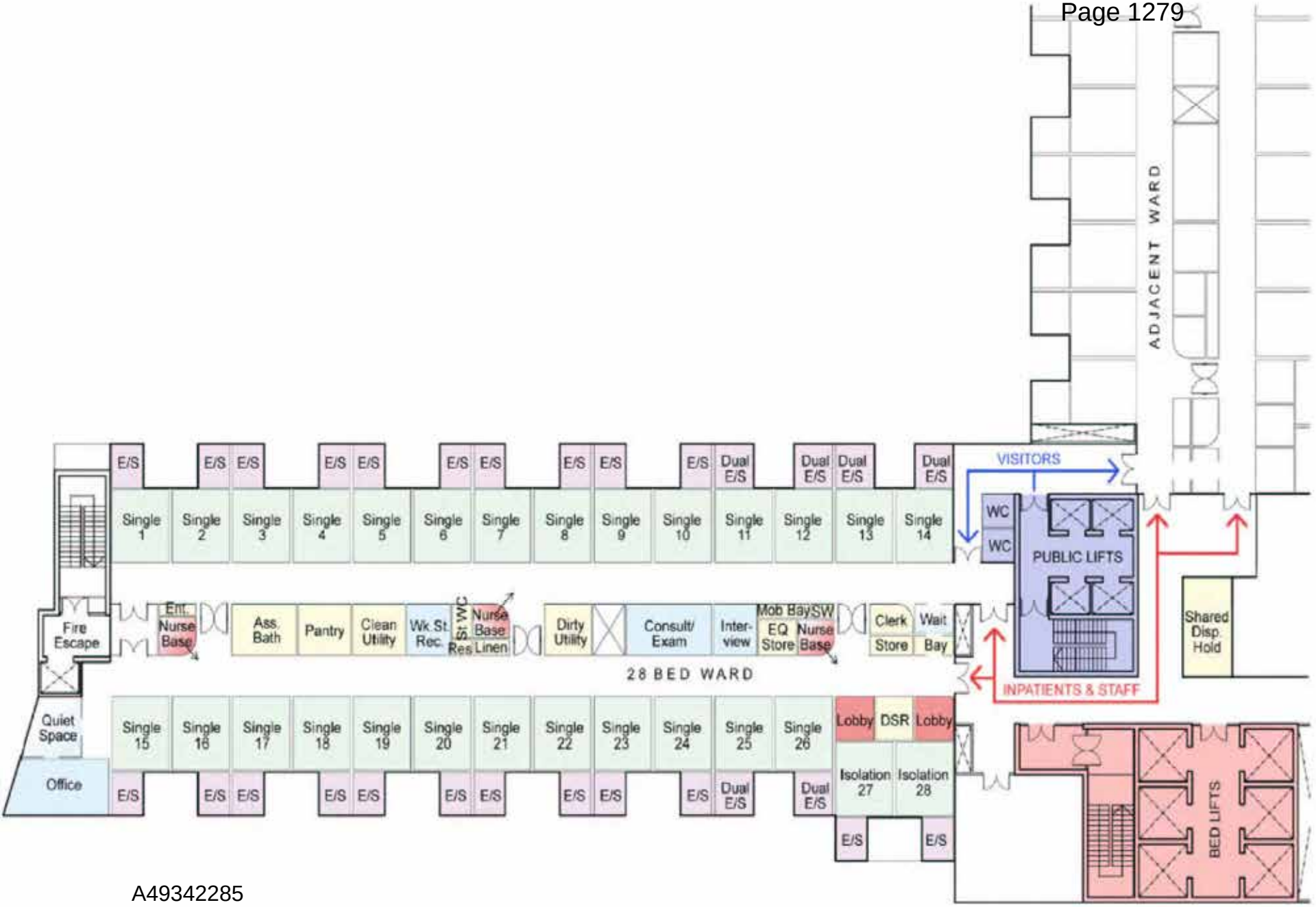

ADJACENT WARD
VISITORS
WC
WC
PUBLIC LIFTS
Shared Disp. Hold
INPATIENTS & STAFF
E/S
Dual E/S
Single 1
Single 2
Single 3
Single 4
Single 5
Single 6
Single 7
Single 8
Single 9
Single 10
Single 11
Single 12
Single 13
Single 14
Fire Escape
Ent. Nurse Base
Ass. Bath
Pantry
Clean Utility
Wk. St. Rec.
St. WC
Res
Nurse Base
Linen
Dirty Utility
Consult/ Exam
Inter-view
Mob Bay
EQ Store
SW Nurse Base
Clerk
Wait
Store
Bay
28 BED WARD
Quiet Space
Office
Single 15
Single 16
Single 17
Single 18
Single 19
Single 20
Single 21
Single 22
Single 23
Single 24
Single 25
Single 26
Lobby
DSR
Lobby
Isolation 27
Isolation 28
BED LIFTS

A49342285

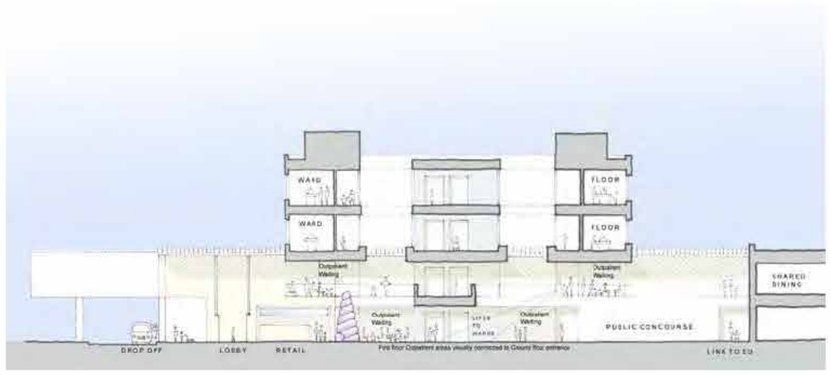
# Appendix 11
# 1:200 Design Layouts for New Children's Hospital

Plan of Atrium 1:200

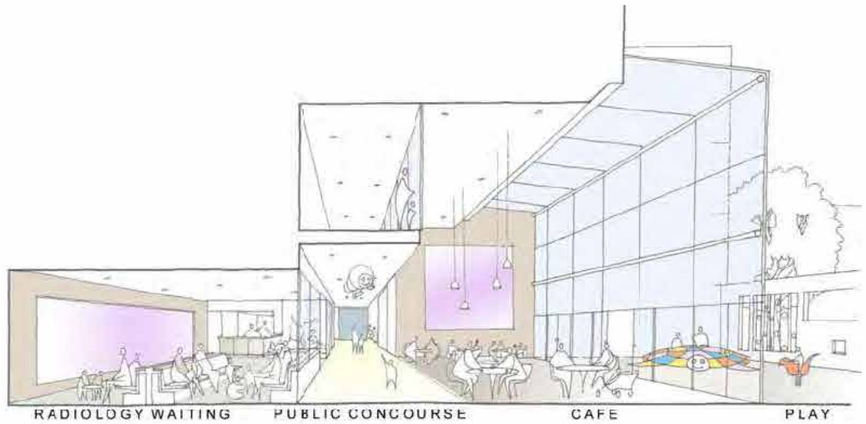
Flybot wayfinding system

Interactive display

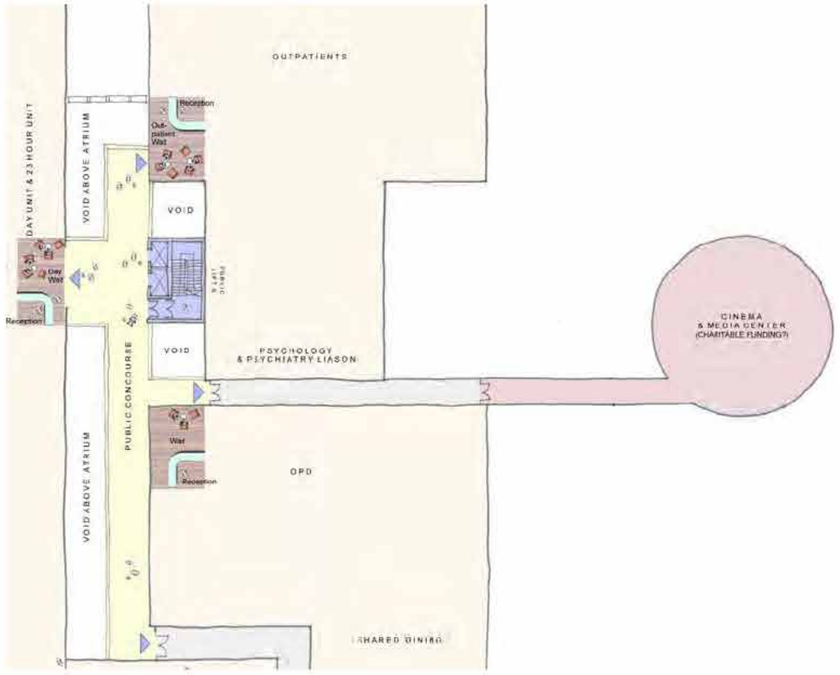
Space and Play




Section through Concourse 1:200




B View of Concourse




Atrium at Level One 1:200

A View from Main Entrance

| | | | |
|---|---|---|---|
| rev | date | drawn by | checked by |
| A | 17/04/07 | JP | IB |

New comments incorporated

date of first issue: 29.05.07
status: PRELIMINARY
scale: 1: 200
size: A0
drawn by: JP
checked by: IS

project: New South Glasgow Hospital
drawing: Childrens Atrium

drawing number: 05017-GA-ATR-002
revision: A

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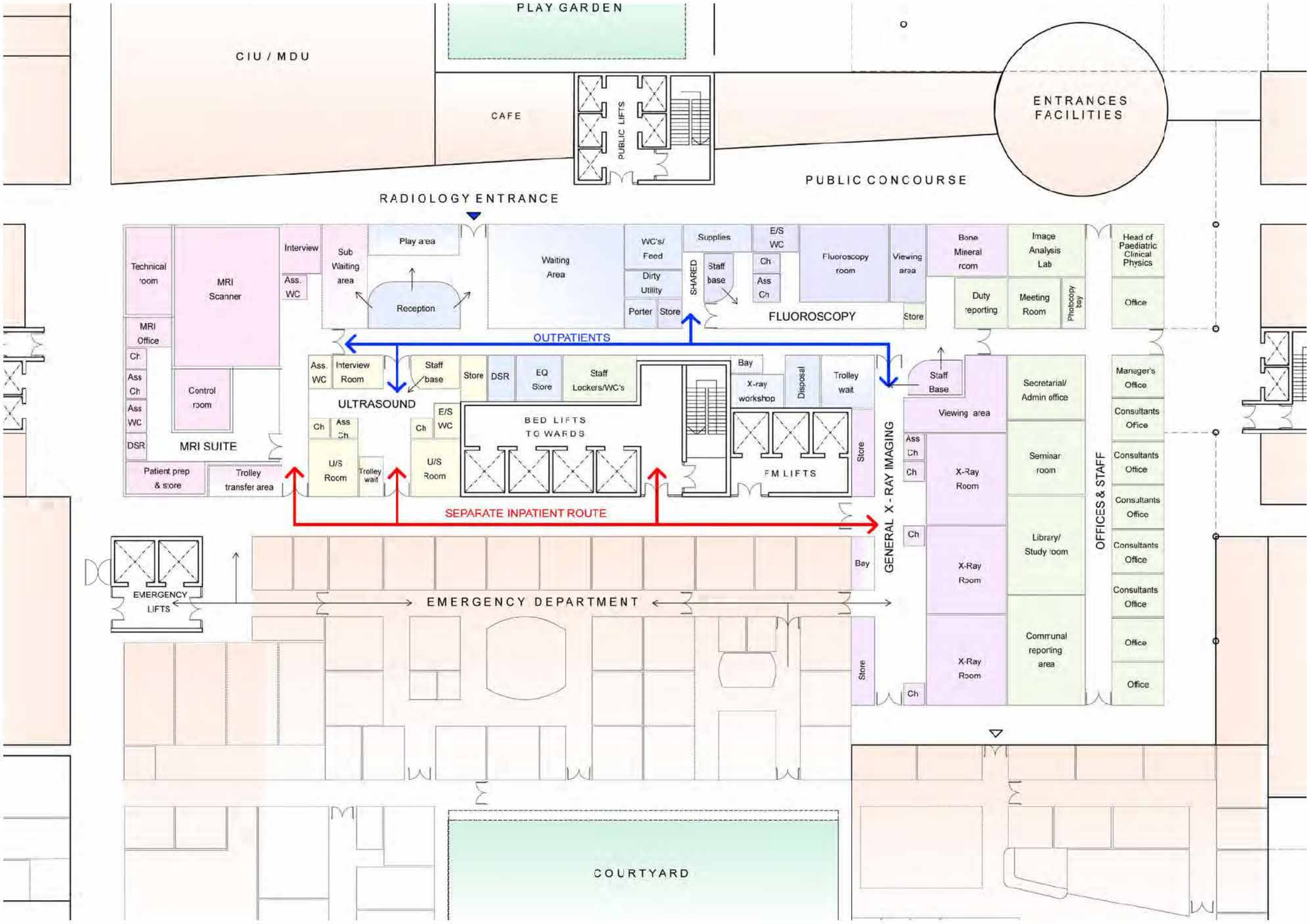


notes

| rev | date | drawn by | checked by | description |
|---|---|---|---|---|
| A | 08.06.07 | CA | IS | User comments Incorporated |

| | |
|---|---|
| date of first issue | status |
| 11.05.07 | PRELIMINARY |
| scale | size |
| 1: 200 | A2 |
| drawn by | checked by |
| CA | IS |

| | |
|---|---|
| project | New South Glasgow Hospitals |
| drawing | Childrens Outpatient Radiology |

| drawing number | revision |
|---|---|
| 05017-GA-RAD-001 | A |

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| | | | | |
|---|---|---|---|---|
| A | 08.06.07 | CA | IS | User comments incorporated |
| rev | date | drawn by | checked by | description |

date of first issue: 30.05.07
status: PRELIMINARY
scale: 1:200
size: A1
drawn by: CA
checked by: IS

project: New South Glasgow Hospital

drawing: Children's Hospital Critical Care

drawing number: 05017-GA-PICU-001
revision: A

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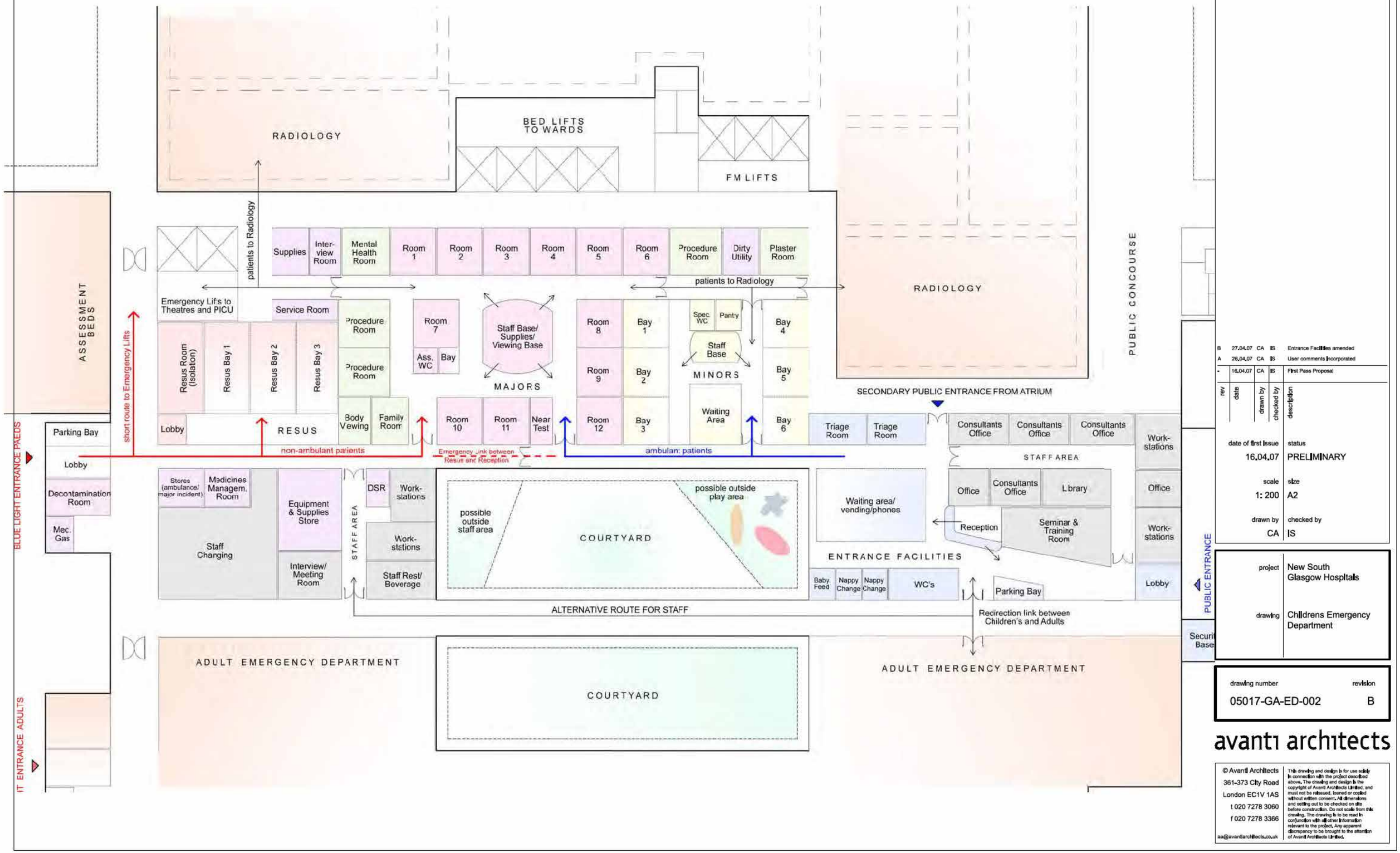


notes

| rev | date | drawn by | checked by | description |
|---|---|---|---|---|
| B | 27.04.07 | CA | IS | Entrance Facilities amended |
| A | 26.04.07 | CA | IS | User comments incorporated |
| - | 16.04.07 | CA | IS | First Pass Proposal |

| | |
|---|---|
| date of first issue | status |
| 16.04.07 | PRELIMINARY |
| scale | size |
| 1: 200 | A2 |
| drawn by | checked by |
| CA | IS |

| | |
|---|---|
| project | New South Glasgow Hospitals |
| drawing | Childrens Emergency Department |

| drawing number | revision |
|---|---|
| 05017-GA-ED-002 | B |

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| A | 08.06.07 | CA | IS | User comments incorporated |
|---|---|---|---|---|
| rev | date | drawn by | checked by | description |

date of first issue: 30.05.07
status: PRELIMINARY
scale: 1:200
size: A1
drawn by: CA
checked by: IS

project: New South Glasgow Hospital

drawing: Children's Hospital Critical Care

drawing number: 05017-GA-PICU-001
revision: A

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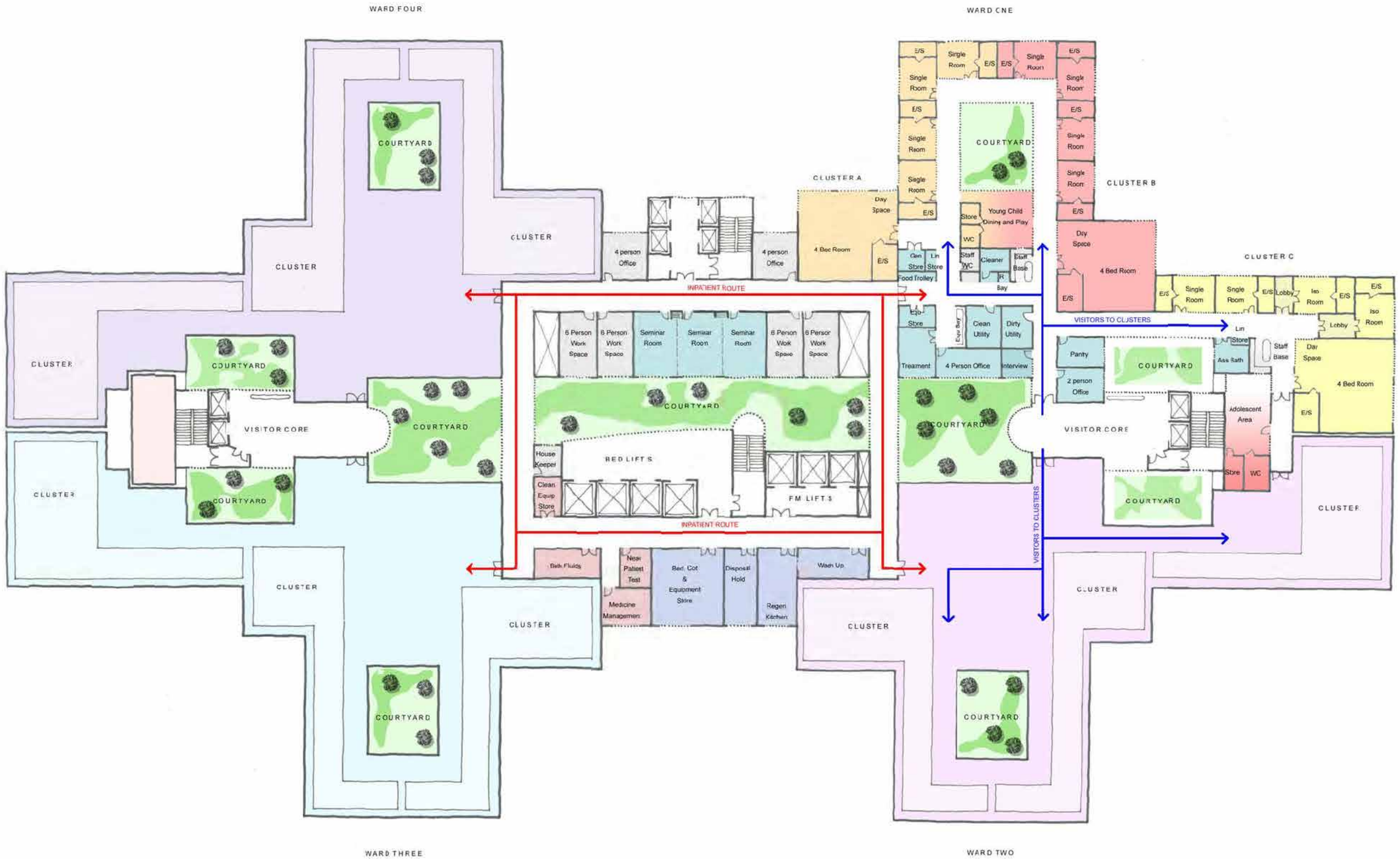


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| CA | IS |

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| 05017-GA-WARDS-003 | - |

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# Appendix 12
# Outline Business Case for the Labs Development

# Appendix 13
# Risk Management Plan

## Appendix 13 Project Management Risks - Table To Show Risk Management Strategy

| Risk | Description | Consequence of Occurrence | Risk Management Policy |
|---|---|---|---|
| **Design and construction risks** | | | |
| 1. Unavailable site | Risk of unavailability of suitable site – i.e. unable to clear identified site | Unavailability of site would delay the start of build and add to the project costs. | The planned site (Southern General) is identified and owned by the Health Board. There is a comprehensive plan of enabling works to allow the site to be cleared in 2009. The plan has been shared and is supported by relevant stakeholders. |
| 2. Planning Permission | Risk of failure or delay to obtaining outline planning permission. | Going out to market without planning permission would decrease the potential attractivenesss of the scheme therefore reduce the potential number of bidders | The Health Board is liaising regularly with the City Council. The risk components of the planning submission have been identified and are being managed by the Project Team on an ongoing basis.<br><br>Conditional approval subject to the Section 75 legal agreements has been received. |
| 3. Inadequate design | Design brief not adequate to allow the planning of a facility which meets the desired clinical and functional needs. | Inappropriate design would result in changes and therefore delays and cost to the project. Poor spec would also make the project unattractive to the market | There is ongoing involvement and input of users to ensure the brief is both detailed and meets user/clinical needs. |
| 4. Failure to design to brief | Failure of design team to translate the requirements of NHSGG&C into the design | Failure to design to specification would result in changes and delays to the build | There will be on-going involvement of users in the design and evaluation of bidders and close monitoring of the design process by the Project Team |

| Risk | Description | Consequence of Occurrence | Risk Management Policy |
|---|---|---|---|
| 5. Change in requirements of stakeholders | Risk that Board and/or stakeholders may require changes to the design e.g. legislative or regulatory requirements specific to the NHS. | May lead to additional design and building costs and a delay the timetable | The Health Board will minimise the use of variation orders once the contract has been awarded. It is envisaged that the specification will be well developed prior to issuing any briefing documentation. Any known potential change in legislation will be taken into account within the output specification.<br><br>Already considered current clinical reviews which may create design changes. |
| 6. Ground Conditions | Unforseen ground site conditions | Potential to delay start of build causing increase in project costs | The Southern General Estates team have undertaken a thorough survey of ground conditions to minimise the risk of unforseen ground conditions |
| 7. Cost estimates incorrect | Costs incurred to complete the project may be different from that estimated. E.g. Market prices differ from surveyor estimate. | Cost of the project increases. | Cost estimates QS have been confirmed through independent checks. |
| 8. Timetable – The Project will be delivered within acceptable timescales | The project is delayed. | The new hospitals are not constructed and commissioned within stated timescale adding to the cost of the project | Project timetable has been developed in liaison with technical, financial legal advisers. Also taken soundings from construction companies.<br><br>Careful monitoring of the project timetable against progress will be needed. The Project Team will be working in close liaison with the organisations involved in the delivery of the new hospitals therefore any deviation from the timetable will be flagged up at an early stage with corrective action taken where possible |
| 9.Equipment costs | Risk that equipment costs are greater than anticipated | The cost of the project increases | Procurement department have been involved in the project and costings from an early stage and will have an ongoing input thus reducing the risk of equipment costs. |

| **Capacity and Demand Risks** | | | |
|---|---|---|---|
| 10. The activity assumptions are correct | The activity is greater/less than stated | The building and equipment is under or over capacity | A detailed audit of activity and bed requirements was undertaken and reviewed by CHKS to project bed requirements into 2014. This has been discussed with/agreed with Directors.<br><br>Audits of A&E activity have been under-taken as has modelling of theatre requirements and utilisation. The Health Board will continute to monitor activity and other aspects such as waiting list activity and ensure a continuing match with the planned facilities on the Southern site and across Glasgow. |
| 11.Incorrect time and cost estimates for commissioning | Delay in handover | Impact upon clinical services with additional operational costs e.g. double running costs. | The Health Board will develop a detailed commissioning plan as the project progresses. This will be integrated into the overall project plan and key messages to stakeholders communicated. |
| 12. Service continuity will be maintained both prior to, and during the build and service relocation | Disruption to continuity of the service | Cancelled operations, disruption to patient services and failure to meet waiting time targets. | A detailed enabling plan has been developed by the Southern General Estates team to minimise any disruption to the operational clinical services on site. In addition the area for construction will be sealed off with the creation of a dedicated route for construction traffic into the site. The schedule of service transfer will be designed to ensure an orderly and effective transfer with minimum disruption of clinical service. There will be close communication with users both before, during and immediately after the transfers. New governance arrangements for delivery stage see the establishment of a site co-ordinating group who will directly control all programmes. |
| 13. HR Issues associated with relocating staff will be managed | Staff morale falls due to raised anxiety over the change | Increase in turnover; difficulty in recruiting, low motivation leading to deterioration and disruption in service | Full time staff representatives are members of the ASR Programme Board and Project Executive Group. The benefits of the project will be highlighted e.g. better workng environment, fit for use facility<br><br>Nearer the time of build it is planned to develop a Human Resource sub – group with full time staff representation to address staffing issues, keeping staff informed and encouraging ownership of |

| | | | |
|---|---|---|---|
| | | | the change through involvement with Work Groups planning the commissiong of the building and new services. |
| **Other Risks** | | | |
| 15. Transitional costs | Costs are greater than stated. | Unfunded cost pressure | Transitional costs have been calculated drawing on the experience and outcome of a number of large capital projects around Glasgow NHS eg maternity new build at GRI, A&E build ( GRI) and West of Scotland Cancer centre phases 1 and 2. |
| Risk that IT costs are inaccurate | Actual IT costs are higher than stated | Additional unfunded cost pressure | IT Department input has identified likely IT costs for the project. IT will have an ongoing involvement in reviewing costs between OBC and FBC. |
| The predicted sales proceeds from the vacated sites are assumed to be accurate | Actual sale proceeds are lower than stated | Lower than predicted sales proceeds will introduce a cost pressure to the Board and overall affordability of the project | A prudent approach has been taken in the estimates of the sale proceeds |
| The revenue savings/costs are realistic.<br><br>Revenue savings/costs | The revenue savings/costs are realistic | The actual revenue savings are lower than anticipated | The Board will conduct a vigorous review of savings to ensure that they are achieved. |
| **Capacity and Demand Risks** | | | |
| Other approvals required | Sign off of Children's Hospital of West Scotland Health Boards | Delay in sign off leading to delay and incrrease in the cost of the project. | The Board is in close liaison with the WofS Boards ensuring key aspects and costs of the project are communicated. Any points raised by the WofS Boards are being taken into account and liaison is ongoing. |
| Energy usage and greenhouse gas emissions | Risk of increase in energy usage and inability to meet gas emissions targets. | Energy costs rise and greenhouse gas emissioning targets are not met resulting in increased global warming. | Monitoring of energy usage and costs, training staff in energy efficient working practices. Increased use of renewable energy services. |

The Project Team considers effective risk management to be an integral part of successful project management. The development and implementation of risk management policy is considered an on-going process and the Project Team will continue to monitor the project, with its advisers and partners, for new risks and ensure that action is taken to address each risk appropriately.

# Appendix 14
# OB1 Forms for the New Adult and Children's Hospitals and New Laboratory Facility

# Appendix 15
# Optimism Bias Assessment

# Appendix 16
# Value for Money Appendices

# Appendix 17
# Risk Schedule

# Appendix 18
# Benefits Appraisal

# Appendix 18 - Benefits Analysis

| | Description of Benefit | Weighting (out of 100) | Option 1 (Score out of 10) | Option 1a (Score out of 10) | Greenfield | Option 1 | Option 1a | Greenfield |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Score x Weighting | Score x Weighting | |
| | **Consolidation of Services**<br><br>Consolidate inpatient services onto 3 sites. Meeting key objectives of ASR.<br><br>Centralise and concentrate specialist clinical expertise to meet European Working Time Directive, New Deal for Junior Doctors, Modernising Medical Careers and need to sub specialise | 25 | 10 | 10 | 10 | 250 | 250 | 250 |
| | **Clinical Quality**<br><br>Tripe location of Adult, Children and maternity services leading to safer care for mothers and babies. Provide integrated neonatal unit.<br><br>Clinical Effectiveness and safety for patients. Create structured links to support services provided by primary care and social work. | 20 | 10 | 10 | 10 | 200 | 200 | 200 |
| | **Performance Improvement in Patient Services**<br><br>Increase clinical capacity, improve access to services, meet waiting time guarantees, increase number of one stop clinics, improved electronic records.<br><br>Separate elective from emergency activity leading to less cancellations and improve efficiency of procedures.<br><br>Delivery of age appropriate care. Provide care to adolescents & young people taking cognisance of their privacy & dignity needs. | 20 | 10 | 10 | 10 | 200 | 200 | 200 |

# Appendix 18 - Benefits Analysis

| | Description of Benefit | Weighting (out of 100) | Option 1 (Score out of 10) | Option 1a (Score out of 10) | Greenfield | Option 1 | Option 1a | Greenfield |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Score x Weighting | Score x Weighting | |
| | **Quality Environment**<br><br>Provide modern accommodation, fit for purpose. Promote a healing environment. Improve accessibility across the campus. Adherence to health and safety legislation. Compliance with building requirements. | 15 | 9 | 8 | 10 | 135 | 120 | 150 |
| | **Accessibility to Hospital**<br><br>Ensure uniform access for routine services across Glasgow. Ensure that wider social & diversity needs are incorporated into scheduling & care planning | 5 | 10 | 10 | 8 | 50 | 50 | 40 |
| | **Staff Facilities and Staff Motivation**<br><br>Positive impact for staff. Maximise use of facilities where possible for staff & the community through out of hours access e.g. rehab gyms, staff facilities. | 5 | 10 | 9 | 8 | 50 | 45 | 40 |
| | **Enhanced University Links**<br><br>Maintain and enhance academic links e.g. the Genetics research service provided at RHSC. | 5 | 9 | 9 | 9 | 45 | 45 | 45 |
| | **Environmental**<br><br>Minimise impact on environment during construction, reducing long term carbon output. Use of sustainable materials, maintaining biodiversity. | 5 | 9 | 8 | 6 | 45 | 40 | 30 |
| | Total | 100% | | | | 975 | 950 | 955 |

# Appendix 19
# Project Management Structure
# - Remit of Groups

**APPENDIX 19**

## 1) ASR PROGRAMME BOARD

### Role and Remit

The ASR Programme Board (ASRPB) is responsible for overseeing the delivery of the Acute Services Review. This includes the planning and implementation of the individual elements identified as necessary to achieve the strategic change and also the quantification of outcomes to ensure they are in line with the agreed aims and objectives of the Acute Services Strategy.

The ASRPB will ensure that all activities are in line with agreed principles and timescales. The ASRPB will receive updates regarding all aspects of planning and implementation of the Acute Services Review.

The ASRPB will ensure that the strategic direction is reviewed and confirmed as still appropriate (in line with Gateway 0).

The ASRPB will consider the wider implications of implementing the Acute Services Review including: the impact on local communities; providing direction and advice on liaising and working with the many interested parties, maximising local benefit through advocating good community planning processes are adhered to and ensuring that political sensitivities are managed appropriately.

The ASRPB will ensure the necessary linkages to delivery between elements of the strategy are being dealt with.

The ASRPB will ensure overall financial control is being managed and is kept within the parameters of the Board's expenditure.

The ASRPB will approve and monitor the appropriate governance is in place to ensure a successful outcome for each major element of the Acute Services Plan.

The ASRPB ensure that the performance of all aspects of planning and implementing the Acute Services Review is monitored and progressed at the appropriate level for a successful outcome.

The ASRPB will consider and approve specific aspects/proposals of the planning and implementation process to the agreed level of delegation.

## 2) NEW SOUTH GLASGOW HOSPITALS EXECUTIVE BOARD

### Role and Remit

The New South Glasgow Executive Board (NSGEB) will ensure that all activities of the Organisational Change Group (OCG) and Procurement & Finance Group (PFG) are co-ordinated and achieving the appropriate progress.

The NSGEB will have appropriate delegated authority to take forward necessary negotiations to ensure objectives are achieved, progress is maintained and business is concluded especially where time is critical to the ASR2 viability with respect to financial aspects and the implementation programme.

The NSGEB will report and advise the Acute Services Review Board (ASRPB) on all aspects of the implementation of ASR2.

The NSGEB will monitor all aspects of performance of the implementation of ASR2.

The NSGEB will provide change management control in that any change which impacts upon the project must be authorised by this Board before it can be implemented.

The NSGEPB will meet regularly (every 2 months) to assess programme progress. The NSGEPB will also meet as often as necessary when critical factors that may be detrimental to the progress of implementation of ASR2 require to be addressed.

## 3) ASR SYSTEMS REDESIGN GROUP

**Role and Remit**

The ASR Systems Redesign Group will oversee the impact of implementing the Acute Services Review (ASR) on the whole organisation and drive forward the service transformation programme which will include changes in activity, models of care and new ways of working.

As the project progresses the remit of this group will evolve from a strategic clinical redesign focus to a more operational focus. On this basis it is proposed that the chair will change to reflect the evolving remit. The ASR Systems Redesign Group will ensure that external and internal stakeholder involvement is at the heart of planned change and that a development plan for staff is fully supported and implemented to enable change to happen appropriately.

The ASR Systems Redesign Group will report to the New South Glasgow Hospital Executive Board and be accountable for ensuring a fully co-ordinated approach is adopted to completing the work to achieve the objectives of the ASR.

The ASR Systems Redesign Group will approve and commission all aspects of clinical/service redesign in order to provide assurance to the ASRPB that the programme of transformation and change is on target and achieving agreed objectives.

The ASR Systems Redesign Group will monitor the stakeholder management plan to assure it interfaces with the following organisations and manages these links appropriately.

- Scottish Government
- MP's/MSP's (Local politicians)
- City Council Members and Offices
- Town Planning/Heritage Groups/Architect and Design Scotland
- Neighbourhood Groups
- Patient Groups
- Local/National media, safety and sustainability

The ASR Systems Redesign Group will approve or make recommendations to ASRPB all aspects of

- Clinical Output Specs
- User Interface
- Bid Evaluation – (Service Based)
- Assure clinical functionality, safety and sustainability

## 4) PROCUREMENT AND FINANCE GROUP

The Procurement & Finance Group (PFG) will be responsible to New South Glasgow Hospitals Executive Board.

**Role and Remit**

The following describes the group's remit in respect of a) the procurement aspects and b) financial aspects.

**a) Procurement aspects**
The PFG is accountable for the planning and delivery of all procurement measures required to deliver the identified investment and services that fall within the scope of the whole project.

The PFG will ensure the following are completed to the satisfaction of the Acute Services Review Project Board (ASRPB):-

- Procurement Plan and timetable
- Procurement Administration
- Bid evaluation process and administration
- Procurement budget control
- Issues, risks, dependency logs administration
- Change control administration

The PFG will take forward and complete all aspects of:

- Negotiating commercial issue
- Draft Contracts/Final Contracts
- Report on issues affecting affordability to the Investment Board
- Examine financing proposals and make recommendations to the ASRPB.
- Bid evaluation
- Monitor funding competition
- Develop and report Value for Money (VfM) proposals.

The PFG will be responsible for attending to all technical requirements and issues which arise during the full procurement programme and hence oversee and approve the:

- Technical Output Specs
- Bid Evaluation Process
- Test technical viability of solutions
- All planning issues
- All changes to contract/design/specification

The PFG will oversee all aspects of commissioning and agree main programme interface with equipment installations.

The PFG will have specific NHS Board delegated authority to conduct and conclude negotiations at time critical and project critical moments of the procurement process.

**b) Financial aspects**
The PFG will oversee the whole investment programme associated with the implementation of ASR and will be responsible for the planning and completion of the procurement programmes including:

- New Adult and Children's Hospital complex
- Medical and Non-Medical Equipment
- IT Equipment
- All enabling schemes
- All advisor procurements (financial, legal & technical).

It will also be responsible for ensuring that critical expenditure forecasting for the project is in line with agreed income levels supporting the roll-out of the project and this will include:

- Approval, monitoring and reporting savings plans required to fund the project
- Income forecasting
- Financial risk management assessments
- Capital cost control approval, monitoring and reporting
- Incorporation of any new service developments are matched with income sources

The PFG will advise the Acute Services Review Project Board (ASRPB) on all major financial aspects of the project ensuring that any financial concerns are raised immediately.

The PFG will consider and approve all aspects of achieving Value for Money (VfM).

The PFG will ensure all Standing Financial Instructions (SFI's) are adhered to and that all financial transactions are enacted within the appropriate financial convention of accepted practice.

The PFG will monitor financial model and affordability and examine financing proposals to advise and make recommendations to ASRPB

**5) SITE PROGRAMME CO-ORDINATING GROUP**

The role of the Site Programme Co-ordinating Group (SPCG) will be to ensure that all construction projects on the Southern General Hospital Site are planned, developed and constructed in a co-ordinated matter to ensure that all potential impacts and risks that may occur in delivering a multi construction project environment are appropriately managed. The SPCG will report to the Procurement & Finance Group.

The SPCG will ensure that:-

- There is an overall site development plan which identifies every aspect of change being planned for the Southern General Hospital Site.

- There is an agreed critical path which identifies the key actions necessary to be taken to ensure all construction takes place in accordance with the agreed programming and the appropriate level of Health & Safety, cost, time and quality are delivered at all times.

- There is a Project Steering Group managing all individual projects on the Southern General Site and an accountable officer identified to deliver the project and take account of all other projects on the site.

- Priority is given to those aspects of the site development which will provide the least overall risk (including:- Health & Safety, cost, time and service implications).

- The SPCG will sign off all planned activity to ensure the agreed critical path for site development can be met taking account of:

    - Current clinical services requirements
    - Health & Safety
    - Cost
    - Time
    - Overall programme requirement

**6) PROJECT TEAM**

The Project Team are responsible for managing the planning and delivery of all aspects of the project up to Full Business Case.

**7) NEW ADULT HOSPITAL**

**New South Glasgow and ACH Directors Group**

The Group membership will include the Acute Directors and it's key role will be to:

- Act as a focus in driving and overseeing the user input and signing off the outputs, e.g. patient models, design plans and equipment.
- Provide drive and strategic vision for the clinical redesign, co-ordinating work from different specialties.
- Act as a first stage change management control considering financial and non-financial pacts before deciding whether or not the request proceed to the NSGEB for authorisation or otherwise.
- Act as a conduit for staff groups (medical, nursing, AHP's, technical, auxillary) and keep them up to date.

**8) NEW CHILDREN'S HOSPITAL**

**Clinical Planning Group**
The New Children's Hospital Clinical Planning Group delivers a programme of work agreed and directed by the Project Team. It operates within a clear framework of delegated decision making, bringing together the strands of work being led by the Project Team and the Clinical Advisory Group.

It ensures that there is positive and consistent involvement of the public and staff. It is informed by the views of children and young people.

# Appendix 20
# Project Management Structure
# - Membership of Groups

# Appendix 20

## Draft Membership for Governance Structure

### Acute Services Review Programme Board

**Chair : Tom Divers**

**Members:**

| | |
|---|---|
| Alan Seabourne | Project Director, New Hospitals' Project Team |
| Alastair Brown | Deputy Director of Delivery, Scottish Government Health Department |
| Alex McIntyre | Director of Facilities |
| Ally McLaws | Director of Communications |
| Brian Cowan | Medical Director |
| Calum Kerr | Scottish Ambulance Service Rep |
| Caroline Fee | JOC - Area Partnership Forum representative |
| Frances Lyall | Acute Partnership representative |
| Douglas Griffin | Director of Finance |
| Grant Archibald | Director of Emergency Care and Medical Services |
| Helen Byrne | Director of Acute Services Strategy, Implementation and Planning |
| Ian Reid | Director of HR |
| Iona Colvin | Director South West Glasgow CHCP |
| Jane Grant | Director of Surgery and Anaesthesia |
| Jim Crombie | Director of Diagnostics |
| Niall McGrogan | Head of Community Engagement and Transport |
| Peter Gallagher | Director of Finance (Acute) |
| Richard Copland | Director of Health, Information and Technology |
| Robert Calderwood | Chief Operating Officer |
| Rosslyn Crocket | Director of Women and Children's Services |
| Sharon Adamson | Head of Acute Services Planning and Redesign |
| Tony Curran | Head of Capital Planning and Procurement |
| Acute Director of Nursing | |
| *Ch(c)P Director (Clyde)* | |

**Attendees:**

| | |
|---|---|
| Anne MacPherson | Associate Director of Human Resources (Acute) |
| Heather Griffin | Project Manager, New Adult Hospital |
| Mairi Macleod | Project Manager, New Children's Hospital |
| Tony Cocozza | Head of Finance (Capital and Planning) (Acting) |
| | |
| Audit Scotland Rep | David McConnell/Jim Rundell |

Attendees will be invited to the meeting as and when required in support of the Members.

## New South Glasgow Hospitals Executive Board

| | |
|---|---|
| **Chair: Helen Byrne** | Director of Acute Services Strategy Implementation & Planning |
| Alan Seabourne | Project Director |
| Alex McIntyre | Director of Facilities |
| Brian Cowan | Medical Director |
| Douglas Griffin | Director of Finance |
| Peter Gallagher | Director of Finance - Acute Division |
| Robert Calderwood | Chief Operating Officer |
| Rosslyn Crocket | Director of Women & Children's Directorate |

Acute Director of Nursing
Technical Advisor
Legal Advisor
Financial Advisor
*Commercial Advisor*

## ASR Systems Redesign Group

| | |
|---|---|
| **Chair: Helen Byrne** | Director of Acute Services Strategy Implementation & Planning |
| **Co:Chair: Brian Cowan** | Medical Director |
| Alan Seabourne | Project Director |
| Ann Crumley | Head of Organisational Development – Acute Services |
| Anne MacPherson | Associate Director of HR |
| David Stewart | Associate Medical Director |
| Deborah den Herder | Director of Clyde Acute |
| Grant Archibald | Director of Emergency Care and Medical Services |
| Heather Griffin | Project Manager - Adult Hospital |
| Iain Wallace | Associate Medical Director |
| Ian Reid | Director of HR |
| Iona Colvin | Director South West Glasgow CHCP |
| Jane Grant | Director of Surgery & Anaesthetics |
| Jim Crombie | Director of Diagnostics |
| Karen Murray | Director East Dunbartonshire CHP |
| Mairi Macleod | Project Manager - New Children's Hospital |
| Mary Ann Kane | General Manager - Facilities |
| Morgan Jamieson | Project Medical Director, New South Glasgow Hospitals |
| Niall McGrogan | Head of Community Engagement and Transport |
| Richard Copland | Director of Health Information and Technology |
| Robert Calderwood | Chief Operating Officer |
| Robin Reid | Associate Medical Director - Diagnostics |
| Rosslyn Crocket | Director of Women & Children's Directorate |
| Sharon Adamson | Head of Acute Services Planning and Redesign |
| Tim Cooke | Associate Medical Director - Surgery & Anaesthetics |

Acute Director of Nursing
Area Partnership Forum representative
Acute Partnership representative
University representative
Communications representative

## Procurement & Finance Group

**Chair: Robert Calderwood** Chief Operating Officer

**Members:**

| | |
|---|---|
| Alan Seabourne | Project Director |
| Alec McIntyre | Director of Facilities |
| Grant Archibald | Director of Medicine |
| Helen Byrne | Director of Acute Services Strategy Implementation & Planning |
| Jane Grant | Director of Surgery |
| Mike Baxter | Scottish Government |
| Peter Gallagher | Director of Finance – Acute Division |
| Peter Moir | Head of Major Project – Capital Planning |
| Richard Copland | Director of Health Information and Technology |
| Tony Cocozza | Head of Finance (Capital Planning and Procurement) |
| Tony Curran | Head of Capital Planning |

Head of Procurement
Technical Advisor
Legal Advisor
Financial Advisor
Commercial Advisor — Independent (as per recommendation in the Gateway Review Report)

**Attendees:**

| | |
|---|---|
| Heather Griffin | Project Manager - Adult Hospital |
| Mairi Macleod | Project Manager - New Children's Hospital |
| Morgan Jamieson | New Children's Hospital - Medical Director |

Attendees will be invited to the meeting as and when required in support of the Members.

## Site Programme Co-ordinating Group

**Chair: Helen Byrne** Director of Acute Services Strategy Implementation & Planning

| | |
|---|---|
| Alan Seabourne | Project Director |
| Alex McIntyre | Director of Facilities |
| Tony Curran | Head of Capital Planning and Procurement |
| Project Leads | Lead Officers for each project |

Staff side representation
Health & Safety representation
Facilities Directorate rep
Local Communication rep

# Appendix 21
# Community Engagement

# Appendix 21 - Community Engagement

This section will detail the work undertaken under each of the key strands highlighted, how this will inform the OBC for the new hospitals and plans for further engagement.

**New South Glasgow Adult Acute Hospital**

Working in partnership with colleagues from the current Southern General Hospital an initial scoping exercise was undertaken to determine the views of patients, carers and volunteers on the physical design of the new adult hospital and inform the development of the OBC for the new adult hospital. The scoping exercise consisted of:

- 6 Focus Groups
- Questionnaire in medical and surgical wards
- Audit of complaints

In total over 242 individuals participated in the scoping exercise with approximately 60 participating in focus group discussions. These were organised around a number of specific themes. These included:

- Volunteers
- Carers
- Disabilities
- Black and Minority Ethnic Communities; and
- Patients

Questionnaires were distributed over a two-week period to Medical and Surgical wards in the Southern General Hospital. Patients were supported by ward staff to complete and return questionnaires. In total 182 completed forms were received.
Finally an audit of complaints specific to the physical environment of hospitals in South Glasgow was undertaken to identify key issues relating to the current hospital estate.

The initial scoping exercise identified a number of key themes and issues that were important in considering the future design of the new hospital. These included:

- The Hospital Environment (Internal/ External)
- Functionality
- Iconic and innovative design
- Facilities for staff, patients, carers and support groups
- Ward areas
- Accident and Emergency
- Maximising co-location of services
- Minimising travelling distances
- Accessibility
- Utilisation of green space

The findings of the scoping exercise were compiled into a detailed report (Appendix 7a). Individuals who participated in the scoping exercise met again to agree the content of the final report and discuss how the findings would be used in the future.

In addition, the Community Engagement Team has undertaken a series of presentations and inputs to local community organisations and structures to ascertain their views on the new adult hospital. These have included:

- South West Area Committee

- South Area Committee
- South East Area Committee
- Central Govan Action Plan
- Govan Community Council
- East Govan Community Council
- Greater Govan Social Inclusion Partnership
- Govan Craigton Housing Forum

This process has helped inform planning for our future engagement activities, in particular our approach to engaging around the New Hospitals Campus.

## New Children's Hospital

NHS Greater Glasgow and Clyde is committed to ensuring that families, children and young people are central to the planning for the New Children's Hospital. The first step of this commitment was to determine how children, young people and families wanted to be involved. So over a 3-month period, the Community Engagement Team conducted an extensive programme of consultation with families, support groups, charities, voluntary organisations, children and young people to determine a framework for community engagement on the buildings, services and design of the new hospital.

Over 150 groups and individuals took part in helping to shape the community engagement approach. Following this consultation an on-going community engagement structure has been agreed and implemented. This structure comprises:

A **Community Engagement Advisory Panel** with representation from clinical and nursing staff, the New Children's Hospital Project Team, Community Health & Social Care Partnerships, family support services, families and young patients. This group oversees community engagement activity in the New Children's Hospital. It ensures that the widest possible range of views are represented; that these are fed back into the planning and design processes; and that this activity is understood and supported within the existing Yorkhill hospitals.

A **Youth Panel** has been established to make sure that the issues, needs and hopes of young people are included in the design of the new hospital and a **Family Panel** provides guidance on how best to engage with families and to include their ideas in the planning and design processes.

This structure, will manage a comprehensive 5 year programme of engagement that seeks to:

- Build relationships with all interested groups
- Ensure that all aspects of engagement are conducted in an inclusive, sensitive and values-based manner
- Work with colleagues to ensure that patient and family input is central to the planning and design processes
- Develop community ownership for this significant development
- Ensure compliance with 'Fair for All' in promoting equality of participation and considering the specific impact of the development on any communities or equalities groups

The Community Engagement Manager leading on the New Children's Hospital manages these structures. In association with the Office of the Children's Commissioner for Scotland, the National Steering Group for Specialist Children's Services and the Scottish Health Council they are responsible for re-interpreting the PFPI agenda to ensure its' appropriateness for teenagers and children thus ensuring their full engagement. They are also responsible for ensuring that this process meets NHSGG&C's statutory responsibilities and PAF on Patient Focus and Public Involvement.

## Community Engagement on the Outline Business Case

NHS Greater Glasgow's Community Engagement Team and staff from the current children's hospital at Yorkhill undertook an initial scoping exercise with patients, children, young people, families and voluntary organisations who have used or have experience of the Royal Hospital for Sick Children to inform the development of the OBC around the physical design of the new hospital. The approach adopted sought to reflect Scottish Executive guidance on involving the wider public and in particular, excluded groups.

This project used a similar process to that undertaken previously for the scoping exercise for the new adult acute hospital. It used a number of qualitative and quantitative methods to engage with and gather feedback from children, young people and families. These were:

- A survey conducted in all wards and departments of Yorkhill. Community Engagement staff spent significant time in Yorkhill talking to families and patients and helping them to complete and return completed survey forms.
- Survey forms distributed to families in geographic communities outwith Glasgow that were independently completed and returned.
- 8 focus groups were held in Yorkhill and in the community with families and young people.
- A photography project by young patients recorded their views of the positive and negative features of the current buildings and physical environment
- An analysis of complaints relating to the physical environment was undertaken to identify key issues relating to the current hospital estate.

Through these methods the project met with, spoke to and heard from 320 parents/families, young people and children. These represented a wide range of groups and communities of interest. In particular it was successful in ensuring the participation of potentially excluded groups.

- 15% were aged 16 or under.
- 30% of parents had a child aged 0-5, 28% aged 6-11 and 22% aged 12-16
- 82% were white British, 7% Asian, 2% Chinese and 2% Black
- 7% of the sample was disabled, 31% were parents of a disabled child - sensory, cognitive and motor impairments were included
- 31% were or had been in-patients, 28% out patients and 31% were both in-patients and out patients. 1% of the sample was day patients

The key themes identified by this process were as follows: -

- The Hospital Environment – Fully integrated externally and internally
- Provides for staff, patients, carers and support groups
- Ward areas – Mix of single rooms and ward areas preferred
- Age appropriateness - Separate bed and play/recreation areas provided for children and teenagers
- Accommodation – Facilities for parents and families essential
- Space - Some single rooms to have sufficient space to accommodate a specialised bed, wheelchair, hoists and other equipment
- Interaction – Both communal facilities such as day or sitting rooms for families and quiet space important
- Way-finding – Co-location and compact site key
- Accessibility – Fully integrated into the design both external/internal
- Fit with wider environment and utilise green space
- Site access and car parking require to be integrated into the design

A detailed report is attached in Appendix 7a

Collectively, this process enabled a ‘snapshot’ of patient and families views to be gathered and fed into the design of the New Children’s Hospital at an early stage. The themes and issues highlighted present an initial perspective while more in-depth work, managed by the Community Engagement, Family and Youth Panels, will ensure that children, young people and families are fully engaged in the on-going project.

**Shared Themes**

In undertaking the separate processes for the adult and children’s hospitals a number of shared themes have been identified that are common to both hospitals and are important issues for service users. These include:

- Public access and car parking
- Public Transport penetration
- Way-finding and adjacencies
- Importance of outdoor space
- Importance of non-clinical space
- Accessibility

# Appendix 22
# Engagement Report
# - Children’s Hospital

Tell us what you think?

# Report on the initial scoping exercise to determine children, young people and family's aspirations for The New Children's Hospital

Kate Munro Niall McGrogan

NHS Greater Glasgow and Clyde Community Engagement Team

November 2006

A49342285

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## Acknowledgements

The Community Engagement Team would like to acknowledge the children, young people and families who shared their views with us and the support of Marjorie Gillies, Siobhan Smith, Frances McGuiness, Jeanette Weir, Zarina Shaheen and all the staff who helped us find out more about children, young people and families' hopes for the New Children's Hospital.

# Key Messages

The Community Engagement Team undertook a programme of work with children, young people and families to inform the Outline Business Case for the New Children's Hospital and to contribute to its design and planning processes. The key messages were:

**Wards & In-Patient Areas**

- There should be a mix of single rooms and ward bays. Some thought that the company of other families was supportive but for others the enhanced privacy of a single room was important
- Wards should include a bed, showers, toilets and kitchen access for parents. A communal laundry area would be welcomed.
- Age appropriate areas were recommended with separate bed and play/ recreation areas provided for children and teenagers
- Age appropriate play areas were highly valued with a desire expressed for appropriately located spaces, soft play areas and access to the outside.
- Day or sitting room for families and quiet space were very important

**Outpatients & Day Patients**

- Waiting areas should have age appropriate play areas, play facilities suitable for disabled children with access to an outdoor play area desired
- Parents of children with diabetes asked for a quiet room where they could administer injections
- A quiet waiting area away from the busy activity of the waiting areas would be welcomed by some parents, particularly those with children with autistic spectrum disorders
- A quiet space for parents would also help when dealing with bad news

**Facilities**

- Car parking was the biggest single difficulty identified
- Access by public transport was also noted as a difficulty
- A Family Centre and Parent Education Centre would be highly valued
- Parents valued cafés and restaurants
- Better access to a range of shops would be welcomed
- More spacious lifts with separate lifts for transferring patients between treatment areas and wards would be very welcome
- A central reception desk located at the point of entrance would be helpful

**Space**

- The current space in wards and outpatient areas was generally felt to be adequate but enhanced space between beds would be welcomed
- The exception to this was access for wheelchair users where there was a need for greater space, particularly in wards and single rooms
- Some single rooms had to be large enough to accommodate a specialised bed and wheelchair, hoists and other equipment with enough room for disabled children and young people to transfer from bed to a wheelchair

- Toilets needed to be bigger for access for wheelchairs and buggies and a bed/ plinth and hoist for changing children and young adults
- Greater storage space in wards and single rooms would be welcomed

**Adjacencies**

- Family toilets and shower facilities should be located inside wards
- Car parking needs to be located close to the hospital to facilitate access for disabled children and those pushing buggies
- Easy access to a café/tea bar was important for all families but particularly those who were staying in the hospital
- Outpatients should be co-located with play areas and, if possible, an outdoor or soft play area
- The Family Bereavement Centre should not be located near to or on a path to the morgue or viewing facilities
- The neurological unit and neurological ward should be close together with the EEG Department in close proximity
- ITU/HDU would benefit from close proximity to a quiet room or chapel

# Introduction

Glasgow is to have a new hospital for the treatment and care of children and young people. This development, which will take place on the site of the Southern General Hospital, represents a significant element in Glasgow's ambitious plans for modernising acute services. The New Children's Hospital project will deliver a world-class facility providing local, regional and national services. In addition, the site is strategically placed to complement, and benefit from, the development of the New South Glasgow Hospital. The triple co-location of adult, maternity and children's facilities will help to ensure that mothers, babies, children and young people receive the best treatment available within modern, fit-for-purpose hospitals.

The Outline Business Case (OBC) describes the initial thinking behind the project and defines a framework for the project's future development. Therefore, it is important that the OBC for the New Children's Hospital project reflects not only NHS Greater Glasgow and Clyde's vision but also the views and aspirations of those who use it. The Minister for Health and Social Care, Mr Andy Kerr MSP and the Chairman of NHS Greater Glasgow and Clyde, Sir John Arbuthnott, have made it clear that they want to see children, young people and families involved in the design of the new hospital and in the services it will offer. This will ensure that the hospital offers not just the best clinical treatment possible but also buildings and facilities that support them through difficult times.

Therefore, NHS Greater Glasgow's Community Engagement Team and staff from the current children's hospital at Yorkhill undertook an initial scoping exercise with patients, children, young people, families and voluntary organisations who have used or have experience of the Royal Hospital for Sick Children at Yorkhill to inform the development of the OBC around the physical design of the new hospital. The approach adopted sought to reflect Scottish Executive guidance on involving the wider public and in particular, excluded groups.

''The Scottish Executive Health Department (SEHD) and NHS Scotland are committed to an inclusive process of communication, where the public have opportunities to influence decision making''

Patient Focus and Public Involvement

Similarly, the Fair for All approach requires the considerations of equality for ethnic minorities and other potentially excluded groups and whether proposed policy or service development, including service change will have specific impacts on any communities or equalities groups.

This paper provides an overview of the process involved in engaging with communities of interest around the New Children's Hospital project, summarises the key findings from the engagement activities and highlights the broad concepts and themes identified.

## Process

This project used a number of methods to engage with and gather feedback from children, young people and families. These were:

- A survey conducted in the wards and departments of Yorkhill
- Survey forms distributed to geographic communities
- Focus groups with families and young people

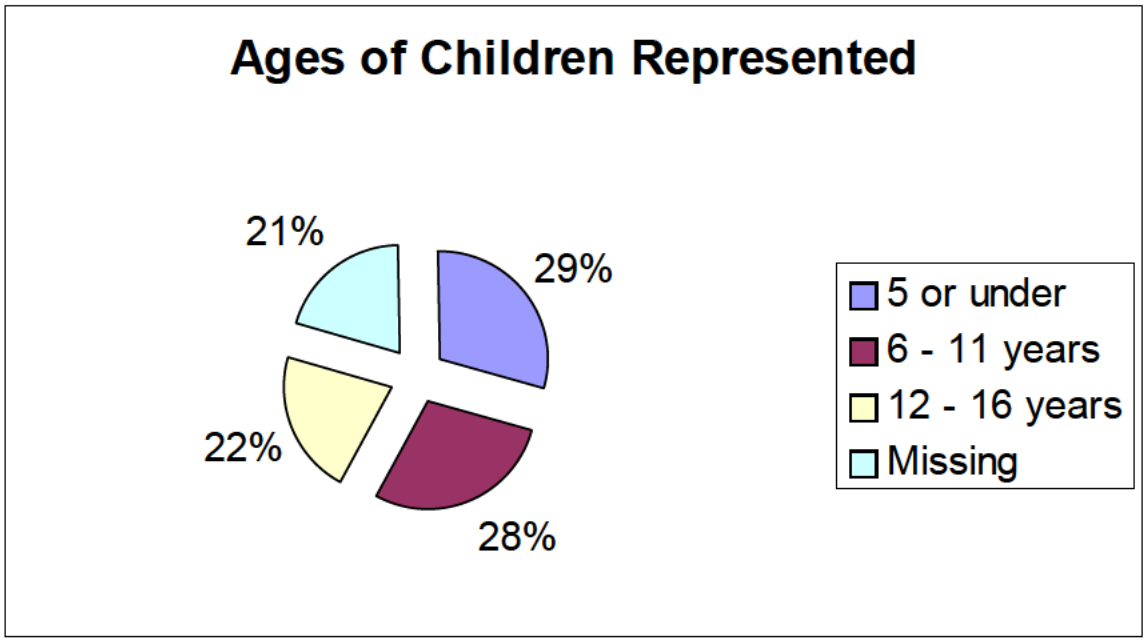
An analysis of complaints relating to the physical environment

Through these methods the project met with, spoke to and heard from 280 parents/families, nearly 30 young people and 5 younger children

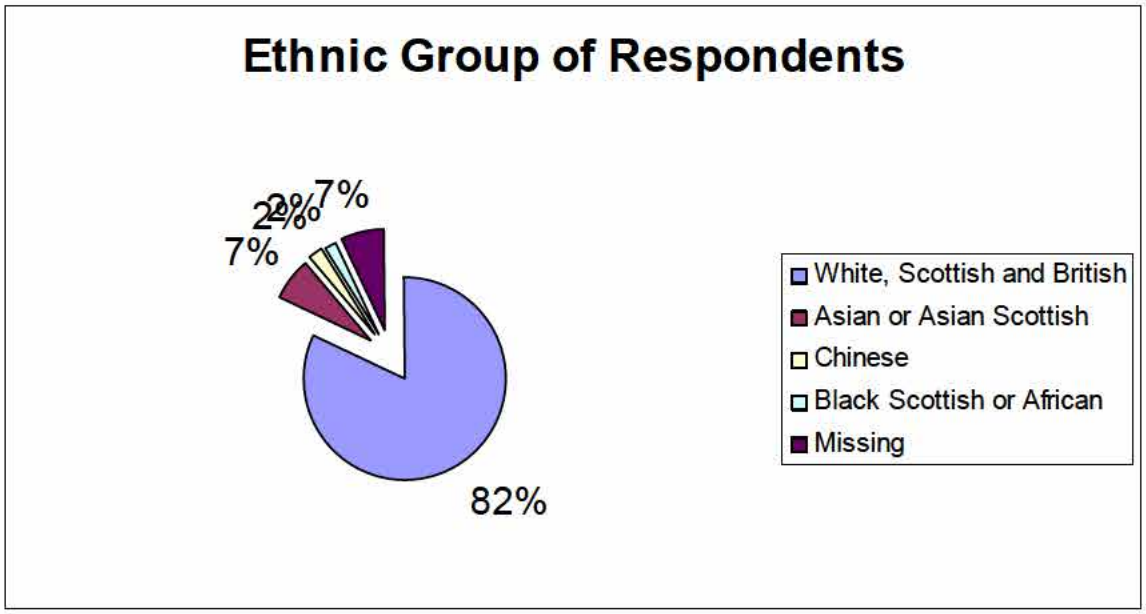
The principal method of engaging with families was a **survey** delivered by the Community Engagement Team in the wards and departments at Yorkhill. It had been hoped to provide the survey form on-line to facilitate access for geographic communities but this did not prove possible within the short time frame available. Instead, national charities and voluntary organisations supported the survey by distributing it to their membership.

In total 189 responses were gathered that allowed patients and families to comment on aspects of the existing hospital's physical design and how important they rated specific elements i.e. ward facilities. The survey respondents represented a wide range of groups and communities of interest. In particular it was successful in ensuring the participation of potentially excluded groups.

68% of the respondents were female and 25% male (7% of the data was missing). Most were aged between 25 and 40 years but, importantly, 9% were aged 16 or under. Of the parents who responded 30% had a child aged 0-5, 28% had a child aged 6-11 and 22% had a child aged 12-16 (21% missing)

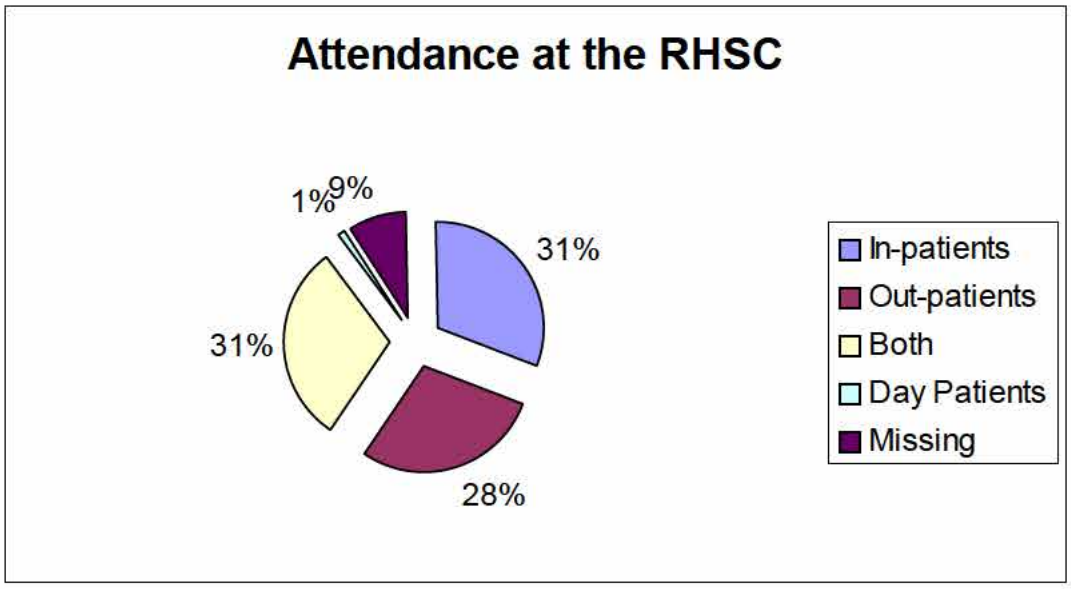


The sample respondents overwhelming described their ethnic groups as white Scottish (82%) but 7% were Asian or Asian Scottish, 2% Chinese and 2% Black Scottish or Black African (7% missing). 7% of the survey respondents were Muslim, 0.5% were Hindu and another 0.5% Sikh. These figures compare favourably with the composition of the black and ethnic minority community within the NHS Greater Glasgow and Clyde area.




The needs and perspectives of disabled people were also well represented as 7% of the sample identified themselves as disabled and 31% were parents of a disabled child. Children with sensory, cognitive and motor impairments were included.

Finally, we asked respondents to describe the nature of their use of Yorkhill. 31% were or had been in-patients, 28% attended as out patients and 31% were both in-patients and out patients. Only 1% of the sample was day patients (9% missing).



The survey was supported by a series of **focus/discussion groups**. Participants were drawn from a number of groups including patients, families and voluntary organisations that supported carers.

Although most of the focus groups were undertaken on the hospital site, there was an opportunity to run the sessions externally and this was offered in the first instance to parents of children with complex needs. These proved popular while some of the groups within Yorkhill garnered little interest and the sessions were unable to proceed. However, this exercise should be viewed as the beginning of an ongoing process and further efforts should be made in the future to engage with these groups on more substantive elements of the project to ensure the hospital is fully inclusive.

In total, 8 workshop sessions were held involving 54 participants:

| | |
|---|---|
| Young People | (11) |
| Parents of children with complex needs | (13) |
| Parents who are deaf or have deaf children | (20) |
| Parents of Teenagers | (6) |
| Volunteers/Voluntary Organisations | (4) |

Each focus group followed the same process and format and gathered participants views on:

- What was positive about existing hospital provision
- What could be done better?
- Vision for the New Children's Hospital

Young patients at Yorkhill also participated in a project to **photograph the buildings and facilities**, highlighting what they considered to be the positives and negatives of the current buildings. Some of their photographs are included in this report to illustrate the issues they raised.

Finally, the **complaints received by the Yorkhill Division specific to the hospitals physical environment were analysed**. In total, over a 3-year period 10 complaints were received specific to the hospitals physical infrastructure. These all related to the issue of car parking with 2 themes emerging from a brief analysis:

- Abuse of disabled parking spaces
- Availability of car parking in close proximity to hospital entrances

Collectively, this process has enabled a 'snapshot' of patient and families views to be gathered to feed into the design of the New Children's Hospital at an early stage. It should be stressed that the themes and issues highlighted only present initial perspectives and more in depth work is required to ensure that children, young people and families are fully engaged in the on-going project.

# The New Children's Hospital: Looking to the Future

In both the survey and focus groups participants were encouraged to draw on their experience of using our existing hospital provision. This was primarily their experience of Yorkhill but some had also attended other children's hospitals – most notably Aberdeen and some also used facilities at the Southern General, the Princess Royal Maternity Hospital, Glasgow Royal Infirmary and other adult sites. They were asked to give their view on what they thought worked well, what they liked about the existing hospital and what we could do better.

## What do we do well?

Participants were keen to stress that they were largely happy with the facilities and buildings at Yorkhill. They identified a number of features of the physical environment that they found supportive and were keen to ensure that these were not lost in the move to a new site.

### Family Accommodation

Family accommodation was highly valued with all families stressing the importance for children in having their family with them during their stay in hospital and the assistance this offered families in managing the stress of an inpatient stay. Families described how they used a number of options for accommodation including staying by their child's bedside in a fold down bed, sleeping in the ward using a recliner chair, Ronald MacDonald House and CLIC Sargent.

*"Parent and carer accommodation – I feel strongly about this because there will be lots more people like myself who will find it difficult to get back and forth to the hospital as I don't have my own transport"* Mother of 0-5 year old

A range of options was considered important as not all family's needs were served by being accommodated at their child's bedside. Where there were siblings who required accommodation or where the family was under great stress as a result of a long stay or the burden of ill health their child experienced then great importance was placed on the availability of neighbouring facilities. These allowed families to be accommodated together and also offered a small measure of relief from the ward and hospital environment.

*"Staying in is not always the best option – sometimes you need to get out"* Mother of a 2 year old in HDU

### Play Areas

Play areas were also universally acknowledged as a key aspect of the current facilities. Play areas in wards and waiting rooms were thought to greatly ease the stress of hospital attendance and the outdoor play area was valued. Play areas also played an important role in entertaining siblings during their visits to the hospital.

*"Play areas are the most important, they are so important especially when you have other children who have to come with you – they can run around and let off steam"* Mother of a teenage patient

However, there was scope for the development of play areas with a number of parents and young people identifying a lack of age-appropriate facilities, no access for disabled children to the outdoor play areas and few toys for disabled children – especially those with sensory impairments – in waiting and play areas.

*"My daughter in a wheelchair, every time we're up at Yorkhill she wants to play on the outdoor play but there's nothing for disabled children"* Mother of a 6-11 year old with complex needs

*"Should be like Brewsters with a play area indoors with a ball pool and swings and a climbing frame"* 7 year old out patient

**Cafes and Restaurants**
Cafes and restaurants featured highly in the positive feedback received from families and young people. Once again these were felt to facilitate their experience at Yorkhill providing both a neutral venue to sit with visitors, family and siblings as well as a place of respite for parents who needed both a meal and a break from the intensity of the ward environment.

*"I know it sounds daft but see at night when I was sitting downstairs with just a can of juice – its daft but I really needed that, just sitting down by myself with a can of juice"* Parent of 6 year old boy with complex needs who is a regular patient

There were, however, also suggestions for how these facilities could be improved with parents requesting that they be located closer to the wards and longer opening hours.

*"Restaurants need to be more accessible to the wards, sometimes you can only grab a few minutes and you don't ant to be away from the ward for too long"* Mother of 6-11 year old

**Youth Facilities**
The Youth Zone and Youth Booth were particularly valued by young people who welcomed the opportunity to spend time in a less clinical environment, with people their own age and in an age-appropriate setting. Parents of young people also welcomed these amenities describing how they had provided an important release for teenagers. More age-appropriate facilities and opportunities would be welcomed.

*"Better space for young people to meet. Need different stimulators compared to a toddler"* Mother of teenage out-patient

**Facilities for Family Support**
The service provided by the Family Support and Information Service was highly valued with many parents stressing the need for an on-going role for such a service. Its current location in the main reception was felt to be appropriate, facilitating access to the service. However, parents also felt that enhanced facilities would assist this service with a need for more quiet space, private interview rooms and a communal sitting room for families identified as helpful developments.

*" Quiet space - sometimes when things are not too good – peace and quiet is nice for a while - to be allowed time with your thoughts"* Mother of teenager with complex needs

Radio Lollipop, the Family Bereavement Service, the school and the chapel were also singled out as facilities that helped to create a supportive and healing environment. It was felt to be important to ensure that these facilities were transferred to the new hospital.

Parents and young people identified a need for the shops provided at Yorkhill. These were felt to be useful in providing many of the items parents needed during their stay, particularly if admission had been unexpected, and helped to pass the time during long stays. Better access to a wider range of shops would be welcomed although the cost implications of this were also raised.

*"…shops are good because you don't always plan for A&E so need toothbrush etc"* Mother of child age under 5 with complex needs

**Open Aspects**
The views and open aspects enjoyed at Yorkhill were seen as positive although the lack of outdoors space for sitting, walking or playing in the hospital grounds were a recurring theme.

## What could we do better?

As might be expected families, children and young people had a number of suggestions for how the current environment and facilities could be improved. These can be summarised under the following themes.

- Site Access
- Wards and Bedside Facilities
- Disabled Access
- External Environment
- Facilities

Each is discussed below.

**Site Access**
Car parking and vehicular access was a common concern with significant issues raised in terms of the availability of parking spaces, the distance from designated parking to hospital entrance points and the management and provision of disabled parking. There was a perception that this tended to be abused and poorly monitored. The particular issue of ease of access when pushing a pram or a wheelchair was repeatedly raised as was the need to locate disabled parking at the hospital entrance.

*"Car parking needs to be improved – horrendous"* Mother of 6-11 year old outpatient

*"…monitoring of (disabled) spaces would be useful. We currently need an extra pair of hands to pack the car, often in lower car parks – I can't push the wheel-chair up. We've adopted a drop and park system but it makes keeping appointments difficult and take two to deliver one patient"* Mother of teenager with complex needs

Overall, it was agreed that public transport provision was poor; this encompassed perceptions of bus quality and routage to access hospital sites.

*"Public transport is a nightmare if you have to get 2 buses and have other siblings with you"* Mother of teenager

Other site access issues included the distance from public transport nodes to the main site, poor signage for pedestrian or vehicular access from Argyll Street and the lack of a central reception/information desk at the point of entrance to the hospital grounds. Wayfinding and signage was a recurring theme in that there was an over reliance on standard information signs and that other options such as electronic signage, alternative formats, Braille plinths and textured walls, alternative languages etc. were not fully utilised.

*"It would be good to have texture and colour bars on the walls as it helps to steer young children"* Mother of teenage out-patient

**Wards and Bedside Facilities**

The general consensus was that the design and layout of the ward areas should focus on patient's needs. Families needs were acknowledged as secondary but, given the long periods of time spent by some families on the ward and the high levels of support they offered to the nursing staff in the care of their children there was a view that more could be done to ease their experience. Space could be better used and more done to make the patient and carer experience more comfortable. The overall ward layout was felt to be less than ideal. Limited family and carer facilities, an inappropriate mix of different age groups and poor access to bathing and toilet facilities were identified as problems.

*"You need better access to the toilets and showers, don't want to leave the ward and don't want to be away from the bed for too long"* Mother of 0-5 year old

There was no consensus on the importance of single rooms. 52% thought a single room was very important, 18% thought quite important while 5% said it was not important. Access to a single room was thought to depend on a number of factors including the level of ill health, need for isolation, need for company to aid recovery and teenagers in particular were thought to need the enhanced privacy of a single room. A number of parents and children thought that the company of other families and children was a comfort and support as they shared experiences and offered encouragement and information. This was identified as a major means of communicating information about the services and facilities available within the hospital.

*"Camaraderie between families and patients is important – can miss out if in own room"* Mother of child aged 0-5

There was a high level of support (60%) for the provision of a day room or sitting room where families in single rooms could meet together away from the clinical environment. Quiet space was also highly valued with many parents pointing to the difficulties of hearing and trying to manage bad news within a busy ward or outpatient area. 73% of the people surveyed requested more quiet space – for breaking bad news, to discuss issues away from the patient's bed or respite from the treatment areas.

*"Quiet space for patients and families, when you are feeling down or happy. Its nice to have a private place to let emotions out (good and bad) with no interruptions"* Mother of 6-11 year old patient

A particular request was made for a private interview room located near to theatre for privacy.

All parents were grateful for the provision of a bed that allowed them to stay close to their child. The provision of recliner chairs, however, was no longer felt to offer an adequate resource. Similarly, it was no longer felt appropriate to offer parents only a bed. The expectation had been raised that they would be *accommodated* within the ward and for many this meant that a range of other ward facilities was required. These included easy, safe and convenient access to showers, toilets and kitchen areas.

*"You need a shower and enough room for you to spend time yourself, also not a chair to sleep in but a bed if you no use to your child if you haven't had a good nights sleep*" Mother of 6-11 year old with complex needs

The current arrangements whereby parents needed to leave the ward to use the toilets or showers were felt to be unsafe at night and difficult in that they necessitated a lengthy break from the bedside. This was a particular issue for parents who were deaf or hard of hearing as they found the intercom system for ward access to be a significant barrier. There were repeated requests for an area where families could make and drink a cup of tea inside the ward. This, it was proposed, would make a significant difference to families' experience. Access to a communal laundry area would also be welcomed.

The space provided in current wards and single rooms was generally felt to be adequate but enhanced space between beds would be welcomed as would bigger toilets to facilitate access for wheelchairs and buggies. Parents of disabled children, however, disagreed that space was adequate and argued very strongly that greater space provision was required for disabled children and especially for disabled teenagers. This is discussed more fully below.

*"For a child like my son we need a hoist, a bed, a wheelchair so room must accommodate for these as well as a parent's bed, sink, toilet and shower and a wide doorway"* Mother of child age under 5 with complex needs

There was agreement that age appropriate areas should be recommended with separate bed and play/recreation areas provided for children and teenagers.

This was an issue of particular importance to young people who pointed to issues of privacy, company and the potential disruption to wards caused by teenagers wishing to watch videos etc after younger children were asleep.

*"Need separate space for babies and adolescents"* Father of 0-5 year old

Bedside facilities were identified as a concern with the bed spacing, environmental control, access to drinking water, lighting, noise and privacy cited. Some parents (37%) would welcome a bedside phone, fewer (33%) wanted access to a computer but those who did felt there would be significant merit in this development.

*"Access to a computer would help you manage the rest of your life"* Mother of a 4 month old in HDU

*"Children that are in for long stays need to be able to talk to friends, and friends often can't come and visit so kids need access to phones and e-mail"* Father of 6-11 year old boy with complex needs

Teenagers reported that they found bedside facilities poor suggesting greater access to computers and enhanced television access such as to freeview or Sky TV.

Storage was seen as particularly poor with the lack of lockable storage space causing concern, as did the lack of space for toys, clothes, parent's belongings etc accumulated over a lengthy stay.

*"I have noticed…a lack of shelving for long-term patients to store their DVDs, books, results of craft activities, school work etc"* Emily-Jane, age 14

*"Room size and sleep arrangement for parents is very, very important as it is ridiculous, uncomfortable and crowded in patients rooms now my 2 year old kid has been here for 10 months now and there is no room to move"* Mother of 2 year old disabled child

**Disabled Access**

Access issues were important and there was a strong consensus that Yorkhill could do more to ensure fully accessible facilities for disabled people, with more use of automatic doors, adjustable tables in play areas, video phones, accessible toilets with changing plinths and hoists all cited as examples.

*"Automatic doors – really important if you have lots of equipment – suction pack, feed pack, bog with spares, buggy!"* Parent of 6-11 year old outpatient

While most people felt that the space provided within current wards and single rooms was adequate parents of disabled children and young people strongly disagreed arguing that greater space was required. They proposed that some single rooms had to be large enough to accommodate a specialised bed and wheelchair, hoists and other equipment.

There also needed to be sufficient room for disabled children and young people to transfer from bed to a wheelchair to facilitate both their comfort and continued independence.

Washing and bathing facilities were seen as critical in that user's experience from Yorkhill suggested that the numbers and location of bathroom facilities was poorly thought out, as was the appropriateness of the facilities for disabled people. Upgraded disabled toilets with a bed/plinth and hoist for changing children and young adults were felt to be a necessity.

Play areas and equipment also needed development to be more inclusive of disabled children.

*"I think it is important all play areas and equipment should be made as accessible as possible to all children including those with physical and sensory disabilities"* Mother of teenager with complex needs

Overall, there was a strong consensus that planners had to move beyond minimum standards and aim for the highest standards using innovation and imagination to overcome challenges.

*"…need barrier free access to all areas"* Mother of disabled teenager

**External Environment**

Particularly disappointing for many was the external environment and the failure to develop and utilise green space for the enjoyment and benefits of patients and staff alike. These could provide areas for reflection and convalescence. Neurological patients, who often experienced lengthy stays in hospital, were one group that it was felt would benefit from easy access to outdoor areas while out-patient waiting areas would be significantly improved by an outdoor play area.

*"Patients are sometimes confined to their rooms for days on end so it would be good if they could see something from their windows. Sometimes patients are allowed out of their rooms although they are still attached to drips. They are therefore limited in where they can go. It would be nice if they had access to outside space, perhaps a roof garden?"* Emily Jane age 14

*"I would like to see an enclosed garden that you could take patients to sit in and patients could be involved in planting etc and wards could look onto it and have a peaceful view for patients"* Parent of 10 year old who is a regular in patient and outpatient at Yorkhill

Smoking was a real concern and the sight of smokers congregating at entrances, particularly beside the outdoor play area, gave a poor impression of the hospital. It was proposed that a shelter was needed for parents who smoke.

**Facilities**
Participants understood that planners gave most thought to the clinical configuration of the hospital site, however there was a view that more thought should be given to other areas of the patient experience and the provision of additional amenities and facilities for patient and family comfort and relaxation i.e. spiritual care, libraries, shopping, the provision of day rooms and quiet areas within wards and provision for other children. These were often seen as an after thought but families and young people felt that they required more thorough planning and consideration.

*"When your child goes to hospital you basically 'live' there at the hospital for the duration of the child's stay. It is important for the child to have an environment that is close to normal life and a comfortable, clean and caring environment. Parents need that also"* Mother of 6-11 year old boy

There were few suggestions for outpatients or day wards but one group that did identify a need for enhanced facilities were the parents of children with diabetes who requested consulting areas that ensured patient confidentiality, welfare and to create a relaxed and caring environment. In particular they proposed the provision of a family or quiet room where they could feel comfortable administering injections when attending appointments.

*"Parents sometimes need a quiet area to compose themselves – having to go to the canteen for a coffee when you are upset is horrible"* Mother of disabled teenager

The provision of quiet space was a common concern with some parents asking for somewhere quiet to gather their thoughts or deal with bad news other than sitting in the tea bar while one parent proposed that this would be beneficial for children with autistic spectrum disorders while waiting for an appointment.

*"Provision of a quiet area to allow people with autistic spectrum disorders to prepare for appointment maintaining sensory input in an acceptable way"* Mother of disabled teenager

There was some consideration of the facilities for theatres with families suggesting that theatre recovery areas should be separate from the general ward area. They also asked for a waiting area to be located next to theatre recovery and for a quiet, interview room in the vicinity where any meetings with theatre personnel could be conducted.

One facility that families proposed as requiring careful development was the Family Bereavement Centre. As with the Family Support and Information Service this was a facility that required a mixture of accommodation with quiet, private interview rooms a necessity. Most importantly it was felt that this facility should not be located near to the morgue or viewing area. It was reported that some bereaved parents found it difficult to walk past the morgue on their way to the existing service because of the association with their loss. This was closely linked to existing facilities for coping with bereavement such as relative rooms, viewing and mortuary facilities.

There was some discussion as to the appropriateness of existing provision and whether more could be done to help families manage the loss of a child.

One further facility that was identified as requiring further development was the lifts. Families proposed that consideration should be given to the provision of more lifts and in particular separate lifts for theatre access and transfer of patients between wards and departments to offer enhanced privacy.

*"When our daughter was arriving for admission seeing patients on trolleys in the lift area really upset her. Could the theatre and other lifts be separate?"*
Mother of disabled teenager

Finally, a number of comments related to the appearance of the entrance to the hospital with some feeling that this could be improved to provide a more accessible, welcoming environment. It was felt that both layout and décor could be better designed to facilitate ease of access and wayfinding around the facility.

**Adjacencies**
The following adjacencies were thought to be important: -

- Toilets and shower facilities for families should be located inside ward areas
- Car parking needs to be located close to the hospital to facilitate access for disabled children and those pushing buggies
- Easy access to a café/tea bar was important for all families but particularly those who were staying in the hospital
- Outpatients should be co-located with play areas and, if possible, an outdoor play area
- The neurological unit and neurological ward should be close together with the EEG Department in close proximity
- ITU/HDU would benefit from close proximity to a quiet room or chapel
- A waiting area should be located next to theatre recovery
- Separate theatre recovery from the general ward area

## Conclusion

The engagement work with families, children and young people proved successful in a number of regards. There was an active and enthusiastic participation from all those involved, with families, children and young people sharing positive and considered views on the physical environment of the new children's hospital. These views will now be included in the debates and discussions on the outline business case for the new hospital.

The methods adopted by this exercise offered a number of opportunities for families, children and young people to participate but there were some groups such as families for whom English is not their first language that were not so well represented. Additional efforts will be required in the future if they are to be given an equal opportunity to contribute to the design and planning processes. Further effort will also be required to develop special initiatives for children and young people to ensure their on-going and full participation.

However, as discussed earlier, this exercise should be viewed as the beginning of an ongoing process and further efforts should be made in the future to engage with these groups on more substantive elements of the project to ensure the hospital is fully inclusive.

The evidence from this project suggests that families, children and young people will prove to be a valuable partner in the planning and design of their new hospital.

Dear Kate,

I hope you remember me I am a member of the Youth Voices group and have been out for pizza with you - very enjoyable! As a patient on Schiehallion I am aware of some issues that may not be relevant for other wards, especially as I have been on the ward since January. When designing the new ward I would like the architects to take into account some of the following;

- Patients are often confined to their rooms for days on end so it would be good if they could see something from their windows. One solution would be to design the adolescent area so that the rooms all faced onto a central area; in a square. The rooms could have sliding glass doors so that even patients who were unable to leave their rooms could feel included.

- Sometimes patients are allowed out their rooms although they are still attached to drips. They are therefore limited in where they can go. It would be nice if they had access to an outside space, perhaps a roof garden?

- The room spaces themselves need some thought. I have noticed that there is nowhere for visitors to hang their coats, limited working space for the nurses and a lack of shelving for long term patients to store their DVDs, books, results of craft activities, school work etc.

- Patients presently do not have bedside lockers which is a problem as they cannot easily access their things without leaving the bed and the cupboard is often inaccessible due to the number of drip stands in the way.

- The TV/ps2 etc need to be at a height that is accessible by the patients and not so high as to cause neck strain!

- The desk should not be in a corner facing a wall; motivation for school work is low and therefore this should be a more attractive area.

- The bathroom should be closer to the patients bed as this would enable them to go to the toilet without taking their drip stands with them. They would also be more able to go unaccompanied .

- The parent bed needs to be a lot comfier, perhaps a fold down from the wall. It would also be good if there was more than one comfy chair in the room so that the patient and parent/visitor could sit at the same height and be a bit more companiable.

Yours sincerely

Emily—Jane

# Appendix 23
# Engagement Report
# - Adult Hospital

# Appendix 23 Engagement Report - Adult Hospital

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# Introduction

"In terms of physical design...the most important aspect is the staff as they are your first point of contact and seeing someone who puts you at ease is vital"

The redevelopment of the Southern General site represents an important phase in the modernisation of NHS Greater Glasgow's Acute Services. The New South Glasgow hospital project will deliver a world class facility providing local, regional and national services. In addition, the site is strategically placed to complement, and benefit from, unprecedented regeneration activity along the Clyde corridor and Greater Govan area.

The Outline Business Case (OBC) details initial thinking behind the project and defines a framework for the project's future development. It is important that the OBC reflects not only NHS Greater Glasgow's vision but also the views and aspirations of the wider public. NHS Greater Glasgow's Community Engagement Team and South Division undertook an initial scoping exercise with patients, carers and volunteers to inform the development of the OBC and seek views on the physical design of the new hospital. The approach adopted sought to reflect Scottish Executive guidance on involving the wider public and in particular, excluded groups.

> ''The Scottish Executive Health Department (SEHD) and NHSScotland are committed to an inclusive process of communication, where the public 'have opportunities to influence decision making'' (Patient Focus and Public Involvement). Similarly, the Fair for All approach requires the considerations of equality for ethnic minorities and other potentially excluded groups and whether proposed policy or service development, including service change will have specific impacts on any communities or equalities groups''

This report provides an overview of the process involved in engaging with communities around the new hospital project, summarises the key findings from the engagement activities and highlights the broad concepts and themes identified that will be considered in developing the project.

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## Summary

"Why not have a room with booths inside were people could use mobiles"

The project engaged with 242 individuals on the ***physical*** design of the New South Glasgow Hospital.

There was a distinct pride and affection for the Southern General. The new building should reflect the Southern's role as an important part of the wider community and as an element in the regeneration of South West Glasgow.

The general consensus from participants was that functionality needs to be married with innovative design and the building should be an attractive and comfortable place to work and be cared for.

The external landscape should be viewed as an extension of the main hospital and should include a good mix of areas to enhance the experience of staff, patient's and their carers.

It was important the feeling of space at the existing Southern should be retained but travelling between different areas of the hospital campus should be kept to a minimum.

The design should maximise the opportunities for human interaction, creating a welcoming environment, putting patients and carers at ease.

Participants were keen the design should maximise the use of space to incorporate a range of additional support services, amenities and facilities.

The design should fully embrace new technologies and design techniques ensuring the care and treatment of patients is second to none.

Accident and Emergency facilities were viewed as uncomfortable, intimidating and threatening. There was a strong view that future planning needs to consider design and how to manage problem behaviour effectively.

"The place should look welcoming and homely,
relaxing with shopping - lots of people say about the shop being taken away, I certainly miss it any time I'm in"

Participants were keen to see the project as the first phase in an ongoing engagement with patients and the wider community in developing the New South Glasgow Hospital.

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## Process

The project used three techniques to determine patient and carer views. These were:

- focus groups
- questionnaires: and
- audit of complaints received in South Glasgow,

The focus groups engaged participants from a number of groups including volunteers, carers and patients. In total, 6 workshop sessions were held involving 61 participants drawn from the following groups

- Volunteers
- Carers
- Disabled people
- Black and Minority Ethnic Communities
- Homelessness
- Patients (Including representation from the Spinal Injuries Unit)

"Many women of a 'certain age' really feel the heat while older patients really feel the cold"

The format for the group was piloted with staff and each focus group followed the same format:

- What was positive about existing hospital provision?
- What could be done better?
- Vision for the New South Glasgow Hospital?

The focus groups were complemented by a questionnaire circulated around Medical and Surgical wards. In total 181 responses were gathered, allowing patients to comment on specific elements i.e. Bedside facilities.

Finally, complaints received by the South Glasgow Division specific to the hospitals physical environment were collated and were summarised. In total, over a 15-month period, 31 complaints were received. The themes emerging within this brief analysis were:

- Car Parking, particularly the levels of disabled parking provision
- Toilet Facilities
- Perceived levels of cleanliness and hygiene
- Maintenance of the building fabric
- Bathing and showering facilities

Collectively, this process has enabled a 'snapshot' of patient views to be gathered and fed into the design of the new South Glasgow hospital. This report has grouped the issues raised under a number of themes and follows the structure of the workshops.

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## Learning the Lessons

**What we do well**

Participants were keen that good practice form other hospitals was used. There was a strong view that there was no need to reinvent the wheel.

The Victoria Infirmary was seen as a positive example in that the building was viewed as compact.

The Southern was largely viewed as positive in terms of signage relative to other hospitals although this varied between groups.

The Spinal Injuries, Care of the Elderly and Westmarc developments at the Southern were seen as examples of good practice, however there was still room for improvement.

*"Seating throughout must be ergonomic. At outpatients clinics thought is needed to users needs eg. rheumatoid, suitable seating required and a good assortment of chairs on wards."*

Relative to other Glasgow hospitals, the Southern was seen as having good parking provision.

The open aspects enjoyed at the Southern were seen as positive although the continuing odour from the nearby sewage works was a recurring theme.

*"Lack of space around each bedside is very important, there should be more space provided"*

***What could we do better***

The design and location of existing hospitals make it difficult for public transport to deliver patients and visitors to the most appropriate point.

There were issues in terms of the management and provision of disabled parking and designated drop off-pick up points. There was a perception that these tended to be abused and poorly monitored.

Existing sites tend to consist of a large number of separate buildings with services and disciplines poorly located.

Consulting rooms are seen as poorly designed with waiting areas located to close to clinical areas.

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## Learning the Lessons

Spiritual care facilities were seen as not accommodating the needs of diverse religions.

Wayfinding and signage was a recurring theme in that there was an over reliance on standard information signs.

Washing and bathing facilities were seen as important, experience from existing sites indicates that numbers and location of bathroom facilities was poorly thought out.

The quality of shopping, catering, social and recreational provision were identified as poor across almost all of NHS Greater Glasgow's sites for staff, patients, carers and relatives.

Particularly disappointing for many was the lack of attention given to the external environment and the failure to develop and use green space for the enjoyment and benefits of patients and staff alike.

There was a strongly held view across all groups that the cleanliness and maintenance of existing sites could be improved.

"Warm, light colours are important to give clean and healthy feel to the place"

The ability of existing sites to use new technology was identified as poor, restricting the provision of improved facilities for staff and patients.

Bedside facilities were identified as a concern with perceived use of mixed wards, bed spacing, environmental control, access to cold water, lighting, noise and privacy cited as poor.

Safety and security was a concern particularly in Accident and Emergency.

***Participants were then encouraged to discuss the issues identified in order to develop a vision for the New South Glasgow Hospital.***

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# Realising the Vision: Wayfinding

It was important the entry point to the hospital should be a welcoming environment with a clear and visible, staffed reception area to greet patients, provide information and directions and arrange escort and guidance if appropriate.

Linked to this was the development of some form of internal transport system for people with mobility problems to help them move around the site. The idea of electric scooters similar to those used in supermarkets was suggested.

The existence of appropriate, clear and accurate signage, externally and internally, was seen as important.

The need to cater for different languages, literacy levels, and sensory impairments was seen as challenging and that innovative solutions were required such as information screens or other electronic formats. Participants from minority ethnic communities were particularly concerned about this issue.

Lifts and automatic doors could use appropriate technology such as voice information alongside more traditional Braille, symbols and raised lettering to assist users around site.

The physical design was viewed as important in assisting internal way finding by ensuring that interdependent services/ departments are co-located, reducing movement around the site.

*"There is nothing worse when entering a hospital trying to find what department or ward you are looking for if this is not properly signposted especially if you are disabled or in a wheelchair"*

*"Disability access very important, especially toilet areas, hospital signs are not very clear for directions"*

Participants were keen that the sense of space and open aspects in the existing site were retained while creating a compact and easily negotiable space. The preference would be to build upwards but not to exceed the existing site profile if possible.

The external environment should be seen as an extension of the physical building and be designed to bring people into the main entrance with reception area. This would include creating public transport hubs, disabled parking and pick up/drop of points close to main entry points.

Traffic flow and patient movement should b managed by ensuring effective co-location and linkages between services and facilities. Overall, the hospital site should be viewed as one hospital in its own right as opposed to a series of different buildings.

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# Realising the Vision: Accessibility

The issue of accessibility was viewed as important by over 97% of those surveyed. The two most prominent factors were related to reaching the site i.e. transport, car parking and physical access to the building and services.

Car parking consumes considerable space and the design should look at innovative options for optimising space. Disabled car parking and emergency access should be given appropriate priority with fully monitored and policed spaces available close to the hospital main entry point (s).

Consideration should also be given to prioritising parent and child spaces. Car parking provision should be made available as appropriate for all other users with designated staff, visitor and patient areas.

However, vehicular access should not inhibit access for emergency vehicles and if possible this should be separated. Car parking was seen as important by 90% of those surveyed and reflects the broad consensus on this issue.

Public transport should be able to penetrate the site from either end but be orientated to the main access point where appropriate support can be accessed immediately i.e. reception, escort, internal transport. If public transport is to penetrate the site then there is a need for designated stops with shelters and seating with regularly updated travel information

Participants were aware that the effective management of traffic and patient/pedestrians on site presents challenges. Restricted vehicular access to the central site with an internal shuttle bus was one option discussed.

Areas that may require 24 hour access i.e. A&E, Spiritual Care Facilities should be located close together to ensure appropriate use of space, access and site security.

Consideration should not be given solely to the co-location of clinical services but broader patient, visitor and relative support.

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# Realising the Vision: Environment

There was a view that the main hospital building should fit with the wider external environment and retained hospital infrastructure. Overall, the surroundings should be pleasant and attractive and give a good first impression utilising greenspace well.

The building design should aim to create a sense of space in a modern and bright environment with the imaginative use of colour and innovative décor were appropriate.

Although only 63.5% of those surveyed viewed the décor as important, the more qualitative discussions suggested that art and design should be used to enhance the building and contribute to the overall patient experience, promoting a positive, welcoming and relaxing environment. The use of colour and design should contribute to the easy navigation of the site.

The design should ensure the ease of maintenance and standards of cleanliness, separating the service components of the building from the main patient and clinical areas. This was the issue that most concerned participants.

"The initial impact upon entering the hospital is very important in that it really improves your outlook right away and helps you really recover"

"A change of environment from the usual routine is a must while in hospital for more than two days"

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# Realising the Vision: Safety

A major issue from a safety perspective was the design of Accident and Emergency facilities, particularly the extent to which different patients share the same waiting area and the overall design of the waiting area.

The future hospital needs to look at the how patients who are aggressive or under the influence of drugs or alcohol can be separated from other patients who are attending, particularly families or vulnerable adults. If appropriate it was felt strongly that patients who were aggressive or cause distress to other patients should be removed to a secure area.

Bedside facilities could be more secure, including a secure locker that 87.8% of those surveyed viewed as important. CCTV could be more extensively used both internally and externally to assist in promoting a sense of security.

The design of ward areas should optimise visibility not only in terms of enhancing patient care but also to ensure a more secure environment. Equally, having a more visible staffed reception would enhance the sense of security and safety.

Safety in accessing the site was a real concern with not only on site issues but external issues such as the underpass and the industrial area to the west of the site.

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# Realising the Vision: Ward Areas

For ward areas as a whole, the issues of cleanliness and hygiene were of paramount concern with the view that the building design should seek to minimise opportunities for infection. This was echoed by those surveyed with 98.9% of responses viewing the issue of hygiene and cleanliness as important.

There was a difference of opinion on a preferred ward layout. Participant's views differed between a return to the "Nightingale wards" of the past, 4–6 bed rooms or single room provision. There was universal agreement that there should be no mixed sex wards in the hospital.

Ward areas should also seek to ensure patient confidentiality and privacy is respected. The groups were keen that what ever configuration was chosen, the need for patients and nursing staff to maintain visibility was important.

"You need to control all aspects of ventilation and temperature as some illnesses depend on this'

Bedside facilities and the immediate bedside environment were viewed as important by 85.6% of those surveyed; in particular the following were highlighted:

- Temperature
- Access to cold drinking water without recourse to nursing staff
- Bedside furniture should be robust and secure
- Patients would welcome opportunity to personalise space i.e. Notice board for cards etc
- Individually controlled lighting
- Individually tailored entertainment/ communications that don't impact on other patients
- View, outlook from ward

"No large wards – the largest bay should be no more than 4 beds, preferably less"

58.6% of those surveyed stated that access to a phone at the bedside was important. Most people felt that there was a need to strike a balance between easy access and maintaining a quiet, peaceful environment for

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## Realising the Vision: Ward Areas

other patients. A designated area in a ward block or floor with telephone access and/ or were mobile phones could be used was seen as achievable.

58.6% of those surveyed viewed access to a TV as important. This could be complemented by entertainment systems (i.e. game consoles for adolescents) or the Internet. Views differed on access at every bedside, ward level or other designated areas. Participants also felt that the design needed to incorporate a range of different areas

"A place to relax for patients and talk in private or watch TV, strict rules about eating and drinking and definitely no smoking"

linked to wards for the benefit of staff, patients, visitors and carers. For example, TV room, day room, quiet room, Internet access. This was echoed by those who responded to the questionnaire with 77.3% identifying dayroom provision as important while the concept of a discharge lounge was only seen a important by 45.3% of respondents.

"The area you are staying in is most important and needs to be homely and welcoming. If there are windows it would certainly be nicer to look at some greenery"

Almost universally, bathing and toilet facilities at ward level were viewed as inadequate. This was echoed by those surveyed with 97.8% viewing this aspect important.

A view from the bedside was only considered important by 39.8% of respondents while 80.6% felt that space for appropriate seating was important.

The most significant factor for respondents was the issue of environmental control with 98.3% of those questioned viewing the ability to control the immediate environment around the bedside as important.

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# Realising the Vision: Shopping

The need for a range of shopping facilities was identified, this included a number of fixed and mobile retail units, and a good coverage of vending machines in public spaces.

In addition, most people felt that that there should be a variety/ mix of communal space spread throughout the hospital environment to enable patients/ visitors/ staff to socialize and meet, these should include designated café areas.

In terms of fixed shopping units, the types of facilities envisaged included:

- Café/ Coffee shop
- Small general store/ supermarket/ cards/newspapers
- Florist
- Hairdresser
- Fruit stall
- Social area for patients/ staff

This was echoed by those who responded to the survey with 50.8% identifying a hairdresser as an important contribution, with shops in general viewed as important by 63.5% and a café area seen as important by 80.7%. There should be some element of 24 hour provision, including A&E, in a vending machine format or alternative.

In addition, there was identified an opportunity for some form of library with internet access accessible to staff, visitors and patients to utilise, potentially in partnership with Glasgow City Council. Crèche and play facilities were a recurring theme for patients/ carers/ relatives and staff.

# Realising the Vision: A&E

"Wheelchair access is still difficult – opening an internal door in corridors; disabled spaces all used not by badge users – and no space to get wheelchair out."

In terms of emergency care, the overriding priorities were safety and waiting facilities, which were viewed as inter-related.

The first issue was actually arriving at A&E where there was a feeling that there should be some form of emergency parking provision available on a short stay basis.

It was felt important that there was a highly visible security presence on site to discourage aggressive or intimidating behaviour, the design of the A&E should attempt to minimise potential for patients and their carers to feel ill at ease or intimidated.

In extreme cases the A&E should have facilities to remove rowdy, drunk or aggressive attendees from the main waiting areas into a more secure manageable environment (separate from other patients) with security personnel in attendance.

The treatment/ consulting areas have the perception of being poorly soundproofed and not conducive to retaining patient dignity or privacy, often when they are at their most vulnerable.

People were keen that the overall environment is welcoming and puts people at ease in what are potentially difficult and trying circumstances.

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# Realising the Vision: General

Participants felt that consulting rooms should be large enough to accommodate a wheelchair user or allow the option of a carer or relative sitting in as a support.

72% of those surveyed felt some form of relatives' room would be important while 67% felt that some form of overnight carer accommodation would be an important addition. Overall, there was a view that more consideration needs to be given to facilities for relatives and carers.

"Pleasant surroundings relax people...what about a council library on the grounds of the hospital site

Although only 50% of those surveyed felt that spiritual care facilities were important, there was a consensus in the focus group discussions that this facility was necessary.

They should be accessible 24 hours, seven days a week and be able to cater for congregational type activities but also for individual contemplation and reflection.

There was some support to look at the potential for individual quiet rooms/prayer rooms at individual ward level/dispersed throughout the hospital.

Morgue facilities and how corpses were viewed were also seen as important issues for consideration, particularly amongst minority ethnic communities.

There was a consensus that the range of organisations and volunteers who work with the hospital need to be catered for, including office, training accommodation and modern facilities for initiatives like hospital radio.

"WHILST THE DÉCOR SHOULD BE PLEASANT AND CLUTTER FREE, IT SHOULD NOT BE EXTRAVAGANT, CAFÉ AND SHOPPING FACILITIES ARE NECESSARY FOR STAFF, PATIENTS AND VISITORS"

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# Appendix 24
# Project Plan

**NEW SOUTH GLASGOW HOSPITALS** **PROVISIONAL OVERALL TIMELINE (Note - Exact detail may change depending upon the outcome of the procurement workshop)**

**DESIGN AND BUILD PROCUREMENT TIMELINE - NEC Contract Form**

| | Duration | 2007 | | 2008 | | | | 2009 | | | | 2010 | | | | 2011 | | | | 2012 | | | | 2013 | | | | 2014 | | | | 2015 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd |
| Revise OBC / Estates Review | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gateway 1 | | | | OBC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Submit OBC to NHSGG&C Board | | | | January Board | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Submit OBC to CIG | | | | End January CIG | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Submit to Cabinet | | | | March | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Develop TA & Design Team Brief | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Workshop - Design and Build model | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OJEU TA & Design Team | | | | | Post January Board | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Appoint Technical Adviser & Design Team | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Clinical and Technical Brief | | | | | By NHS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Design Development of PSC Design | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Develop Tender + Technical Spec | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gateway 2 | | | | | | | | | Pre OJEU | | | | | | | | | | | | | | | | | | | | | | | | |
| OJEU Contractors - Prequal and selection | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tender Period | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gateway 3 | | | | | | | | | | | | | Prior to Appointment | | | | | | | | | | | | | | | | | | | | |
| Inerviews Evaluation and Selection | | | | | | | | | | | | | | | | | Prior to construction | | | | | | | | | | | | | | | | |
| Gateway 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Full Business Case | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction (inc detail planning months 1-3) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Completion - Children's Hospital | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Completion - Acute Hospital | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| **Note:** |
|---|
| |
| Exact detail may change depending upon the outcome of the procurement workshop. |

NHS Greater Glasgow and Clyde

# New South Glasgow Hospitals

# Full Business Case Report

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# *APPENDIX A*

# *ADULT AND PAEDIATRIC PATIENT ACTIVITY*

***Appendix A***

***Adult and Paediatric Patient Activity***

The breakdown of both adult and paediatric patient activity seen within Glasgow Acute Hospitals by Health Board of patient residence in 2009/10 along with trends over the last 6 years is shown below.

**Table 1**
**2009/10 - Patient Activity seen within Greater Glasgow & Clyde Acute Hospitals (by Health Board)**

| Health Board | Inpatient Episodes | | Day Case Episodes | | New Outpatient Attendances | |
|---|---|---|---|---|---|---|
| Greater Glasgow & Clyde | Actual 228,862 | % 84.8% | Actual 120,703 | % 82.1% | Actual 366,612 | % 86.8% |
| Lanarkshire | 12,694 | 4.7% | 10,486 | 7.1% | 21,092 | 5.0% |
| Highland | 11,959 | 4.4% | 6,981 | 4.7% | 16,693 | 4.0% |
| Ayrshire & Arran | 7,276 | 2.7% | 5,084 | 3.5% | 10,413 | 2.5% |
| Forth Valley | 3,677 | 1.4% | 2,463 | 1.7% | 4,215 | 1.0% |
| Dumfries & Galloway | 1,043 | 0.4% | 297 | 0.2% | 1,049 | 0.2% |
| Others remaining Scottish | 3,333 | 1.2% | 893 | 0.6% | 2,183 | 0.5% |
| Others | 1,143 | 0.4% | 65 | 0.0% | 295 | 0.1% |
| Total | 269,987 | 100.0% | 146,972 | 100.0% | 422,552 | 100.0% |

It can be seen that over 80% of the workload is attributable to NHS Greater Glasgow & Clyde residents.

Patients from Lanarkshire and Highland account for approximately 5% and 4% of inpatient activity respectively.

**Table 2**
**2009/10 Age 0-15 Patient Activity seen within Greater Glasgow & Clyde Hospitals (by Health Board)**

| Health Board | Activity Inpatient | Episodes | Day Case Episodes | | New Outpatient Episodes | |
|---|---|---|---|---|---|---|
| Greater Glasgow & Clyde | **Actual** 12604 | **%** 64 | **Actual** 7105 | **%** 69 | **Actual** 26926 | **%** 83 |
| Lanarkshire | 2817 | 14 | 1781 | 17.5 | 3272 | 10 |
| Highland | 689 | 4 | 338 | 3 | 680 | 2 |
| Ayrshire & Arran | 933 | 5 | 452 | 4.5 | 684 | 2 |
| Forth Valley | 934 | 5 | 405 | 4 | 543 | 2 |
| Dumfries & Galloway | 269 | 1 | 34 | 0 | 176 | 0 |
| Others remaining Scottish | 1114 | 6 | 248 | 2 | 313 | 1 |
| Others | 186 | 1 | 4 | 0 | 33 | 0 |
| Total | 19546 | 100 | 10367 | 100 | 32627 | 100 |

It can be seen that between 64% of the inpatient activity is attributable to Greater Glasgow and Clyde residents.

Patients from Lanarkshire account for 14% of the inpatient activity.

**Activity Trends**
Table 3 below, details the overall activity trends for adult activity over the last 6 years from 2004/05 to 2009/10.

**Table 3**
**Activity Trends within Glasgow Adult Acute Hospitals over the last six years for in-patient episodes, day cases and new out-patient attendances**

| | 2004/05 | 2005/06 | 2006/07 | 2007/08 | 2008/09 | 2009/10 | Percentage increase in activity between 2004/05 and 2009/10 |
|---|---|---|---|---|---|---|---|
| In-Patient Activity | 253,778 | 254,324 | 262,487 | 274,185 | 278,409 | 269,987 | +6.4% |
| Day Cases Activity | 124,242 | 129,703 | 133,949 | 133,654 | 138,147 | 146,972 | +18.3% |
| New Out-Patient Activity | 381,285 | 401,667 | 389,523 | 390,987 | 420,163 | 422,522 | +10.8% |

From the table it can be seen that overall adult in-patient activity has increased by 6.4%, day cases by 18.3% and out-patients 10.8%.

It should be noted that New South Glasgow Hospital will not undertake surgical day case activity and will provide a local out-patient service for the South West Glasgow patients only.

Table 4 below details paediatric activity trends over the last 6 years. It shows that from 2004/05 to 2009/10 inpatient activity has risen by 4%, day cases by 13%, and outpatients by 10 % .

The current RHSC treats children from Greater Glasgow and Clyde up to their 13th birthday the new children's hospital will take 13 and 15 year olds and this activity is included in this table.

**Table 4**
**Activity Trends Age 0-15 in Greater Glasgow & Clyde Hospitals over the last five years for in-patient episodes, day cases and new out-patient attendances**

| | 2005/06 | 2006/07 | 2007/08 | 2008/09 | 2009/10 | PERCENTAGE INCREASE IN ACTIVITY BETWEEN 2005/06 AND 2009/10 |
|---|---|---|---|---|---|---|
| In-Patient Activity | 18795 | 18330 | 18711 | 19459 | 19546 | +4% |
| Day Cases Activity | 9056 | 9066 | 10013 | 9655 | 10367 | +13% |
| New Out-Patient Activity | 29391 | 31472 | 32460 | 32644 | 32627 | +10% |

# *APPENDIX B*

# *DEMOGRAPHY AND HEALTH STATUS*

## *Appendix B*

## *Demography & Health Status*

*Life expectancy*

Although life expectancy is modestly lower for both GG&C males and females compared to their other Scottish counterparts, it is improving for both genders at a similar percentage rate (Table 1). This reflects the fact that age specific mortality rates for both genders and most age groups in GG&C continue to decline in response to concerted efforts to provide a comprehensive range of modern health services and improve housing conditions, environmental and occupational settings, and lifestyle via health improvement initiatives. Life expectancy is also rising for the socially deprived sub-groups in GG&C, although not as quickly as for those in the most privileged neighbourhoods.

**Table1: Life expectancy at birth in Scotland 2006-2008 for GG&C and for Scotland, by gender, and comparisons with 1996-1998**

| | 2006-08 | 1996-98 | Difference | % |
|---|---|---|---|---|
| | Years | Years | in years | change |
| Scotland Males | 75.0 | 72.4 | 2.6 | 3.6 |
| Greater Glasgow & Clyde males | 72.7 | 70.2 | 2.5 | 3.6 |
| | | | | |
| Scotland Females | 79.9 | 78.1 | 1.9 | 2.4 |
| Greater Glasgow & Clyde females | 78.6 | 76.7 | 1.9 | 2.5 |

*Social Deprivation*

The size and complexity of GG&C is further complicated by the existence of large and concentrated areas of social deprivation which sit alongside some of the most privileged parts of Europe. Standardised mortality ratios (all cause) 0-64 years and 0-74 years, which reflect *relative mortality*, will therefore remain high in GG&C, and will remain the highest in Scotland, because they reflect the fact that most of the social deprivation in Scotland is concentrated in the GG&C area. Relative to the declining mortality rates in the rest of Scotland, the declining mortality rates in GG&C remain higher and will continue to do so for the foreseeable future.

The Scottish Index for Multiple Deprivation was calculated at datazone level across Scotland in 2004, 2006 and 2009. The Health Boards with the largest proportion of their datazones in the 15% most deprived are Greater Glasgow & Clyde (30.4%), Ayrshire & Arran (18.3%), Lanarkshire (17.4%), Tayside (13.3%) and Fife (11.3%). The Health Boards with the largest proportions of the 15% most deprived datazones in Scotland are Greater Glasgow & Clyde (45.9%), Lanarkshire (12.9%), Ayrshire & Arran (9.0%), Lothian (8.8%) and Tayside (6.8%). Between them these 5 Health Boards with the largest proportions of the most deprived datazones nationally contain 83% of the 15% most deprived datazones in Scotland, with two thirds contained in the first three.

*Morbidity*

There are multiple sources of data on morbidity experienced by residents of GG&C, all of which have strengths and weaknesses. The QOF prevalence dataset demonstrates that for some, but not all, conditions measured by the national framework in 2008/9, the prevalence in GG&C was higher

than for Scotland (Table 4). These include chronic obstructive pulmonary disease, congestive heart failure, new cases of depression, epilepsy and mental health problems.

*Admission rates (based on episodes of discharge from day case or inpatient care)*

National SMR1 datasets demonstrate that age specific admission rates are considerably higher in GG&C than in Scotland as a whole for most age groups. GG&C age-specific admission rates are usually the highest of all the health board rates. In 2008/9, the most recent year for which there is routinely published admission data, the admission rate (all specialities and all ages) was 14% higher in GG&C than for Scottish residents as a whole (Table 2). Social deprivation as a cause of increased morbidity is probably the main factor directly causing high admission rates but social factors play an indirect role in contributing to avoidable admission, as does proximity to secondary and tertiary hospital services. It is worth noting that admission rates for children aged 0-14 years are lower in GG&C than for Scottish children as a whole.

**Table 2: Age-specific rates of hospital discharge (episodes) and Crude rate (all ages) per 100,000 during 2008/9 for GG&C and Scotland.**

| | Rates | |
|---|---|---|
| Age group | GG&C | Scotland |
| 0-14 | 11,468 | **12,414** |
| 15-24 | 12,124 | **11,445** |
| 25-34 | 14,732 | **13,707** |
| 35-44 | 21,378 | **17,600** |
| 45-54 | 29,010 | **23,460** |
| 55-64 | 42,435 | **34,315** |
| 65-74 | 68,891 | **55,067** |
| 75-84 | 95,469 | **80,525** |
| 85+ | 124,198 | **102,539** |
| All ages | 30,756 | **26,936** |

# *APPENDIX C*

# *BED COMPLIMENT FOR THE NEW CHILDREN'S HOSPITAL*

***Appendix C***

**Bed Complement for the New Children's Hospital**
**Review of Planning Assumptions**

Current planning for the New Children's Hospital (NCH), as reflected in the Outline Business Case, is based on a total bed complement of 240 beds (appendix A). This overall bed model includes inpatient capacity (including 12 beds provided within the NICU), day case, short stay and inpatient child psychiatry beds.

This bed model was agreed by NHS GGC on the basis of a review undertaken by CHKS during mid-2006. The CHKS report was informed by a number of key assumptions

1. Improved performance (as measured by average length of stay and day case rates) based on a benchmarking exercise utilising a peer group of 6 specialist children's hospitals and 5 major teaching hospitals with significant paediatric activity (all in England)
2. Improved efficiency in bed utilisation equating to average occupancy rates of 85% and 65% in elective and emergency areas respectively
3. An overall 11% reduction in acute hospital activity due to a projected 12.5% decline in the under 16 population by 2015
4. The transfer into the NCH of paediatric neurosurgical activity from the INS and all patients aged up to 16 currently cared for in other Greater Glasgow Hospitals. (Note: paediatric services currently provided in Clyde were not included in any of the planning assumptions)

Based on these assumptions the initial bed complement agreed in discussion with CHKS was 245. This was subsequently reduced to 240 following internal discussions with the Women's and Children's Directorate Management Team and NHS GGC. This additional reduction of five beds was based on

a. An agreement that the complement of inpatient psychiatry beds (not considered in the CHKS report) could be reduced from nine to six
b. The calculation that a reconfigured hospital incorporating, in particular, the co-location of Cardiology and Critical Care, could increase efficient bed utilisation by a further two beds (Note: this co-location was not achieved in the development of the Public Sector Comparator for the OBC but is being actively revisited at present and appears achievable)

The CHKS recommendation was shaped around an overall reduction of inpatient beds by 72 this figure was based on

34 beds arising from improved performance
15 beds arising from improved utilisation
23 beds arising from reduced demand due to demographic change

This reduction was partially offset by an increase in short stay and day case beds to facilitate improved performance such that the overall proposed reduction equated to approximately 50 beds based on an existing complement of 271 beds at RHSC and a "virtual" pool of approximately 18 – 20 beds currently accommodating the non-RHSC paediatric activity in other Glasgow hospitals (including the INS).

**Current Situation**

Population Projections

The CHKS report was based on the General Register Office 2004 population projections by Health Board area and age group (the most up-to-date available at that time) and used the projection for the 0-15 population in Greater Glasgow as a proxy for overall demographic change in respect of the RHSC catchment area.
The intervening years have seen an upward shift in the birth rate in Scotland (there has been a 13% increase in the births per annum in the 5 years to 2007[1]) which has now been reflected in significantly revised population projections. It is also noteworthy that in basing their calculation on the under 16 Greater Glasgow population as a whole the CHKS report did not accurately reflect the geographic referral base for RHSC (around 50% of RHSC admissions are from outwith the Greater Glasgow area) or the normal age profile (over 50% of inpatients are under 5 years).

Based on the most recent GRO population projections by Health Board and age range (2006-based; issued January 2008[2]) staff at the General Registrar Office have reviewed the inpatient activity (2006-2007 figures) at RHSC based on bed days broken down by age band and Health Board of origin and provided revised projections for future demand up to 2016 – 2017. These projections suggest that demographic change within the current RHSC referral base will result in a minimal reduction in activity (200 bed days; 0.4%) by 2013-2014 albeit with a shift towards an increased proportion of patients under 5 years (54% rising to 57%).

It is pertinent to note that these calculations are based on 2006 projections. Formal population projections, including those broken down by Health Board and age, are issued biennially and will not therefore be available for a further year. Interim data from the GRO does however emphasise the continuing upward trend in birth rate[3]. The first half of 2008 saw 1500 more births than the corresponding period of 2007 and the second quarter births in 2008 were the highest recorded for 11 years.

Activity

Although there is some year on year fluctuation, activity patterns at RHSC have remained fairly constant over the past 3 years. During the same timeframe overall average length of stay has reduced by 8.5%.

1. Scotland's Population 2007, The Register General's Annual Review of Demographic Trends, General Register Office, August 2008
2. Population Projection Scotland (2006 – based), General Register Office , January 2008
3. Births, Marriage and Deaths, Quarterly Figures, General Registrars Office, September 2008

| | **2004-2005** | **2007-2008** |
|---|---|---|
| Day Case | 6753 | 10033* |
| Inpatients (EL) | 6531 | 7996 |
| Inpatients (EM) | 8830 | 8400 |
| Inpatients (Total) | 15361 | 16396 |
| Bed Days (EL) | 27678 | 31105 |
| Bed Days (EM) | 30087 | 25320 |
| Bed Days (Total) | 57765 | 56425 |
| ALOS (EL) | 4.2 | 3.9 |
| ALOS (EM) | 3.4 | 3.0 |
| ALOS (Total) | 3.76 | 3.42 |

*a significant element of the rise in day cases has been due to the transfer of GG dental activity from the Dental Hospital to RHSC in 2007. Non GG day case activity has changed from 3117 per annum to 4299 per annum in same timeframe

Performance

Given the methodology and data base used for the CHKS report it is not possible to replicate that analysis in order to test performance assumptions against more recent data comparing RHSC with peer group hospitals. RHSC does however currently participate in a peer group programme led by Civil Eyes Research which also includes 13 other children's hospitals, or major teaching hospitals with paediatric units, across the UK including all the specialist children's hospitals utilised by CHKS. The CER analysis has focused on the 60 most common HRGs and has compared performance in terms of ALOS and day case rates. Analysis of the data suggests not insignificant inter-hospital differences in the approach to, and depth and accuracy of, the coding which underpins the allocation to HRGs and this requires to be taken into consideration in any interpretation of the data. This work does however offer the only currently available mechanism which allows some up-to-date peer group comparisons.

In regard to bed days the CER approach analyses the number of potential bed days which could be saved per HRG at each hospital were performance to match the 25$^{th}$ centile length of stay of the entire group for that HRG.

Inevitably the CER analysis reveals differences between hospitals both in terms of their overall capacity to reduce bed days and their performance in respect of individual HRGs. Across the full range of HRGs and all 14 hospitals the improvement that could be achieved by each unit consistently matching "best performance" was 0.54 bed days per spell* (Birmingham 1.13 bed days per spell; Liverpool 0.58 bed days per spell; Manchester 0.50 bed days per spell; RHSCG 0.84 bed days per spell)

Using this analysis, were RHSC to match *existing* average performance across the 14 hospitals (ie a saving of 0.3 bed days per spell – from 0.84 to 0.54) this would equate to a saving of 2500 bed days or equivalent of 7 beds.

**Note: CER analysis uses "spells" as opposed to FCEs*
Matching "best performance" for each individual HRG (ie saving 0.84 bed days per spell) would equate to a saving of 6800 bed days or 18-19 beds.

These potential savings relate to the top 60 HRGs. Applying this analysis, which is already subject to significant caveats, to the total activity of RHSC (or indeed any of the other hospitals) would involve significant additional assumptions that would, in turn, preclude drawing reliable conclusions. For illustration purposes however applying an improvement to match average performance (ie an improvement of 0.3 bed days per spell) to the overall activity of RHSC would equate to a reduction of 4900 bed days (13-14 beds) and applying a reduction of 0.84 bed days per spell to overall activity would equate with approximately 37 beds.

As already identified there are substantial differences in the CER approach to that used by CHKS which precludes reliable cross-referencing. The two reports have been considered in the context of the work undertaken by ISD (see below) and it has been recognised that it is not possible to make meaningful direct comparisons. The CER data is not however thought to have identified any obvious or significant shift in the bed modelling implications of RHSC matching a "virtual" best performance children's hospital that would suggest that the reduction of 34 inpatient beds used by CHKS does not remain essentially valid.

Information Services Division

Given the recognised change in the demographic projections published by GRO in early 2008, ISD were invited to review the CHKS report and its assumptions in the light of the changed projections and more updated activity levels.

Opportunity was also taken to invite ISD to consider the CER benchmarking approach and the feasibility of cross-referencing to the CHKS performance analysis albeit, as already identified, it was concluded that accurate cross-referencing was not possible and that no conclusion could be drawn other than the absence of any evidence of a significant shift in relative performance between RHSC and virtual “best practice”.

The report provided by ISD applied the efficiency benchmarks utilised by CHKS and the same assumptions regarding occupancy levels. The report also confirms that ISD found the impact of altered demographic projections to be essentially the same as GRO. Although there is some year on year variation due to fluctuations on activity levels the ISD calculations would suggest the need for a bed complement (excluding 6 child psychiatry beds) of between 246 – 256 beds (inpatient and ambulatory care). The report also recognised that at this level of inpatient bed provision, and with current activity patterns and performance, daily variation in admission rates means the hospital would be unable to accommodate demand (even at 100% occupancy) on “numerous days”.

Conclusion

The existing NCH bed complement of 240 beds has been based primarily on work undertaken by CHKS in 2006 which was, in turn, predicated on a number of key assumptions regarding improved performance, improved bed utilisation, a falling child population and specific agreed patient transfers (neurosurgery and GG adolescent patients).

Recent review of these assumptions demonstrates that one parameter (demographic change) has significantly altered in the interim. This element contributed 32% of the overall planned reduction in bed numbers (23 of 72 inpatient beds: allowing for the enhancement of day and short stay beds to enable improved performance, 32% of the overall final bed reduction of 50 beds would equate with around 16 beds).

The work undertaken with GRO and ISD has confirmed the impact of the identified changes in the population projections. Taken in conjunction with consistent activity patterns and the absence of evidence to alter the performance improvement assumptions applied in the CHKS report, consideration requires to be given to the implications of the revised population projections for the bed complement of the NCH.

In that regard it is pertinent to note there are a number of uncertain variables in respect of future activity patterns of RHSC particularly in regard to

- the future pattern/sustainability of DGH services (or elements thereof) across the West of Scotland
- the full impact of changes in the age limits for children’s services both in respect of DGHs and in regard to any application, within GG, of the original Kerr recommendation that patients aged 16-18 years should have the option of opting for care in a children’s unit

These issues do not lend themselves to accurate analysis or prediction at the present time but would, if anything, be likely to increase rather than decrease RHSC activities. Inevitably all of these matters need to be considered in the light of RHSC’s role as a sole provider of local services, many regional services and a number of Scotland-wide services.

Appendix A

**NCH Bed model**

| RHSC | OBC Bed Model |
|---|---|
| Neonatal surgical cots in Mat | 12 |
| Cardiology | 18 |
| Schiehallion | 22 |
| Psychiatry | 6 |
| Medical & surgical wards | 100 |
| ITU/HDU | 22 |
| 23 hour beds* | 13 |
| | |
| **in patient bed total** | **193** |
| | |
| short stay assessment | 20 |
| day surgery* | 13 |
| day case oncology | 4 |
| MDU | 10 |
| | |
| **overall total** | **240** |

* these will operate as a flexible combined unit

# *APPENDIX D*

# *BENEFITS EXPECTED FROM THE PROJECT*

***Appendix D***

***Benefits Expected from the Project***

## 1. BENEFITS EXPECTED FROM THE PROJECT

The following details the benefits which the investment in the New South Glasgow Hospitals will bring. The benefits fall under the following categories:

1.1 Clinical Quality
- 1.1.1 Establishment of Critical Co-Locations
- 1.1.2 Enhanced Patient Services
- 1.1.3 Reduction in Hospital Acquired Infection (HAI)

1.2 Sustainability of Services – (consolidation of services)
- 1.2.1 Ensuring continuing sustainability of clinical services
- 1.2.2 Optimal use of resources
- 1.2.3 Clinical Governance/Standardisation

1.3 Performance Improvement
- 1.3.1 General Issues
- 1.3.2 Performance Improvement – Emergency Activity
- 1.3.3 Performance Improvement – Elective Activity
- 1.3.4 Performance Improvement – Facilities Management (FM)
- 1.3.5 Performance Improvement – Information Technology (IT)

1.4 Physical Environment
- 1.4.1 Physical Environment – General Issues
- 1.4.2 A Healing Environment

1.5 Human Resources (Staffing and Workforce)
1.6 Environment Considerations
1.7 Enhanced links with the University
1.8 IT
1.9 Accessibility to Hospital
1.10 Economic and community benefits

The following section describes these benefits in more detail.

## 1.1 CLINICAL QUALITY

The design and build quality of the new South Glasgow hospitals will offer a world class environment for clinical care supporting significant improvements in the quality of clinical services and a reduction in hospital acquired infection. The following explains this in more detail.

### 1.1.1 Establishment of Critical Clinical Co-Locations

A major strength of Yorkhill Hospital had been its physical co-location with the Queen Mother's Maternity Hospital. Links however with adult clinical services were less good requiring staff to move between adult and children/maternity sites and on occasion the physical transfer of adult women across Glasgow to adult hospital facilities. The building of the new South Glasgow Hospitals allows "triple location" of adult, children's and maternity services onto one site. This "triple location" will mean appropriate staff will be available for the majority of clinical situations affecting all patient groups. This will eliminate the need for transfer of babies or women across the city to other sites and result in less distress for relatives, less staff movement and more efficient working practices.

The design of the new hospitals allows for a physical link between neurology and neurosurgical services and new adult and children's services. At present paediatric neurosurgical services are fragmented. A number of "work-arounds" have been developed to support this service however this present model of care is associated with inefficiencies and is not fit for purpose for modern medical practice. The co-location and physical linkage between the Institute for Neurological Sciences and the New South Hospitals allows the present model to be developed allowing easy access for patients to the optimal clinical environment and to appropriate specialist staff

Many of the buildings from which clinical services are currently provided date from the Victorian/Edwardian eras and have evolved piecemeal over the last 100 years with restricted opportunities available to achieve desirable clinical co-locations. Whilst these buildings have been adapted over the years as far as possible; these facilities do not lend themselves to the 21st century practice of medicine. The buildings and their associated clinical departments are often geographically remote from one another resulting in a large volume of staff and patient movement. As a result of these constraints the redesign of clinical services to date has been limited. The new South Glasgow hospitals development supports interdependent services to be optimally co-located resulting in an overall more efficient service.

### 1.1.2 Enhanced Patient Services

Consolidation on the Southern General site will achieve triple location of adult, maternity and children's services. The benefits this will deliver are detailed in section 1.1.1.

Bringing three adult hospitals onto one site has clear benefits around being able to build multidisciplinary specialist teams with 24/7 specialist availability. Having larger clinical teams means that, in general, higher cost treatments/interventions can be more efficiently deployed. Furthermore clinicians are better able to acquire and maintain required specialist skills. Duplication of resources on multiple sites is avoided.

The separation of elective and emergency work streams allows for high quality streamlined emergency care which at the same time avoids elective services being interrupted by emergency work and bottlenecks forming. In more detail, existing hospitals experience considerable cross over between emergency and elective work. While attempts have been, and continue to be, made to re-configure services to separate these flows; the success of this re-configuration is hampered by the design of existing buildings. The result of this cross over in flows is that pressure on one tends to lead to problems with the other. The design of the new South Glasgow hospitals has focussed on keeping emergency and elective work

separate. Effectively this will mean a better quality of care in that potential for bottle necks will be reduced and it will be easier, for example, to maintain the 4 hour wait Emergency Department standard at times of increased emergency activity without this coming at the expense of elective waiting times' guarantees

Combining clinical services from multiple sites affords the opportunity to realign beds across clinical specialties. This will improve occupancy rates and reduce the clinical risks and delays in patient care which occur due to "boarding" patients outwith the appropriate specialty.

The triple co-location of adult and children's will improve the quality of care of patients as they move from childhood to adulthood. Adolescence is recognised as a time of major physical and emotional change and stress. Many patients who suffer from chronic conditions (such as diabetes) experience increasing problems through their adolescent years. These difficulties are compounded where transition care arrangements are sub-optimal. Transitional services (where they exist) are currently fragmented. This is due to a combination of the lack of physical co-location of hospital sites and the need for Yorkhill to link to 5 adult hospital sites in Glasgow. The new South Hospitals build affords a first opportunity to properly develop these transitional services in an efficient manner which will lead to better patient outcomes and a more effective use of clinical staff.

### 1.1.3 Reduction in Hospital Acquired Infection (HAI)

Hospital Acquired Infection (HAI) is a major problem within modern clinical practice. There are a number of factors associated with increased HAI rates some of which relate to behaviours (staff & patients) and some of which relate to hospital design. It is well recognised however that good design can in turn influence behaviours. The infection control team have been closely involved throughout the design process. Design of the hospital is following the Department of Health Primary Guidance, Infection Control in the Built Environment (2002) to ensure a robust and consistent approach to HAI prevention and to demonstrate commitment to improving patient safety. Prevention of infection contributes to more effective healthcare which in turn aids productivity as delayed discharges and the requirement for further clinical interventions are reduced.

The presence of 100% single room with toilet / shower en-suite accommodation in ward areas will reduce HAIs by providing physical separation between patient beds and also greater flexibility in being able to isolate infectious patients. Any patient with an infectious (or potentially infectious) illness will always be in a single room. At the present time, healthcare workers often have to move patients from an open ward to a single room when infection becomes evident. This can sometimes require a patient to be moved to another ward or even to a single room in another different specialty area. Single room accommodation (as planned in this development) will result in better overall clinical care and outcomes with less patient (and carer) stress as well as more efficient use of healthcare workers' time

Behavioural issues which impact upon HAI rates include factors such as good hand hygiene and appropriate antibiotic use. Appropriate antibiotic use can be effected by proper use of clinical guidelines and good pharmacy support. The design of the new South Glasgow Hospitals includes a Medicines Management facility in all key clinical areas.

Hand hygiene is in part about staff behaviour however this is also influenced by making appropriate hand washing facilities available. Infection control measures in general and hand washing facilities in particular are a high priority within the design process. Every ward bed room and clinical area will have a clinical wash hand basin.

## 1.2 SUSTAINABILITY OF SERVICES – (CONSOLIDATION OF SERVICES)

The new adult and children's hospitals will allow:

a) the children's services at Yorkhill Hospital to transfer onto the Southern General Hospital site
b) adult inpatient services from 3 sites, the Western Infirmary, Victoria Infirmary and Southern General Hospital to consolidate onto a single site at the Southern General Hospital site.

This will ensure continuing sustainability of clinical services, optimise the use of resources and enhance clinical standardisation. These are described in more detail below.

### 1.2.1 Ensuring continuing sustainability of clinical services

There are a number of challenges around sustaining present clinical services. Some of these challenges are around delivering national clinical targets such as waiting times guarantees and the 4-hour Emergency Department wait standard. There are additional challenges around maintaining clinical staff rotas that are both European Working Times Directive (EWTD) compliant and, in the case of medical staff, compliant with the principles associated with Reshaping the Workforce (formally Modernising Medical Careers (MMC)). Bringing together the three adult hospitals onto one site will allow consolidation of a number of important clinical specialties (including A&E, Critical Care, theatres, renal, vascular surgery and Imaging) with resulting economies of scale. The number of staff rotas can be reduced and also the intensity of work associated with these rotas facilitating sustainability around both EWTD and Reshaping the Workforce.

The consolidation of services into a new build will allow more efficient working practices to be developed ensuring sustainability of service, these are discussed in more detail under 'performance Improvement'

### 1.2.2 Optimal use of resources

Bringing three adult hospitals onto one site affords significant economies of scale benefits including better use of equipment and physical resources. For example there will only be one Emergency Department compared with three at present. The same applies to theatres, critical care and Imaging, all of which will reduce from 3 to 1 sites. This rationalisation onto one site will be of particular benefit with respect to out of hours cover and extended day working along with the highlighted more efficient use of equipment.

Keeping a separate adult and children's hospital identity is important as both groups have very different physical and emotional healthcare needs. There are however some key adjacencies which support shared working under certain circumstances. The adult and children's Emergency Departments are sited side by side and, although physically separate, can support joint working in cases of major incident. Similarly chemical decontamination facilities are situated between the adult and children's Emergency Department entrances and are designed to be shared.
Careful co-location of departments is also important in providing contingency capacity. As an example; the adult and children's imaging departments are co-located which, in addition to providing contingency capacity for each hospital, also allows the potential for out of hours imaging rotas to be amalgamated.
There a number of other facilities and services which are shared such as the energy centre, pharmacy dispensary, FM systems and restaurant thereby supporting optimal resource utilisation

### 1.2.3 Clinical Governance / Standardisation

Standardised approaches to clinical care are difficult to achieve across multiple sites. This is due both to cultural differences amongst institutions as well as differences in the physical layouts of facilities. Introducing models of best practice in medical care and sustaining them remains challenging. By moving to a large single site facility standardised approaches will be easier to develop, institute and sustain. Evaluation of clinical and other performance outcomes will also be easier with less duplication of effort involved.

## 1.3 PERFORMANCE IMPROVEMENT

### 1.3.1 General Issues

HEAT (Health improvement, Efficiency, Access, Treatment) targets for the time taken from General Practitioner referral to institution of treatment for cancer and other services require to be met by 2011. The new South Glasgow hospitals development will ensure the sustainability of these targets and the ability to meet future targets by supporting improved ways of working, creating more capacity through more efficient working and more effective patient pathways. The aim being to provide timely and fit for purpose emergency and elective care.

The separation of emergency from elective care will support better patient throughput/bed occupancy by better avoiding peaks of emergency activity disrupting elective work.

Bringing together three hospitals onto a single site better supports service re-design and re-configuration. This re-design in turn will support the implementation of the planned future bed model. This will be sustained both by efficiencies within overall lengths of stay and by better alignment of bed numbers to meet specialty requirements.

### 1.3.2 Performance Improvement – Emergency Activity

The large number of emergency and elective admissions that will result from consolidation from three hospitals onto one site gives the opportunity to further develop 24/7 specialist rotas. From a patient perspective this means better clinical care with access as early in the journey as possible to the appropriate specialist which will be associated with earlier and more focussed investigation and treatment plans. There is good evidence available to show that specialists (compared to generalists) will use clinical resources (such as diagnostics) more efficiently and institute treatment/management plans earlier. There is also evidence that specialist involvement is associated with a shorter length of stay and a greater use of out-patient care. All of these factors will allow more efficient working practices to be developed and enhanced and support future workforce planning and bed modelling profiles.

The new Acute Assessment Unit model supports future work that will be carried out around admission avoidance. The development of a dedicated AAU Outpatient Area provides a focus for the provision of a greater proportion of ambulatory care. This may avoid the need for admission for a number of well defined patient groups such as patients with DVT, low risk pulmonary embolism, low risk GI bleed and patients who require IV antibiotic therapy. Earlier patient discharge can often be effected where appropriate and timely (early) outpatient specialist review is available. The AAU Outpatient Area provides a locus for this activity without impacting on the main elective outpatient activity happening elsewhere in the hospital.

### 1.3.3 Performance Improvement – Elective Activity

The Day of Admission facility in the Theatres Complex will allow patients to be admitted straight to theatre on day of their surgery (rather than going first to a ward area). This will streamline the patient journey and reduce overall length of stay. The Day of Admission facility

allows wards to work more efficiently by maintaining the focus on discharging patients during the first part of the morning rather than having to combine the patient discharge process with dealing with new admissions.

The General Outpatient Clinic area in conjunction with the Medical Day Unit and Pre-Operative Assessment Unit will also provide opportunities to streamline patient flows, by for example streamlining testing/diagnostics to avoid unnecessary “return” appointments

### 1.3.4 Performance Improvement – Facilities Management (FM)

The planned introduction of Automated Guided Vehicles (AGVs) and the (underground) physical link between the Facilities Management yard and the new hospitals will increase the efficiency and reliability of supplies delivery and waste removal. The latter will also reduce the risk from moving and handling injuries .

The installation of a pneumatic tube between the hospital departments and the laboratory building will allow high speed material transport of specimens which will facilitate faster turn-around of diagnostic tests. This system can also be used for delivery of discharge medicines to ward areas and support earlier in the day discharges.

A reduction in the number of hospital sites will facilitate a reduction in both maintenance costs and site management costs. Moving from Victorian buildings to a new build will allow sustainability and green issues to be met and savings in energy efficiency.

### 1.3.5 Performance Improvement – Information Technology (IT)

Effective IT will also support effective working. The new hospitals development is fully IT networked with appropriate provision of hardwired and wireless technology. This will support paperless/lite working. This is described in more detail in section (1.8).

## 1.4 PHYSICAL ENVIRONMENT

### 1.4.1 Physical Environment – General Issues

The new South Glasgow hospitals development is based upon a purpose built design which, through input of staff users and patient representatives, is fit for purpose and better able to address the priorities in ‘The Healthcare Quality Strategy for NHS Scotland’ as described below.

The provision of 100% single rooms in ward areas will provide the privacy and space to allow clear communication and discussion between the clinician and patient supporting shared decision making in treatment. Care has been taken within the single room design to allow optimum patient observation for staff but still maintain appropriate patient privacy.

The Design of the building and careful selection of materials and will make the cleaning and maintenance of the building easier and improve the health and safety of patients and staff and reduce the risk of Hospital Acquired Infection.

Detailed planning around security of entrances and internal corridors with appropriate use of “swipe card” access doors, the setting up of areas that are only accessible to patients and clinical staff, use of CCTV and the potential to lock down clinical areas out of hours will enhance security for patients and staff.

### 1.4.2 A Healing Environment

The new facilities will provide a modern environment with good levels of natural light and ventilation in an aesthetically pleasant setting with amenities both internal and external to the buildings.

A Design and Healthy Strategy Group has been formed to develop and implement a strategy to deliver a healthy and therapeutic environment for the new South Glasgow Hospitals including building design and healing environment, interior design and landscaping, way finding, architectural elements and integrated art. This will ensure a pleasant therapeutic environment for patients and visitors and a positive working environment for staff encouraging retention

New hospital buildings which have been designed to maximise easy way finding which will enhance the patient/visitor/carer experience and reduce stress. For example the shape of the buildings and planned landscaping will provide intuitive way finding to the main entrances, this will be enhanced by clear signage, and lighting. Once inside the main entrance there are receptions desks strategically placed to allow immediate access to information. Key routes through the hospitals will be land marked by art or signature pieces. Exits from the lifts on each floor although similar, will be individually land marked to orientate visitors through the building.

The children's hospital in response to parent/carers feedback, provides an overnight stay facility for parents by each bed, showers and also kitchen facilities for parents to make beverages and snacks.

## 1.5 HUMAN RESOURCES

As part of the development of the new South hospitals we anticipate some real tangible benefits for the workforce. The new state-of-the-art facilities will be key to attracting potential employees to NHSGGC and retaining existing staff. The ability to attract new employees will be particularly helpful in recruiting for the new roles – particularly those at levels three and four of the career framework which have been developed in partnership with local education providers and other roles developed as part of the redesign of services and working towards the aim of making the NHS an employer of choice as part of *A Force for Improvement: The Workforce Response to Better Health, Better Care.* Together with the new facilities and modern equipment the South Glasgow site will also be shared with Glasgow University. This will enhance teaching, research and play a significant role in attracting and retaining high-quality staff in all disciplines.

The design of the new adult hospital provides single-bedded rooms for all patients. This model increases observation of patients from appropriate staff areas. Similarly, staff absence caused by musculoskeletal problems from manual handling and lifting of patients should decrease given the introduction of assisted handling and moving hydraulics in each patient bedroom thereby reducing the need for staff to complete the majority of moving and handling manoeuvres.

Consolidating the workforce onto fewer sites delivers benefits to workforce utilisation, allows for rationalisation of existing rotas, the introduction of new work patterns, reducing the number of unsocial hours required to be worked and supporting the choice around work/life balance. The consolidation also increases the likelihood that doctors will be able to work in a team environment within their own specialities, provides opportunities to redesign services based on best-practice from across existing sites and reduces the need for inter-site travel.

The new South hospitals will have a dedicated transport hub and by working with local public transport providers the Board's aim to develop a transport plan to ensure as many members

of staff as possible are able to reach the new hospitals by public transport. This will have associated environmental benefits and be an incentive to staff to leave their cars at home.

Evidence from similar builds, for example our own ambulatory care hospitals recognises there can be real benefits to staff morale by working in a purpose-built facility with large, open areas for meeting colleagues. With the inclusion of the park just outside the adult hospital this will provide space for staff to relax and unwind. Similarly, with concentrating staff on fewer sites it will enhance medical staff rotas, offer them more opportunity to share expertise and work in a multi-disciplinary environment.

Staff involvement in the design process has been beneficial as they have been fully consulted on critical design elements, for example the layout of patient rooms and have had the opportunity to feedback on areas where further improvements could be made. This involvement will result in a hospital designed from the ground-up to meet the needs of patients and develop good workflows and environment for staff.

## 1.6 ENVIRONMENT CONSIDERATIONS

Importantly a new build will provide opportunities to address environmental considerations maximising energy efficiency. Energy consumption and carbon emissions were considered in terms of evaluating building performance during the tender stage. NHS GG&C have worked in association with the Carbon Trust and Sustainability Glasgow to set demanding performance targets, and in conjunction with the delivery partner, will deliver a beacon development of sustainability. In more detail the New South Glasgow Hospitals will deliver the following benefits in respect of the environment.

### 1.6.1 Reduced Carbon Output

The Operational Carbon Design target of this facility is 55% lower than that expected of an average Healthcare site. This equates to annual saving of over 5,000 tonnes of CO2 compared to an existing Healthcare site which should go some way to meeting the Health Board's obligations under the Climate Change Act (Scotland).

### 1.6.2 Reduced Energy Costs

The Demonstrated Energy costs target of the New Adult and Children's Hospital are 60% lower than a traditional comparable existing hospital,

### 1.6.3 Quality User Environment

The Brookfield bid has demonstrated how the New Hospitals will achieve an "Excellent" rating under the BREEAM Healthcare Assessment to ensure the highest quality of user environment and amenity for patients, visitor's and staff.

## 1.7 ENHANCED LINKS WITH THE UNIVERSITY

In addition to their primary clinical service role, the new South Glasgow Hospitals will also have a major education role. This will lead to a further enhancement of links with local universities (particularly Glasgow & Caledonian Universities) as well as consolidation of existing academic links.

Consolidating three hospitals onto one site brings a number of opportunities from an education perspective. These opportunities might be considered both from a staff perspective and from a research opportunity perspective.

From a staff perspective, clinical academics currently based in the Western Infirmary will have their clinical base in the new South Glasgow Hospital. This relocation will provide staff with critical co-location with other academic staff – including existing academic staff in neurology and neurosurgery already on the Southern General campus – as well as other clinical staff in multiple different specialties. This enhances opportunities for collaboration in both research and teaching.

From a research perspective bringing patients, whose attendance is currently split across three hospital sites, onto a single site provides an enhanced opportunity for clinical research. A number of clinical research networks are already in place. These networks will be strengthened by virtue of their geographic co-location.

A site has been identified adjacent to the new South Hospitals build that has been earmarked for a new build for the University of Glasgow. This will potentially provide laboratory space and large lecture theatre space on site. The presence of clinical academic staff and the large volume of clinical activity that will take place will act as stimulus to support the business case for this development.

The new South Glasgow Hospital has also been designed to support teaching and training. Large meeting/seminar rooms are situated throughout the podium and the ward tower block. These areas will be particularly suitable for undergraduate and postgraduate teaching. All seminar rooms will be fully equipped for teaching and have appropriate IT links provided.

In addition to the presence of academic clinical staff and the bringing together of large teams of clinical specialists; the large number of patients will provide an unrivalled opportunity for clinical teaching at undergraduate and postgraduate level for a number of disciplines including medicine, nursing and allied health professions.

## 1.8 IT

Technologically advanced IT networks providing hardwired and wireless infrastructure are included throughout the hospitals providing the backbone for developing systems. This will support the implementation of a paper-lite environment which will allow patient information to be accessed and inputted at the point of care , the IT infrastructure will also facilitate telemedicine initiatives enhancing teaching and information sharing.

## 1.9 ACCESSIBILITY TO HOSPITAL AND COMPLIANCE WITH TRAVEL PLAN

The Design of the New Hospitals and the strategy and funding underpinning the Travel Plan, will deliver a number of benefits to the Hospitals communities and the Greater Govan area. A key element of the design of the new Hospitals is a high quality public transport arrival space adjacent to the main entrances of both hospitals. This will provide better access to the hospitals by reducing walking time from bus stance to front door. In particular, those with restricted mobility or parents with children in buggies will benefit. The Arrival Space will also have high quality shelters as well as waiting areas inside the Hospitals. Both these waiting areas will have real time information allowing passengers to know exactly when a bus service is arriving. These reduce exposure to the cold or rain enhancing the travel experience as well as avoiding damage to health. The investment in this space allows for consideration of a Quality Bus Partnership to be developed. This could further enhance the quality of the vehicles using the Arrival Space by agreeing standards relating to driver behaviour, cleanliness, punctuality and engine emissions. Improved confidence in public transport, more patronage, improved air quality could all follow.

The Travel Plan makes generous provision for improved public transport to and from the site. The provision of Fastlink or the alternative Super Southern bus will enhance connectivity

between Glasgow City Centre, Govan Underground, the New Hospitals and Braehead Shopping Centre. The service will provide improved connectivity within the City Centre at Buchanan Street Station, Queens Street and Central Stations, thus enhancing access for those coming from outside Glasgow. This will be of particular benefit to parents and patients of the New Children's Hospital. As well as provide high quality public transport for staff, patients and visitors of the New Hospitals, this iconic bus service will help economic development in the Greater Govan area and access to employment. The significant financial investment in other bus routes will increase access to the site, reduce current journey times and improve DDA compliance through the tendering process.

The site car parking strategy will also bring major benefits to the current situation. The strategic aim of controlling peak hour access to the site will ensure that localised congestion is not exacerbated. Achieving this will require distribution of car parking permits in a way which provides a more equitable access to different grades of staff. Car sharing will be greatly enhanced by the provision of dedicated car parking spaces and short term social need will be better addressed by provision of bookable spaces. The Travel plan arrangements will also reduce nuisance parking outside the site by support for controlled parking. Cycling will be made more attractive by the design of bespoke bike shelters and provision of showering, changing and secure storage facilities. This will reduce localised congestion, help improve air quality, result in individual health gain by regular exercise. The financial contribution towards cycling paths will help integrate the site and the local community better into the Cycling Network and the Core Paths network. This will contribute to improved access to the area through better and safer cycle routes to and from the area.

## 1.10 COMMUNITY AND ECONOMIC BENEFITS

NHS Greater Glasgow and Clyde recognises within the current economic climate the need to utilise its infrastructure investment in South West Glasgow effectively to support and sustain business and jobs in the wider economy.

The redevelopment of the Southern General site is recognised by partners as a catalyst for broader economic and social regeneration, contributing positively to the physical development of the local area and contributing significantly to the South West economy and that of the wider locality.

NHS Greater Glasgow and Clyde continues to engage partners and communities in maximising the economic impact of its investment in the New South Glasgow Hospitals Campus.

# *APPENDIX E*

# *BENEFITS ANALYSIS*

## *Appendix E*

## *Benefits Analysis*

| | Description of Benefit | Weighting (out of 100) | Option 1 (Score out of 10) | Option 1a (Score out of 10) | Greenfield | Option 1 | Option 1a | Greenfield |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Score x Weighting | Score x Weighting | |
| | **Sustainability of Services (Consolidation of Services)**<br>Consolidate inpatient services onto 3 sites. Meeting key objectives of ASR.<br>Centralise and concentrate specialist clinical expertise to meet European Working Time Directive, New Deal for Junior Doctors, Modernizing Medical Careers and need to sub specialise | 25 | 10 | 10 | 10 | 200 | 200 | 200 |
| | **Clinical Quality**<br>Triple co-location of Adult, Children and maternity services leading to safer care for mothers and babies. Provide integrated neonatal unit.<br>Clinical Effectiveness and safety for patients. Create structured links to support services provided by primary care and social work. | 20 | 10 | 10 | 10 | 200 | 200 | 200 |
| | **Performance Improvement in Patient Services**<br>Increase clinical capacity, improve access to services, meet waiting time guarantees, increase number of one stop clinics, improved electronic records.<br>Separate elective from emergency activity leading to less cancellations and improve efficiency of procedures.<br>Delivery of age appropriate care. Provide care to adolescents & young people taking cognisance of their privacy & dignity needs. | 20 | 10 | 10 | 10 | 200 | 200 | 200 |

| | Description of Benefit | Weighting (out of 100) | Option 1 (Score out of 10) | Option 1a (Score out of 10) | Greenfield | Option 1 | Option 1a | Greenfield |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Score x Weighting | Score x Weighting | |
| | **Physical Environment**<br>Provide modern accommodation, fit for purpose. Promote a healing environment. Improve accessibility across the campus. Adherence to health and safety legislation. Compliance with building requirements. | 15 | 9 | 8 | 10 | 135 | 120 | 150 |
| | **Accessibility to Hospital**<br>Ensure access to hospital services | 5 | 10 | 10 | 8 | 50 | 50 | 40 |
| | **Staff Facilities and Staff Motivation**<br>Positive impact for staff. Maximise use of facilities where poss ble for staff & the community through out of hours access e.g. rehab gyms, staff facilities. | 5 | 10 | 9 | 8 | 50 | 45 | 40 |
| | **Enhanced University Links**<br>Maintain and enhance academic links e.g. the Genetics research service provided at RHSC. | 5 | 9 | 9 | 9 | 45 | 45 | 45 |
| | **Environmental**<br>Minimise impact on environment during construction, reducing long term carbon output. Use of sustainable materials, maintaining biodiversity. | 5 | 9 | 8 | 6 | 45 | 40 | 30 |
| | Total | 100% | | | | 975 | 950 | 955 |

In addition to the above listed benefits it is recognised that economic benefits are also a feature of the project. The application of this would be neutral across options and therefore not scored separately as it does not impact on the outturned totals.

# *APPENDIX F*

## *SAMPLE TRACKER FOR 1:200 DESIGN USER GROUP MEETINGS*

*Appendix F*
*Sample Tracker for 1:200 Design User Group Meetings*

***NA-SH-001***
***NEW SOUTH GLASGOW HOSPITALS***
***1:200 USER GROUP MEETING TRACKING SCHEDULE & PROGRAMME***
***Rev 16 (FBC submission)***

NIGHTINGALE associates

**UGM Change Status Key**

| | |
|---|---|
| A | Minor / Nominal change |
| B | Medium change |
| C | Severe / Significant change (redraw) |

**Tracking Status**

| | |
|---|---|
| √ | Complete |
| ● | Amendment from Bid drawings. Workshop review required to resolve issues. |
| * | Complete redesign/redraw therefore no drawing markup issued directly following UGM |

**Sign Off Status**

| | |
|---|---|
| √ | Complete |
| √ | Further design development after 1 200 design stage - sign off received during 1 50 Stage |
| | |

| | | | | | | | | 5 weeks (approx) | | | | | | | | | | 5 weeks (approx) | | | | | | | | Sign off Period | | | | | 1:50 Design Development (Standard Rooms) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | DEPARTMENT NAME | FLOOR | Sheet & Drawing No. | Latest Rev | Date Issue for UGM1 drawings | PreMeeting Briefing Pack Issued | **User Group Meeting No. 1** | UGM 1 Change Status | Markup issued to board | Action points received | M&E Design Review | Structural Design Check | SOA compliance | Final Check & Issue | Date Issue for UGM2 drawings | PreMeeting Briefing Pack Issued | **User Group Mtg No 2** | UGM 2 Change Status | Markup issued to board | Action points received | Review by M&E | Structural Design Check | SOA compliance | Final Check & Issue | Date Issue for UGM3 drawings | PreMeeting Briefing Pack Issued | **User Group Mtg No 3** | User Group Mtg No 4 required? | Area Reports, B/W, Thematic views issued | Signed Dwg Markup issued | Sign Off Action points received | **FINAL SIGN OFF** | User Group Mtg No 1 | User Group Mtg No 2 | Appendix K Review Meeting |
| **Adult 1:200's Design User Group Meetings** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Inpatient Wards (Generic) | 03-05 | NA-xx-06-PL-252-401<br>NA-xx-06-PL-252-402<br>NA-XX-XX-SK-AS-400-100 | 05<br>01 | 05/01/10 | √ | **20/01/10** | A | √ | √ | √ | √ | √ | √ | 26/02/10 | √ | **08/03/10** | A | √ | √ | √ | *ongoing* | √ | √ | 09/04/10 | √ | **20/04/10** | - | Yes | √ | √ | √ | 14/06/10 | 16/08/10 | √ |
| 2 | Stroke Ward | 01 | NA-xx-01-PL-252-406 | 07 | 13/01/10 | √ | **20/01/10** | C | √ | √ | √ | ● | √ | √ | 26/02/10 | √ | **08/03/10** | B | √ | √ | √ | *ongoing* | √ | √ | 09/04/10 | √ | **20/04/10** | - | Yes | √ | √ | √ | 14/06/10 | 16/08/10 | √ |
| 3 | Rehabilitation (Outpatients) | 00 | NA-xx-00-PL-252-409<br>NA-xx-06-PL-252-400 | 03<br>03 | 13/01/10 | √ | **20/01/10** | A | √ | √ | √ | √ | √ | √ | 26/02/10 | √ | **08/03/10** | A | √ | √ | √ | *ongoing* | √ | √ | 09/04/10 | √ | **20/04/10** | - | Yes | √ | √ | √ | - | 23/08/10 | √ |
| 4 | Renal Inpatients & Day Unit, &<br>Renal Dialysis | 02&04 | NA-xx-04-PL-252-411<br>NA-xx-02-PL-252-409 | 04<br>06 | 15/01/10 | √ | **21/01/10** | B | √ | √ | √ | √ | √ | √ | 02/03/10 | √ | **10/03/10** | A<br>C | √ | √ | √ | *ongoing* | √ | √ | 13/04/10 | √ | **22/04/10** | - | Yes | √ | √ | √ | 17/06/10 | 19/08/10 | √ |
| 5 | Main Entrance & Public Areas | 00&01 | NA-xx-00-PL-252-411<br>NA-xx-01-PL-252-400 | 06<br>04 | 13/01/10 | √ | **22/01/10** | A | √ | √ | √ | √ | √ | √ | 01/03/10 | √ | **09/03/10** | B | √ | √ | √ | √ | √ | √ | 12/04/10 | √ | **21/04/10** | - | Yes | √ | √ | √ | - | 10/08/10 | √ |
| 6 | Radiology | 00&01 | NA-xx-00-PL-252-407<br>NA-xx-01-PL-252-407 | 07<br>04 | 18/01/10 | √ | **25/01/10** | C | √ | √ | ● | √ | √ | √ | 05/03/10 | √ | **15/03/10** | B | √ | √ | √ | *ongoing* | *ongoing* | √ | 16/04/10 | √ | **27/04/10** | 13/05/10 | Yes | | √ | √ | 21/06/10 | 30/08/10 | √ |
| 7 | OPD (Generic) & Pre Assessment Unit | 00&01 | NA-xx-00-PL-252-409<br>NA-xx-01-PL-252-409 | 04<br>07 | 19/01/10 | √ | **26/01/10** | C | √ | √ | √ | √ | √ | *Sketch Issued* | 03/03/10 | √ | **11/03/10** | B | √ | √ | √ | *ongoing* | *ongoing* | √ | 14/04/10 | √ | **23/04/10** | - | Yes | √ | √ | √ | 01/07/10 | 06/09/10 | √ |
| 8 | Operating Theatres AODOS & Recovery | 02 | NA-xx-02-PL-252-415 | 04 | 20/01/10 | √ | **27/01/10** | C | √ | √ | ● | ● | √ | √ | 03/03/10 | √ | **11/03/10** | B | √ | √ | √ | *ongoing* | *ongoing* | √ | 14/04/10 | √ | **23/04/10** | - | Yes | √ | √ | √ | 28/06/10 | 02/09/10 | √ |
| 9 | Acute Assessment Unit (AAU) | 00 | NA-xx-00-PL-252-406 | 04 | 22/01/10 | √ | **29/01/10** | C | √ | √ | √ | ● | √ | √ | 04/03/10 | √ | **12/03/10** | B | √ | √ | √ | *ongoing* | *ongoing* | √ | 15/04/10 | √ | **26/04/10** | - | Yes | √ | √ | √ | 12/07/10 | 09/09/10 | √ |
| 10 | MDU/Clinical Investigations Unit | 01 | NA-xx-01-PL-252-406 | 07 | 19/01/10 | √ | **01/02/10** | C | * | √ | √ | √ | √ | √ | 08/03/10 | √ | **16/03/10** | B | √ | √ | √ | *ongoing* | *ongoing* | √ | 19/04/10 | √ | **28/04/10** | - | Yes | √ | √ | √ | - | 12/08/10 | √ |
| 11 | Critical Care | 01 | NA-xx-01-PL-252-414 | 05 | 25/01/10 | √ | **01/02/10** | C | * | √ | √ | ● | √ | √ | 11/03/10 | √ | **19/03/10** | B | √ | √ | √ | *ongoing* | *ongoing* | √ | 13/04/10 | √ | **22/04/10** | - | Yes | √ | √ | √ | 24/06/10 | 26/08/10 | √ |
| 12 | Emergency Department (ED) | 00 | NA-xx-00-PL-252-405 | 06 | 21/01/10 | √ | **02/02/10** | C | * | √ | √ | ● | √ | √ | 10/03/10 | √ | **18/03/10** | A | √ | √ | √ | *ongoing* | *ongoing* | √ | 20/04/10 | √ | **29/04/10** | - | Yes | | √ | √ | 08/07/10 | 13/09/10 | √ |
| 13 | Coronary Care Unit (CCU) | 01 | NA-xx-01-PL-252-404 | 06 | 24/01/10 | √ | **02/02/10** | B | * | √ | √ | √ | √ | √ | 09/03/10 | √ | **17/03/10** | B | √ | √ | √ | *ongoing* | *ongoing* | √ | 23/04/10 | √ | **04/05/10** | - | Yes | √ | √ | √ | 13/07/10 | 10/09/10 | √ |
| 14 | Nuclear Medicine (Adults & Childrens) | 01 | NA-xx-01-PL-252-408 | 04 | 08/01/10 | √ | **03/02/10** | C | * | √ | √ | √ | √ | √ | 06/04/10 | √ | **14/04/10** | A | √ | √ | √ | *ongoing* | *ongoing* | √ | 07/05/10 | √ | **18/05/10** | - | Yes | | | √ | 14/07/10 | 01/09/10 | √ |
| 15 | Endoscopy | 02 | NA-xx-02-PL-252-404 | 08 | 11/01/10 | √ | **03/02/10** | A | | √ | √ | √ | √ | √ | 11/03/10 | √ | **19/03/10** | C | √ | √ | √ | *ongoing* | *ongoing* | √ | 23/04/10 | √ | **04/05/10** | - | Yes | √ | √ | √ | 30/06/10 | 17/09/10 | √ |
| 16 | Urology | 01 | NA-xx-01-PL-252-409<br>NA-xx-01-PL-252-410 | 07<br>02 | 26/01/10 | √ | **03/02/10** | C | √ | √ | √ | √ | √ | *Sketch Issued* | 10/03/10 | √ | **18/03/10** | A | √ | √ | √ | *ongoing* | *ongoing* | √ | 19/04/10 | √ | **28/04/10** | - | Yes | √ | √ | √ | 02/07/10 | 06/09/10 | √ |
| 17 | Diabetes | 01 | NA-xx-01-PL-252-409 | 07 | 26/01/10 | √ | **03/02/10** | C | √ | √ | √ | √ | √ | *Sketch Issued* | 04/03/10 | √ | **12/03/10** | A | √ | √ | √ | *ongoing* | *ongoing* | √ | 13/04/10 | √ | **22/04/10** | - | Yes | √ | √ | √ | 02/07/10 | 09/09/10 | √ |
| 18 | Haemato-oncology (Inpatient Ward) | 04 | NA-xx-04-PL-252-403 | 03 | 22/01/10 | √ | **04/02/10** | B | | √ | √ | √ | √ | √ | 16/03/10 | √ | **25/03/10** | B | √ | √ | √ | *ongoing* | *ongoing* | √ | 28/04/10 | √ | **07/05/10** | - | Yes | √ | | √ | - | 16/08/10 | √ |
| 19 | Pharmacy &<br>Aseptic Suite (Adults & Childrens) | 00 | NA-xx-00-PL-252-411<br>NA-xx-02-PL-252-404 | 05<br>10 | 27/01/10 | √ | **04/02/10** | B / C | | √ | ● | √ | ● | √ | 15/03/10 | √ | **23/03/10** | A / B | √ | √ | √ | *ongoing* | *ongoing* | √ | 04/05/10 | √ | **13/05/10** | 21/05/10 | Yes | √ | √ | √ | 14/07/10 | 15/09/10 | √ |
| 20 | ENT | 01 | NA-xx-01-PL-252-409 | 07 | 28/01/10 | √ | **05/02/10** | C | √ | √ | √ | √ | | *Sketch Issued* | 09/03/10 | √ | **17/03/10** | A | √ | √ | √ | *ongoing* | *ongoing* | √ | 27/04/10 | √ | **06/05/10** | - | Yes | √ | | √ | 02/07/10 | 06/09/10 | √ |
| 21 | Ophthalmology | 01 | NA-xx-01-PL-252-409 | 07 | 28/01/10 | √ | **05/02/10** | C | √ | √ | √ | √ | | *Sketch Issued* | 09/03/10 | √ | **17/03/10** | A | √ | √ | √ | *ongoing* | *ongoing* | √ | 19/04/10 | √ | **28/04/10** | - | Yes | √ | √ | √ | 02/07/10 | 06/09/10 | √ |
| 22 | Orthopaedics | 00 | NA-xx-00-PL-252-409 | 04 | 28/01/10 | √ | **05/02/10** | C | √ | √ | √ | √ | | *Sketch Issued* | 09/03/10 | √ | **17/03/10** | A | √ | √ | √ | *ongoing* | *ongoing* | √ | 27/04/10 | √ | **06/05/10** | - | Yes | √ | | √ | 02/07/10 | 09/09/10 | √ |
| 23 | Cardiology OPD &<br>Cardiac Rehabilitation | 01<br>00 | NA-xx-01-PL-252-409<br>NA-xx-00-PL-252-409 | 07<br>05 | 28/01/10 | √ | **05/02/10** | C | √ | √ | √ | √ | | *Sketch Issued* | 09/03/10 | √ | **17/03/10** | B<br>A | √ | √ | √ | *ongoing* | *ongoing* | √ | 23/04/10 | √ | **04/05/10** | - | Yes | √ | √ | √ | 13/07/10 | 10/09/10 | √ |
| 24 | Decontamination Suite | 02 | NA-xx-02-PL-252-404 | 08 | 29/01/10 | √ | **08/02/10** | C | √ | √ | √ | | √ | √ | 12/03/10 | √ | **22/03/10** | A | √ | √ | √ | *ongoing* | *ongoing* | √ | 26/04/10 | √ | **05/05/10** | - | Yes | √ | √ | √ | 16/07/10 | 16/09/10 | √ |
| 25 | FM Facilities (Adult & Children's) | B1-04 | NA-xx-01-PL-252-400<br>NA-xx-02-PL-252-400<br>NA-xx-03-PL-252-400<br>NA-xx-B1-PL-252-400<br>NA-xx-B1-PL-252-010<br>NA-xx-06-PL-252-400 | 06<br>03<br>05<br>03<br>02<br>05 | 01/02/10 | √ | **09/02/10** | B/C | | √ | ● | | | √ | 12/03/10 | | **22/03/10** | C | √ | √ | √ | *ongoing* | *ongoing* | √ | 26/04/10 | √ | **05/05/10** | - | Yes | √ | √ | √ | 15/07/10 | 16/09/10 | √ |
| 26 | Medical Illustration (Adults & Childrens) | 00 | NA-xx-00-PL-252-407 | 06 | 03/02/10 | √ | **11/02/10** | C | √ | √ | | ● | | √ | 15/03/10 | √ | **24/03/10** | C | √ | √ | √ | *ongoing* | *ongoing* | √ | 10/05/10 | √ | **19/05/10** | - | Yes | √ | | √ | - | 01/09/10 | √ |
| 27 | Dermatology Ward &<br>Dermatology OPD | 02 | NA-xx-02-PL-252-401<br>NA-xx-02-PL-252-409 | 04<br>05 | 15/02/10 | √ | **23/02/10** | A | √ | √ | | | | *Sketch Issued* | 18/03/10 | √ | **29/03/10** | C<br>B | √<br>√ | √ | | *ongoing* | *ongoing* | √ | 28/04/10 | √ | **07/05/10** | - | Yes | √ | √ | √ | - | 09/09/10 | √ |

***NA-SH-001***
***NEW SOUTH GLASGOW HOSPITALS***
***1:200 USER GROUP MEETING TRACKING SCHEDULE & PROGRAMME***
***Rev 16 (FBC submission)***

NIGHTINGALE associates

**UGM Change Status Key**

| | |
|---|---|
| A | Minor / Nominal change |
| B | Medium change |
| C | Severe / Significant change (redraw) |

**Tracking Status**

| | |
|---|---|
| √ | Complete |
| ● | Amendment from Bid drawings. Workshop review required to resolve issues. |
| * | Complete redesign/redraw therefore no drawing markup issued directly following UGM |

**Sign Off Status**

| | |
|---|---|
| √ | Complete |
| √ | Further design development after 1 200 design stage - sign off received during 1 50 Stage |
| | |

| | | | | | | | | 5 weeks (approx) | | | | | | | | | | 5 weeks (approx) | | | | | | | | | Sign off Period | | | | | 1:50 Design Development (Standard Rooms) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | DEPARTMENT NAME | FLOOR | Sheet & Drawing No. | Latest Rev | Date Issue for UGM1 drawings | PreMeeting Briefing Pack Issued | **User Group Meeting No. 1** | UGM 1 Change Status | Markup issued to board | Action points received | M&E Design Review | Structural Design Check | SOA compliance | Final Check & Issue | Date Issue for UGM2 drawings | PreMeeting Briefing Pack Issued | **User Group Mtg No 2** | UGM 2 Change Status | Markup issued to board | Action points received | Review by M&E | Structural Design Check | SOA compliance | Final Check & Issue | Date Issue for UGM3 drawings | PreMeeting Briefing Pack Issued | **User Group Mtg No 3** | User Group Mtg No 4 required? | Area Reports, B/W, Thematic views issued | Signed Dwg Markup issued | Sign Off Action points received | **FINAL SIGN OFF** | User Group Mtg No 1 | User Group Mtg No 2 | Appendix K Review Meeting |
| **Children's 1:200's Design User Group Meetings** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **28** | Cardiology Ward | 01 | NA-xx-01-PL-252-403 | 07 | 29/01/10 | √ | **08/02/10** | B | √ | √ | | | | √ | 23/03/10 | √ | **01/04/10** | A | √ | √ | √ | *ongoing* | *ongoing* | √ | 18/05/10 | √ | **27/05/10** | - | Yes | √ | | √ | - | 25/08/10 | √ |
| **29** | Cardiology Testing | 00 | NA-XX-00-PL-252-402 | 04 | 29/01/10 | √ | **08/02/10** | A | √ | √ | | | | √ | 23/03/10 | √ | **01/04/10** | B | √ | √ | √ | *ongoing* | *ongoing* | √ | 18/05/10 | √ | **27/05/10** | - | Yes | √ | | √ | - | 25/08/10 | √ |
| **30** | Lung Function Suite | 00 | NA-XX-00-PL-252-402 | 04 | 29/01/10 | √ | **08/02/10** | A | √ | √ | | | | √ | 23/03/10 | √ | **01/04/10** | B | √ | √ | √ | *ongoing* | *ongoing* | √ | 18/05/10 | √ | **27/05/10** | - | Yes | | | √ | - | 25/08/10 | √ |
| **31** | Theatres, Endoscopy, Recovery. & CT/MRI Suite (to be covered in Radiology) | 01 | NA-xx-01-PL-252-401<br>NA-xx-02-PL-252-402 | 05<br>06 | 29/01/10 | √ | **08/02/10** | C | √ | √ | | | | √ | 19/03/10 | √ | **30/03/10** | B | √ | √ | √ | *ongoing* | *ongoing* | √ | 10/05/10 | √ | **19/05/10** | - | Yes | | | √ | 29/06/10 | 03/09/10 | √ |
| | Day & 23 Hour Unit | 01 | NA-xx-01-PL-252-402 | 04 | 29/01/10 | √ | **08/02/10** | C | | *minutes received* | | | | √ | 19/03/10 | √ | **30/03/10** | B | √ | √ | √ | *ongoing* | *ongoing* | √ | 10/05/10 | √ | **19/05/10** | - | Yes | | | √ | 29/06/10 | 03/09/10 | √ |
| **32** | Child Protection | 00 | NA-xx-00-PL-252-403 | 04 | 02/02/10 | √ | **10/02/10** | C | √ | √ | | | | √ | 16/03/10 | √ | **25/03/10** | A | √ | √ | √ | *ongoing* | *ongoing* | √ | 05/05/10 | √ | **14/05/10** | - | Yes | √ | | √ | - | 13/09/10 | √ |
| **33** | Inpatient Wards & Renal Services | 03 | NA-xx-03-PL-252-402<br>NA-xx-03-PL-252-403 | 03<br>04 | 03/02/10 | √ | **11/02/10** | B | √ | √ | | | | √ | 17/03/10 | √ | **26/03/10** | A | √ | √ | √ | *ongoing* | *ongoing* | √ | 14/05/10 | √ | **25/05/10** | - | Yes | √ | | √ | 15/06/10 | 17/08/10 | √ |
| | Acute Receiving Unit | 02 | NA-xx-02-PL-252-403 | 04 | 03/02/10 | √ | **11/02/10** | B | √ | √ | | | | √ | 17/03/10 | √ | **26/03/10** | B | √ | √ | | *ongoing* | *ongoing* | √ | 14/05/10 | √ | **25/05/10** | - | Yes | √ | | √ | 15/06/10 | 17/08/10 | √ |
| | Renal Dialysis | 03 | NA-XX-03-PL-252-403 | 04 | 03/02/10 | √ | **11/02/10** | C | √ | √ | | | | √ | 17/03/10 | √ | **26/03/10** | B | √ | | | *ongoing* | *ongoing* | √ | 14/05/10 | √ | **25/05/10** | - | Yes | √ | | √ | 18/06/10 | 20/08/10 | √ |
| | Hospital at Night | 02 | NA-XX-02-PL-252-403 | 06 | 03/02/10 | √ | **11/02/10** | C | √ | √ | | | | √ | 17/03/10 | √ | **26/03/10** | √ | √ | | | *ongoing* | *ongoing* | √ | 14/05/10 | √ | **25/05/10** | - | Yes | √ | | √ | - | 17/08/10 | √ |
| **34** | Emergency Department & Transport Base | 00 | NA-xx-00-PL-252-404 | 03 | 04/02/10 | √ | **12/02/10** | C | √ | √ | | | | √ | 12/03/10 | √ | **23/03/10** | B | √ | √ | √ | *ongoing* | *ongoing* | √ | 07/05/10 | √ | **18/05/10** | - | Yes | | | √ | 09/07/10 | 14/09/10 | √ |
| | Observation Ward | 00 | NA-xx-00-PL-252-403 | 04 | 04/02/10 | √ | **12/02/10** | C | √ | √ | | | | √ | 12/03/10 | √ | **23/03/10** | A | √ | √ | √ | *ongoing* | *ongoing* | √ | 07/05/10 | √ | **18/05/10** | - | Yes | | | √ | 09/07/10 | 14/09/10 | √ |
| **35** | Main Entrance & Public Areas | 00 | NA-xx-00-PL-252-402 | 02 | 08/02/10 | √ | **16/02/10** | C | √ | √ | | | | √ | 17/03/10 | √ | **26/03/10** | A | √ | √ | √ | *ongoing* | *ongoing* | √ | 05/05/10 | √ | **14/05/2010** | - | Yes | | | √ | - | 11/08/10 | √ |
| | Sanctuary | 00 | NA-xx-00-PL-252-403 | 03 | 08/02/10 | √ | **16/02/10** | C | √ | √ | | | | √ | 17/03/10 | √ | **26/03/10** | √ | √ | √ | | *ongoing* | *ongoing* | √ | 05/05/10 | √ | **14/05/2010** | - | Yes | √ | | √ | - | 11/08/10 | √ |
| | Admin, Training, Health Records & Staff Facilities | 03 | NA-xx-03-PL-252-403 | 03 | 08/02/10 | √ | **16/02/10** | A | √ | √ | | | | √ | 17/03/10 | √ | **26/03/10** | √ | √ | √ | √ | *ongoing* | *ongoing* | √ | 05/05/10 | √ | **14/05/2010** | - | Yes | √ | | √ | - | 11/08/10 | √ |
| **36** | Ophthalmology | 00 | NA-xx-00-PL-252-402 | 04 | 10/02/10 | √ | **18/02/10** | C | √ | √ | | | | √ | 01/04/10 | | **14/04/10** | √ | √ | | | *ongoing* | *ongoing* | √ | 17/05/10 | √ | **26/05/10** | - | Yes | √ | | √ | 06/07/10 | 07/09/10 | √ |
| **37** | Schiehallion Ward (Haemato - oncology), Day Case & TCT | 02 | NA-xx-02-PL-252-402 | 06 | 10/02/10 | √ | **18/02/10** | C | √ | √ | | | | √ | 07/04/10 | √ | **16/04/10** | B | √ | | | *ongoing* | *ongoing* | √ | 06/05/10 | √ | **17/05/10** | - | Yes | | | √ | - | 18/08/10 | √ |
| **38** | Medical Records (Adults & Children) | 03 | NA-xx-03-PL-252-400 | 03 | 11/02/10 | √ | **19/02/10** | A | √ | √ | | | | √ | 31/03/10 | √ | **13/04/10** | √ | √ | √ | | *ongoing* | *ongoing* | √ | n/a | n/a | **Not Required** | - | Yes | √ | | √ | - | 11/08/10 | √ |
| **39** | Audiology | 00 | NA-xx-00-PL-252-402 | 03 | 11/02/10 | √ | **19/02/10** | B | √ | | | | | √ | 22/03/10 | √ | **31/03/10** | A | √ | √ | √ | *ongoing* | *ongoing* | √ | 05/05/10 | √ | **14/05/10** | - | Yes | √ | | √ | 06/07/10 | 07/09/10 | √ |
| **40** | Outpatients OPD (Generic & Specialities) | 00 | NA-xx-00-PL-252-402 | 04 | 15/02/10 | √ | **22/02/10** | C | √ | √ | | | | √ | 01/04/10 | √ | **14/04/10** | B | √ | √ | √ | *ongoing* | *ongoing* | √ | 17/05/10 | √ | **26/05/10** | - | Yes | √ | | √ | 05/07/10 | 07/09/10 | √ |
| **41** | Medical Physics & Bio-Engineering (Adults & Childrens) | 02 | NA-xx-02-PL-252-404 | 06 | 15/02/10 | √ | **23/02/10** | C | √ *SOA* | √ | | | | √ | 18/03/10 | √ | **29/03/10** | A | √ | √ | √ | *ongoing* | *ongoing* | √ | n/a | n/a | **N/A** | - | Yes | | | √ | - | 13/08/10 | √ |
| **42** | Rehabilitation Suite, Therapies & Special Feeds | 00 | NA-xx-00-PL-252-401<br>NA-xx-01-PL-252-403 | 02<br>02 | 15/02/10 | √ | **23/02/10** | C | √ | √ | | | | √ | 19/03/10 | √ | **30/03/10** | C / A | √ | | √ | *ongoing* | *ongoing* | √ | 14/05/10 | √ | **25/05/10** | - | Yes | √ | | √ | - | 24/08/10 | √ |
| **43** | Radiology, & CT/MRI from Theatres Suite? | 00&01 | NA-xx-00-PL-252-407<br>NA-xx-01-PL-252-401 | 03<br>04 | 16/02/10 | √ | **24/02/10** | A | √ | √ | | | | √ | 18/03/10 | √ | **29/03/10** | C | √ | √ *Interim Mtg* | √ | *ongoing* | *ongoing* | √ | 06/05/10 | √ | **17/05/10** | **Yes** (Likely) | Yes | √ | √ | √ | 22/06/10 | 31/08/10 | √ |
| **44** | Psychiatry / DCFP | 04 | NA-xx-04-PL-252-402 | 03 | 16/02/10 | √ | **24/02/10** | B | √ | √ | | | | √ | 31/03/10 | √ | **12/04/10** | A | √ | √ | | *ongoing* | *ongoing* | √ | 04/05/10 | √ | **13/05/10** | - | Yes | √ | | √ | - | 18/08/10 | √ |
| **45** | Critical Care (PICU) | 01 | NA-xx-01-PL-252-403 | 06 | 17/02/10 | √ | **25/02/10** | C | √ | √ | | | | √ | 15/03/10 | √ | **24/03/10** | C | √ | √ | √ | *ongoing* | *ongoing* | √ | 17/05/10 | √ | **26/05/10** | - | Yes | √ | | √ | 25/06/10 | 08/09/10 | √ |
| **46** | Day Investigation Unit / Medical Day Unit | 01 | NA-xx-01-PL-252-403 | 06 | 17/02/10 | √ | **25/02/10** | C | √ | √ | | | | √ | 06/04/10 | √ | **15/04/10** | A | √ | √ | √ | *ongoing* | *ongoing* | √ | 18/05/10 | √ | **27/05/10** | - | Yes | | | √ | - | 13/08/10 | √ |

# *APPENDIX G*

# *RISK REGISTERS*

NSGH
Board Risk Register

Date Last Reviewed - 14th September 2010

***Appendix G***
***Risk Registers***

| No | CATEGORY | Issue / requirement | Risk | Primary Owner: Board | Programme | Cost | MITIGATION: RISK CONTROL MEASURE | Post Control: LIKELIHOOD (1 5) | Post Control: COST IMPACT (1 5) | Post Control: PROGRAMME IMPACT (1 5) | Post Control: OVERALL RATING | Stages applicable | Probability | Frequency | Post Control Risk Value per stage £'s: Max | Avg | Min | Owner/ Leader | Action By Date | COMMENTS (Incl. notes on basis of quantification and valuation of risk provision) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Access | Complying with Section 75/Transport strategy | If additional off site road or traffic works, not currently identified as part of masterplan, are required outwith the campus to comply with Planning Authority requirements then these will require to be designed and constructed | Yes | | | 1. Section 75 agreement signed off. | | | | | 1 | | | | | | | | No impact on Labs project |
| | | | | | | | | | | | | 2 | | | | | | | | No change |
| | | | | | | | | | | | | 3 | | | | | | | | |
| | | | | | | | | | | | | 3a | | | | | | | | |
| 2 | Commercial | Risk that lab design is not sufficiently developed at the stage tender submitted, i.e. Stage E / F | If the Labs design does not achieve Stage E/F design status (including Stage Building Warrant submission) at the time of contract award to allow construction to start as planned then potential for cost movement due to design development/clarifications post bid submission (GG&C has advised the need for a Compensation Event at contract award) | Yes | | | 1. Manage design process<br>2. Appropriate wordings in submission<br>3. Establish appropriate contingency | | | | | 1 | | | | | | | | Agreed to risk to be closed out |
| 3 | Commercial | Funding availability and cashflow | Disruption to construction activities | Yes | | | 1. Board will set up to fund bidders agreed programme 2. Board will liaise with Scottish government | | | | | 1 | | | | | | | | 1 ongoing risk re cashflow. Revised cashflow proposal to be discussed with BCL. |
| | | | | | | | | | | | | 2 | | | | | | | | See above |
| | | | | | | | | | | | | 3 | | | | | | | | See above |
| | | | | | | | | | | | | 3a | | | | | | | | See above |
| 4 | Commercial | Late payments by the employer | If Certified Payments are not paid within due timescale additional costs may arise | Yes | | | Board to put in place compliant payment process within the contract. | | | | | 1 | | | | | | | | No issues - Payment Process working well. Timeline working well. |
| | | | | | | | | | | | | 2 | | | | | | | | See above |
| | | | | | | | | | | | | 3 | | | | | | | | See above |
| | | | | | | | | | | | | 3a | | | | | | | | See above |
| 5 | Commercial | Inflation above the allowance in the contract | If inflation varies from the allowances in the accepted Target / Maximum Price then Compensation Event will be required to increase Target / maximum price | Yes | | | Appropriate indices to be included in contract | | | | | 1 | | | | | | | | Ongoing monitoring. DR presented a synopsis on potential risk on inflation for 09/10 to ASSB on 09/08/2010 |
| | | | | | | | | | | | | 2 | | | | | | | | See above |
| | | | | | | | | | | | | 3 | | | | | | | | See above |
| | | | | | | | | | | | | 3a | | | | | | | | See above |
| 6 | Commercial | Failure to achieve approvals at key dates and gateways FBC approval due to the Boards non performance | Delay to project and increased costs | Yes | | | Ensure programme dates are met by both parties and ensure approval processes are in place and closely monitored | | | | | 1 | | | | | | | | BCL to do lookahead and identify extra items which would be required if FBC for Hospitals is not achieved. Alternative Labs Specimen/Bloods delivery route may need to be identified if FBC for Hospitals not achieved (current proposal for Vacuum system delivery from hospitals) BCL lookahead will cover a) roads and infrastructure, b) tunnels, c) drainage, d) SW Land & SAS Land (£2m), e) Landscaping |
| | | | | | | | | | | | | 2 | | | | | | | | Have iden ified all the actions to complete FBC. FBC programme and tracker document in place |
| | | | | | | | | | | | | 3 | | | | | | | | |

NSGH
Board Risk Register

Date Last Reviewed - 14th September 2010

| No | CATEGORY | Issue / requirement | Risk | Primary Owner: Board | Programme | Cost | MITIGATION: RISK CONTROL MEASURE | Post Control: LIKELIHOOD (1 5) | Post Control: COST IMPACT (1 5) | Post Control: PROGRAMME IMPACT (1 5) | Post Control: OVERALL RATING | Stages applicable | Probability | Frequency | Post Control Risk Value per stage £'s: Max | Avg | Min | Owner/ Leader | Action By Date | COMMENTS (Incl. notes on basis of quantification and valuation of risk provision) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | 3a | | | | | | | | |
| 7 | Character/ Innovation | Impact of change in Employers Requirements (space and design standards) | If the Board amend the Employers Requirements forming part of the ITPB then potential for<br>1. Re-design of affected elements<br>2. Re-work (if already constructed)<br>3. Poss ble adverse impact on programme<br>4. Poss ble cost impact | Yes | | | 1. Establish requirement to implement change<br>2. If change required, review with main contractor to determine most economic and effective means of implementation.<br>3. Optimism Bias as appropriate | | | | | 1 | | | | | | | | Signed off for Labs - Closed off |
| | | | | | | | | | | | | 2 | | | | | | | | Being managed hrough the 1:200 and 1:50 process. Any changes are managed through the Board's Change Control Process overseen by Chief Executive. Early warning process being utilised. |
| | | | | | | | | | | | | 3 | | | | | | | | |
| | | | | | | | | | | | | 3a | | | | | | | | |
| 8 | Character/ Innovation | The introduction and incorporation of changes to Scottish Government Health Department new requirements | 1. Re-design of affected elements<br>2. Re-work (if already constructed)<br>3. Adverse impact on programme<br>4. Cost impact | Yes | | | 1. Early identification<br>2. Concise brief for required changes<br>3. Decisions approved by acute directors as per the Change control process. | | | | | 1 | | | | | | | | Not aware of any issues |
| | | | | | | | | | | | | 2 | | | | | | | | Not aware of any changes to requirements hus far. Intensive Care design proposes removal of glass dividers. Early Warning process being utilised. |
| | | | | | | | | | | | | 3 | | | | | | | | |
| | | | | | | | | | | | | 3a | | | | | | | | |
| 9 | Construction | Archaeology - Impact due to significant find | If prior to or during construction activities an archaeological find is identified there may be<br>1. Delay to works within the vicinity of the find<br>2. Potential to delay overall project if found within area critical to the progress of the works | Yes | | | Examine historical records to determine likelihood of a significant find | | | | | 1 | | | | | | | | Closed off for Labs Project |
| | | | | | | | | | | | | 2 | | | | | | | | |
| | | | | | | | | | | | | 3 | | | | | | | | Ongoing risk. Further Site Investigation being undertaken to mitigate risk. |
| | | | | | | | | | | | | 3a | | | | | | | | |
| 10 | Construction | Archaeology - Impact due to small find | If prior to or during construction activities an archaeological find is identified there may be<br>1. Delay to works within the vicinity of the find<br>2. Potential to delay overall project if found within area critical to the progress of the works | Yes | | | Examine historical records to determine likelihood of a small find | | | | | 1 | | | | | | | | Closed off for Labs Project |
| | | | | | | | | | | | | 2 | | | | | | | | |
| | | | | | | | | | | | | 3 | | | | | | | | Ongoing risk. Further Site Investigation being undertaken to mitigate risk. Demolitions being progressed. |
| | | | | | | | | | | | | 3a | | | | | | | | |
| 11 | Construction | The impact of incorrect programme and cost estimates for decanting from existing premises due to board non performance | If the Surgical Block is not vacated within allowed timeframes to facilitate completion of Stage 3A works<br>1. Decant period extended with potential to delay subsequent operations<br>2. Potential for increased costs | Yes | | | 1. Early preparation of decant programme<br>2. Appropriate consultation and secure commitment and agreement of all relevant Stakeholders<br>3. Arrange appropriate briefing sessions and workshops in the period up to decant to re-affirm roles, responsibilities and timescales<br>4. Funding in place | | | | | 1 | | | | | | | | Not applicable for Labs Project - Closed off |
| | | | | | | | | | | | | 2 | | | | | | | | |
| | | | | | | | | | | | | 3 | | | | | | | | Ongoing risk however decant plan being progressed for consideration |
| | | | | | | | | | | | | 3a | | | | | | | | |
| 12 | Construction | Any unforeseen ground/site conditions under the footprint of existing facilities | If ground conditions encountered below demolished buildings vary significantly from that identified in the Site Investigation Report<br>1. Additional temporary works may be required<br>2. Additional excavations / fill may be required<br>3. A degree of redesign may be necessary<br>4. Adverse impact on programme<br>5. Additional costs | Yes | | | 1. Obtain complete SIs, review and undertake additional surveys as appropriate<br>2. Effective communication/ consultations with appropriate Stakeholders | | | | | 1 | | | | | | | | Not applicable for Labs Project - Closed off |
| | | | | | | | | | | | | 2 | | | | | | | | |
| | | | | | | | | | | | | 3 | | | | | | | | Residual risk remains as buildings currently located on footprint for new hospitals. The SI work has been programmed to take place as soon as the demolitions have been completed. Report awaited from current SIs. |
| | | | | | | | | | | | | 3a | | | | | | | | |
| | | | If ground conditions encountered vary | | | | | | | | | 1 | | | | | | | | No further risks for Labs. Ongoing review and continuous monitoring |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | | |
| 13 | Construction | Unforeseen site conditions | significantly (mine workings, underground structures etc) from that identified in the Site Investigation Report then<br>1. Additional temporary works may be required<br>2. Additional excavations / fill may be required<br>3. A degree of redesign may be necessary<br>4. Adverse impact on programme<br>5. Additional costs | Yes | | | 1. Obtain complete SIs, review and undertake additional surveys as appropriate<br>2. Effective communication/ consultations with appropriate Stakeholders | | | | | | 2 | | | | | | | | |
| | | | | | | | | | | | | | 3 | | | | | | | | Further SIs being undertaken. Summary report recieved for Board review. |
| | | | | | | | | | | | | | 3a | | | | | | | | |
| 14 | Construction | The impact of "Compensation Events" to the Contractor (variations) | Compensation Events issued changing the Employers Requirements will require to be funded by the Board Potential for delay and additional costs | Yes | | | 1. Minimise potential impact of CE by effective dialogue<br>2. Ensure change is minimised via robust GG&C internal control process<br>3. Robust and timely change control process | | | | | | 1 | | | | | | | | Ongoing monitoring. Change control process continuing to be managed through Chief Executive and Chief Operating Officer. Weekly joint review undertaken by NHS & BCL |
| | | | | | | | | | | | | | 2 | | | | | | | | Change control process being managed through Chief Executive and Chief Operating Officer.Weekly joint review undertaken by NHS & BCL |
| | | | | | | | | | | | | | 3 | | | | | | | | As above |
| | | | | | | | | | | | | | 3a | | | | | | | | |
| 15 | Construction | Discovery of unknown major services within site boundary | If an unidentified service is discovered during the works resulting in<br>1. Service str ke causing potential injury<br>2. Impact on buildings supplied by the service<br>3. Service diversion required<br>4. Additional costs<br>5. Adverse impact on programme | Yes | | | 1. Early surveys, check for presence of live services<br>2. Consider re-survey post demolitions, pre FBC to mitigate any potential impact upon construction programme and cost<br>3. Robust operation of permit to dig regimes | | | | | | 1 | | | | | | | | Closed off |
| | | | | | | | | | | | | | 2 | | | | | | | | |
| | | | | | | | | | | | | | 3 | | | | | | | | Completed further survey work and gas main located. Radar scan completed |
| | | | | | | | | | | | | | 3a | | | | | | | | |
| 16 | Construction | Impact of delay in gaining access to the site | If the Board fail to provide access to the site for the Contractor in accordance with the ITPB documents then there may be potential for delay to programme | Yes | | | 1. Ensure all legal agreements are concluded at earliest possible date.<br>2. Ensure all enabling works are completed | | | | | | 1 | | | | | | | | Not applicable for Labs Project |
| | | | | | | | | | | | | | 2 | | | | | | | | |
| | | | | | | | | | | | | | 3 | | | | | | | | On-going monitoring of demolitions programme. Now managed and controlled by BCL |
| | | | | | | | | | | | | | 3a | | | | | | | | |
| 17 | Construction | The impact of changes in VAT | VAT changes from the HM Treasury guidance current at date of Tender result in increased costs | Yes | | | 1. Seek appropriate advice from specialists (E&Y)<br>2. Review and monitor potential change and undertake some senario planning | | | | | | 1 | | | | | | | | Paper presented to August ASSB meeting |
| | | | | | | | | | | | | | 2 | | | | | | | | As above |
| | | | | | | | | | | | | | 3 | | | | | | | | As above |
| | | | | | | | | | | | | | 3a | | | | | | | | As above |
| 18 | Construction | The non-realisation of VAT re-claim and introduction of new statutory costs | VAT changes from the HM Treasury guidance current at date of Tender result in increased costs | Yes | | | 1. Seek appropriate advice from specialists<br>2. Review and monitor potential change | | | | | | 1 | | | | | | | | External advisors (Ernst & Young) and Board finance colleagues continuing to identify and reclaim VAT where appropriate |
| | | | | | | | | | | | | | 2 | | | | | | | | As above |
| | | | | | | | | | | | | | 3 | | | | | | | | As above |
| | | | | | | | | | | | | | 3a | | | | | | | | As above |
| | | | If asbestos is identified in existing underground ducts / buildings identified for demolition then | | | | 1. Risk assessments and works procedures to take | | | | | | 1 | | | | | | | | Closed off for Labs Project. |
| | | | | | | | | | | | | | 2 | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 19 | Construction | Asbestos (unforeseen) | 1. Potential affect on programme if not identified in good time<br>2. Increased costs due to additional work or required upgrade | Yes | | | cognisance of possible environmental hazards<br>2. Effective liaison with GG&C re possible measures required<br>3. Review of site information | | | | | 3 | | | | | | | | May be residual risk re SAS building and duct work under car-park. Demolition survey works completed. |
| | | | | | | | | | | | | 3a | | | | | | | | |
| 20 | Construction | Additional areas of affected Japanese knotweed | If additional areas of Japanese knotweed are identified then potential for additional works, delay, costs, adverse impact upon critical path | Yes | | | 1. Obtain complete SIs, review and undertake additional surveys as appropriate.<br>2. Specialist contractors engaged to eradicate and control JK | | | | | 1 | | | | | | | | Closed off for Labs Project |
| | | | | | | | | | | | | 2 | | | | | | | | |
| | | | | | | | | | | | | 3 | | | | | | | | Residual area of knotweed iden ified on Hospitals construc ion site at perimeter fencing. Board instructed specialist contractor to spray affected area. Ongoing monitoring and potential removal. |
| | | | | | | | | | | | | 3a | | | | | | | | |
| 21 | Engineering | Impact of enabling demolition works on main contract works | If demolition works are not undertaken and completed by stated dates then Stage 3 site handover may not take place as per contract dates. Potential for delayed start, ground clearance in particular, and impact upon overall completion date | Yes | | | 1. Contractor assistance to co-ordinate and programme all interface works within the campus<br>2. Continue effective dialogue with key Stakeholders<br>3. Contractor assistance with interface works<br>4. Engage specialist supply chain for sub station works | | | | | 1 | | | | | | | | Closed off for Labs Project - no impact |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | 3 | | | | | | | | Contractor managing these works. Ongoing |
| | | | | | | | | | | | | | | | | | | | | |
| 22 | Construction | Relocation of orange aerial tower to accommodate land purchase | If third part works to relocate telecommunications mast is not undertaken by due dates then may impact on programme | Yes | | | 1. Engage specialist contractors.<br>2. Manage land purchases | | | | | 1 | | | | | | | | Closed off for Labs Project - no impact |
| | | | | | | | | | | | | 2 | | | | | | | | N/A |
| | | | | | | | | | | | | 3 | | | | | | | | Closed off for Hospitals Project as Orange Tower will not be relocated |
| | | | | | | | | | | | | 3a | | | | | | | | N/A |
| 23 | Design | Planning authority don't comply with statutory response times when in receipt of correctly completed Application | 1. Delay to programme<br>2. Additional costs<br>3. Any inflation/LADs<br>4. Delay to Roads Construction Consent<br>5. Delay in occupying the buildings | Yes | | | 1. Ensure timely & complete submission to planning<br>2. Board apply political influence<br>4. Anticipate changes in planning conditions<br>5. Appropriate wordings in submission | | | | | 1 | | | | | | | | Closed off for Labs Project - no issues |
| | | | | | | | | | | | | 2 | | | | | | | | Close off - All complete |
| | | | | | | | | | | | | 3 | | | | | | | | All timescales met by planners up to June 2010. Final approval anticipated end September 2010. |
| | | | | | | | | | | | | 3a | | | | | | | | |
| 24 | Design | Additional requirements for Police counter terrorism | 1. Delay to programme<br>2. Additional costs due to design development/ clarifications post bid submission | Yes | | | 1. Manage design process with Police involvement<br>2. Appropriate wordings in submission<br>3. Establish appropriate contingency | | | | | 1 | | | | | | | | Ongoing monitoring and discussion. 2 issues raised at recent meeting i.e. a) management of vehicles entering service yard and b) vehicles entering service yard from exit point. |
| | | | | | | | | | | | | 2 | | | | | | | | Impact on BREEAM points to be managed |
| | | | | | | | | | | | | 3 | | | | | | | | BCL and NHS Team to meet to discuss impact for/on hospitals. |
| | | | | | | | | | | | | 3a | | | | | | | | |
| 25 | Design | Unforeseen additional Equipment requirements | Equipment requirements of Board not fully developed and will evolve over time effecting design and procurement | Yes | | | 1. Board to ensure timely issue of equipment with comprehensive details.<br>2. Early involvement with specialist Board staff | | | | | 1 | | | | | | | | Residual risk - ongoing review. |
| | | | | | | | | | | | | 2 | | | | | | | | Being managed hrough the 1:50 process. Also looking at specialist equipment requirement. |
| | | | | | | | | | | | | 3 | | | | | | | | |
| | | | | | | | | | | | | 3a | | | | | | | | |
| 26 | Design | Car Parking strategy changes | If the 3500 spaces is reduced then additional off site public transport contributions may be required | Yes | | | | | | | | 1 | | | | | | | | No applicable to Labs Project |
| | | | | | | | | | | | | 2 | | | | | | | | |
| | | | | | | | | | | | | 3 | | | | | | | | Ongoing monitoring. No plan to change strategy |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | 3a | | | | | | | | |
| 27 | Design | Level of information provided about ICT requirements | If the brief in the Employers Requirements changes the potential for cost movement due to design development/clarifications post bid submission | Yes | | | 1. Manage design process<br>2. Appropriate wordings in submission<br>3. Establish appropriate contingency | | | | | 1 | | | | | | | | Additional infrastructure being requested. Needs to be considered by COO prior to being progressed through Board's Change Control Process. |
| | | | | | | | | | | | | 2 | | | | | | | | |
| | | | | | | | | | | | | 3 | | | | | | | | Requirements in ERs exactly as requested. Confusion over what ICT now require and also in respect to loadings. IT needs to consult COO prior to any work commencing |
| | | | | | | | | | | | | | | | | | | | | |
| 28 | Design | Lifts Strategy (Lab) | If the FM strategy changes post contract award additional lifts in the Labs / FM building may be required. Potential for cost movement due to design development/clarifications post bid submission | Yes | | | 1. Manage design process<br>2. Appropriate wordings in submission<br>3. Establish appropriate contingency | | | | | 1 | | | | | | | | Closed off for Labs Project |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| 29 | Engineering | The Board do not provide a contract programme for the 33kV sub-station by the required date which is when the board approve the stages 1, 2, 3 & 3a | If the Board fail to accept the Contact for the new primary sub-station by the due date then it will not be available for new Labs commissioning | Yes | | | 1. Early dialogue and confirmation of brief<br>2. Robust design<br>3. Possible use an Independent DNO | | | | | 1 | | | | | | | | Procurement of 33KVA Substation being actively managed an on programme. Agreed that Board have accepted contract therefore risk to be closed out. |
| | | | | | | | | | | | | 2 | | | | | | | | |
| | | | | | | | | | | | | 3 | | | | | | | | Maybe an issue re cladding should FBC not be achieved. |
| | | | | | | | | | | | | 3a | | | | | | | | |
| 30 | Engineering | The requirements of site wide engineering strategy change | If Board change Employers Requirements for site wide energy strategy then may be re-design, potential for additional cost | Yes | | | 1. Early dialogue and confirmation of brief<br>2. Effective EWN/CE process, if applicable | | | | | 1 | | | | | | | | |
| | | | | | | | | | | | | 2 | | | | | | | | |
| | | | | | | | | | | | | 3 | | | | | | | | Confirmed strategy in ERs and no changes being requested |
| | | | | | | | | | | | | | | | | | | | | |
| 31 | Legal | Delay to land acquisition to secure the Scottish Water land | 1. Delay to project programme<br>2. Cost impact<br>3. Re-design to accommodate road infrastructure | Yes | | | 1. Ensure all legal agreements are concluded at earliest possible date with SW<br>2. Business case concluded and approved | | | | | 1 | | | | | | | | Closed off for Labs Project - no impact |
| | | | | | | | | | | | | 2 | | | | | | | | District Valuaters valuation received by Board. CLO progressing legal works. Progressing well |
| | | | | | | | | | | | | 3 | | | | | | | | |
| | | | | | | | | | | | | 3a | | | | | | | | |
| 32 | Legal | Delay to land acquisition to secure the Ambulance Service land | 1. Delay to project programme<br>2. Cost impact<br>3. Re-design to accommodate Car park 2 | Yes | | | 1. Ensure all legal agreements are concluded at earliest possible date with SAS<br>2. Business case concluded and approved | | | | | 1 | | | | | | | | Closed off for Labs Project - no impact |
| | | | | | | | | | | | | 2 | | | | | | | | Being progressed by CLO. Progressing well. |
| | | | | | | | | | | | | 3 | | | | | | | | |
| | | | | | | | | | | | | 3a | | | | | | | | |
| | | Potential for impact of legislative or regulatory | Change in law/ regulations gives a potential for | | | | 1. Establish requirement to implement change<br>2. If change required, review with main contractor to | | | | | 1 | | | | | | | | Monitoring BREEAM progress. Building warrants submitted so should "lock-down" Labs Project against future changes |
| | | | | | | | | | | | | 2 | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | |
| 33 | Legal | change, e.g.<br>1. Green issues<br>2. Environmental Planning standards | Change in law/ regulations gives a potential for late change, re-design, cost and delay | Yes | | | determine most economic and effect ve means of implementation<br>3. Progress design in line with current environmental<br>4. Design build in line with BREEAM excellent rating | | | | | 3 | | | | | | | | No forthcoming changes identified. Building Warrant will be submitted in due course which will then "lock-down" the design to any forthcoming changes. Continuing to monitor |
| | | | | | | | | | | | | 3a | | | | | | | | |
| 34 | Operational | Impact on construction with day to day operation of existing hospital and interface with facilities manager | 1. Patient care effected.<br>2. Health & safety implications.<br>3. Public perception damaged<br>4. Traffic issues<br>5. Cost & Programme delays | Yes | | | 1. Close liaison between contractor and Board<br>2. Appropriate management procedures in place<br>3. Communication plan for stakeholders<br>4. Key staff involved in planning to reduce disruption | | | | | 1 | | | | | | | | Weekly Construction Interface Group meeting.Key part of planning. |
| | | | | | | | | | | | | 2 | | | | | | | | |
| | | | | | | | | | | | | 3 | | | | | | | | Weekly Construction Interface Group meetings will continue. Regular Logistics Group meetings to be established. |
| | | | | | | | | | | | | 3a | | | | | | | | |
| 35 | Operational | Operation of Helipad during lab construction disrupting works | 1. Delay to Construction Programme resulting from an increase of landings per year above that of the stated 400<br>2. Additional costs due to programme delay | Yes | | | 1. Agree cost allowance.<br>2. Agree management plan to reduce disruption | | | | | 1 | | | | | | | | Helicopter Management Plan working well and regularly reviewed. |
| | | | | | | | | | | | | 2 | | | | | | | | |
| | | | | | | | | | | | | 3 | | | | | | | | Helicopter Management Plan will be reviewed/revised to cover the Adult and Children's Hospital construction site |
| | | | | | | | | | | | | 3a | | | | | | | | |
| 36 | Performance | Any unexpected changes in medical technology causing work changes | If there are changes in medical technology requiring changes to Employers Requirements there may be<br>1. Re-design to accommodate<br>2. Re-work (if already constructed)<br>3. Poss ble adverse impact on programme<br>4. Poss ble cost impact | Yes | | | 1. Flexible building design to accommodate technological change/ advances<br>2. Appropriate supplier and product selection | | | | | 1 | | | | | | | | Procurement risk re track analysers outstanding. Likely to be resolved Feb 2011 |
| | | | | | | | | | | | | 2 | | | | | | | | Any changes will con inue to be explored and where necessary will be dealt with through he Board's Change Control Process. |
| | | | | | | | | | | | | 3 | | | | | | | | As above |
| | | | | | | | | | | | | 3a | | | | | | | | |
| 37 | Programme | Approval process / sign off of equipment plans & RDS if Board don't comply with agreed timescales | 1. Delay to design, construction & procurement, Reviewable Design Data (RDD) process. 2. Increased costs & delay to project. | Yes | | | 1. Contractor and Board to agree and work within the approval and sign-off process<br>2. Good communication plan established | | | | | 1 | | | | | | | | RDS signed off. RDD process due to commence thereafter continual montoring. |
| | | | | | | | | | | | | 2 | | | | | | | | Programmes prepared and regularly reviewed and agreed |
| | | | | | | | | | | | | 3 | | | | | | | | |
| | | | | | | | | | | | | 3a | | | | | | | | |
| 38 | Space | An increased demand for patient services from that agreed | If demand assessment changes there may be an impact on Employers requirements resulting in 1. Departmental brief change<br>2. Extension to or partial closure of the building(s) | Yes | | | 1. Establish requirement to implement change<br>2. If change required, review with main contractor to determine most economic and effective means of implementation | | | | | 1 | | | | | | | | Closed off for Labs Project |
| | | | | | | | | | | | | 2 | | | | | | | | Any changes will con inue to be dealt with through the Board's Change Control Process. |
| | | | | | | | | | | | | 3 | | | | | | | | |
| | | | | | | | | | | | | 3a | | | | | | | | |
| 39 | Use | The non-realisation of existing equipment transfer into new facilities | 1. Costs associated with requirement to order new equipment<br>2. Delay if new equipment is not available within the required timescale | Yes | | | 1. Ongoing monitoring of schedule of equipment to be re-used to confirm continuing availability dates<br>2. Early identification of any additional equipment required as a result of non availability for transfer<br>3. Liaison with main contractor re back stop dates for delivery to site | | | | | 1 | | | | | | | | Ongoing work to identify New vs Newly purchased vs transfer for fume an safety cabinets to be concluded |
| | | | | | | | | | | | | 2 | | | | | | | | Ongoing management through Equipment Group |
| | | | | | | | | | | | | 3 | | | | | | | | |
| | | | | | | | | | | | | 3a | | | | | | | | |
| | | | | | | | 1. Ongoing monitoring of schedule of equipment to | | | | | 1 | | | | | | | | Closed off for Labs Project |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | |
| 40 | Use | Equipment (Group 1 & 2) varies from the information in the ITPD | If the equipment varies from the requirements stated in the ITPD then additional costs may be incurred | Yes | | | be re-used to confirm continuing availability dates<br>2. Early identification of any additional equipment required as a result of non availability for transfer<br>3. Liaison with main contractor re back stop dates for delivery to site | | | | | 2 | | | | | | | | 1 50 process and Equipment Group managing. Equipment schedule issued for review. |
| | | | | | | | | | | | | 3 | | | | | | | | |
| | | | | | | | | | | | | 3a | | | | | | | | |
| 41 | 3rd Party Works | Potential for delayed completion of enabling works by others, eg:<br>1. Site clearance<br>2. Car Parks<br>3. Substation | Delayed start, ground clearance in particular, and impact upon overall completion date | Yes | | | 1. Liaise with contractor to co-ordinate and programme all interface works within the campus<br>2. Continue effective dialogue with key Stakeholders<br>3. Engage specialist supply chain for sub station works | | | | | 1 | | | | | | | | Closed off |
| | | | | | | | | | | | | 2 | | | | | | | | |
| | | | | | | | | | | | | 3 | | | | | | | | Ongoing site clearance planned for completion October 2010 |
| | | | | | | | | | | | | | | | | | | | | |
| 42 | Space | Gross floor area exceeds 166,958m2 + 0.05% | Gross floor area exceeds 166,958m2 + 0.05%, without change to net area requirement as a result of user input to design development | Yes | | | 1. Manage design process | | | | | 1 | | | | | | | | Design development process managed. 1:50 design review process ongoing. |
| | | | | | | | | | | | | 2 | | | | | | | | Continuing to be managed through ER's and design development and review process. |
| | | | | | | | | | | | | 3 | | | | | | | | |
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| Risk | | | Response | | | Residual Assessment | | | | Comments |
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| **Item** | **Description** | **Risk Effect** | **Risk control measure or action taken to mitigate** | **Action Owner** | **When** | **P 1-5** | **I 1-5** | **PI Score** | **Strategy** | |
| B1 | Advance payments for material orders | Prices decrease; material wastage; storage costs; increased insurance costs | Prudent advance purchase of programme critical and cost sensitive materials for energy centre / equipment / etc | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | In principle paper to be submitted to Board. |
| B2 | Availability of suitable labour resource and impact on procurement of various packages | Delay to the project and increased costs. | Ensure that labour resources are planned for through use of labour resource histograms etc. Ensure good relationships with DWP. Consider procurement strategy in order to ensure work load is balanced across the trades and that key packages are split where there is risk of inadequate resource with one Subcontractor. | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | Ongoing review of labour resource - no impact at present. Contacts with local employment market continuing to be built upon and maintained. Working well with suppliers. |
| B3 | Calculation of disallowable costs | Project disputes arise and costs increase | Properly manage the supply chain in order to minimise the opportunity for discussion in regard to disallowable costs. | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | Managing the supply chain. Carrying out internal audits. First audit complete, report will be circulated. |
| B4 | Change Control and Management of Change protocol by the Contractor through the Supply Chain | Delay to Project and subsequent increase in Defined Cost | Implement Change Control at start of Stage 1 | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | Process ongoing and Sypro being used to administer process between Board and BCL. Process working well. |
| B5 | Change in Contractor or Sub-Contractor management personnel | Loss of direction to project. | Ensure suitable management hierarchy in place. | Brookfield | Stage 1 | 1 | 2 | 2 | Acceptable | No issues currently. Onoing review. |
| B6 | Cost escalation given economic climate, prevailing market conditions. Allowance to compensate for movement in component and material costs over and above that which is recoverable against RPI calcs | Increase in Defined costs | Ensure adequate consideration given to risk allowances / procure major works packages early | Brookfield | Stage 1 | 2 | 4 | 8 | Undesirable | Continuing to monitor inflation rate and RPI |
| B7 | Cost of extended warranties e.g. Performance bonds, PCGs etc | Increase in Defined costs | Ensure adequate allowance made within budget at outset. Agree terms with supply chain in advance. Seek to agree key Packages requiring bonds and period of bonds and establish by risk analysis the potential to reduce level of bonds and/or timescale for bonds. Consider other Insurance Products on the Market that may provide more economical solution. Where PCG is available from Subcontractor consider option to provide in lieu of bonds. Commercial Dialogue Meeting no 3 it was confirmed that Contractor Bond expires at Completion of each Stage. | Brookfield | Stage 1 | 0 | 0 | 0 | Acceptable | No current issues. Ongoing monitoring. |
| B8 | Deflation | Presents both opportunity to reduce costs but may have a negative impact on commercial viability of supply chain members. | Brookfield team to ensure supply chain is robust | Brookfield | Stage 1 | 1 | 2 | 2 | Acceptable | Ongoing monitoring. Risk pot being protected. |
| B9 | Delay damages as a result of much tighter programme initiated by the Board | Cost increase | Board confirmed at Commercial meeting No 3 the level of damages: Labs £50k/wk. | Brookfield | Stage 1 | 3 | 4 | 12 | Undesirable | Programme remains on target. Ongoing monitoring of programmes |
| B10 | Design development and scope creep to meet ER's | Increased costs | Ensure effective change control is in place during contract period | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | D to E reconcilliation completed. No further scope creep. |
| B11 | Incorrect Level of Pricing in the Contractors tender pricing | Increase in Defined Costs | Benchmarking and market testing of all key elements of Contractor pricing. Peer review and tender settlement meeting. Key Supply Chain input. | Brookfield | Stage 1 | 2 | 4 | 8 | Undesirable | Ongoing review. Overall balancing out. |
| B12 | Infrastructure surrounding Labs impacting on delivery of programme | Cost increase and time delay | To be monitored during construction | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | Ongoing monitoring. Potential VIE issue re new Labs Road layout. BCL to provide phasing drawings. |
| B13 | Insolvency of supply chain / suppliers | Increased costs and delay to project | Ensure robust financial checks are undertaken on supply chain prior to appointment and that ownership of materials etc. are managed in accordance with Contract requirements. | Brookfield | Stage 1 | 2 | 4 | 8 | Undesirable | No current issues. Ongoing monitoring of supply chain/suppliers. Internal traiing within team complete, individual identified to review financial information. |
| B14 | Insufficient information to adequately establish defined cost | Cost impact with regard to pain/gain | Robust contract management procedures e.g. change control. Full audits on supply chain | Brookfield | Stage 1 | 1 | 4 | 4 | Acceptable | Ongoing management of supply chain |
| B15 | Insurance excesses not recovered as a consequence of it being a disallowable cost | Cost Increase | Undertake discussions with insurance brokers and supply chain. Subguard. | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | No insurance issues to date |
| B16 | Interest rate changes | Costs increase due to inflationary impact | Secure fixed costs for works packages early in procurement process | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | Continuous monitoring of inflation |
| B17 | Material off site payments | Failure to transfer title in goods and leads to loss | Ensure correct paperwork and appropriate management procedures are in place. | Brookfield | Stage 1 | 1 | 4 | 4 | Acceptable | In principle paper to be submitted to Board as per B1. |
| B18 | Proper administration of NEC3 contract | Delays to projects, increased costs and damaging to relationships | Set up NEC3 workshops to ensure that it is understood by all and ensure appropriate resources are in place to deliver. | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | Administration processes in place. Weekly BCL and NHS joint meeting to discuss EWs,PMIs, CEs. |
| B19 | Scope of packages due to inadequate information | Scope missed and leads to increased costs. Package is too large to manage. | Schedule meeting to list all packages and agree scope and apply standard Brookfield procurement processes. | Brookfield | Stage 1 | 2 | 3 | 6 | Acceptable | Regular package scope meetings in place |
| B20 | Step down agreements with sub-contractors | Supply chain members are unable to meet contractual obligations which leads to project delay | Ensure that terms and conditions are pitched at a level appropriate to the specific package of works. | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | Step down arrangements working well. |
| B21 | The impact of incorrect programme and cost estimates for commissioning new building | Increased cost and delay to programme | Commissioning programme and costing to be fully detailed and reviewed. | Brookfield | Stage 1 | 2 | 3 | 6 | Acceptable | Ongoing lookahead. Commissioing groups to be established in due course. Labs Progress Meeting convened, monthly meetings scheduled. |
| B22 | Transparency of tender procurement process and out turn | Loss of trust and negative impact on relationships. Failure to agree contract price delays programme | Operate open book collaborative working throughout supply chain. | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | Open book process working well. Ongoing process |
| B23 | Unions and Industrial Relations with regard to construction | Poor relationships could lead to delays in the project and increased costs | Ensure full dialogue and engage with Unions at an early stage. Ensure Community Engagement strategy includes Union/Industrial relations | Brookfield | Stage 1 | 1 | 2 | 2 | Acceptable | No issues thus far. |
| B24 | Area increase to Labs from OBC | Cost increase and time delay | Implement Change Control at start of Stage 1 | Brookfield | Stage 1 | 2 | 2 | 4 | Acceptable | To be closed off as part of Stage D to E reconcilliation |
| B25 | Change Control and Management of Change protocol by the Board | Uncontrolled change leads to increased costs delays to programme. | Implement Change Control at start of Stage 1. Change by Board will be a Compensation Event | Brookfield | Stage 1 | 0 | 0 | 0 | Acceptable | Protocol being operated. Ongoing weekly review of EWs, PMIs and CEs |
| B26 | Cost of discharging planning conditions | Cost increase | Early assessment of planning conditions once received | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | Agreed at Commercial Group. |
| C1 | Compliance with CAA Regulations during construction | Impact on helicopter and existing aircraft operations which affect hospital function. | Close liaison with the facilities management team during construction works | Brookfield | Stage 1 | 1 | 2 | 2 | Acceptable | Helicopter Management Plan fully signed off by all stakeholders. Regular review of HMP |
| C2 | Construction noise | Stoppages resulting in increased costs. Methods of working result in increased costs e.g. water bursting methods | Examine construction operational procedures and implement appropriate liaison measures. | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | Ongoing local community engagement and liaison. Noise Plan in force. |
| C3 | Damage to existing / 3rd party buildings due to carrying out of the works e.g. subsidence, heave, vibrations etc. | Damage to property, injury, loss of life all resulting in delays to project and increased costs | Review construction methods, ensure adequate protection in place prior to commencement of works and all method statements approved. | Brookfield | Stage 1 | 1 | 2 | 2 | Acceptable | Undertaken dilapidation studies prior to commencing works to allow measurements to be taken. Ongoing visual review |
| C4 | Ground floor slab construction sequencing | Increased costs and programme | Detailed installation plans and methodology to be developed. Costs included in Cost Plan | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | Working in accordance to current programme |
| C5 | Delays to procurement of materials | Delays to project and increased costs | Ensure supply chain adequate to suit size of project and that materials are sourced from a competent source. | Brookfield | Stage 1 | 1 | 4 | 4 | Acceptable | Continuing to monitor supply chain and work with supply chain to ensure no delays |
| C6 | De-watering | Impact on construction works, delays progress and increased costs | Ensure adequate de-watering system in place | Brookfield | Stage 1 | 2 | 3 | 6 | Acceptable | Dewatering system currently in place is working well. To be closed |
| C7 | Disposal of excavated material | Unable to locate local tip leads to increased costs | Tip sourced through supply chain | Brookfield | Stage 1 | 1 | 1 | 1 | Acceptable | Ongoing, site waste management plan in place. |
| C8 | Disposal of waste | Unable to identify suitable local tip leads to increased costs. Impact on BREEAM rating for failure to classify correctly | Implement waste segregation and implement schemes e.g. SWMP in accordance with current legislation. | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | SWMP in place. Ongoing process. Identified opportunity for SME. |
| C9 | Failure by Contractor to co-ordinate M&E Installations | Project delays and increased costs | Continue early involvement of M&E supply chain, ensure robust programme management and use of 3D modelling. Consider/implement use of off-site pre-fabrication process. | Brookfield | Stage 1 | 1 | 2 | 2 | Acceptable | Early involvement of M&E supply chain. Working with the design team |
| C10 | Failure by Contractor to co-ordinate of M&E services with the building structure | Spatial requirements are inadequate to meet needs of service installations leading to failure of delivery of project | Ensure spatial requirements are agreed and determined early in the programme. | Brookfield | Stage 1 | 2 | 4 | 8 | Undesirable | Good early co-ordination already taken place |
| C11 | Failure to maintain adequate on site security (Project) | Theft, vandalism, fire etc resulting in delays and increased costs | Employ suitable on site security from start of project | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | Acceptable security company employed on site with no issues to date. |
| C12 | Inadequacy of O&M Manuals | Complexity in compiling and use | Understanding clients requirements e.g. electronic system and agree appropriate format and content. | Brookfield | Stage 1 | 1 | 4 | 4 | Acceptable | Process put in place to capture all information |
| C13 | Delays due to inclement weather | Additional cost and programme delays | Include allowances for minimal delays in target cost | Brookfield | Stage 1 | 2 | 4 | 8 | Undesirable | High winds continues to be a risk re potential for cranage downtime. |
| C14 | Interfaces between external wall and structure | Lack of air tightness and weather permeability and thus non compliance with Section 6 of Building Regs | Quality control during construction | Brookfield | Stage 1 | 1 | 2 | 2 | Acceptable | Ongoing and will be a focus further down the line |
| C15 | Lack of quality control | Delays to project handover, failure to achieve requisite level | Implement on-site quality control measures and ensure employment of dedicated QA personnel. | Brookfield | Stage 1 | 1 | 2 | 2 | Acceptable | Current quality control measures satisfactory |
| C16 | Proximity of welfare facilities | Reduction in productivity leading to increased costs and time delays | Through logistics plan developed; implement flexible working arrangements to allow coordinated lunch and tea breaks in accordance with Union regulations. | Brookfield | Stage 1 | 1 | 1 | 1 | Acceptable | Onsite canteen replaced. Ongoing liaison with contractors/operatives. Notice Board erected for use by supply chain to allow information sharing between BCL and operatives |
| C17 | Quality of sub-contractors to service large work packages | Delays to the project | Ensure supply chain management procedures are followed; split packages where appropriate | Brookfield | Stage 1 | 1 | 4 | 4 | Acceptable | Working well. 64 packages identified for Labs Project |
| C18 | Site safety (CDM etc.) | Death or injury to persons and damage to property resulting in increased costs, delays to the project, insurance claims and legal proceedings etc. | Robust Health & Safety plans, site inductions for all personnel, tool box talks, PPE, method statements, risk statements, hot works permits etc. Appropriate H&S qualifications e.g. CSCS cards. | Brookfield | Stage 1 | 1 | 5 | 5 | Acceptable | Health an Safety record very good. AK will provide a presentation to Board's H&S Manager at next PSG. |
| C19 | The discovery of latent defects in new building after handover | Disruption to operational use of building and increases client management costs. Damage to public perception | Robust quality control measures, building commissioning procedures and appointment of experienced supervisor all led by good design detailing and specifications. | Brookfield | Stage 1 | 1 | 5 | 5 | Acceptable | Not at this stage |
| C20 | Roosting nesting season/Bat surveys | Delays to programme if timing not appropriate | RFI 146 refers. NHSGG&C to undertake bat survey Sept 2009 and results will be passed to bidder on contract award. None anticipated | Brookfield | Stage 1 | 1 | 1 | 1 | Acceptable | Closed off. Bat Survey confirmed no bats on site |

| Risk | | | Response | | | Residual Assessment | | | | Comments |
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| C21 | Attendance and/or information relating to group 2-4 equipment | Failure to agree who provides what level of attendance impacts installation resulting in delays to the project and increased costs | Early agreement of attendances required | Brookfield | Stage 1 | 2 | 4 | 8 | Undesirable | Equipment list being finalised, Version 5 circulated. |
| C22 | Discovery of unexploded ordinance | Health & Safety implications, time delays and cost increases. Potential impact on existing facilities. | Consideration of probes prior to piling | Brookfield | Stage 1 | 1 | 2 | 2 | Acceptable | Closed off. Piling works completed |
| C23 | Restrictions on oversailing of existing buildings influences construction methods e.g. tower cranes | Increases costs and delays to programme due to possible restricted methods of workings | No oversailing included in logistics | Brookfield | Stage 1 | 1 | 1 | 1 | Acceptable | Closed off. No issues |
| C24 | Damage to works by Employer or any of its Third Party Consultants and Contractors | Cost/Delay | Attendance and management of direct contracts during construction | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | No issues so far. Monitoring ongoing |
| C25 | Dilapidation surveys | Disputes over status of existing facilities prior to works commencing | Ensure full joint survey undertaken and agreed with the Client. | Brookfield | Stage 1 | 1 | 1 | 1 | Acceptable | Closed off - Dilapidation Surveys completed |
| C26 | Energy centre - link to retained estate | Interruption to existing facilities | Consider stand-by power generation or review ability to design and construct as part of Stage 1 Works. | Brookfield | Stage 1 | 1 | 4 | 4 | Acceptable | PICKED UP ELSEWHERE |
| C27 | Delays to piling due to obstructions | Additional cost and programme delays | Allow suitable risk allowance based on latest site investigation carried out during Stage 2; Review passing risk to contractor | Brookfield | Stage 3 | 2 | 3 | 6 | Acceptable | Closed off. Piling works completed |
| D1 | Additional Cost of Specialist consultants | Increased Cost | Brookfield management process to be implemented | Brookfield | Stage 1 | 0 | 0 | 0 | Acceptable | Ongoing |
| D2 | Air Tightness | Loss of BREEAM points, impair building operation and performance | Ensure protocols are in place to manage the construction and testing. | Brookfield | Stage 1 | 2 | 3 | 6 | Acceptable | Protocols to be implemented in due course - not at that stage in process |
| D3 | Polyurethane finish to floor and ceilings to mortuary areas - noted as required at last labs dialogue meeting but not included on room data sheets | Additional cost | Determine requirements early during Stage 1 | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | Closed off . Part of Stage D to E reconcilliation works |
| D4 | Drainage Discharge consent not achieved | Increased costs, time delay and site functions and operations | Early identification and an understanding of the requirements. Scottish Water | Brookfield | Stage 1 | 2 | 4 | 8 | Undesirable | Nearing completion. Only drainage to be finalised |
| D5 | External detailing of building below expected quality | Client brief not met, delays to building handover, costs increase. | Implement appropriate quality control measures during construction | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | Ongoing - Part of the GCC Planning process. |
| D6 | General design quality by Contractor | Client brief not met, delays to building handover, costs increase. | Implement appropriate quality control measures during construction | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | Ongoing |
| D7 | Inadequacy of emergency generator provisions | Disruption to hospital services including existing buildings | Identify requirements, liaise with Client's external consultants and include within design. | Brookfield | Stage 1 | 2 | 3 | 6 | Acceptable | No issues so far. Ongoing review |
| D8 | Inadequate Coordination of design due to short pre-construction period | Increased costs and programme delays | Ensure design fully coordinated and reviewed prior to works packages commencing on site | Brookfield | Stage 1 | 2 | 4 | 8 | Undesirable | Ongoing monitoring |
| D9 | Late design information from sub-contractors and designers due to short pre-construction period leading to inadequate procurement times and delays or acceleration | Time delays and cost increases | Ensure good programme management and early appointment of supply chain. | Brookfield | Stage 1 | 3 | 5 | 15 | Unacceptable | Closed off. Completed |
| D10 | Poor Design development and management | Uncontrolled change leads to increased costs delays to programme. | Implement Change Control at start of Stage 1 | Brookfield | Stage 1 | 1 | 2 | 2 | Acceptable | Closed off. Completed |
| D11 | Poorly considered innovative design / materials solutions | Lack of knowledge results in poor construction leading to building failure resulting in increased costs and delay. | Ensure all solutions are fully explored | Brookfield | Stage 1 | 1 | 2 | 2 | Acceptable | Closed off. Completed |
| D12 | Increase to agreed schedule of accommodation: Rooms, circulation, plant rooms, other | Increased costs and time delays | Implement Change Control at start of Stage 1 | Brookfield | Stage 1 | 1 | 2 | 2 | Acceptable | Close off. Completed. |
| D13 | No Group Equipment schedule issued for labs -schedule taken from room data sheets | Increased costs and time delays | Early agreement with novated design team and NSGH Board | Brookfield | Stage 1 | 2 | 4 | 8 | Undesirable | Closed off |
| D14 | External wall service zone strategy requirements unclear from design information issued | Increased costs and time delays | Early agreement of requirements with novated design team | Brookfield | Stage 1 | 2 | 4 | 8 | Undesirable | Closed off |
| D15 | Requirement for vulcathene pipework confirmed at final labs dialogue meeting - URS drawings and design indicate polypropylene | Increased costs and time delays | Early agreement of requirements with novated design team | Brookfield | Stage 1 | 2 | 4 | 8 | Undesirable | Close off. Part of Stage D to E reconcilliation process. |
| D16 | Partition types are noted but no indication of where these are located is included on the drawings or room data sheets | Increased costs and time delays | Early agreement of requirements with novated design team | Brookfield | Stage 1 | 2 | 4 | 8 | Undesirable | Closed off |
| D17 | Brise soleil requirements unclear from drawings | Increased costs and time delays | Early agreement of requirements with novated design team | Brookfield | Stage 1 | 2 | 4 | 8 | Undesirable | Closed off |
| D18 | Interface detailing to external walls - a large number of different cladding types | Increased costs and time delays | Managing of interfaces and package contractors during construction | Brookfield | Stage 1 | 3 | 3 | 9 | Undesirable | Closed off |
| D19 | Implementation of Euro codes and changes to Building Regulations | Increased cost and time | To be considered by Brookfield | Brookfield | Stage 1 | 1 | 2 | 2 | Acceptable | Closed off. Part of Planning |
| D20 | Novated design team fees - adequacy | Cost increase | Review design and scope with novated design team | Brookfield | Stage 1 | 3 | 3 | 9 | Undesirable | Closed - Submitted Building Warrant |
| E1 | Achieving BREEAM Excellent | Increased costs. Failure to meet rating leads to bid rejection | Novated design team to liaise with Brookfield's appointed BREEAM consultant to confirm requirements. BREEAM consultant to carry out BREEAM assessment of design. | Brookfield | Stage 1 | 2 | 4 | 8 | Undesirable | Interim Report 'Very Good' prior to commencement of Energy Centre where 'Excellent' to be achieved. Onoing monitoring. |
| O1 | Delay/Consultation caused by Local Resident's Groups | Opportunity to promote project, Client and Contractor | Brookfield to implement Project Administration Manual, Corporate Social Responsibility Policies e.g. Neighbour notification schemes and appoint liaison manager. | Brookfield | Stage 1 | 1 | 1 | 1 | Acceptable | Neighbourhood notification process going well. Liaison meeting held, no objections raised. Regular communication distributed, Elder Park Communication Centre established, newsletters planned. |
| O2 | Delivery of materials causes disruption to others | Disruption to emergency vehicles, services, patients, visitors, staff. Potential H&S impact. Delays to material deliveries. Potential contamination from construction traffic. Delays to delivery could result in programme delays and increased costs | Implement logistics plan, traffic management plan and engage with Local Authority and Police on best methods. Introduce wheel wash and road cleaning operations. Implement material delivery control e.g. consider "just in time" material delivery. | Brookfield | Stage 1 | 1 | 5 | 5 | Acceptable | Going well |
| O3 | Distribution of materials on-site | Delays to construction, increased labour costs, loss, wastage and damage to materials, all resulting in increased costs. | Consider method of materials handling, storage and distribution in order to reduce wastage, time loss and labour costs, considered within logistics plan. | Brookfield | Stage 1 | 1 | 1 | 1 | Acceptable | Going well |
| O4 | Failure to control dust (Aspergillus) | Patient, staff and public health care affected. Damage to property and damage to public perception. | Implement appropriate control measures e.g. dust suppression, water spraying, wheel washing etc. Managed use of abrasive wheel cutting tools and consider appropriate control e.g. Tents, all as detailed in the logistics plan. | Brookfield | Stage 1 | 1 | 5 | 5 | Acceptable | No issues so far. Continuing to monitor |
| O5 | Obtaining permit to discharge certificate and ramifications thereof | Additional costs and programme | Enter early dialogue with Scottish Water to obatain permit | Brookfield | Stage 1 | 2 | 4 | 8 | Undesirable | Ongoing. Previous issue with SEPA managed. |
| O6 | Highways: Peak periods for access and egress | Disruption to emergency vehicles, services, patients, visitors, staff. Potential H&S impact. Delays to material deliveries. Potential contamination from construction traffic. | Implement traffic management plan, engage with Local Authority and Police on best methods. Introduce wheel wash and road cleaning operations, all as detailed in the logistics plan.. | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | In progress - working well |
| O7 | Management / Provision of site facilities | Poor quality facilities may have an impact on productivity, conversely, good quality facilities helps to attract and retain good quality staff | Brookfield to give careful consideration to planning facilities and requirements and liaison with client on their requirements, all as detailed in the logistics plan. | Brookfield | Stage 1 | 1 | 1 | 1 | Acceptable | No issues thus far - continuing to monitor |
| O8 | Off-site parking for construction staff | Further congestion to surrounding area. Increased costs in provision of parking and worker transfer costs | Brookfield to consider renting suitable local premises, all as detailed in the logistics plan. | Brookfield | Stage 1 | 2 | 3 | 6 | Acceptable | BCL finalising proposals for off-site parking. |
| O9 | Delays caused by protester action groups | Delay to project resulting in increased costs | Develop protocols in conjunction with Police, on-site security and Client's security team. | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | No issues thus far. Continuing to monitor |
| P1 | The impact of incorrect program and duration by Contractor | Increased costs and delay to project | Brookfield to assess and provide a programme that is able to meet the overall requirements and achieve the Key Dates. | Brookfield | Stage 1 | 1 | 3 | 3 | Acceptable | Programme remains on target. Ongoing monitoring of programme |
| O11 | Compliance with WRAP | Increased costs | Understanding the WRAP requirements, evidencing what we are currently providing, providing a strategy and implementation thereof. | Brookfield | Stage 1 | 1 | 1 | 1 | Acceptable | Ongoing |
| O12 | Payment of £750k Bond in relation to Section 75 works | Mechanisms of implementation of bond (who benefits?) | Include costs in tender submission | Brookfield | Stage 1 | 1 | 1 | 1 | Acceptable | Closed off |

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|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Completeness of design from Novated design team for Laboratories and FM building- scope of services, programme and fees | Delay to Project and subsequent increase in Defined Cost | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | 0 | 0 | 0 | Acceptable | |
| 2 | Any other changes in VAT | Cost increase or decrease | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | 0 | 0 | 0 | Acceptable | |

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| **Item** | **Description** | **Risk Effect** | **Risk control measure or action taken to mitigate** | **Action Owner** | **When** | **P 1-5** | **I 1-5** | **PI Score** | **Strategy** | |
| 3 | Approvals sign-off (gateways) | Delay to the project and possible increased costs. | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 4 | Funding availability and cash flow | Additional cost to contractor and possible interest charges | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 5 | Land acquisition(s) for master plan of campus | Failure to acquire on time delays project and will result in re-design | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 6 | Late payments by the Employer | Increased costs in interest charges | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 7 | The impact of "Compensation Events" to the Contractor (variations) | Delays to project and increased costs (beyond those recoverable through CE) | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 8 | The impact of incorrect programme and cost estimates for decanting from existing premises | Delays commissioning and operation of new facility | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 9 | The non realisation of VAT reclaim and the introduction of new Statutory costs | Cost increase or decrease | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 10 | Inflation above the allowance in the contract | Increased cost | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 11 | The introduction and incorporation of changes to Scottish Government Health Department new requirements | Included on NSGH Board Risk Register | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 12 | Potential for impact of legislative or regulatory change, e.g. 1. Green issues 2. Environmental Planning standards | Included on NSGH Board Risk Register | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 13 | Equipment (Group 1 & 2) varies from the information in the ITPD | Included on NSGH Board Risk Register | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 14 | Failure to achieve approvals at key dates and gateways. FBC approval | Delay to project and increased costs | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 15 | Discovery of mine workings | Delay to project and increased costs for grouting etc. | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 16 | Discovery of underground stream / spring | Time delays and cost increases | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 17 | Any unforeseen ground/site conditions under the footprint of existing facilities | Cost increase and delay to project | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 18 | Asbestos | Health & Safety implications. Delays to the site clearance and demolition works and increased costs | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 19 | Asbestos in culvert | Health & Safety implications. Delays to the site clearance and demolition works and increased costs | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 20 | Discovery of existing basements | Delay to project and increased costs. Possible re-design | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 21 | Discovery of existing underground steam mains | Delays to project while dismantled and re-routed resulting in increased costs. Impact on programme e.g. works have to be undertaken during summer months | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 22 | Discovery of Japanese Knotweed | Contamination of other areas within hospital campus. Increased costs and delay to project. | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 23 | Discovery of unknown major services | Cost impact to divert and delay on programme | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 24 | Relocation of orange aerial tower to accommodate land purchase | Included on NSGH Board Risk Register | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 25 | The Board do not provide a contract programme for the 33kV sub-station by the required date which is when the board approve the stages 1, 2, 3 & 3a | Included on NSGH Board Risk Register | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 26 | Any unexpected changes in medical technology | Increased costs, delay to project and impaired functional performance | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 27 | Impact of pre-construction demolition works on design | Failure to implement early site clearance will delay site surveys and affect final design completion. | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 28 | Impact of change in Employers Requirements (space and design standards) | Included on NSGH Board Risk Register | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 29 | Planning authority don't comply with statutory response times when in receipt of correctly completed Application | Included on NSGH Board Risk Register | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 30 | Additional requirements for Police counter terrorism | Included on NSGH Board Risk Register | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 31 | Unforeseen additional Equipment requirements | Included on NSGH Board Risk Register | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 32 | Car Parking strategy changes | Included on NSGH Board Risk Register | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 33 | Level of information provided about ICT requirements | Included on NSGH Board Risk Register | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 34 | Lifts Strategy (Lab) | Included on NSGH Board Risk Register | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 35 | The requirements of site wide engineering strategy change | Included on NSGH Board Risk Register | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 36 | An increased demand for patient services from that agreed | Included on NSGH Board Risk Register | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 37 | The non realisation of existing equipment transfers into new facilities | Increased costs and delay to project as a result of Compensation Event | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 38 | Operation of Helipad during lab construction disrupting works | Included on NSGH Board Risk Register | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 39 | Interaction of construction with day to day operation of existing hospital and interface with facilities managers | Patient care affected. Health & Safety implications. Public perception damaged | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 40 | Archaeology - Impact due to find | Delay to project and increased costs as a result of Compensation Event | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 41 | Impact of delay in contractor gaining access to the site or availability of areas | Increased costs and delay to project | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 42 | Approval process / sign off of equipment plans & RDS if Board don't comply with agreed timescales | Included on NSGH Board Risk Register | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 43 | Potential for delayed completion of enabling works by others, eg: 1. Site clearance 2. Car Parks 3. Substation | Included on NSGH Board Risk Register | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 44 | Inability to secure Planning approval: Labs/FM facility | Delay to project and increased costs | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| 45 | Section 75 Agreements and conclusion thereof | Delay to project and increased costs | Included on NSGH Board Risk Register | NHS GGC | Stage 1 | **0** | **0** | **0** | Acceptable | |
| | | | | | | | | | | |
| | | | | | | **Total** | | | | |

**Brookfiled Risk Register** **Stage 2 - FBC Design** **Date last reviewed** 14th September 2010

| Risk | | | | Inherent Assessment | | | | Response | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Item** | **Category** | **Description** | **Risk Effect** | **P 1-5** | **I 1-5** | **PI Score** | **Strategy** | **Risk control measure or action taken to mitigate** | **Action Owner** | **When** | **COMMENTS** |
| D7 | Design | Design development generally | De d ig r u m t e t itio al t base design is at Stage C/D | **4** | **4** | **16** | Unacceptable | Implement Change Control from start of Stage 2 | Brookfiel | Stage 2 | Ongoing |

**Brookfield Risk Register** **Stage 3 - Design & Construction New Hospitals** **Date last reviewed: 14th September 2010**

Brookfield

| Risk | | | | Inherent Assessment | | | | Response | |
|---|---|---|---|---|---|---|---|---|---|
| Item | Category | Description | Risk Effect | P 1-5 | I 1-5 | PI Score | Strategy | Risk control measure or action taken to mitigate | Comments |
| B1 | Business | Availability of suitable labour resource and impact on procurement of various packages | Delay to the project and increased costs. | 3 | 3 | 9 | Undesirable | Ensure that labour resources are planned for through use of labour resource histograms etc. Ensure good relationships with DWP. Consider procurement strategy in orde to ensure work load is balanced across the trades and that key packages are split where there is risk of inadequate resource with one Subcontractor. | On-going discussion No labour resource issues anticipated. BCL to identify the need for highly skilled commissioning personnel for hospitals |
| B2 | Business | Calculation of disallowable costs | Project disputes arise and costs increase | 3 | 4 | 12 | Undesirable | Properly manage the supply chain in order to minimise the opportunity for discussion in regard to disallowable costs. | Ongoing identification of work packages |
| B3 | Business | Change Control and Management of Change protocol by the Contractor through the Supply Chain | Delay to Project and subsequent increase in Defined Cost | 2 | 4 | 8 | Undesirable | Implement Change Control from start of Stage 3 | Change Control Process in place |
| B4 | Business | Change in Contractor or Sub-Contractor management personnel | Loss of direction to project. | 2 | 3 | 6 | Acceptable | Ensure suitable management hierarchy in place. | Ongoing review |
| B5 | Business | Cost escalation given economic climate, prevailing market conditions | Increase in Defined costs | 3 | 4 | 12 | Undesirable | Agree target costs with key supply chain members at end of Stage 2 to mitigate cost increases (85% of works package value let at end of Stage 2) | Continual monitoring of tender price and inflation.<br>Checks undertaken on key supply chain partners |
| B6 | Business | Cost of extended warranties e.g. Performance bonds, PCGs etc | Increase in Defined costs | 1 | 4 | 4 | Acceptable | Include in target cost at end of Stage 2 | Checks undertaken on key supply chain partners. Extended warranties being monitored. |
| B7 | Business | Deflation | Presents both opportunity to reduce costs but may have a negative impact on commercial viability of supply chain members. | 2 | 3 | 6 | Acceptable | Brookfield team to make appropriate assessment. | Continual monitoring. |
| B8 | Business | Delay damages due to tighter programme completion date | Cost increase | 2 | 5 | 10 | Undesirable | To be considered. Board confirmed at Commercial meeting No 3 the level of damages: Adult & Children's £62,500 per week (weeks 1 to 4), £125,000 (weeks 5 to 8), £187,500 (weeks 9 to 12), £250,000 week thereafter | Programme under review. Acceleration discussions will commence when/if necessary as programme prepared at bid stage |
| B9 | Business | Design development and scope creep | Increased costs | 3 | 4 | 12 | Undesirable | Undertake value management and value engineering exercises during preconstruction period. Ensure effective change control is in place during pre-contract period and ensure through dialogue meetings that risk is identified and mitigated by immediate action. | Monitoring through 1:200 and 1:50 process. Process going well. |
| B10 | Business | Incorrect Cost estimates for Adult & Children's' planning approval | Increase in planning fees | 1 | 3 | 3 | Acceptable | Include in target cost at end of Stage 2 | Planning fee discussions concluded |
| B11 | Business | Incorrect insurance rates included in tender | Increase costs | 1 | 3 | 3 | Acceptable | To be considered. | Ongoing review. Overall balancing out so far. |
| B12 | Business | Incorrect Level of Pricing in the Contractors tender pricing | Increase in Defined Costs | 3 | 5 | | Unacceptable | Agree target costs with key supply chain members at end of Stage 2 to mitigate cost increases (85% of works package value let at end of Stage 2) | BCL confident with cost plan. Ongoing monitoring |
| B13 | Business | Insolvency of supply chain / suppliers | Increased costs and delay to project | 3 | 4 | 12 | Undesirable | Ensure robust financial checks are undertaken on supply chain prior to appointment and that ownership of materials etc. are managed in accordance with Contract requirements. | Continuing to monitor and do checks on the supply chain.<br>Continuing to break down the packages into manageable contracts |
| B14 | Business | Insufficient information to adequately establish defined cost | Cost impact with regard to pain/gain | 2 | 4 | 8 | Undesirable | Robust contract management procedures e.g. change control. | Change Control Process in place. Ongoing review of costs. |
| B15 | Business | Insurance excesses not recovered as a consequence of it being a disallowable cost | Cost Increase | 1 | 4 | 4 | Acceptable | Undertake discussions with insurance brokers and supply chain. Subguard. | No issues presently |
| B16 | Business | Interest rate changes | Costs increase due to inflationary impact | 2 | 4 | 8 | Undesirable | Allowance included in Target Cost | Ongoing monitoring |
| B17 | Business | Material off site payments | Failure to transfer title in goods and leads to loss | 2 | 5 | 10 | Undesirable | Ensure correct paperwork and appropriate management procedures are in place. | Paper being prepared re off-site working. Ongoing |
| B18 | Business | Priced activity schedule | Failure to complete activities on time impacts payment | 2 | 5 | 10 | Undesirable | Discuss amending payment provision with NHS GGC. Monthly Valuations with 4 week payment cycles confirmed at Commercial Dialogue meeting | Activity schedule updated on a monthly basis |
| B19 | Business | Proper administration of NEC3 contract | Delays to projects, increased costs and damaging to relationships | 2 | 4 | 8 | Undesirable | Set up NEC3 workshops to ensure that it is understood by all and ensure appropriate resources are in place to deliver. | Ongoing management of NEC3 Process. Regular Early Warning meetings to discuss changes to contract. |
| B20 | Business | Scope of packages not appreciated at time of establishing Target Price due to speed of tender and design information available | Scope missed and leads to increased costs. Package is too large to manage. | 3 | 5 | 15 | Unacceptable | Agree target costs with key supply chain members at end of Stage 2 to mitigate cost increases (85% of works package value let at end of Stage 2) | Packages are being broken down and reviewed. Information on packages being pulled together. |
| B21 | Business | Step down agreements with sub-contractors | Supply chain members are unable to meet contractual obligations which leads to project delay | 2 | 4 | 8 | Undesirable | Ensure that terms and conditions are pitched at a level appropriate to the specific package of works at Stage 2 | Appropriate step-down arrangements being undertaken |
| B22 | Business | The impact of incorrect programme and cost estimates for commissioning new building | Increased cost and delay to programme | 2 | 5 | 10 | Undesirable | Commissioning programme and costing to be fully detailed and reviewed. | Will establish Adult and Children's Hospitals Commissioning Group in due course. |
| B23 | Business | Transparency of tender procurement process and out turn | Loss of trust and negative impact on relationships. Failure to agree contract price delays programme | 2 | 4 | 8 | Undesirable | Operate open book collaborative working throughout supply chain. | Current process working satisfactory and will continue throughout the Adult & Children's project |
| B24 | Business | Unions and Industrial Relations with regard to construction | Poor relationships could lead to delays in the project and increased costs | 2 | 4 | 8 | Undesirable | Ensure full dialogue and engage with Unions at an early stage. Ensure Community Engagement strategy includes Union/Industrial relations | Ongoing engagement |
| B25 | Business | Change Control and Management of Change protocol by the Board | Uncontrolled change leads to increased costs delays to programme. | 3 | 4 | 12 | Undesirable | Implement Change Control from start of Stage 3 | Change Control Process implemented and actively managed. Regular Early Warning meetings in place to discuss changes |
| B26 | Business | Dispute Resolution | Delays to projects, increased costs and damaging to relationships | 3 | 5 | 15 | Unacceptable | Agree tiered dispute resolution process and engender good team working relationships as promoted by NEC3. Consider introduction of informal "high level" director involvement in process before matter goes to formal dispute resolution mechanism. | No issues currently |
| C1 | Construction | Physical site conditions don't reflect site investigation | Time delay and cost increase | 3 | 4 | 12 | Undesirable | Appropriate risk to be calculated | Further SIs undertaken. Report received in September 2010. Report appendices awaited by Board team. |
| C2 | Construction | Compliance with CAA Regulations during construction | Impact on helicopter and existing aircraft operations which affect hospital function. | 2 | 5 | 10 | Undesirable | Timely decision required on location of heli pad and temporary relocation of helicopter facilities. | Ongoing review. Helicopter Management Plan agreed by all stakeholders and under regular review. |
| C3 | Construction | Construction noise | Stoppages resulting in increased costs. Methods of working result in increased costs e.g. water bursting methods | 3 | 3 | 9 | Undesirable | Examine construction operational procedures and implement appropriate liaison measures. | Neighbourhood liaison has commenced and will continue |
| C4 | Construction | Damage to existing / 3rd party buildings due to carrying out of the works e.g. subsidence, heave, vibrations etc. | Damage to property, injury, loss of life all resulting in delays to project and increased costs | 2 | 5 | 10 | Undesirable | Review construction methods, ensure adequate protection in place prior to commencement of works and all method statements approved. | Commenced condition surveys in the areas surrounding the Adult & children's Construction site. Stage 3 area surveys commenced. |
| C5 | Construction | Delays to procurement of materials | Delays to project and increased costs | 3 | 4 | 12 | Undesirable | Ensure supply chain adequate to suit size of project and that materials are sourced from a competent source. | Currently no delays and none anticipated. |
| C6 | Construction | Delays due to inclement weather | Additional cost and programme delays | 3 | 4 | 12 | Undesirable | Include allowances for minimal delays in target cost | No issues.<br>Monitoring ongoing.<br>Lessons learned from Labs Project |
| C7 | Construction | De-watering | Impact on construction works, delays progress and increased costs | 3 | 3 | 9 | Undesirable | Ensure adequate de-watering system in place and that desk top study and/or boreholes are taken to establish level of water table. | No issues.<br>Monitoring ongoing.<br>Lessons learned from Labs Project |
| C8 | Construction | Discovery of unforeseen ground conditions | Time delays and cost increases | 2 | 4 | 8 | Undesirable | Undertake detailed site surveys and site investigations etc. | No issues.<br>Monitoring ongoing.<br>Lessons learned from Labs Project |
| C9 | Construction | Disposal of excavated material | Unable to locate local tip leads to increased costs | 2 | 4 | 8 | Undesirable | Tip sourced through supply chain | No issues.<br>Monitoring ongoing.<br>Lessons learned from Labs Project |
| C10 | Construction | Disposal of waste | Unable to identify suitable local tip leads to increased costs. Impact on BREEAM rating for failure to classify correctly | 2 | 4 | 8 | Undesirable | Implement waste segregation and implement schemes e.g. SWMP in accordance with current legislation. | No issues.<br>Monitoring ongoing.<br>Lessons learned from Labs Project<br>BCL will liaise with WRAP |
| C11 | Construction | Diversion of the existing culvert | Delays to the project and increased costs | 2 | 4 | 8 | Undesirable | Establish location and agree route for diversion. | No issues.<br>Monitoring ongoing.<br>Lessons learned from Labs Project |
| C12 | Construction | Failure by Contractor to co-ordinate M&E Installations | Project delays and increased costs | 2 | 4 | 8 | Undesirable | M&E works package contractor to be responsible for M&E design | M&E works package working well |
| C13 | Construction | Ground floor slab construction sequencing | Increased costs and programme | 2 | 4 | 8 | Undesirable | Detailed installation plans and methodology to be developed. Cost now included in Cost Plan | Programme set-up accordingly |
| C14 | Construction | Failure by Contractor to co-ordinate of M&E services with the building structure | Spatial requirements are inadequate to meet needs of service installations leading to failure of delivery of project | 3 | 4 | 12 | Undesirable | Ensure spatial requirements are agreed and determined early in the programme. | M&E services being co-ordinated |
| C15 | Construction | Failure to maintain adequate on site security (Project) | Theft, vandalism, fire etc resulting in delays and increased costs | 2 | 4 | 8 | Undesirable | Logistics team to advise on best set-up and engage in consultation with local Police. | Will be expanded as and when necessary |
| C16 | Construction | Inadequacy of O&M Manuals | Complexity in compiling and use | 2 | 4 | 8 | Undesirable | Understanding clients requirements e.g. electronic system and agree appropriate format and content. | O&M Manuals will be generated from the start of the Adult and Children's Hospitals Project |
| C17 | Construction | Interfaces between external wall and structure | Lack of air tightness and weather permeability and thus non compliance with Section 6 of Building Regs | 3 | 4 | 12 | Undesirable | Quality control during construction | QA procedures will be implemented |
| C18 | Construction | Lack of quality control | Delays to project handover, failure to achieve requisite level | 2 | 4 | 8 | Undesirable | Implement on-site quality control measures and ensure employment of dedicated QA personnel. | QA procedures will be implemented |
| C19 | Construction | Quality of sub-contractors to service large work packages | Delays to the project | 3 | 4 | 12 | Undesirable | Agree target costs with key supply chain members at end of Stage 2 to mitigate cost increases (85% of works package value let at end of Stage 2) | Work packages broken down into manageable packages |
| C20 | Construction | Site safety (CDM etc.) | Death or injury to persons and damage to property resulting in increased costs, delays to the project, insurance claims and legal proceedings etc. | 1 | 5 | 5 | Acceptable | Robust Health & Safety plans, site inductions for all personnel, tool box talks, PPE, method statements, risk statements, hot works permits etc. Appropriate H&S qualifications e.g. CSCS cards. | Health & Safety Plan in place. Lessons learned from Labs Project carried across to Adult & Children's Project |
| C21 | Construction | The discovery of latent defects in new building after handover | Disruption to operational use of building and increases client management costs. Damage to public perception | 2 | 5 | 10 | Undesirable | Robust quality control measures, building commissioning procedures and appointment of experienced supervisor all led by good design detailing and specifications. | BCL do not anticipate any latent defects in the new building |
| C22 | Construction | Waterproofing of basement | Leaking basements affecting function and operation. | 3 | 4 | 12 | Undesirable | Appropriate quality control during construction works | Ongoing works and lessons learned from Labs Project will be carried across to Adult and Childre's Hospital project |

**Brookfield Risk Register** **Stage 3 - Design & Construction New Hospitals** **Date last reviewed: 14th September 2010**

Brookfield

| Risk | | | | Inherent Assessment | | | | Response | |
|---|---|---|---|---|---|---|---|---|---|
| Item | Category | Description | Risk Effect | P 1-5 | I 1-5 | PI Score | Strategy | Risk control measure or action taken to mitigate | Comments |
| C23 | Construction | Discovery of unexploded ordinance | Health & Safety implications, time delays and cost increases. Potential impact on existing facilities. | 2 | 5 | 10 | Undesirable | Probing in advance of piling works | None anticipated |
| C24 | Construction | Damage to works by Employer or any of its Third Party Consultants and Contractors | Cost/Delay | 2 | 3 | 6 | Acceptable | Attendance and management of direct contracts during construction | No issues thus far |
| C25 | Construction | External detailing of building below expected quality | Client brief not met, delays to building handover, costs increase. | 2 | 4 | 8 | Undesirable | Appropriate quality control measures to be implemented during construction | Being dealt with through consultation with GGC Planning Dept. Discussions ongoing. |
| C26 | Construction | External materials not to required standard | Client brief not met, delays to building handover, materials don't meet life cycle expectations, costs increase. | 2 | 4 | 8 | Undesirable | Appropriate quality control measures to be implemented during construction | BCL continuing to meet expectations thus far |
| C27 | Construction | Failure to meet acoustic requirements of new building | Impact on patient health care and specialist departments | 2 | 5 | 10 | Undesirable | Appropriate quality control measures to be implemented during construction | Accoustics Logic and Astins liaised to identify solutions. Acoustics response to be provided for Board review. |
| C28 | Construction | Damage to completed works e.g. Ceilings, walls, doors, etc | Additional costs | 3 | 3 | 9 | Undesirable | Allow for adequate protection during construction | Damages will be managed accordingly. |
| C29 | Construction | Commissioning: providing adequate programme allowance for test and commissioning | Delays handover of new facility | 3 | 4 | 12 | Undesirable | Ensure sufficient time allowed in programme. Ensure that specialist Commissioning Manager is appointed and reviews all aspects of commissioning at an early stage. | Technical Commissioning Programme to be merged |
| C30 | Construction | Delays to piling due to obstructions | Additional cost and programme delays | 3 | 4 | 12 | Undesirable | Allow suitable risk allowance based on latest site investigation carried out during Stage 2; Review passing risk to contractor | Stage 3 Piling solution identified for tender. Identified that there will be no driven piles. |
| C31 | Construction | Air Tightness | Loss of BREEAM points, impair building operation and performance | 2 | 4 | 8 | Undesirable | Ensure protocols are in place to manage the construction and testing. | Ongoing tests at appropriate time |
| D1 | Design | All departments now detailed during Stage 2 and general design development during Stage 2 now impact on construction cost | Additional cost | 4 | 3 | 12 | Undesirable | Design development resulting from Stage 2 | Ongoing monitoring of design. Nearing completion - no issues so far |
| O1 | Operational | Delay/Consultation caused by Local Resident's Groups | Opportunity to promote project, Client and Contractor | 2 | 2 | 4 | Acceptable | Brookfield to implement Project Administration Manual, Corporate Social Responsibility Policies e.g. Neighbour notification schemes and appoint liaison manager. | Neighbourhood liaison will continue throughout Adult & Children's Hospitals Project. Cognisance taken of lessons learned for Labs Project |
| O2 | Operational | Delivery of materials causes disruption to others | Disruption to emergency vehicles, services, patients, visitors, staff. Potential H&S impact. Delays to material deliveries. Potential contamination from construction traffic. Delays to delivery could result in programme delays and increased costs | 2 | 5 | 10 | Undesirable | Agree delivery strategy at Stage 2 - residual risk only | Delivery management will continue through Adult & children's Project. Cognisance taken of lessons learned through Labs Project. |
| O3 | Operational | Distribution of materials on-site | Delays to construction, increased labour costs, loss, wastage and damage to materials, all resulting in increased costs. | 2 | 4 | 8 | Undesirable | Agree delivery strategy at Stage 2 - residual risk only | Management of the distribution on materials will continue through Adult & children's Project. Cognisance taken of lessons learned through Labs Project. |
| O4 | Operational | Failure to control dust (Aspergillus) | Patient, staff and public health care affected. Damage to property and damage to public perception. | 2 | 5 | 10 | Undesirable | Implement appropriate control measures e.g. dust suppression, water spraying, wheel washing etc. Managed use of abrasive wheel cutting tools and consider appropriate control e.g. Tents, all as detailed in the logistics plan. | Continuing to monitor dust levels. Any issues are reported to the weekly Construction Interface Group |
| O5 | Operational | Highways: Peak periods for access and egress | Disruption to emergency vehicles, services, patients, visitors, staff. Potential H&S impact. Delays to material deliveries. Potential contamination from construction traffic. | 2 | 4 | 8 | Undesirable | Consider outline planning consent conditions, implement traffic management plan, engage with Local Authority and Police on best methods. Introduce wheel wash and road cleaning operations, all as detailed in the logistics plan.. | The next phase of the Logistics Plan will be implemented |
| O6 | Operational | Maintaining blue light route | Delays to patient treatment. H&S implication. | 2 | 5 | 10 | Undesirable | Implement traffic management plan and close liaison with client. | Plans and Programme identified for stage 3 based on end November access to the SAS |
| O7 | Operational | Management / Provision of site facilities | Poor quality facilities may have an impact on productivity, conversely, good quality facilities helps to attract and retain good quality staff | 2 | 3 | 6 | Acceptable | Brookfield to give careful consideration to planning facilities and requirements and liaison with client on their requirements, all as detailed in the logistics plan. | Ongoing monitoring of provision of site facilities. Stage 3 plan prepared. Site facilities will expand as necessary. |
| O8 | Operational | Off-site parking for construction staff | Further congestion to surrounding area. Increased costs in provision of parking and worker transfer costs | 2 | 3 | 6 | Acceptable | Brookfield to consider renting suitable local premises, all as detailed in the logistics plan. | Off-site parking plans being finalised. In discussion to purchase nearby land. |
| O9 | Operational | Operational noise | Impact on patient health care. | 2 | 4 | 8 | Undesirable | Acoustic and vibration consultants to liaise with designers to ensure appropriate design and selection of equipment. | Ongoing monitoring. Noise activities identified in advance and neighbourhood notified accordingly |
| O10 | Operational | Shift working (e.g. noise during certain periods) | Impact on patient care. Potential stoppages resulting in delays and increased costs | 2 | 3 | 6 | Acceptable | Brookfield liaison manager to establish Client's guidelines, monitor and manage accordingly on site | Ongoing monitoring. Noise activities identified in advance and neighbourhood notified accordingly |
| O11 | Operational | Heli Pad: Disruption caused by construction works | Patient care affected by transfer times depending on location | 2 | 5 | 10 | Undesirable | Temporary heli pad located outwith site boundary | Helipad to be off-site March 2011 |
| O12 | Operational | Inadequacy of Security requirements - site wide | Health & Safety, personal security, staff wellbeing, theft, vandalism, fire etc resulting in delays and increased costs | 2 | 4 | 8 | Undesirable | Employ suitable site security throughout construction phase | Suitable security provision identified. Cognisance taken of lessons learnt from Labs Project. Existing contract working well. Contract will be expanded as necessary. |
| O13 | Operational | Disruption to existing facilities at location of links | Disruption to ongoing operation of facility | 3 | 4 | 12 | Undesirable | Robust method statements to be provided and agreed in advance of works commencing. Close liaison with FM | Ensuring that Method Statements are satisfactory. Construction Liasion Group kept fully informed. |
| O14 | Operational | Delays caused by protester action groups | Delay to project resulting in increased costs | 2 | 3 | 6 | Acceptable | Develop protocols in conjunction with Police, on-site security and Client's security team. | Not at this stage |
| P1 | Programme | The impact of incorrect program and duration by Contractor | Increased costs and delay to project | 3 | 3 | 9 | Undesirable | Brookfield to assess and provide a programme that is able to meet the overall requirements and achieve the Key Dates. | Ongoing review of programme |
| P2 | Programme | The impact of delivery due to poor project management | Increased costs and delay to project | 2 | 4 | 8 | Undesirable | Ensure pro-active project management and robust implementation of Project Execution Plan. | Project Management being carried out proactively. |
| P3 | Statutory | Compliance with WRAP | Increased costs | 2 | 2 | 4 | Acceptable | Understanding the WRAP requirements, evidencing what we are currently providing, providing a strategy and implementation thereof. | Ongoing. BCL will continue to comply with WRAP. |
| 1 | Business | The equipment costs exceed equipment budget (Group 1 - Purchased by Brookfield) | Included on NSGH Board Risk Register | 0 | 0 | | Acceptable | Included on NSGH Board Risk Register | |
| 2 | Business | Any other changes in VAT | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 3 | Business | Approvals sign-off (gateways) | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 4 | Business | Funding availability and cash flow | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 5 | Business | Land acquisition(s) for master plan of campus | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 6 | Business | Late payments by the Employer | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 7 | Business | The impact of "Compensation Events" to the Contractor (variations) | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 8 | Business | The impact of incorrect programme and cost estimates for decanting from existing premises | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 9 | Business | The non realisation of VAT reclaim and the introduction of new Statutory costs | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 10 | Business | Failure to achieve approvals at key dates and gateways. FBC approval | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 11 | Business | Inflation above the allowance in the contract | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 12 | Construction | Timing of provision of new sub-station | Installation by PU delays project and results in increased costs | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 13 | Construction | Discovery of existing basements under surgical block | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 14 | Construction | Discovery of mine workings | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 15 | Construction | Discovery of underground stream / spring | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 16 | Construction | Any unforeseen ground/site conditions under the footprint of existing facilities | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 17 | Construction | Asbestos | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 18 | Construction | Asbestos in culvert | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 19 | Construction | Discovery of existing basements | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 20 | Construction | Discovery of existing underground steam mains | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 21 | Construction | Discovery of Japanese Knotweed | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 22 | Construction | Discovery of unknown major services | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 23 | Construction | Relocation of orange aerial tower to accommodate land purchase | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 24 | Construction | Additional requirements for Police counter terrorism | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 25 | Construction | Unforeseen additional Equipment requirements | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 26 | Construction | Car Parking strategy changes | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 27 | Design | Any unexpected changes in medical technology | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 28 | Design | Impact of pre-construction demolition works on design | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 29 | Design | Impact of change in Employers Requirements (space and design standards) | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |

**Brookfield Risk Register** **Stage 3 - Design & Construction New Hospitals** **Date last reviewed: 14th September 2010**

Brookfield

| Risk | | | | Inherent Assessment | | | | Response | |
|---|---|---|---|---|---|---|---|---|---|
| Item | Category | Description | Risk Effect | P 1-5 | I 1-5 | PI Score | Strategy | Risk control measure or action taken to mitigate | Comments |
| 30 | Design | An increased demand for patient services from that agreed | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 31 | Design | Equipment (Group 1 & 2) varies from the information in the ITPD | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 32 | Operational | The non realisation of existing equipment transfers into new facilities | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 33 | Operational | Interaction of construction with day to day operation of existing hospital and interface with facilities managers | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 34 | Programme | Archaeology - Impact due to find | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 35 | Programme | Impact of delay in contractor gaining access to the site or availability of areas | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 36 | Programme | The Board do not provide a contract programme for the 33kV sub-station by the required date which is when the board approve the stages 1, 2, 3 & 3a | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 37 | Programme | Potential for impact of legislative or regulatory change, e.g. 1. Green issues 2. Environmental Planning standards | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 38 | Programme | Approval process / sign off of equipment plans & RDS if Board don't comply with agreed timescales | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 39 | Programme | Potential for delayed completion of enabling works by others, eg: 1. Site clearance 2. Car Parks 3. Substation | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 40 | Statutory | Inability to secure Planning approval: Labs/FM facility | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 41 | Statutory | Section 75 Agreements and conclusion thereof | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 42 | Statutory | The introduction and incorporation of changes to Scottish Government Health Department new requirements | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 43 | Statutory | Planning authority don't comply with statutory response times when in receipt of correctly completed Application | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |

The following transferred from Stage 2 Risk

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| B1 | Business | Achieving the NHS brief | Proposed final design solution rejected and increased costs and delay to programme for re-design | 1 | 4 | 4 | Acceptable | Ensure brief is understood by the Brookfield team and the Works Information provided by the Contractor and included in the agreed Contract adequately reflects the Boards design brief. Brookfield submission becomes Works Information as clarified in Commercial Dialogue Meeting no 3 | Acheived thus far |
| B2 | Business | Advance payments for material orders prior to FBC | Prices decrease; material wastage; storage costs; increased insurance costs | 2 | 4 | 8 | Undesirable | Prudent advance purchase of programme critical and cost sensitive materials. Schedule to be prepared at start of Stage 2 | |
| B3 | Business | Change Control and Management of Change protocol by the Contractor through the Design Team | Delay to Project and subsequent increase in Defined Cost | 2 | 4 | 8 | Undesirable | Implement Change Control from start of Stage 2 | Change Control Process in place |
| B4 | Business | Change in Contractor or Sub-Contractor management personnel | Loss of direction to project. | 1 | 3 | 3 | Acceptable | Ensure suitable management hierarchy in place. | |
| B5 | Business | Cost escalation given economic climate, prevailing market conditions over and above amount reimbursed by Board through RPI calculations | Increase in Defined costs | 3 | 4 | 12 | Undesirable | Ensure adequate consideration given to allowances at FBC stage. | |
| B6 | Business | Cost of extended warranties e.g. Performance bonds, PCGs etc | Increase in Defined costs | 1 | 4 | 4 | Acceptable | Ensure adequate allowance made within budget at outset. Agree terms with supply chain in advance. Seek to agree key Packages requiring bonds and period of bonds and establish by risk analysis the potential to reduce level of bonds and/or timescale for bonds. Consider other Insurance Products on the Market that may provide more economical solution. Where PCG is available from Subcontractor consider option to provide in lieu of bonds. Commercial Dialogue Meeting no 3 it was confirmed that Contractor Bond expires at Completion of each Stage. | |
| B7 | Business | Deflation | Presents both opportunity to reduce costs but may have a negative impact on commercial viability of supply chain members. | 2 | 3 | 6 | Acceptable | Brookfield team to make appropriate assessment. | Ongoing monitoring |
| B8 | Business | Incorrect Cost estimates for Adult & Children's' planning approval | Increase in planning fees | 1 | 3 | 3 | Acceptable | Ensure accurate estimate is provided. | |
| B9 | Business | Incorrect insurance rates included in tender | Increase costs | 1 | 3 | 3 | Acceptable | To be considered. Agree target price with key supply chain members early | |
| B10 | Business | Incorrect Level of Pricing in the Contractors tender pricing that cannot be managed out in design development process leading up to FBC | Increase in Defined Costs | 3 | 5 | 15 | Unacceptable | Benchmarking and market testing of all key elements of Contractor pricing. Peer review and tender settlement meeting. Key Supply Chain input. | |
| B11 | Business | Insolvency of supply chain / suppliers | Increased costs and delay to project | 3 | 4 | 12 | Undesirable | Ensure robust financial checks are undertaken on supply chain prior to appointment and that ownership of materials etc. are managed in accordance with Contract requirements. | |
| B12 | Business | Interest rate changes | Costs increase due to inflationary impact | 2 | 4 | 8 | Undesirable | Allowance included in Target Cost | |
| B13 | Business | Proper administration of NEC3 contract pre-contract | Delays to projects, increased costs and damaging to relationships | 2 | 4 | 8 | Undesirable | Set up NEC3 workshops to ensure that it is understood by all and ensure appropriate resources are in place to deliver. | |
| B14 | Business | Scope of packages | Scope missed and leads to increased costs. Package is too large to manage. | 2 | 5 | 10 | Undesirable | Robust procurement process to be implemented. Key suppliers already procured via Professional Services Contracts for Stage 2 | |
| B15 | Business | Step down agreements with sub-contractors | Supply chain members are unable to meet contractual obligations which leads to project delay | 2 | 4 | 8 | Undesirable | Ensure that terms and conditions are pitched at a level appropriate to the specific package of works. | |
| B16 | Business | Transparency of tender procurement process and out turn | Loss of trust and negative impact on relationships. Failure to agree contract price delays programme | 2 | 4 | 8 | Undesirable | Operate open book collaborative working throughout supply chain from start of Stage 2 | |
| B17 | Business | Change Control and Management of Change protocol by the Board | Uncontrolled change leads to increased costs delays to programme. | 3 | 4 | 12 | Undesirable | Implement Change Control from start of Stage 2 | Change Control Process in operation |
| B18 | Business | Inadequacy of existing Utilities services | Increased costs and delay to programme. | 3 | 4 | 12 | Undesirable | Identify requirements for new buildings early in Stage 2 design | Currently working with utility suppliers |
| B19 | Business | Cost of discharging planning conditions | Cost increase | 2 | 5 | 10 | Undesirable | Timeous submission of planning application and discussion with planners so conditions can be identified and costed prior to FBC submission | Changes made by Planning Dept |
| B20 | Business | Derogations - agreement and management | Confusion leads to increased costs. | 3 | 4 | 12 | Undesirable | Agree clear schedule of responsibilities and identify and clear derogations required at an early stage. | Derogations being identified at an early stage. Alternative design/derogations will sit alongside appendix K |
| B21 | Business | Additional temporary attenuation requirements until Stage 3A is completed | Additional cost and programme delays | 2 | 4 | 8 | Undesirable | Develop appropriate solution to include in target cost | Monitoring as project progresses |
| D1 | Design | Delays to procurement of materials | Delays to project and increased costs | 3 | 4 | 12 | Undesirable | Ensure supply chain adequate to suit size of project and that materials are sourced from a competent source. | Packages are being identified and broken down into manageable packages. |
| D2 | Design | Failure to provide knock-out panels in floors at columns | Impacts on future use of building | 2 | 4 | 8 | Undesirable | Include requirements within design | A part of design detailing |
| D3 | Design | Interfaces between external wall and structure | Lack of air tightness and weather permeability and thus non compliance with Section 6 of Building Regs | 3 | 4 | 12 | Undesirable | Interfaces to be designed and early dialogue to be undertaken between appropriate disciplines and supply chain members | Ongoing |
| D4 | Design | Kitchen strategy still to be determined | Requirements unclear - if full cooking kitchen is required hot smoke extract requirements will have to be incorporated into the design - additional cost | 1 | 3 | 3 | Acceptable | Requirements to be fully identified and designed during Stage 2 | Finalisation of kitchen strategy detail ongoing. Detail exchange continuing between Board and BCL. |
| D5 | Design | Escape bed lifts - requirements still to be fully defined | Requirements unclear in respect of final lift specification and M&E requirements - additional cost | 3 | 4 | 12 | Undesirable | Requirements to be fully identified and designed during Stage 2 | A part of design detailing - ongoing |
| D6 | Design | Radiation requirements still to be finally determined - location and heights | Additional costs | 3 | 4 | 12 | Undesirable | Final equipment locations to be determined during Stage 2; Proposal for permit to work above ceilings in these locations to be evaluated and agreed during Stage 2 | Final appendix K drawing package awaited by Board. |
| D7 | Design | Design development generally | Detailed design requirements result in additional costs - base design is at Stage C/D | 4 | 4 | 16 | Unacceptable | Implement Change Control from start of Stage 2 | Ongoing |
| D8 | Design | Access requirements for cleaning ETFE roof still to be determined | Additional costs | 2 | 3 | 6 | Acceptable | Identify requirements in conjunction with FM during Stage 2 | A part of design development |
| D9 | Design | 11 nr departments have been detailed - remaining departments have yet to be fully defined | Additional cost and programme implications | 0 | 0 | 0 | Acceptable | Fully determine requirements for all other departments during Stage 2 | Seperceeded by design development. Risk to be closed off |
| D10 | Design | Approval required from Glasgow City Council Roads Department for new foul out-let pipe | Additional cost and programme implications | 2 | 3 | 6 | Acceptable | Stats approvals to be logged early with programme float allowed | Changes to roads in discussion with GCC Planners |
| D11 | Design | Drainage assumes no hazardous / noxious discharges | Additional cost and programme implications | 2 | 4 | 8 | Undesirable | Requirements to be determined during Stage 2 | A part of design development |
| D12 | Design | Current level of geotechnical testing not robust to allow full assessment of design requirements for substructure and sub-soil treatment | Additional cost and programme implications | 2 | 4 | 8 | Undesirable | Carry out full detailed geotechnical and soil testing during Stage 2 to inform design | Further tests being undertaken for contamination |
| D13 | Design | Selection of appropriate piling solutions | Additional cost and programme implications | 3 | 4 | 12 | Undesirable | Confirmation of selected piling solution through Stage 2 design process | Piling solution achieved. Risk to be closed off |
| D14 | Design | Impact on design of flood risk assessment | Additional cost and programme implications | 3 | 3 | 9 | Undesirable | Carry out flood risk assessment during Stage 2 to inform design | Work finalising strategy nearing completion |
| D15 | Design | Impact of Traffic Assessment on design following conclusion of Masterplan | Additional cost and programme implications | 3 | 4 | 12 | Undesirable | Carry out final traffic assessment during Stage 2 | Completed. Risk to be closed off |
| D16 | Design | Failure to obtain approvals for proposed fire strategy solution | Additional cost and programme implications | 2 | 5 | 10 | Undesirable | Early consultation with Local Authority and Fire Officer. Brookfield Fire Engineer already appointed | Verbal agreement with Building Control, Building Standards Agency and Board's Fire Officer. Awaiting formal confirmation and 3rd party review |
| D17 | Design | Proximity of welfare facilities | Reduction in productivity leading to increased costs and time delays | 2 | 3 | 6 | Acceptable | Through logistics plan to be developed during Stage 1 - no risk to Stage 2 | Welfare facilities on-site and will be expanded accordingly. |

**Brookfield Risk Register** **Stage 3 - Design & Construction New Hospitals** **Date last reviewed: 14th September 2010**

Brookfield

| Risk | | | | Inherent Assessment | | | | Response | |
|---|---|---|---|---|---|---|---|---|---|
| Item | Category | Description | Risk Effect | P 1-5 | I 1-5 | PI Score | Strategy | Risk control measure or action taken to mitigate | Comments |
| D18 | Design | Quality of sub-contractors to service large work packages | Delays to the project | 3 | 4 | 12 | Undesirable | Ensure supply chain management procedures followed and as indicated above consider splitting of packages where practical. | |
| D19 | Design | Sustainable Urban Drainage System (SUDS) / attenuation - New Hospitals | Failure to consider leading to additional costs, location and volume - open/closed. To be adopted by Scottish Water? (Potential impact on construction) | 2 | 4 | 8 | Undesirable | Identify requirements and monitor incorporation into design. Early agreement of design principles with Scottish Water and SEPA. | SUDS work and Temporary SUDS works are still on-going. |
| D20 | Design | Waterproofing of basement | Leaking basements affecting function and operation. | 3 | 4 | 12 | Undesirable | Appropriate design and construction solution to be evaluated and within design seek to minimise extent of basement construction. | Design detail ongoing. Lessons learned from Labs Project |
| D21 | Design | Heli Pad: Permanent location (roof top) | Health & Safety, noise, cost, fire engineering and structural impact | 2 | 4 | 8 | Undesirable | Appropriate design solutions to be determined | Ongoing design |
| D22 | Design | Impact of sewage works | Odours impact performance of building in use | 2 | 3 | 6 | Acceptable | Appropriate design solutions to be determined | Ongoing |
| D23 | Design | Relocation of VIE and oil storage tanks within site | Delays to the project, increased costs and impact on existing hospital estate | 3 | 3 | 9 | Undesirable | Appropriate design solutions to be determined | Meeting to discuss final location of VIE will be arranged in due course. |
| D24 | Design | Restrictions on oversailing of existing buildings influences construction methods e.g. tower cranes | Increases costs and delays to programme due to possible restricted methods of workings | 2 | 4 | 8 | Undesirable | Requirements to be fully identified and included in target cost | Restrictors will be utilised on cranes. Lessons learned from Labs Project |
| D25 | Design | Condition and capacity of existing sewage system | Reinforcement works required to main infrastructure and leads to increased costs | 2 | 3 | 6 | Acceptable | Undertake condition surveys to ensure capacity and condition of existing systems and include requirements in design | Ongoing |
| D26 | Design | Dilapidation surveys | Disputes over status of existing facilities prior to works commencing | 2 | 3 | 6 | Acceptable | Ensure full joint survey undertaken and agreed with the Client | Dilapidation surveys completed |
| D27 | Design | Impact of any additional works at links to buildings including any reconfiguration | Links unachievable due to height restrictions. Failure to achieve DDA compliance and Gold Standard Achievements | 3 | 4 | 12 | Undesirable | Robust surveys to be undertaken to identify works required and include in design | A part of design detailing. BCL requested to look at Maternity link |
| D28 | Design | Additional Cost of Specialist consultants | Increased Cost | 2 | 3 | 6 | Acceptable | Brookfield to consider requirements and consider cost effects. | Nearing completion. |
| D29 | Design | Air Tightness | Loss of BREEAM points, impair building operation and performance | 3 | 3 | 9 | Undesirable | Ensure protocols are in place to manage the design | Will ensure design in place to ensure air tightness. |
| D30 | Design | Compliance with CAA Regulations - completed building | Impact on helicopter and existing aircraft operations which affect hospital function. | 3 | 3 | 9 | Undesirable | To be considered in design | |
| D31 | Design | Compliance with design tools | Failure to meet Client's tender submission requirements | 2 | 4 | 8 | Undesirable | Ensure compliance with client requirements and implement design toolkit recommendations. | Ongoing. Using AEDET |
| D32 | Design | Does the design fit on site | Fails to meet gateway approvals leading to programme delays and increased costs. Affects functionality of hospital. | 2 | 5 | 10 | Undesirable | Ensure all appropriate design and impact assessments are undertaken in accordance with Client's requirements and compliance with current outline planning consent conditions. | Design fits on site. Risk to be closed off. |
| D33 | Design | Drainage Discharge consent not achieved | Increased costs, time delay and site functions and operations | 2 | 5 | 10 | Undesirable | Early identification and an understanding of the requirements. Scottish Water | Nearing completion |
| D34 | Design | External detailing of building below expected quality | Client brief not met, delays to building handover, costs increase. | 3 | 4 | 12 | Undesirable | Ensure that Client's brief is met and implement appropriate quality control measures. | Part of the GCC Planning Process |
| D35 | Design | External materials not to required standard | Client brief not met, materials don't meet life cycle expectations, costs increase. | 3 | 4 | 12 | Undesirable | Undertake life cycle cost exercise to establish best solution e.g. higher capital cost, lower maintenance cost. | Part of the GCC Planning Process |
| D36 | Design | Failure to meet acoustic requirements of new building | Impact on patient health care and specialist departments | 2 | 5 | 10 | Undesirable | Acoustic consultant already part of Brookfield team. Hospital requirements v SHTM's. | Process to be implemented in due course. |
| D37 | Design | Fire services - The provision of any additional means of escape | Increased cost and time implications. Spatial impact. | 2 | 5 | 10 | Undesirable | Ensure understanding of requirements and compliance with Building Regulations and NHS fire code. | Part of the Fire Strategy. Links to D16 |
| D38 | Design | General design quality by Contractor | Client brief not met, delays to building handover, costs increase. | 3 | 4 | 12 | Undesirable | Ensure that Client's brief is met and implement appropriate quality control measures. | To be commenced |
| D39 | Design | Inadequacy of emergency generator provisions | Disruption to hospital services including existing buildings | 2 | 4 | 8 | Undesirable | Identify requirements, liaise with Client's external consultants and include within design. | Ongoing design development. |
| D40 | Design | Inadequate Coordination of design | Increased costs and programme delays | 3 | 4 | 12 | Undesirable | Ensure design fully coordinated and review of 3D modelling prior to completion of Stage 2 | Ongoing |
| D41 | Design | Inappropriate selection of plant and equipment | Programme delay / advantage and cost increase / saving | 2 | 4 | 8 | Undesirable | Early dialogue between Brookfield, designers and cost consultants with emphasis on LCC to select 'best methods'. | Ongoing. BCL linking with Board's FM reps |
| D42 | Design | Late design information from sub-contractors | Time delays and cost increases | 3 | 3 | 9 | Undesirable | Ensure good programme management and early appointment of supply chain. Professional Services contracts for key supply chain members during Stage 2 | Ongoing |
| D43 | Design | Design development to pods in atrium | Additional cost | 3 | 4 | 12 | Undesirable | Finalise design requirements during Stage 2 | Ongoing |
| D44 | Design | No catchment survey for drainage system | Additional attenuation. Cost | 1 | 4 | 4 | Acceptable | To be considered during Stage 2 | Ongoing |
| D45 | Design | Poor Design development and management | Uncontrolled change leads to increased costs delays to programme. | 2 | 4 | 8 | Undesirable | Develop appropriate solution to include in target cost | Design development being managed. EW and Change Control processes in operation. Ongoing using AEDET |
| D46 | Design | Poorly considered innovative design / materials solutions | Lack of knowledge results in poor construction leading to building failure resulting in increased costs and delay. | 2 | 4 | 8 | Undesirable | Ensure all solutions are fully explored, including life cycle cost plans. | Good ideas being put forward. Work ongoing |
| D47 | Design | Vibrations in new building causing damage to sensitive equipment | Impact on hospital operations and function. Damage to equipment resulting in increased costs. | 3 | 3 | 9 | Undesirable | Liaison with acoustic and vibration consultants and undertake sensitivity analysis, vibration analysis etc. During FBC Design Stage | Currently not at this stage |
| D48 | Design | Increase to agreed schedule of accommodation: Rooms, circulation, plant rooms, other | Increased costs and time delays | 2 | 4 | 8 | Undesirable | Implement change control with design team from start of Stage 2 | A part of the design review process. SoA will be updated to provide total brief. Risk to be closed out once updated SoA recieved by Board team |
| D49 | Design | The change to and flexibility of the building to meet future clinical delivery | Cost increase & time delay | 2 | 4 | 8 | Undesirable | Identify requirements early in stage 2 | No major changes anticipated |
| D50 | Design | Agreement of building cleaning strategy | Increased costs and time. Impact on building design and performance related to location of heli-pad | 2 | 2 | 4 | Acceptable | Early consideration and understanding of Board operations to ensure compliance with CDM requirements and include in design | To be commenced at an appropriate stage. NHS and BCL to liaise to identify detail of strategy |
| D51 | Design | Compliance with Security / Terrorism issues i.e. Category A prisoners | Safety of patients, staff, visitors. | 2 | 3 | 6 | Acceptable | Understand Client's requirements and agree and implement appropriate design solution. | Part of design development. Ongoing review of requirements. Met with Strathclyde Police. Identified that they wish to utilise 'Secure by Design' |
| D52 | Design | Consideration in Design to prevent cross infection (MRSA and similar infections) | Failure to comply with design requirements leading to FBC rejection and/or increased costs | 2 | 5 | 10 | Undesirable | Comply with HTM and Scottish NHS design guidelines. | Part of design development. |
| D53 | Design | Delays in decisions regarding introduction of Robotics | Increased costs and time delays | 2 | 2 | 4 | Acceptable | Engage with Client and specialist designers to determine requirements and sophistication required early in Stage 2 | Part of design development. |
| D54 | Design | Department of Child and Family Psychiatry ligature free design | Patient healthcare affected, danger to health & safety and non-compliance with design requirements | 2 | 4 | 8 | Undesirable | Incorporation and implementation of recommended design guidance. | Ongoing |
| D55 | Design | Fire services - The provision of any additional fire fighting requirements | Increased cost and time implications | 2 | 3 | 6 | Acceptable | Compliance with Building Regulations and NHS fire code. Fire engineer employed by Brookfield | A part of the Fire Strategy |
| D56 | Design | Implementation of Euro codes and changes to Building Regulations | Increased cost and time | 2 | 3 | 6 | Acceptable | To be considered by Brookfield | A part of design development. Ongoing. |
| D57 | Design | Incorrect vertical transportation strategy | Spatial impact, cost impact, time delays | 2 | 4 | 8 | Undesirable | Cost consultants, design team and supply chain to liaise at an early stage to ensure best solution is selected. Ensure design advanced at an early stage. Ensure chosen manufacturers have available manufacturing capabilities in line with programme requirements. | Work ongoing. Board to review BCL revised lift strategy proposal |
| D58 | Design | Privacy / Dignity issues not adequately addressed | Patient health care and wellbeing impaired. Increased costs and time delays. | 2 | 5 | 10 | Undesirable | Understand and agree design parameters with the Board. | Part of design development/review |
| E1 | Environmental & Sustainability | Achieving BREEAM Excellent | Increased costs. Failure to meet rating leads to bid rejection | 2 | 3 | 6 | Acceptable | Early consideration of requirements and liaison with Brookfield's appointed BREEAM consultant to confirm requirements. BREEAM consultant to carry out initial BREEAM assessment of design. | Ongoing. Regular meeings scheduled. On target to achieve BREEAM Excellent. |
| O1 | Operational | Poor signage - new build | Impact on visitors to hospital | 2 | 3 | 6 | Acceptable | Brookfield to consult with the Board and agree suitable way finding and signage. | Part of wayfinding strategy. Ongoing liaison with Board team |
| O2 | Operational | Protection from roosting birds/bats | Health & Safety | 1 | 2 | 2 | Acceptable | Appropriate design measures to be implemented. | Part of design development |
| P1 | Programme | The impact of incorrect program and duration by Contractor | Increased costs and delay to project | 3 | 3 | 9 | Undesirable | Brookfield to assess and provide a programme that is able to meet the overall requirements and achieve the Key Dates. | Programme developed and continually monitored. |
| P2 | Programme | Approval process/sign off of 1:50 equipment plans and Room Data Sheets (effect of delays to overall design, construction and procurement, Reviewable Design Data (RDD) process) | Increased costs and delay to project | 2 | 4 | 8 | Undesirable | Brookfield and NHS GGC to agree and work within the approval and sign-off process. | Approval and Sign-off process agreed. Process to be commenced in due course. |
| P3 | Programme | The impact of delivery due to poor project management | Increased costs and delay to project | 2 | 4 | 8 | Undesirable | Ensure pro-active project management and robust implementation of Project Execution Plan during preconstruction | Project Management being carried out proactively. |
| S1 | Statutory | Inability to secure Planning approval: Adult and Children's Hospital e.g. Tower height & massing, car park solution, TPO removals | Delay to project and increased costs | 2 | 5 | 10 | Undesirable | Ensure continual liaison with Client and Planning authority to ensure no surprises. | Ongoing liaison with GCC and NHS team. |

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|---|---|---|---|---|---|---|---|---|---|
| 1 | Business | Any other changes in VAT | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 2 | Business | Approvals sign-off (gateways) | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 3 | Business | Funding availability and cash flow | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 4 | Business | Land acquisition(s) for master plan of campus | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 5 | Business | Late payments by the Employer | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 6 | Business | The impact of "Compensation Events" to the Contractor (variations) | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 7 | Business | The impact of incorrect programme and cost estimates for decanting from existing premises | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |

**Brookfield Risk Register** **Stage 3 - Design & Construction New Hospitals** **Date last reviewed: 14th September 2010**

Brookfield

| Risk | | | | Inherent Assessment | | | | Response | |
|---|---|---|---|---|---|---|---|---|---|
| Item | Category | Description | Risk Effect | P 1-5 | I 1-5 | PI Score | Strategy | Risk control measure or action taken to mitigate | Comments |
| 8 | Business | The non realisation of VAT reclaim and the introduction of new Statutory costs | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 9 | Business | Failure to achieve approvals at key dates and gateways. FBC approval | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 10 | Business | Inflation above the allowance in the contract | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 11 | Business | The introduction and incorporation of changes to Scottish Government Health Department new requirements | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 12 | Business | Potential for impact of legislative or regulatory change, e.g. 1. Green issues 2. Environmental Planning standards | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 13 | Business | Equipment (Group 1 & 2) varies from the information in the ITPD | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 14 | Construction | Timing of provision of new sub-station | Installation by PU delays project and results in increased costs | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 15 | Design | Discovery of existing basements under surgical block | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 16 | Design | Discovery of mine workings | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 17 | Design | Discovery of underground stream / spring | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 18 | Design | Any unforeseen ground/site conditions under the footprint of existing facilities | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 19 | Design | Asbestos | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 20 | Design | Asbestos in culvert | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 21 | Design | Discovery of existing basements | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 22 | Design | Discovery of existing underground steam mains | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 23 | Design | Discovery of Japanese Knotweed | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 24 | Design | Discovery of unknown major services | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 25 | Design | Relocation of orange aerial tower to accommodate land purchase | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 26 | Design | The Board do not provide a contract programme for the 33kV sub-station by the required date which is when the board approve the stages 1, 2, 3 & 3a | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 27 | Design | Any unexpected changes in medical technology | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 28 | Design | Impact of pre-construction demolition works on design | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 29 | Design | Impact of change in Employers Requirements (space and design standards) | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 30 | Design | Planning authority don't comply with statutory response times when in receipt of correctly completed Application | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 31 | Design | Additional requirements for Police counter terrorism | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 32 | Design | Unforeseen additional Equipment requirements | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 33 | Design | Car Parking strategy changes | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 34 | Design | Level of information provided about ICT requirements | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 35 | Design | The requirements of site wide engineering strategy change | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 36 | Design | An increased demand for patient services from that agreed | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 37 | Operational | The non realisation of existing equipment transfers into new facilities | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 38 | Operational | Interaction of construction with day to day operation of existing hospital and interface with facilities managers | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 39 | Programme | Archaeology - Impact due to find | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 40 | Programme | Impact of delay in contractor gaining access to the site or availability of areas | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 41 | Programme | Approval process / sign off of equipment plans & RDS if Board don't comply with agreed timescales | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 42 | Programme | Potential for delayed completion of enabling works by others, eg: 1. Site clearance 2. Car Parks 3. Substation | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |
| 43 | Statutory | Section 75 Agreements and conclusion thereof | Included on NSGH Board Risk Register | 0 | 0 | 0 | Acceptable | Included on NSGH Board Risk Register | |

**Risk Review Attendees** David Bower, David Hall, Douglas Ross, Frances Wrath, Heather Griffin, Karen Connelly, Mairi Macleod, Peter Moir, Paul Serkis, Shiona Frew

# *APPENDIX H*

# *MASTER PROGRAMME*

NHS Greater Glasgow and Clyde

# New South Glasgow Hospitals Project

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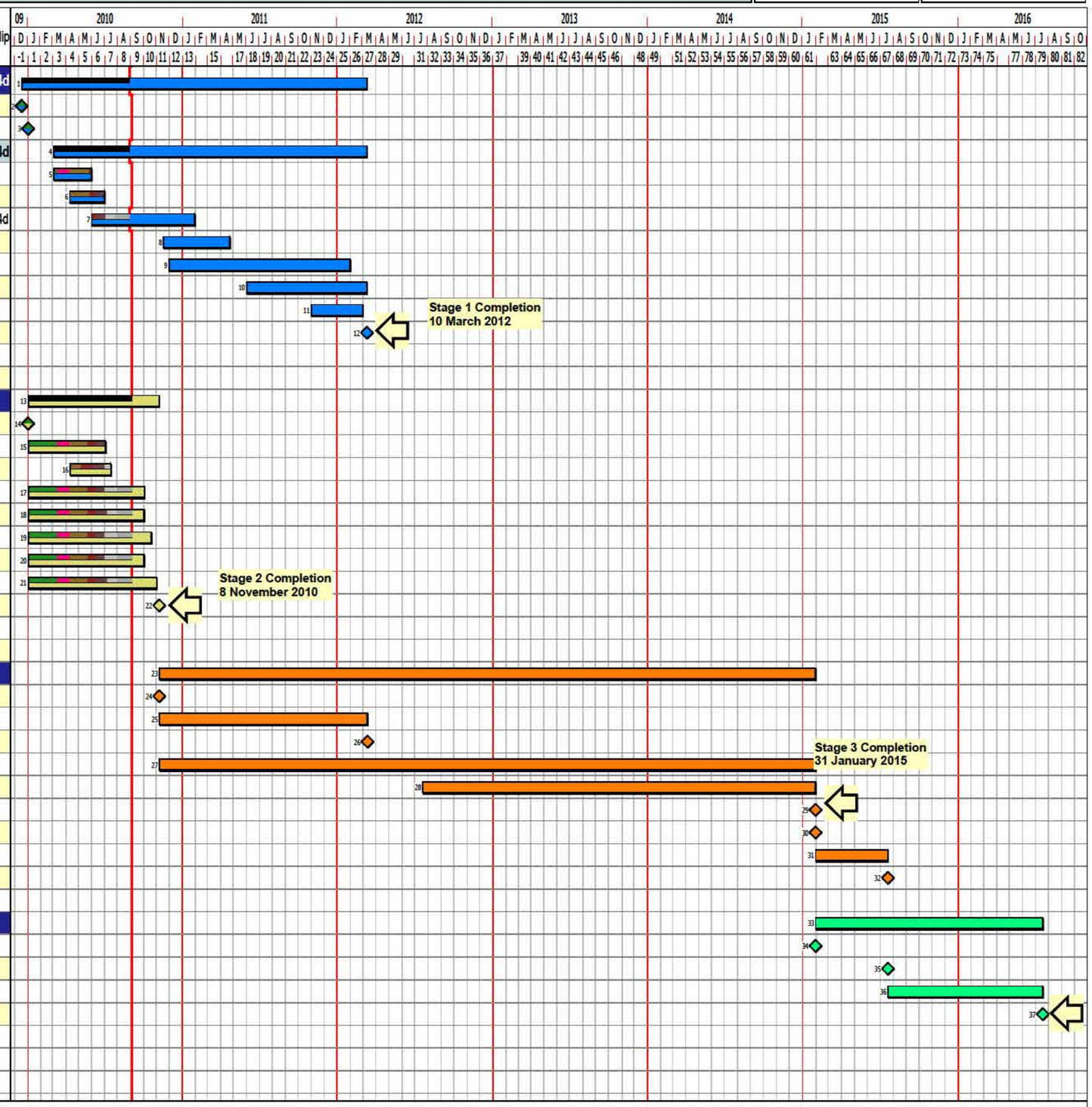
Brookfield

| Line | Activity | Start | Duration | Finish | Planned percent complete | Actual Percent complete | Slip |
|---|---|---|---|---|---|---|---|
| 1 | Stage 1 Laboratories Construction | 18/12/09 | 108w 2d | 10/03/12 | 20 | 19 | -4d |
| 2 | Award Contract | 18/12/09 | | 18/12/09 | 100 | 100 | |
| 3 | Commence Stage 1 (Design and Construction of New Laboratories) | 04/01/10 | | 04/01/10 | 100 | 100 | |
| 4 | Construction of Laboratories | 04/03/10 | 99w 3d | 10/03/12 | 20 | 19 | -4d |
| 5 | Piling | 04/03/10 | 11w 4d | 01/06/10 | 100 | 100 | |
| 6 | Foundations | 12/04/10 | 11w 4d | 01/07/10 | 100 | 100 | |
| 7 | Superstucture/ Frame | 02/06/10 | 32w 4d | 31/01/11 | 41 | 39 | -4d |
| 8 | Envelope | 18/11/10 | 20w 2d | 22/04/11 | | | |
| 9 | Fit out and finishes | 01/12/10 | 56w 1d | 01/02/12 | | | |
| 10 | Commissioning | 02/06/11 | 38w 3d | 10/03/12 | | | |
| 11 | Landscaping | 02/11/11 | 15w 2d | 01/03/12 | | | |
| 12 | Complete Stage 1 - (Construction of Laboratory Facilities) | 10/03/12 | | 10/03/12 | | | |
| | | | | | | | |
| | | | | | | | |
| 13 | Stage 2 Detailed Design Adult and Children's Hospitals to FBC | 04/01/10 | 43w 1d | 08/11/10 | 88 | 88 | |
| 14 | Commence Stage 2 (Detailed Design of Adult, Children's and Infrastructure to FBC) | 04/01/10 | | 04/01/10 | 100 | 100 | |
| 15 | 1:200 Design User Group's Adult and Children's and Sign Off | 04/01/10 | 25w 5h | 05/07/10 | 100 | 100 | |
| 16 | Exemplar Room Mock Ups for Spacial Requirements (ER's Vol 2/6.6) during stage 2 | 12/04/10 | 13w 4d | 16/07/10 | 100 | 100 | |
| 17 | 1:50 Sign-off Process | 04/01/10 | 34w 3d | 05/10/10 | 88 | 88 | |
| 18 | Planning Approval Process (Matters Specified in Planning Conditions) | 04/01/10 | 37w 1d | 04/10/10 | 89 | 89 | |
| 19 | Medical Equipment Programme | 04/01/10 | 38w 4h | 20/10/10 | 83 | 83 | |
| 20 | Design Development Programme Documents as per Appendix K | 04/01/10 | 34w 1d | 04/10/10 | 88 | 88 | |
| 21 | Full Business Case (FBC) Approval Process | 04/01/10 | 41w 2d | 02/11/10 | 80 | 80 | |
| 22 | Complete Stage 2. FBC and approval to proceed with Stage 3 | 08/11/10 | | 08/11/10 | | | |
| | | | | | | | |
| | | | | | | | |
| 23 | Stage 3 Adult and Children's Hospitals Construction | 09/11/10 | 207w 1d | 31/01/15 | | | |
| 24 | Commence Stage 3 (Construct Adult, Children's and Infrastructure) | 09/11/10 | | 09/11/10 | | | |
| 25 | Energy Centre Construction (Shell and Laboratories M&E only) | 09/11/10 | 65w 1d | 12/03/12 | | | |
| 26 | Complete Energy Centre (Building and M&E to service Laboratories only) | 12/03/12 | | 12/03/12 | | | |
| 27 | Stage 3 Construction Period Hospitals | 09/11/10 | 207w 1d | 31/01/15 | | | |
| 28 | Energy Centre M&E Installations in connection with Hospitals | 20/07/12 | 124w 2d | 31/01/15 | | | |
| 29 | Complete Stage 3 (Construction Hospitals) | 31/01/15 | | 31/01/15 | | | |
| 30 | Complete Energy Centre M&E in connection with Hospitals | 31/01/15 | | 31/01/15 | | | |
| 31 | Stage 3 Hospital Commissioning | 01/02/15 | 23w 2d | 20/07/15 | | | |
| 32 | Operational Date - Stage 3 - Hospitals | 20/07/15 | | 20/07/15 | | | |
| | | | | | | | |
| 33 | Stage 3A Demolition and Landscaping | 01/02/15 | 72w 3d | 19/07/16 | | | |
| 34 | Award Contract | 01/02/15 | | 01/02/15 | | | |
| 35 | Commence Stage 3A (Dem Surgical Block etc Completion Landscaping) | 20/07/15 | | 20/07/15 | | | |
| 36 | Demolition and Landscape | 21/07/15 | 49w 1d | 19/07/16 | | | |
| 37 | Stage 3A Completion | 19/07/16 | | 19/07/16 | | | |




Symbols

Milestone

| | |
|---|---|
| Date of Issue: 29/09/2010 | Drawn By: |
| Print Date: 30/09/2010 | Page 1 of 1 |

Comments: Summary Master Programme Progress Mark up week 37 (5th of Sept 2010)

| | |
|---|---|
| Programme No.: BCL-GSM-WKC-0001 | |
| Revision: | Revision Date: 06/09/2010 |

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# *APPENDIX I*

# *DRAFT COMMISSIONING PLAN*

## *Appendix I*

## *Draft New South Glasgow Hospitals Commissioning and Migration Plan*

### Introduction

The New Builds will comprise an Adult Hospital comprising 1109 in patient beds and a Children's hospital comprising 256 beds. Overall 6000 new rooms will require to be commissioned.

The services moving to the new site are spread over 5 existing locations within 25 separate buildings. Over 5600 staff will be relocated to the new site and will include admin, Allied Health professionals, doctors, managers, nurses, scientific and technical and facilities.

In order to plan and prepare for the migration of services to the new hospitals a robust commissioning structure needs to be established. A proposed format of that structure is found in Appendix 1.

### Commissioning Timescales

It is proposed that the service migration will take place over a five – month period from 1/2/15 – 30/6/15. This is based on the assumption that the hospital will be 'Technically Ready' by 31/1/15

Services will be grouped & moved in the following order:

| | |
|---|---|
| Group A | Adult OPD |
| Group B | Adult Intermediate Care (inc MHU at VIC) |
| Group C | Children's Hospital (subdivided into 2 phases C1 OPD & C2 Inpatients) |
| Group D | SGH Inpatient & Acute Care |
| Group E | VIC Inpatient & Acute Care |
| Group F | WIG Inpatient & Acute Care |

The proposed service migration programme is shown on Appendix 2.

### Group A Mapping Exercise

A mapping exercise has been undertaken to test the Group A transfers. This will comprise the move of the adult Outpatient Department & Therapy Centre, which will be refurbished into offices to accommodate 309 NCH staff. This will facilitate the transfer of the clinical services from Yorkhill to the New Children's Hospital.
Appendix 3 lists the Group A services to transfer and reflects their current locations and where they will locate to in the new building.

### Commissioning Management Structure

The management structure for the Commissioning shown on the attached Consolidated Schedule of Group members and Terms of Reference.

Appendix 1

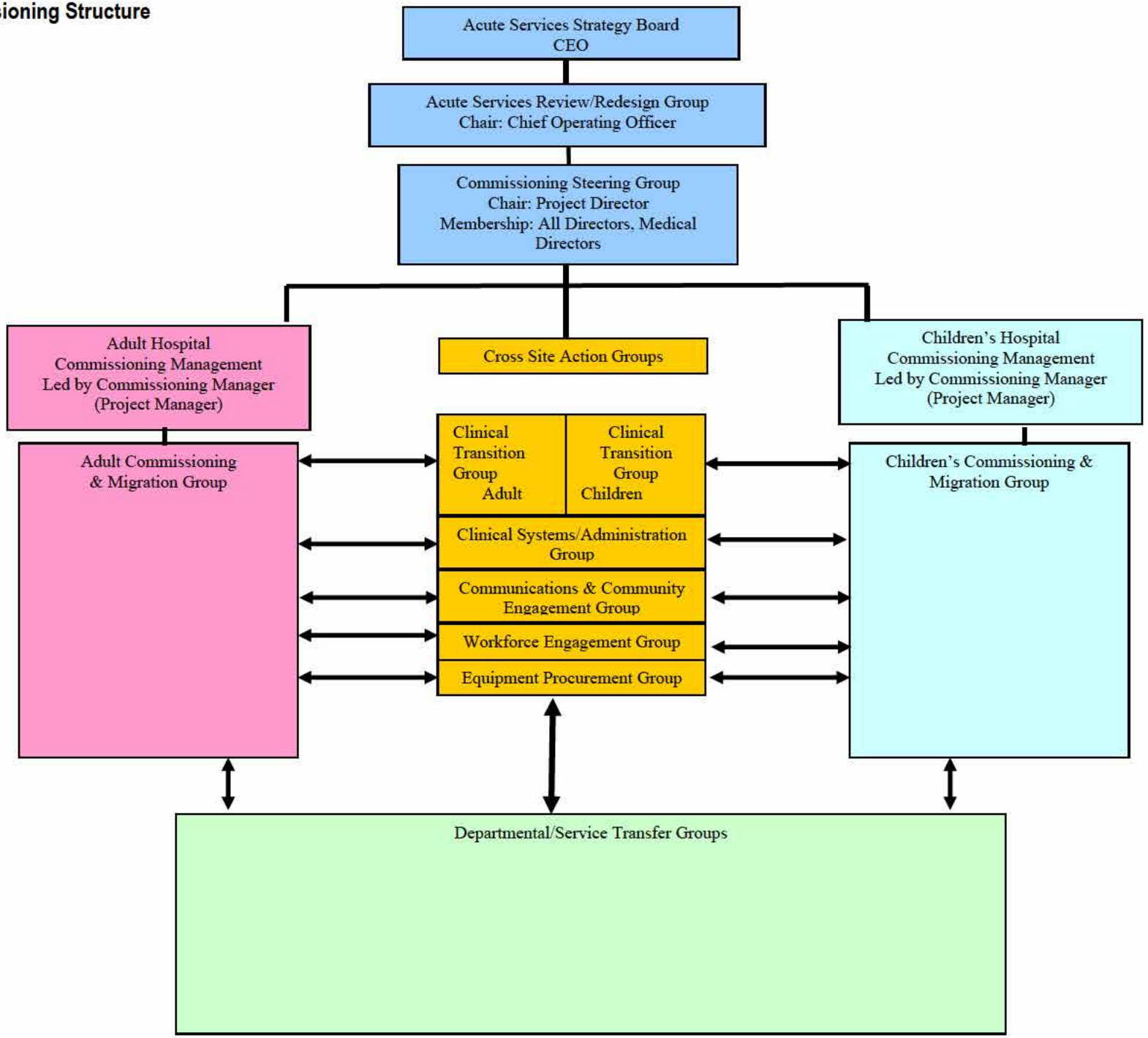
NHS
Greater Glasgow and Clyde

# NSGH COMMISSIONING

## Consolidated Schedule of Group Members and Terms of Reference

**Issue No 1**
**August 2010**

**Commissioning Structure**



| PROJECT: | NSGH COMMISSIONING |
|---|---|

| Group: | Commissioning Steering Group (CSG) | Reporting To: | Acute Services Review Group |
|---|---|---|---|
| Group Leader: | Alan Seabourne | Leader: | Jane Grant |

| Group Members: | Name | Designation | Responsibility/Role |
|---|---|---|---|
| | Alan Seabourne | Project Director, New South Glasgow Hospitals | Project Director |
| | Mairi Macleod | Project Manager, New Children's Hospital | Children's Commissioning Manager |
| | Heather Griffin | Project Manager, New Adult Hospital | Adult's Commissioning Manager |
| | TBA | Staff Partnership Representative | |
| | | | |
| | **Directors to nominate representatives for Membership of Group** | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

| Terms of Reference: | The role of the CSG will be to co-ordinate and direct the commissioning process and monitor delivery of the benefits quarterly, reporting to the ASR Redesign Group on a six monthly basis.<br><br>Group Lead to nominate appropriate group secretary/minute taker |
|---|---|

| PROJECT: | NSGH COMMISSIONING & MIGRATION GROUP |
|---|---|

| Sub Group: | Adult Commissioning Group | Reporting To: | Commissioning Steering Group |
|---|---|---|---|
| Sub Group Leader: | Heather Griffin | Leader: | Alan Seabourne |

| Group Members: | Name | Designation | Responsibility |
|---|---|---|---|
| | Heather Griffin | Adult Commissioning Manager | Commissioning |
| | Frances Wrath | Capital Planning Advisor | Capital Planning |
| | Robert Stewart | Deputy Head of Procurement | Equipment Transfer |
| | Karen Connelly | FM Advisor | Facilities |
| | Fiona McCluskey | Senior Nursing Advisor | Nursing |
| | Jackie Stewart | Infection Control Advisor | Infection Control |
| | Mark Grieg | IT Advisor | IT |
| | Hugh McDerment | Capital Planning Manager | Capital Planning |
| | TBA | Technical Advisor | Technical Issues |
| | TBA | **Directorate Representatives** | |

**Membership of Group to be agreed with Project Steering Group**

| Terms of Reference: | The role of the ACG will be to prepare the buildings for occupation in terms of the physical environment, building wide operational policies and building services.<br><br>> Building Readiness<br>> Fit Out<br>> Migration<br>> Sub groups to be established for Estates, Catering, Portering, Domestic etc and as required<br>> Communication = hold information sessions, workshops etc<br>> Develop Migration Workbooks - using ACH model - collate lists of Service Transfer Owners<br>> Facilitate Site Visits<br>Group Lead to nominate appropriate group secretary/minute taker |
|---|---|

| PROJECT: | NSGH COMMISSIONING & MIGRATION GROUP |
|---|---|

| Sub Group: | Children's Commissioning Group | Reporting To: | Commissioning Steering Group |
|---|---|---|---|
| Sub Group Leader: | Mairi Macleod | Leader: | Alan Seabourne |

| Group Members: | Name | Designation | Responsibility |
|---|---|---|---|
| | Mairi Macleod | Children's Commissioning Manager | Commissioning |
| | Frances Wrath | Capital Planning Advisor | Capital Planning |
| | Robert Stewart | Equipment Procurement Manager | Equipment Transfer |
| | Karen Connelly | FM Advisor | FM |
| | Fiona McCluskey | Senior Nursing Advisor | Nursing |
| | Jackie Stewart | Infection Control Advisor | Infection Control |
| | Sam Suddese | Capital Planning Manager | Capital Planning |
| | Mark Grieg | At Advisor | IT |
| | TBA | Technical Advisor | Technical Issues |
| | TBA | **Directorate Representatives** | |

**Membership of Group to be agreed with Project Steering Group**

| Terms of Reference: | The role of the CCG will be to prepare the buildings for occupation in terms of the physical environment, building wide operational policies and building services.<br><br>> Building Readiness<br>> Fit Out<br>> Migration<br>> Sub groups to be established for Estates, Catering, Portering, Domestic etc and as required<br>> Communication = hold information sessions, workshops etc<br>> Develop Migration Workbooks - using ACH model - collate lists of Service Transfer Owners<br><br>Group Lead to nominate appropriate group secretary/minute taker |
|---|---|

| PROJECT: | ADULT COMMISSIONING |
|---|---|

| Sub Group: | Clinical Transition Group | → | Reporting To: | Commissioning Steering Group |
|---|---|---|---|---|
| Sub Group Leader: | Dr Brian Cowan / Rory Farrelly | | Leader: | Alan Seabourne |

| Group Members: | Name | Designation | Responsibility |
|---|---|---|---|
| | Rory Farrelly | Director of Nursing | Corporate |
| | Brian Cowan | Medical Director | Corporate |
| | Stephen Gallagher | New Adult Project Medical Director | Project Team |
| | Fiona McLuskey | Senior Nurse Advisor | Project Team |
| | Jackie Stewart | Infection Control Advisor | Project Team |
| | Heather Griffen | Project/Commissioning Manager | Project Team |
| | Mark Greig | IT Advisor | Project team |
| | **Representatives from all clinical services to be nominated for group membership by Group Leads** | | |

| Terms of Reference: | The role of the Clinical Transition Group will be to ensure that all clinical services and staff are fully prepared for the operation of the new hospital.<br><br>> Identify Service Transfer Owners<br><br>Group Lead to nominate appropriate group secretary/minute taker |
|---|---|

| Sub Group: | Clinical Transition Group | Reporting To: | Commissioning Steering Group |
|---|---|---|---|
| Sub Group Leader: | | Leader: | Alan Seabourne |

| Group Members: | Name | Designation | Responsibility |
|---|---|---|---|
| | Rory Farrelly | Director of Nursing | Corporate |
| | Brian Cowan | Medical Director | Corporate |
| | Jane Peutrell | NCH Project Medical Director | Project Team |
| | Fiona McLuskey | Senior Nurse Advisor | Project Team |
| | Jackie Stewart | Infection Control Advisor | Project Team |
| | Mairi MacLeod | Project/Commissioning Manager | Project Team |
| | Mark Grieg | IT Advisor | Project Team |
| | **Representatives from all clinical services to be nominated for group membership by Group Leads** | | |

| Terms of Reference: | The role of the Clinical Transition Group will be to ensure that all clinical services and staff are fully prepared for the operation of the new hospital.<br><br>> Identify Service Transfer Owners<br><br>Group Lead to nominate appropriate group secretary/minute taker |
|---|---|

| PROJECT: | NSGH COMMISSIONING |
|---|---|

| Sub Group: | Clinical Systems/Administration Group | Reporting To: | Commissioning Steering Group |
|---|---|---|---|
| Sub Group Leader: | | Leader: | Alan Seabourne |

| Group Members: | Name | Designation | Responsibility |
|---|---|---|---|
| | **Group Lead and membership to be agreed by Jane Grant and Steering Group** | | |

| Terms of Reference: | The role of the Clinical Systems/Administration Group is to ensure that all Information, IT and Health Record functions are established and operational as the new hospitals open. Responsibilities include:<br><br>1. IT systems development & implementation<br>2. Patient Records management<br>3. Patient Booking & Tracking Systems<br>4. PACS<br>5. Scheduling<br>6. Laboratories Action Plan<br>7. Imaging Action Plan<br><br>Group Lead to nominate appropriate group secretary/minute taker |
|---|---|

| PROJECT: | NSGH COMMISSIONING |
|---|---|

| Sub Group: | Equipment Procurement Group | Reporting To: | Commissioning Steering Group |
|---|---|---|---|
| Sub Group Leader: | Robert Stewart | Leader: | Alan Seabourne |

| Group Members: | Name | Designation | Responsibility |
|---|---|---|---|
| | Robert Stewart | Deputy Head of Procurement | Procurement Manager |
| | Frances Wrath | Capital Planning Advisor | Capital Planning |
| | John McGarrity | Deputy Manager Medical Equipment | Medical Physics |
| | TBA | Technical Advisor | Technical Advisor |
| | Mairi Macleod | Project Manager, New Children's Hospital | Commissioning Manager - Children's |
| | Heather Griffin | Project Manager, New Adult Hospital | Commissioning Manager - Adult |
| | Robert Armstrong | Senior Buyer Equipment | Procurement Adviser |
| | Mark Greig | Infrastructure Development | IT Advisor |
| | Karen Connelly | FM Advisor | FM |
| | Jackie Stewart | Infection Control Advisor | Infection Control |

**Group membership to be agreed by lead and Steering Group**

| Terms of Reference: | The role of the Equipment Procurement Group is to:<br><br>1. Manage and co-ordinate the procurement and delivery of Group 2 equipment<br>2. Manage and co-ordinate the procurement, delivery and installation of Group 3 equipment<br>3. Manage and co-ordinate all transfer equipment include above<br>4. Prepare a methodology for the future management of the maintenance and replacement process for all Board supplied equipment (where applicable)<br><br>Group Lead to nominate appropriate group secretary/minute taker |
|---|---|

| PROJECT: | NSGH COMMISSIONING |
|---|---|

| Sub Group: | Community Engagement | Reporting To: | Commissioning Steering Group |
|---|---|---|---|
| Sub Group Leader: | Niall McGrogan | Leader: | Alan Seabourne |

| Group Members: | Name | Designation | Responsibility |
|---|---|---|---|
| | **Group Membership to be agreed by Lead/Steering Group** | | |

| Terms of Reference: | The role of the Community Engagement Group is to:<br><br>1) Plan & implement a Community Engagement strategy<br>2) Inform, engage and involve the public<br>3) Inform the public regarding the services to be provided at the new hospitals and the relationship/linkage with other existing NHSGG&C facilities<br>4) Ensure that all community stakeholders are kept informed of the development<br><br>Group Lead to nominate appropriate group secretary/minute taker |
|---|---|

| PROJECT: | NSGH COMMISSIONING |
|---|---|

| Sub Group: | Communications | | Reporting To: | Commissioning Steering Group |
|---|---|---|---|---|
| Sub Group Leader: | Ally McLaws | → | Leader: | Alan Seabourne |

| Group Members: | Name | Designation | Responsibility |
|---|---|---|---|
| | **Group Membership to be agreed by Lead/Steering Group** | | |

| Terms of Reference: | The role of the Communications Group is to:<br><br>1) Plan and implement a Communications Strategy to raise awareness of the progress of the development of the new hospitals<br>2) Ensure staff and all other stakeholders are kept informed of the development<br><br>Group Lead to nominate appropriate group secretary/minute taker |
|---|---|

| PROJECT: | NSGH COMMISSIONING |
|---|---|

Group Membership to be discussed

| Sub Group: | Workforce Engagement Group | Reporting To: | Commissioning Steering Group |
|---|---|---|---|
| Sub Group Leader: | Anne MacPherson | Leader: | Alan Seabourne |

| Group Members: | Name | Designation | Responsibility |
|---|---|---|---|
| | Anne MacPherson | Associate Director of HR | Human Resources |
| | | Representatives from General Management | |
| | Sandra Bustillo | Associate Director of Communications | Communications |
| | Eddie O'Grady | Learning & Education Lead | Learning & Education (Acute) |
| | Rep? | | Staff Representative (Unison) |
| | Rep? | | Staff Representative (Unite) |
| | Rep? | | Staff Representative (RCN) |
| | TBA | | Technical Adviser |
| | TBA | | OD |
| | | | Practice Development (Nursing) |
| | Toby Mohammed | | |
| | Jonathan Pender | Workforce Information | Workforce Information |
| | TBA | | Medical Rep |

| Terms of Reference: | The role of the Workforce Engagement Group is to:<br><br>1) Identify and procure the workforce resource required to staff the new facilities<br>2) Minimise any skills gaps identified by service redesign<br>3) Plan and implement an HR Strategy to support the migration of staff to the new facilities & appoint secretary<br><br>Group Lead to nominate appropriate group secretary/minute taker |
|---|---|

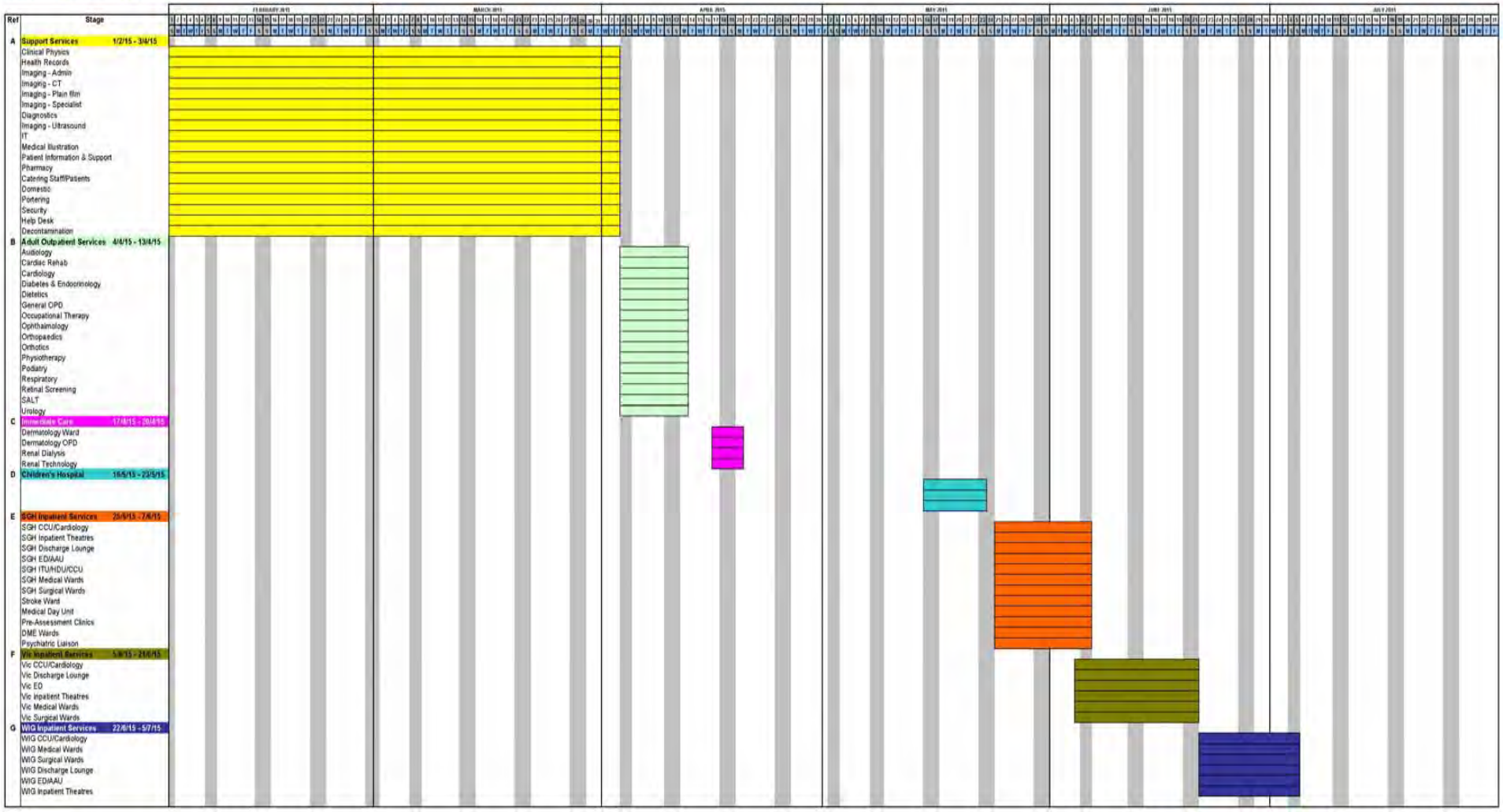
**Appendix 2**

**NHS Greater Glasgow & Clyde**

**New South Glasgow Hospital Clinical Transfer Programme**

| | Feb-15 | Feb-15 | Mar-15 | Apr-15 | May-15 | Jun-15 |
|---|---|---|---|---|---|---|
| Technical Readiness<br><br>Completion by 31/1/15 | GROUP A<br>SGH<br>Adult OPD<br>1/2/15 - 10/2/15 | GROUP B<br>SGH<br>Intermediate Care<br>10/2/15 - 28/2/15 | GROUP C<br>Childrens Hospital<br><br>1/3/15 - 31/3/15 | GROUP D<br>SGH Inpatient<br>& Acute Care<br>1/4/15-30/4/15 | GROUP E<br>VIC Inpatient<br>& Acute Care<br>1/5/15 - 31/5/15 | GROUP F<br>WIG Inpatient<br>& Acute Care<br>1/6/15 - 30/6/15 |
| Medical Physics<br>Equipment Library<br><br>IT Installations<br>Telephones<br><br>Domestic<br><br>Portering<br>Security<br>Help Desk<br>Catering Retail<br><br>Decontamination<br>Imaging<br>Pharmacy Technical<br>New Equipment Fit Out<br>Art Installations<br>Medical Gases<br>Car Parking<br>Estates | Health Records<br>OPD Imaging<br><br>Medical Illustration<br>Pharmacy Dispensary<br><br>Audiology / ENT<br><br>Cardiac Rehab<br>Cardiology<br>Dermatology<br>Diabetes & Endocrinology<br><br>Discharge Lounge<br>Occupational Therapy<br>Ophthalmology<br>Orthopaedics<br>Orthotics<br>Pre-Assessment Clinics<br>Physiotherapy<br>Rheumatology<br>Respiratory<br>Retinal Screening<br>SALT<br>Urology<br>Imaging - MRI | Dermatology Ward<br>Haematooncology<br><br>Renal Dialysis<br>Renal Technology<br><br>Catering Patients<br><br>Medical Day Unit<br>Stroke Ward<br>CT -<br>associated with Stroke DME Wards (MHU from VIC) | GROUP C1 OPD<br>Health Records<br><br>Child Protection Sanctuary, radio lollipop, crèche, family bereavement, adolescents and discharge<br>Play Service<br>Day Investigation Unit<br>Sanctuary<br><br>Nuclear Medicine<br>GROUP C2 INPATIENTS<br>Pharmacy Aseptic<br>Paediatric ICU<br>Emergency Department<br>Observation Ward<br>Schiehallion<br>Theatres<br>Medical Wards<br>Surgical Wards<br>DCFP<br>Hospital at Night<br>Out of Hours<br>Cardiac Cath Labs | Coronary Care Unit<br>Cardiology ward<br><br>Theatres<br>Emergency Department<br>Medical & Surgical Receiving<br><br>(into AAU)<br>Intensive Care Unit<br>High Dependency Unit<br>Medical Wards<br><br>Rheumatology Ward<br>ENT Ward<br>Surgical Wards<br>Sanctuary<br>Endoscopy<br>In-Patient Imaging<br>Orthopaedic Wards | Coronary Care Unit<br>Intensive Care Unit<br>High Dependency Unit<br>Discharge Lounge<br>Emergency department<br><br>Theatres<br>Medical Wards<br>Surgical Wards<br>Imaging<br><br>Health Records | Coronary Care Unit<br>Intensive Care Unit<br>High Dependency Unit<br>Discharge Lounge<br>Emergency department<br><br>Theatres<br>Medical Wards<br>Renal Wards<br>Surgical Wards<br><br>Vascular wards<br>Imaging<br>Health Records |

NHS Greater Glasgow & Clyde
New Adult Hospital & New Children's Hospital
Commissioning Programme - Service Migration

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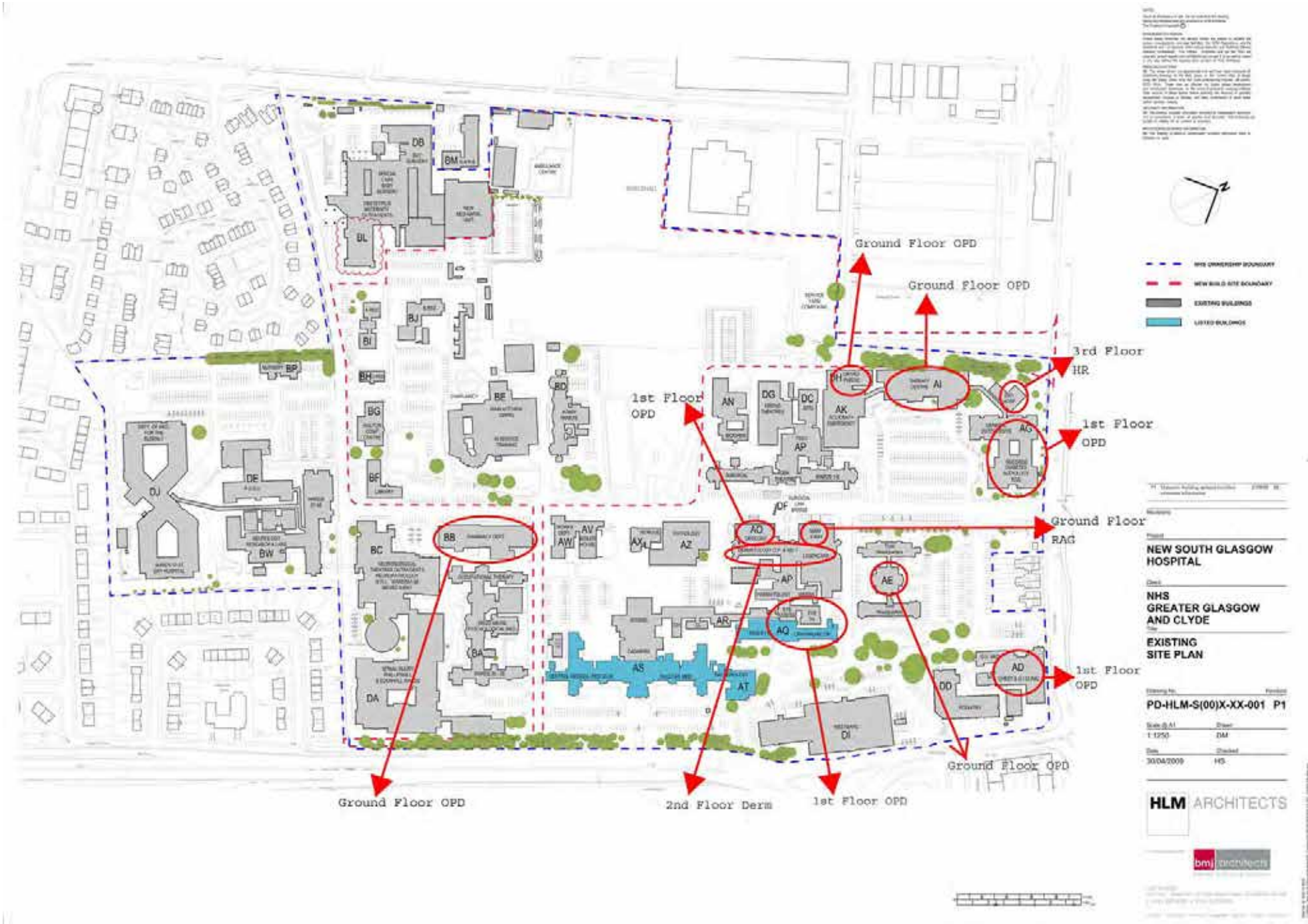
**Appendix 3**

**GROUP A TRANSFERS**

| | GROUP A TRANSFERS | |
|---|---|---|
| **Adult OPD** | **Current Location in SGH** | **New Adult Hospital Location** |
| Health Records | AG | 3RD FLOOR HR |
| Audiology / ENT | AG | IST FLOOR OPD |
| Cardiology | AG | IST FLOOR OPD |
| Diabetes & Endocrinology | AG | IST FLOOR OPD |
| Rheumatology | AG | GROUND FLOOR OPD |
| GENERAL OPD | AG | GROUND /1ST FLOOR |
| Orthotics | AG | GROUND FLOOR OPD |
| Retinal Screening | AG | IST FLOOR OPD |
| Occupational Therapy | AI | GROUND FLOOR OPD |
| SALT | AI | GROUND FLOOR OPD |
| Cardiac Rehab | AI | GROUND FLOOR OPD |
| Physiotherapy | AI | GROUND FLOOR OPD |
| Discharge Lounge | | GROUND FLOOR OPD |
| Ophthalmology | AQ | IST FLOOR OPD |
| Orthopaedics | DH | GROUND FLOOR OPD |
| Pre-Assessment Clinics | | IST FLOOR OPD |
| Respiratory | AD | IST FLOOR OPD |
| Urology | AO | IST FLOOR OPD |
| OPD Imaging | AO | GROUND FLOOR RAG |
| Medical Illustration | AE | GROUND FLOOR OPD |
| Pharmacy Dispensary | BB | GROUND FLOOR OPD |
| Dermatology | AO | 2ND FLOOR DER |
| ***The above transfers would facilitate the move of Yorkhill Hospital to the NCH*** | | |
| **The move of services from AG OPD block - 267 workstations** | | |
| **The move of services from AI Therapy block – 108 workstations** | | |
| **Total workstations available = 375** | | |
| **Workstations required for NCH staff = 309** | | |


Ground Floor OPD
Ground Floor OPD
3rd Floor
HR
1st Floor
OPD
1st Floor
OPD
Ground Floor
RAG
1st Floor
OPD
Ground Floor OPD
Ground Floor OPD
2nd Floor Derm
1st Floor OPD
NHS OWNERSHIP BOUNDARY
NEW BUILD SITE BOUNDARY
EXISTING BUILDINGS
LISTED BUILDINGS
NEW SOUTH GLASGOW HOSPITAL
NHS GREATER GLASGOW AND CLYDE
EXISTING SITE PLAN
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DM
30/04/2009
HS
HLM ARCHITECTS
bmj architects

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# *APPENDIX J*

# *DESIGN STATEMENT PART 1: ARCHITECTURE*

# New South Glasgow Hospitals

# Design Statement

## Matters Specified in Condition (2)

*Site Design, External Appearance and Landscaping*

## Part 1: Architecture

Brookfield

NHS Greater Glasgow and Clyde

A49342285

# New South Glasgow Hospitals

# DESIGN STATEMENT

| | |
|---|---|
| Document Reference: | NA-DC-200 |
| Document Status: | Draft for review & comment<br>Final Draft<br>Formal Issue |
| Document Revision: | D01 |
| Issue Date: | 20/07/2010 |

Brookfield

NHS Greater Glasgow and Clyde

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- Outline Planning Permission
- Approval of Masterplan
- Planning Condition No. 2 Reserved Matters

2 **Context**

3 **Design Brief**
- Clinical Requirements/Exemplar Design
- Employer's Requirements

4 **Concept & Resolution**
- Design Themes – Dock, Beacon, Vessel
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5 **Related Planning Approvals**
- Multi Storey Car Park A1
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6 **Consultations and Design Development**
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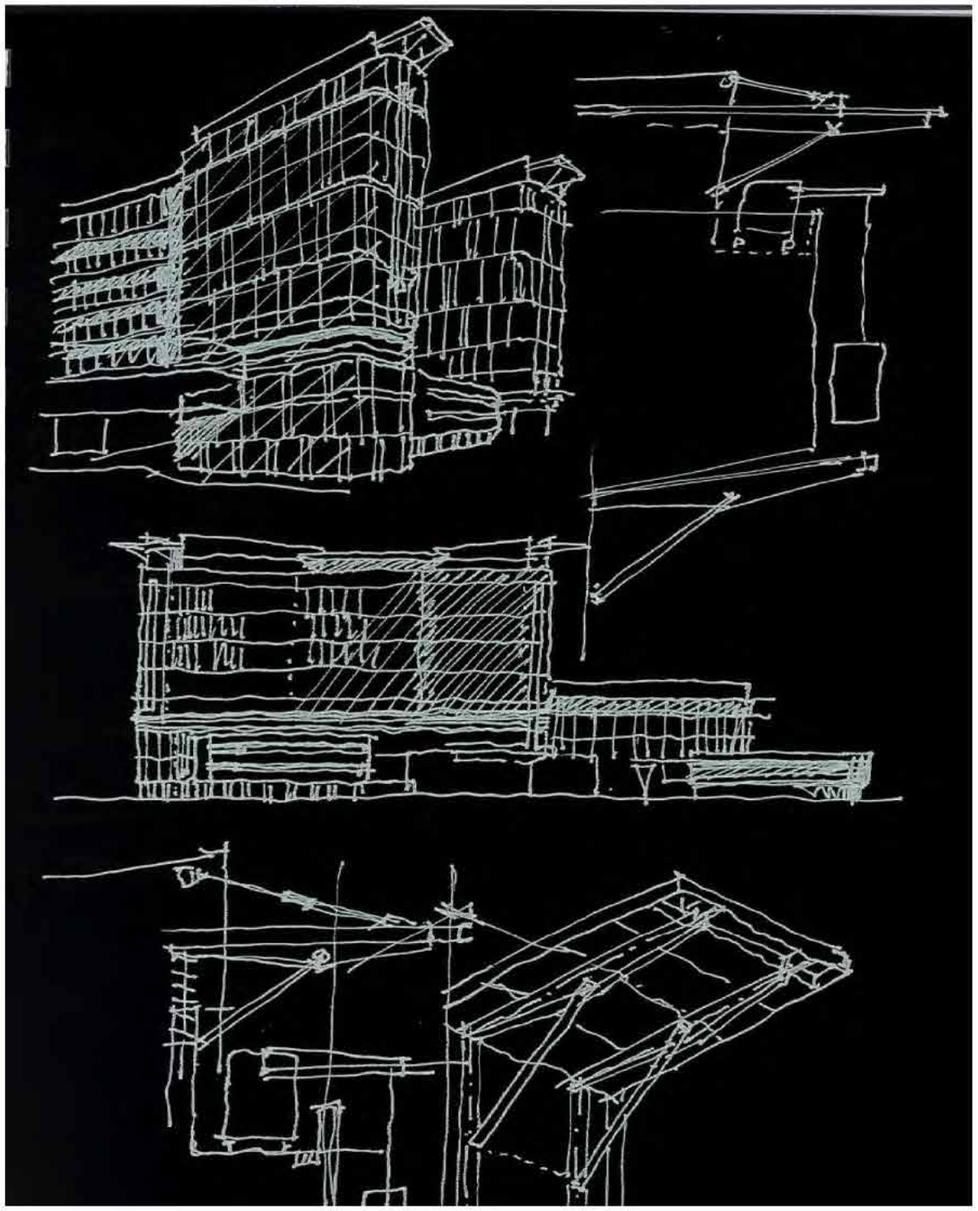
7 **Materials/Finishes Strategy**
- Hierarchy
- Public Realm - North Elevation/Main Entrances/Public Park
- Secondary/Tertiary Elevations/Spaces



## 1.0 Introduction

The development of these proposals have pursued an integrated approach to master planning, building design and clinical planning for all elements of the new hospital. The goal is a hospital that is a fine piece of architecture- an elegant simple solution to a complex problem.

Hospitals are by virtue of their arrangement and multiplicity of services complex buildings. The big challenge to designers is to create a positive patient environment that also helps staff deliver complex clinical processes in a non-institutional environment. The answer in these proposals is simplicity- a building that can be easily understood by all of its users- both in its form, layout and relationship to the landscape.

Its impact on the local and city urban context is understood and it is hoped that its potential to achieve an iconic status may be realised through the provision of a facility that will offer exemplary healthcare facilities, improve staff retention and create an environment that is much more than an institution.

This document has been compiled to specifically explain the proposals in relation to Matters Specified in Conditions 2. This condition refers to Siting, External Appearance and landscaping. It should be noted that matters relating to Landscape are contained in a separate document which should be read in conjunction with this document.

In addition, it is understood that matters relating to sustainability, transport, artwork integration etc., which are described in separate Matters Specified in Conditions, are addressed in separate documents and are not therefore discussed here.

Aerial view of campus

### 1.1 Outline Planning Permission

In April 2007 the Board lodged an outline planning application with Glasgow City Council which was accompanied by an Environmental Statement. The planning application and ES were the subject of consultation with an extensive range of statutory and non statutory bodies, agencies and the general public. The application was reported to the Council's Development and Regeneration (Development Applications) Sub Committee in January 2008, with a recommendation for approval. The Sub Committee voted to grant outline planning permission subject to 43 planning conditions and the signing of a Section 75 Agreement. The outline planning consent for the New South Glasgow Hospitals project was issued by Glasgow City Council on 30 July 2009.

The consent states that subsequent planning approvals will be dealt with as 'Reserved Matters'. This two-stage approach means that there will be a requirement for reserved matters applications to be scrutinised by the planning authority to determine whether further environmental information and assessment is required to allow the detailed consideration and determination of reserved matters.

The proposed Condition No. 2 of the Outline Planning Consent states that:

*Approval of the details of the siting, design and external appearance of the building(s), the means of access thereto and the landscaping of the site (hereinafter called the reserved matters) shall be obtained in writing from the Planning Authority prior to the start of any work on site. All reserved matters to be submitted for approval within three years of the date of this permission.*

***Reason**: In compliance with Section 59 of the Town and Country Planning (Scotland) Act 1997.*

2007 Campus Development Plan

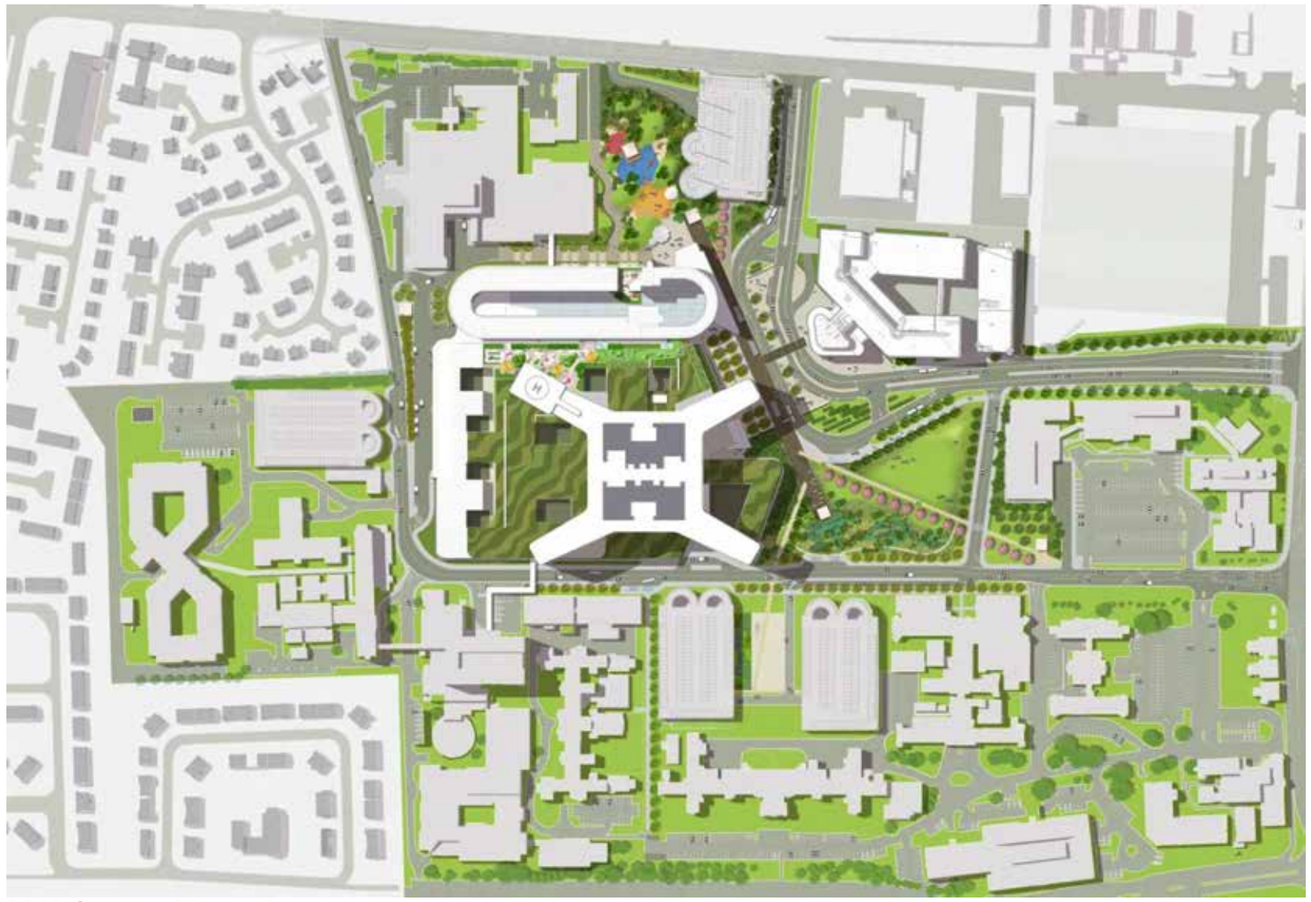
2009 Campus Masterplan

With the implementation of the Development Management component of the Planning Etc. (Scotland) Act 2006 on the 3 August 2009, the submission of 'reserved matters' applications was replaced by the submission of 'Matters specified in Conditions' applications.

### 1.2 Approval of Masterplan

In April 2010, a Matters Specified in Conditions (MSC) application (Ref: 10/00945/DC) was submitted to Glasgow City Council to audit the changes between the indicative campus masterplan and the finalised masterplan, and assess the extent to which the finalised masterplan accords with the ES, as required by Condition No.1 of the Outline Planning Permission. The application outlined the following information.

- Setting the scene
  - Strategic Context
  - 2007 Campus Development Plan
  - 2009 Campus Masterplan
- 2010 Masterplan
  - Site Context
  - Design Vision
  - Masterplan Layout
  - Landscape Framework
  - Elements of the Masterplan
- 2010 Masterplan Strategies
  - Transportation
  - Site Circulation
  - Landscape
  - Drainage
  - Arts and Healthy Environment
  - Sustainability



2010 Campus Masterplan

The MSC application was approved by Glasgow City Council on 24 June

2010, subject to six conditions addressing issues including waste management, surface water, residential amenity, and wind turbines.

### 1.3 Architectural Design Statement

This architectural Design Statement accompanies the 'Matters specified in Conditions' application for the Adult Acute Hospital, the Children's Hospital and the Energy Centre. This Design Statement follows the principles set out in the Scottish Government's Planning Advice Note No. 68 Design Statement published in August 2003. It sets out to explain the scheme in terms of the brief, analysis of context, design development (following consultations) and the final proposals. This statement should be read in conjunction with the relevant submitted application drawings as well as the approved 2010 Campus Masterplan document.

Aerial view of campus viewed from north east

## 2.0 Context

The New South Glasgow Hospitals project is located on the existing 28 hectare Southern General Hospital site, situated on the south side of the River Clyde in the Govan district of Glasgow. The surrounding land uses consist of a mixture of residential to the south and east, industrial and business to the west, hi-tech industry to the north and the Shieldhall Wastewater Treatment Works to the northwest. The area is suburban in character. The local environment is low in quality and most of the built form is industrial in design and poor quality in terms of fabric and finished materials. The existing hospital site dates from 1872 and contains a mix of buildings of varying ages and architectural style and quality. The buildings are arranged in a campus layout with the oldest group of buildings concentrated on the eastern side. The Grade B listed Central medical block provides the most architecturally significant building to be retained within the campus.

Further development took place in the 1900s and 1950s, followed by the Maternity Unit in 1970 and the Institute of Neurological Sciences in 1972. Additions in the last 5 years have included the Department of Medicine for the Elderly, the Westmarc building, extensions to both biochemistry and pathology buildings, and the recently commissioned Neonatal Unit. New structures recently completed and those nearing completion within the site also provide a reference for these proposals. In particular they help to form the basis of a palette of materials and building form. Existing built form varies between four and six storeys and consist of a mix of materials ranging from render, pre-cast concrete panels, stone, brickwork and aluminium panelling.

The importance of recognising and responding to both the local and city context has been emphasised during pre-application consultations which has led to GCC's extension of the Glasgow Urban Model to cover the Govan context and to allow accurate testing of proposals.

Contextual Site Photographs

Study Images using Photomontages
And Glasgow Urban Model

## 3.0 Design Brief

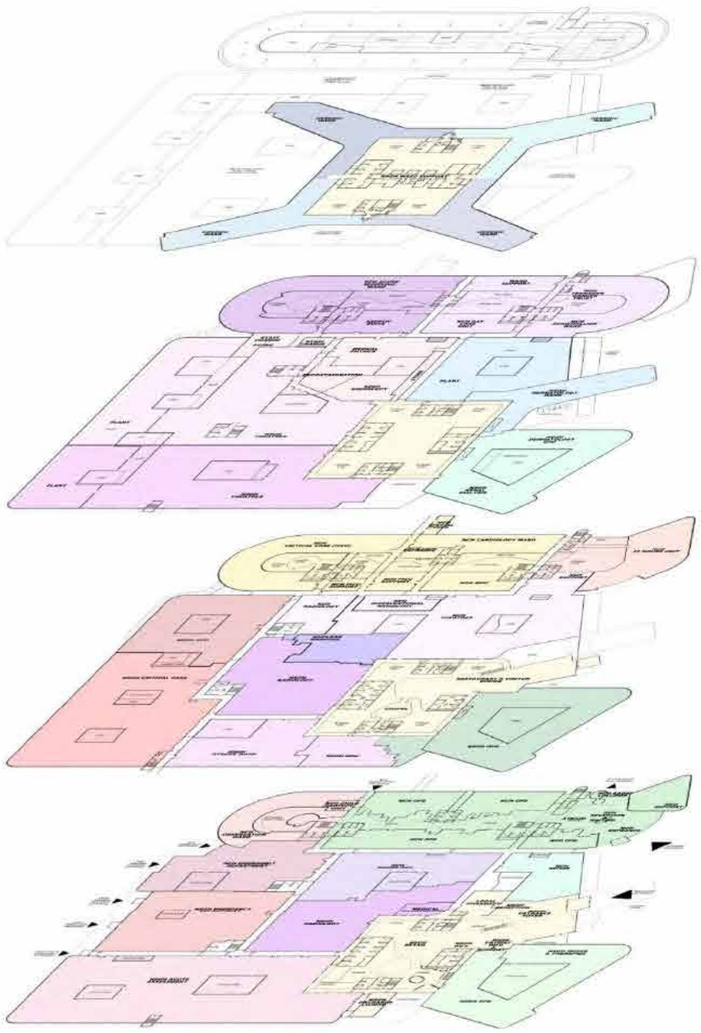
NHS Greater Glasgow and Clyde (The Board) has over the past ten years been developing its Acute Services Review (ASR) to modernise the acute adult health service within its area. The second phase includes the provision of a new Adult Acute Hospital, a new Children's Hospital, laboratory facilities, and associated support areas and other site facilities and infrastructure on the Southern General Hospital site.

The new Adult Hospital will be one of the most advanced acute hospitals in the UK with facilities including 1,109 adult beds, and the biggest critical care complex in Scotland catering for an estimated 110,000 A&E attendances per year. The Adult Hospital is scheduled for completion in early 2015. This will provide some 1,700 beds on campus to meet the healthcare needs of the local, regional and national population that the hospital campus serves. The Adult Hospital will sit alongside and be physically linked to the National Spinal Injuries Unit, the Institute of Neurosciences, and the Maternity and Neonatal Units.

The proposed 244-bed Children's Hospital will be integrated with maternity and adult hospital services to ensure immediate access to specialist services to provide the highest quality and safety standards for mothers, children and babies. The Adult and Children's Hospitals will be built as a single integrated building. The new Laboratories Facility will be detached but physically linked to the new hospitals via a service tunnel. The laboratories block will accommodate haematology, biochemistry, medical genetics, microbiology, and mortuary and post mortem services.

The following requirements have also been specified by the Board in their Employers Requirements as essential factors:

- Development of an integrated adult acute and children's hospital providing the full range of acute health services which functions



Diagrammatic Stacking Diagram of key internal functions

efficiently, effectively and economically optimising the Boards operating costs. The clinical functions must be provided in a high quality care environment which is accessible to the community, welcoming, safe and aesthetically pleasing. The design must also fully reflect the special needs of each patient group it caters for and as a whole should be fully accessible to the widest variety of patient groups possible.

- The development must remain flexible to allow future change and expansion. The buildings must provide spaces that assist patients feeling of belonging and not being intimidated, and which may help with their orientation, mobility, confidence, privacy and ability to socialise. This may be achieved through use of materials, lighting, shape, scale, mass and form.
- The design should respect the local environment and make a contribution to the local context whilst clearly expressing its function both in external and internal appearance. The size, distribution, material and proportion of the design should reflect the clinical function of the building.
- The contractor shall develop building design solutions which create an ordered composition of building elements in a stimulating form that successfully combines good standards of space, height, form, scale and use of materials and colours/images with associated functional requirements and its surroundings.
- The form of the Adult and Children's hospitals, while mutually compatible should have an identifiably distinct character expressed both externally and internally as befits the nature of the patient groups.
- Design should compliment and enhance the quality of the locality in which it is sited. It shall create a welcoming, inclusive and vibrant environment and shall enable easy access by the community. It should be seen as a leading edge community resource reflecting the objectives of the modern NHS in the regeneration of healthcare facilities.

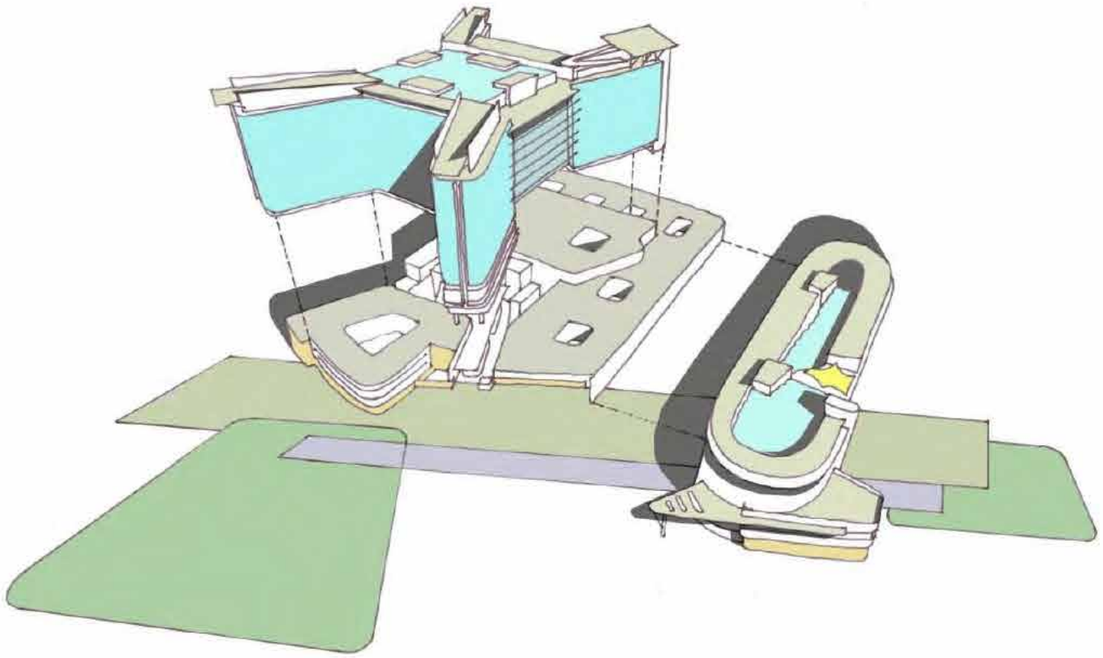
# 4.0 Architectural Design – Concept & Resolution

## 4.1 Introduction

The 2010 Campus Masterplan sought to make the best possible use of the site and the opportunities presented by the requirements of the brief. The arrangement of the buildings, routes and public spaces has been defined to create a user-friendly setting for this significant new landmark healthcare development for Glasgow. The design and layout of the site seeks to underpin very positive experiences of a high quality site for patients, staff and visitors. The masterplan is based upon the establishment of a durable parkland character which will enable the campus to evolve and grow over time in response to healthcare demands and opportunities for redevelopment of particular areas of the existing NHS estate.

The masterplan proposes a strong axial approach from Govan Road to a new plaza/arrival hub from which entrances to all key facilities are accessible and legible. The introduction of two major parks, one for the adult acute facility and one for the children's hospital, is also fundamental to the 2010 masterplan's success in creating a strong framework from which the architectural propositions can emerge. Establishing a strong landscape setting for the building footprint, with foliage proposed immediately adjacent to key area/departments has been a key driver for the landscape element of the masterplan.

The key components of the architectural proposition are given a distinct identity, in accordance with the client's brief, whilst maintaining a considered approach to continuity and hierarchy of material selection. Accordingly, the scheme is conceived as the integration of three distinct elements: the beacon (containing the adult inpatient ward accommodation), the dock (containing the adult acute treatment and diagnostic facilities) and the vessel (the children's hospital). These three elements are given their own architectural character whilst ensuring that



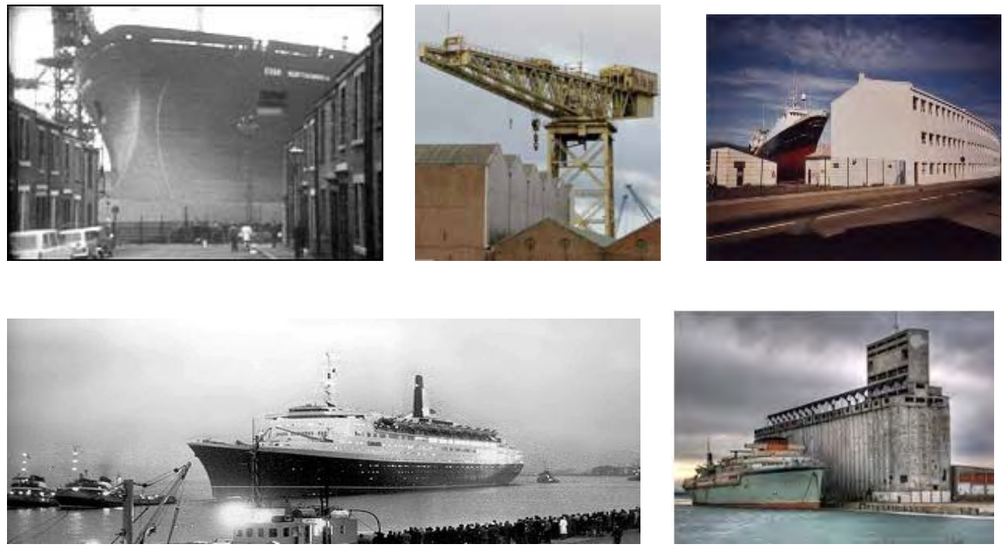
their expression remains within the overall framework suggested by the campus approach to the masterplan recognising the client's existing estate and other planned developments including car-parks and the proposed laboratory facility.

**4.2 Concept & References**

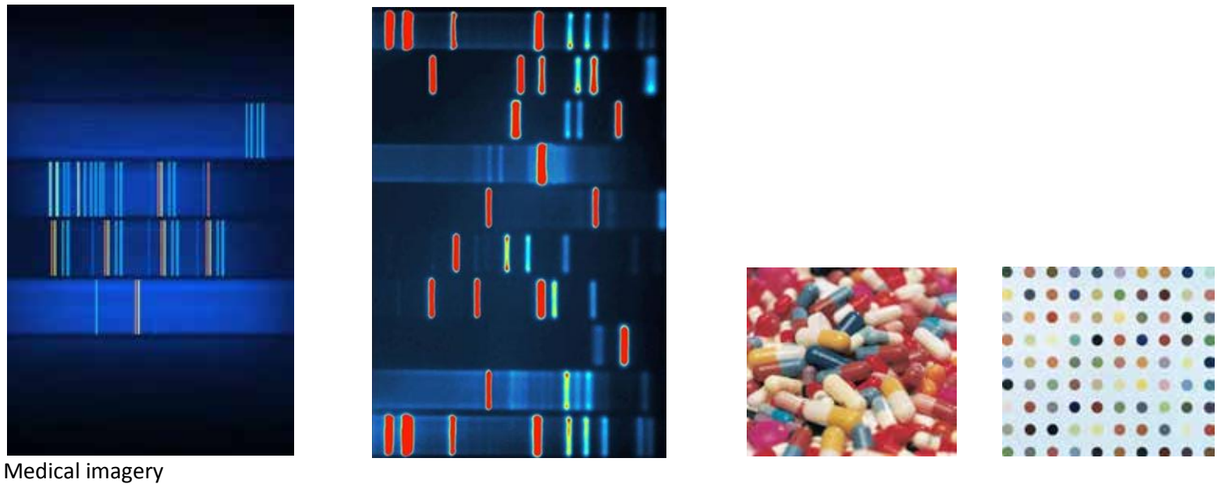
To a large extent, the scheme has been pre-determined by the 2007/2009 exemplar which set fixed parameters for the location of the building and the way in which it connects to existing facilities. The need to ensure that the existing A&E dept continues to operate throughout construction and the requirement to connect in the East and West directions to Neurosciences and Neo-Natal buildings pre-determines the buildings location to the South of the site. In particular the connection to the Neo-Natal building locates the children's hospital to the South West.

These requirements naturally shape the key components of the hospital into a natural grouping of forms consisting of a children's hospital, an accommodation block catering for adult inpatients and a large linking block containing all day, diagnostic emergency and adult outpatient facilities. Given the scale and complexity of the proposed hospital facilities, a simple conceptual approach to these key components has been adopted. Accordingly, and embracing the maritime/ship-yard heritage of the local Govan context, these components have been termed the 'Beacon' (In-patient block) the 'dock' (adult podium upon which the 'beacon' sits) and the 'vessel' (the children's hospital, 'moored' to the 'dock'). This approach assists in dealing with the scale of the building and provides a framework within which the desired architectural identity of each component (in particular the children's hospital) can be expressed.

As well as maritime references, medical imagery has also been a key driver in the conceptual thinking, in particular in relation to facade composition and use of colour. The DNA strand has been adopted as an appropriate reference upon which to build a series of themes that may inform the



Dock/ship yard imagery



Medical imagery

composition of external windows and panel systems.

Adoption of this theme throughout the scheme assists in providing the level of consistency demanded by the campus approach advocated by the master plan whilst subtle use of colour and expression of form ensures that elements are distinct where necessary.

**4.3 Adult Inpatient Block – 'The 'Beacon'**

The adult inpatient facility consists of 1109 single bedrooms, each with en-suite bathroom facilities. Early studies considered whether inpatient facilities could be divided into a series of smaller units, in order to mitigate the scale of the building, however clinical requirements and the need for centralisation has resulted in a single, contiguous block broadly reflecting the design decisions taken in the 2009 Exemplar scheme. The inpatient block consists of 8 floors with four 28 bed wards provided per floor (typically). In order to allow a degree of flexibility of use, and in particular to allow notional departmental boundaries to adjust to meet varying service demands, the plan form of this block is arranged to ensure a continuous 'ribbon' of bedroom accommodation around the perimeter. This approach ensures the optimum response to this requirement and, coupled with the 'internalisation' of fire escape and vertical circulation cores, allows every inpatient bedroom an uninterrupted view with zero overlooking onto other bedrooms. This innovative approach to ward planning also provides the opportunity for each ward to be arranged around a central, covered day-lit atrium. The adult atrium provides a naturally lit, temperate space for provision of day-light to 'internal' spaces and at its base, for orientation, waiting and amenity. The connection of the two proposed 'FM' circulation cores by bridge links at levels 4 to 11 also provides an opportunity for drama through the expression of staff offices as coloured pods linked to the bridge. Although conceived as a continuous ribbon of bedroom accommodation the plan form opens up at the end of each wing through the introduction of a shared 'social space'. This space allows a direct visual link to the outside, exploits elevated panoramic views

View of main arrival space and inpatient block

and provides an appropriate termination to the internal ward corridor axis.

The 'beacon' sits upon the adult podium (dock) and is separated from it by a clearly delineated interstitial plant floor. The interstitial floor is set back from the main facade line wherever possible and is expressed with a continuous ribbon of aluminium ventilation louvers.

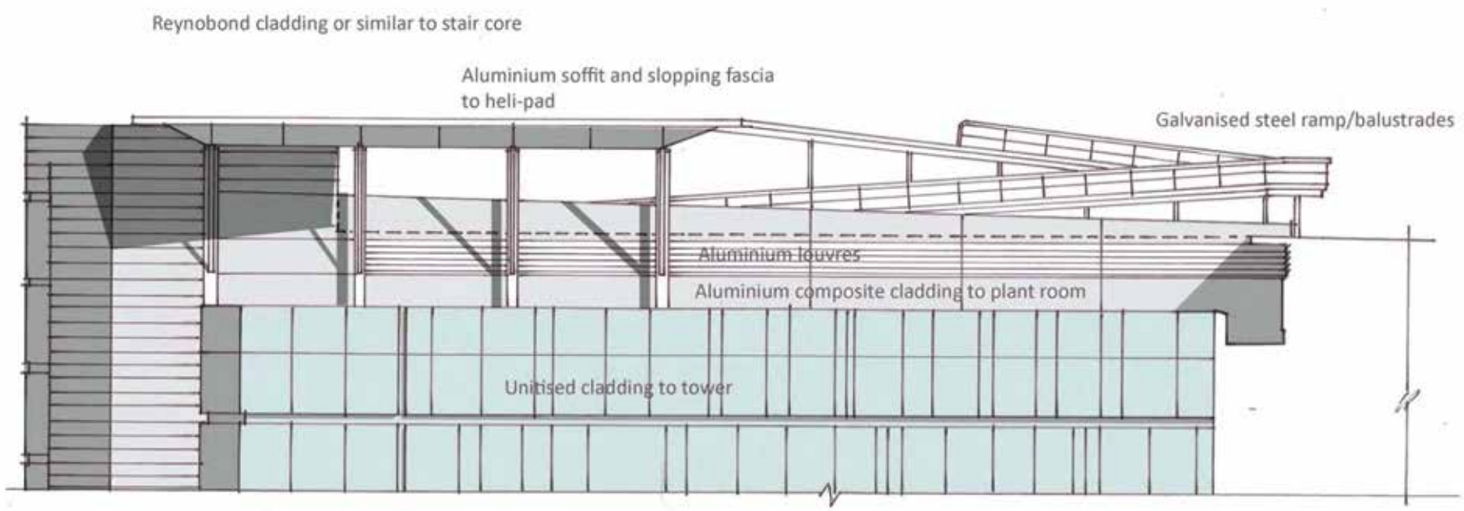
The material strategy for the inpatient 'beacon' is discussed in further detail in section 7 below. The beacon is conceived as essentially glazed with alternate pairs of floors grouped and separated with a horizontal recessed channel. This device mitigates the effects of scale and introduces a strong horizontal emphasis.

**4.4 Heli-Pad**

The provision of a helipad for a proposed hospital of this scale and importance is to be expected and further technical details regarding the potential effects of the proposed pad location have been submitted separately. The pad is located on the roof of South Western wing of the inpatient block in order to provide a direct vertical connection with the emergency departments. Accordingly, given that this 'wing' is the only one where vertical circulation is provided, a different expression is employed compared to the other wings via the use of aluminium panelling. The pad itself must by its nature meet many technical/safety criteria and as such has a minimum size and strict requirements for safety catch-nets, access ramps and fire-fighting equipment. The soffit treatment of the pad and the expression of supporting structure have been considered with the provision of exposed diagonal struts and aluminium panel soffit, lit from below as an architectural feature.

**4.5 The Adult Podium – 'The 'Dock'**

Having located all adult inpatient facilities in the beacon the remaining (OPD, diagnostic, day, emergency, interventional) adult facilities are all contained in the podium (dock).




Partial elevation of proposed heli-pad

The dock consists of three storeys of clinical accommodation (with plant on a fourth floor where necessary) and, given the amount of clinical accommodation required within it (and their adjacencies) fills the available area. Accordingly courtyards and light-wells are inserted into strategic locations to mitigate any 'deep-plan' effects and to ensure adequate access to day light and view.

The dock is treated as a simple architectural element. Horizontal emphasis, through the use of recessed channels aligning with the building floor levels, with full-height vertical panels/windows set within the bands, provides an appropriate back-drop for the more expressive 'Beacon' and 'Vessel'. The adoption of the 'DNA' theme at first and second floor levels ensures a consistency of approach.

Further narrative on the material treatment is contained in section 7.

**4.6 Children's Hospital – 'The 'Vessel'**

The children's hospital, whilst sharing some adult facilities in the podium (theatres) is in effect an additional hospital in its own right. Containing 244 beds, the 'vessel' also provides dedicated facilities for children's OPD, critical care, and mental health. In response to a specific requirement of the brief, i.e. to invest the children's hospital with an identity all of its own, the building is conceived as a more transitory form, 'moored' alongside the 'dock' (adult podium). It is in the 'vessel' that maritime references are most evident. The 'apsed' North and south treatments, whilst a response to the need to maximise the notional flexing of departmental boundaries in the upper inpatient floors, are also intended to provide a clear sense of identity and a link to maritime forms. The building is arranged as a simple linear block on the West side of the site, to connect to existing Neo-Natal block. The block is arranged with a 15m wide atrium separating the East and West sides, providing a large, internal, day-lit, temperate space. The atrium provides a large, covered amenity/waiting space as well as an intuitive

View of children's hospital from the children's park

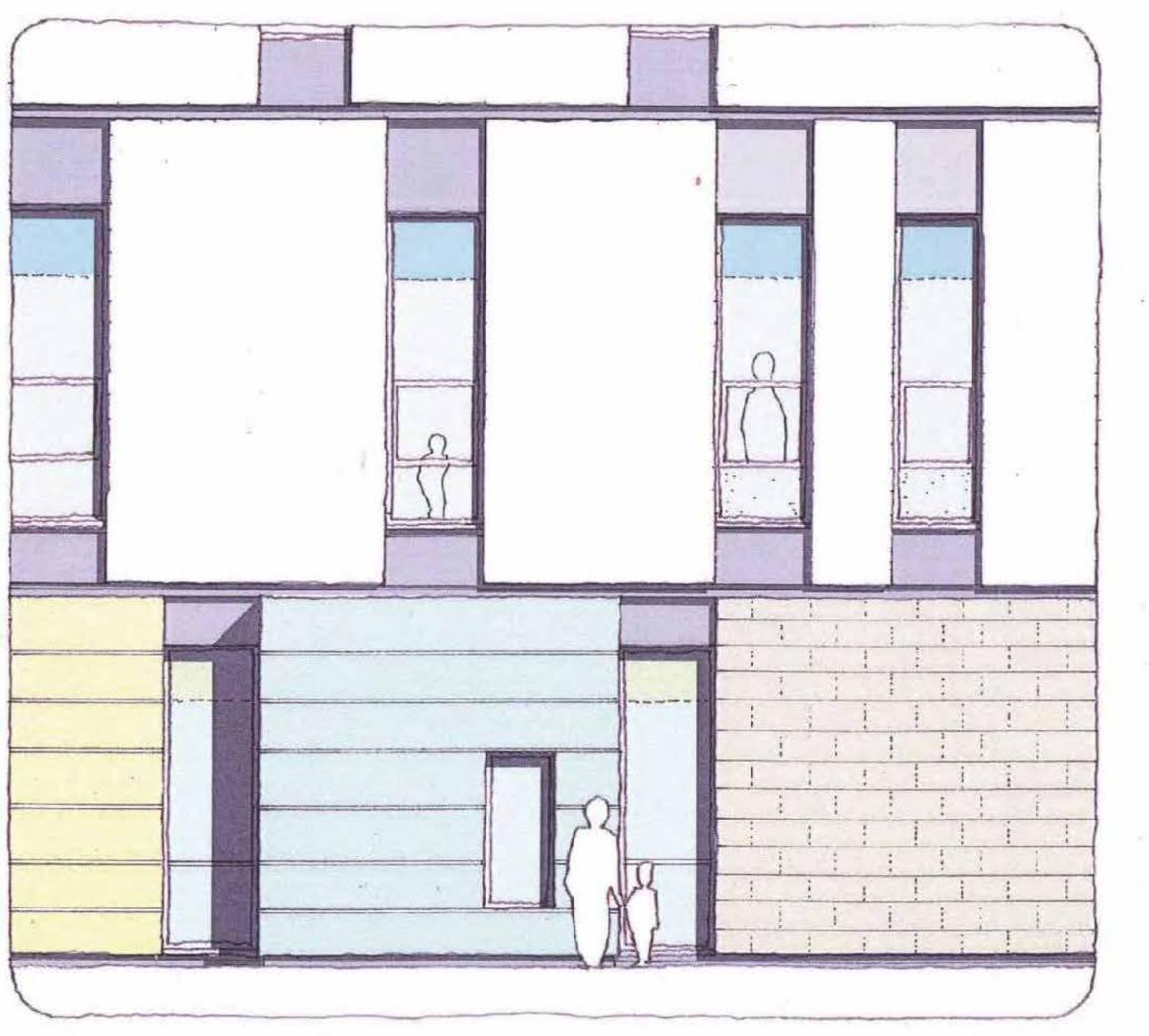
internal way-finding device providing easy access to key vertical circulation cores.

Externally, an emphasis is placed upon the North and North Western facades (facing the arrival space and children's park). As mentioned further in Section 6 below, the main entrance and adjoining facilities at levels 1 and 2 have been developed to ensure response to the diagonal geometry and link between parks, as well as appropriate level of transparency and openness at the entrance.

Further detail on the material treatment is contained in section 7 below. The'DNA' theme is employed in the compositional treatment of the vessels' facades, ensuring a consistent campus approach to the suite of buildings. In this case, in order to express the identity of the children's hospital, and to encourage a degree of 'playfulness', vertical coloured fins are applied radially around the entrance facade and along the West facade, where oblique views when moving North or South along the facade can be exploited. As a further gesture to integration with the children's park the consult/examination suites on the Western facade have been expressed as coloured 'play-boxes'.

**4.7 The Energy Centre**

Part of the suite of buildings that make up these proposals is the energy centre. It will contain the main boilers, absorption chillers, standby generators and switch gear for the whole campus. As such, the energy centre is a critical component in the realisation of the master-plan in that it will provide key services to all the major new buildings featured in it, which include the adult and children's hospitals and the laboratory buildings. Given its relationship to these adjoining facilities, its detailed design and layout of engineering services needs to be informed by the buildings it is serving. The finalised locations of exhausts/ventilation louvers, maintenance requirements and the impact this has upon the façade composition, therefore continues to be refined. Accordingly, and following



Detailed façade study of the children's hospital

discussion with GCC, the illustrative images adjacent which represent the proposed intent will undergo further refinement to the North and East elevations through ongoing dialogue with GCC.

Notwithstanding the above refinements, the submitted proposals do clarify the location, scale and basic form of the energy centre and the following aspects are noted:

The energy centre is located immediately adjacent and to the north of the laboratory building and will consist of three stacked floors of enclosed engineering space with an open roof-top zone of external plant, bounded by screening. Given the size and operational requirements of the equipment, floor-floor heights are (6m approximately) so the overall height of the building is equivalent to five or six standard storeys and is not dissimilar to the adjacent laboratory block.

The energy centre is conceived as a simple cube-like structure which takes its under-lying design direction from the strong context offered by the adjacent laboratories building. The vertical emphasis to fenestration/louvers, use of a masonry base and adoption of a white panelled back-drop to the façade composition are all factors that are intended to be adopted in the energy centre façade composition.

In addition, it will be one of the first buildings encountered upon arrival down the proposed 'boulevard' off Govan Road. The building could therefore function as a gateway to the site and could offer possible opportunities which will be explored through dialogue with GCC.

Energy Centre – development studies. Note – the above images are for information only and are subject to further development and supplementary submissions

## 5.0 Related Planning Approvals

### 5.1 Multi Storey Car Park A1

Three main multi-storey car parks (MSCP) are proposed adjacent to the separate Adult and Children's Hospitals' entrances to reduce walking distances from parking spaces to the main entrances.

Glasgow City Council granted detailed planning permission for Multi Storey Car Park 1A on 15th September 2009 (Ref: 09/00361/DC) . Work commenced in the construction of Car Park 1A in April 2010.

### 5.2 Laboratories Block

In July 2009, NHS-GCC submitted a detailed planning application (Ref: 09/01676/DC) for the provision of some 23,500 sq m of medical laboratory accommodation, including mortuary facilities and facilities management for the new adult and children's hospitals. The planning application was accompanied by the 2009 Campus Masterplan which provided an update of the 2007 Campus Development Plan to reflect the exemplar design to be procured through a Design and Build Contract. Glasgow City Council granted detailed planning permission for the laboratories facilities on 01 December 2009, subject to thirty-two planning conditions addressing a range of issues including materials, roads, trees, landscape design, flooding and drainage.

View of proposals from east and new multi-storey car parks

## 6.0 Consultations & Design Development

### 6.1 Consultation with Glasgow City Council

Since engagement on the implementation of the successful bid proposal in January 2010 a number of detailed workshops, briefings and meetings have been held with Glasgow City Council representatives in order to ensure an adequate level of consultation and collaboration. In relation to the architectural scheme, prior to submission, seven sessions have been held and the submitted proposals have developed over the course of these sessions in response to the discussions held.

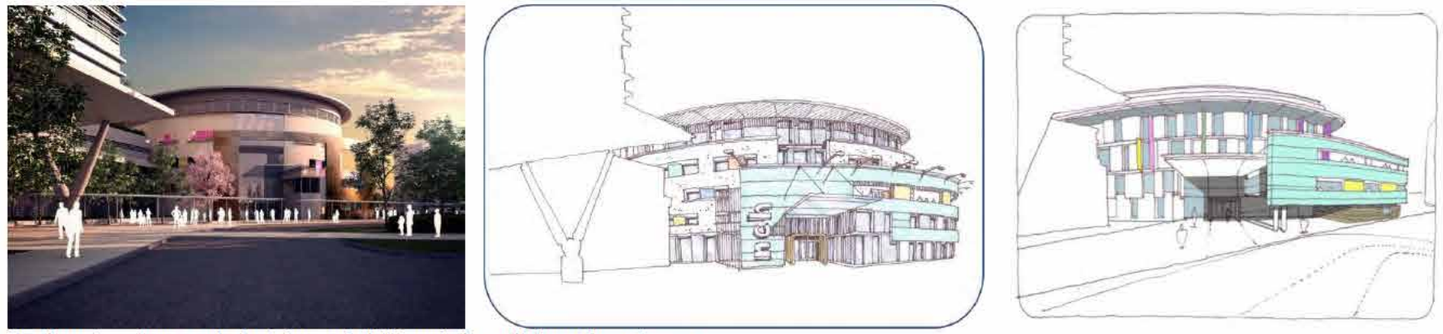
### 6.2 Consultation with Architecture & Design Scotland

In addition, two pre-application engagements with Architecture and Design Scotland (A+DS) have taken place. On 21st April 2010 a pre-application presentation was made to an A+DS review panel, principally to explain the masterplan proposals which were submitted subsequently on 22nd April 2010, but also to gain comments on the direction of the architectural design at that stage. A+Ds recorded their comments in a report dated 10th May 2010.

Following receipt of A+DS's comments a document was issued to A+DS on 24th June 2010 summarising the extent to which the proposals had addressed the feedback recorded in their 10th May report. It is understood that although A+Ds will be formally consulted following submission of the application, a further Design Review Panel presentation will not be necessary, based upon the content of the information submitted on 24th June 2010.

### 6.3 Design Development

The principal areas of design development which emerged are discussed



Design development sketches of children's hospital main entrance

Final proposals for children's hospital main entrance

below and responded to the following key areas of concern as raised by GCC during early workshops:

- The degree to which the two main parks ('Central' park and the children's park) are connected both physically and visually.
- Following the above, the arrangement of architectural elements that made up the main arrival space was deemed too disparate and lacking clarity.
- Material selection – principally the predominant use of render to all elevations at the lower levels of the scheme, including the key public realm interfaces.
- The uniform treatment of the inpatient 'tower' and the lack of consideration of orientation and urban aspect.

Prior to engagement with A&DS on 21st April 2010, the scheme was refined in order to respond to these concerns as follows:

- As discussed extensively in the Master-plan submission, a key development in the genesis of the design was the introduction of the 'dock' element. The dock, a geometrical device for linking the two main parks and providing an organisational mechanism for all elements arranged along the main arrival space, consists of a clearly expressed surface treatment which also imposes a rigour to the whole arrival interface. This new approach specifically introduced a re-working of the lower floors of the children's hospital entrance façade to embody a new geometric emphasis.

- As a response to both the comments received and the requirement for increased internal clinical space, a greater degree of playfulness and engagement with the children's park was introduced through the projection of the consult/examination rooms in a westerly direction and their expression as large 'play-block's through the use of coloured cladding.

Sketch view of 'pedestrian dock'

- Material selection was reviewed with a view to achieving a more hierarchical approach to the differing degrees of public interface across the main facades. Principally, the locations proposed for render was reviewed together with the use of rainscreen cladding panels.

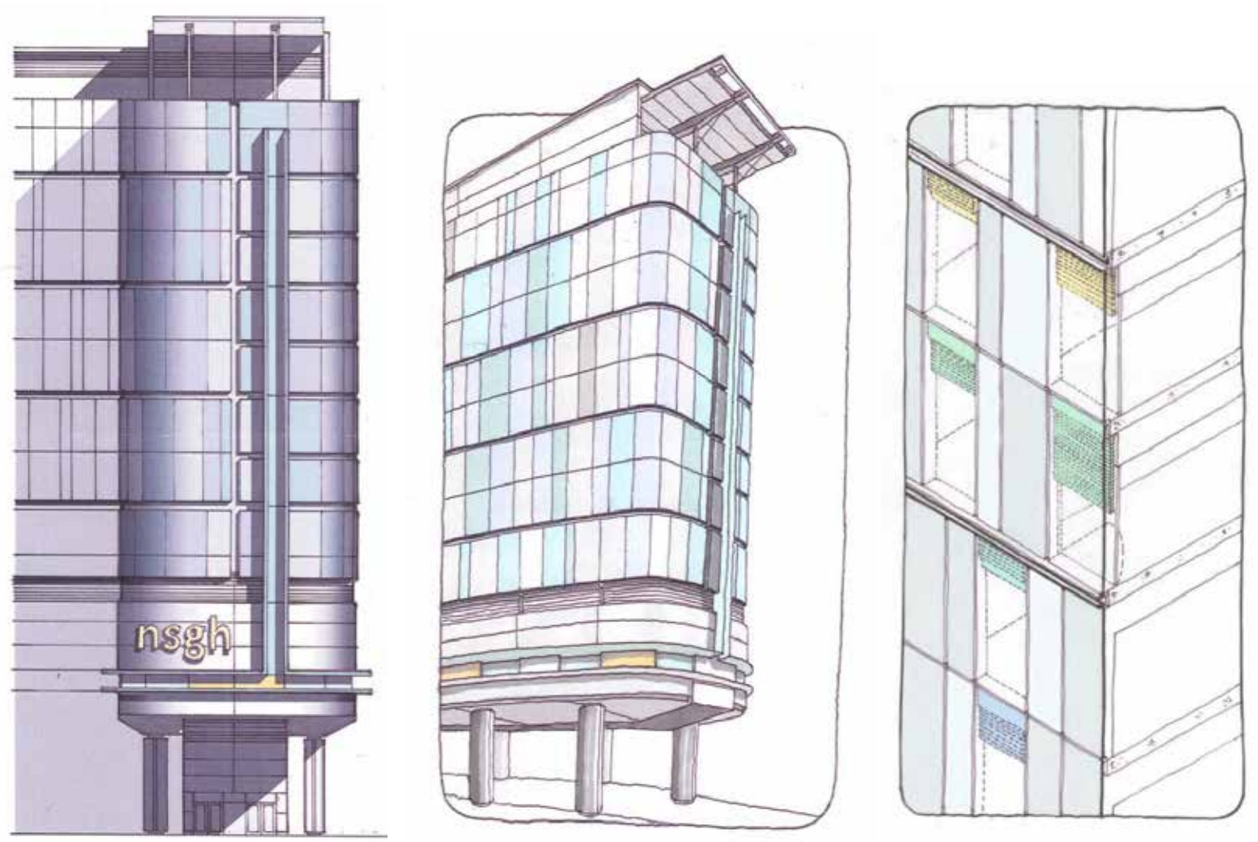
- The inpatient 'tower' and its articulation was reviewed with a view to sub-dividing the form into two recognisable 'halves' arranged either side of an east/west facing central linking element, together with expressing the social spaces introduced into the ends of each tower 'wing'.

Following the receipt of comments from A&DS on 10th May 2010, further refinement was undertaken as follows:

- The report identified the need to further review the articulation of the proposed inpatient block ('the beacon'). Issues identified included the uniform, flat roof-line and the extensive use of glass as a cladding material. In response, the scheme has considered the silhouette of the scheme, through study of the Glasgow Urban Model, and now proposes a more expressive roofline through the emphasis of an extended eaves condition to each wing and sloping parapet walls to the plant rooms.

- A simplified approach to material selection was also suggested in the report. The response suggested a hierarchical approach that emphasised the northern, arrival space facing façade and accepted that elements of the remaining facades could be treated according to their function/location. A detailed description of the proposed material selection is contained in Section 7.

- Following the report's recommendation that the legibility of the entrances facing the main arrival zone should be reviewed, the children's hospital entrance has been re-configured to better




Development sketches of proposed inpatient block

respond to the geometry of the 'dock' and to ensure adequate space is provided between the building edge and the Fastlink drop-off allowing the large amount of foot-fall expected from the western car-park to be adequately catered for.

- Further commentary contained in the report referred to the treatment of courtyards and internal aspects including the main atrium and hospital streets. Further detailed commentary regarding the treatment of courtyards is contained in the Landscape document. The final resolution of the atrium and hospital street spaces is subject to ongoing user engagement.

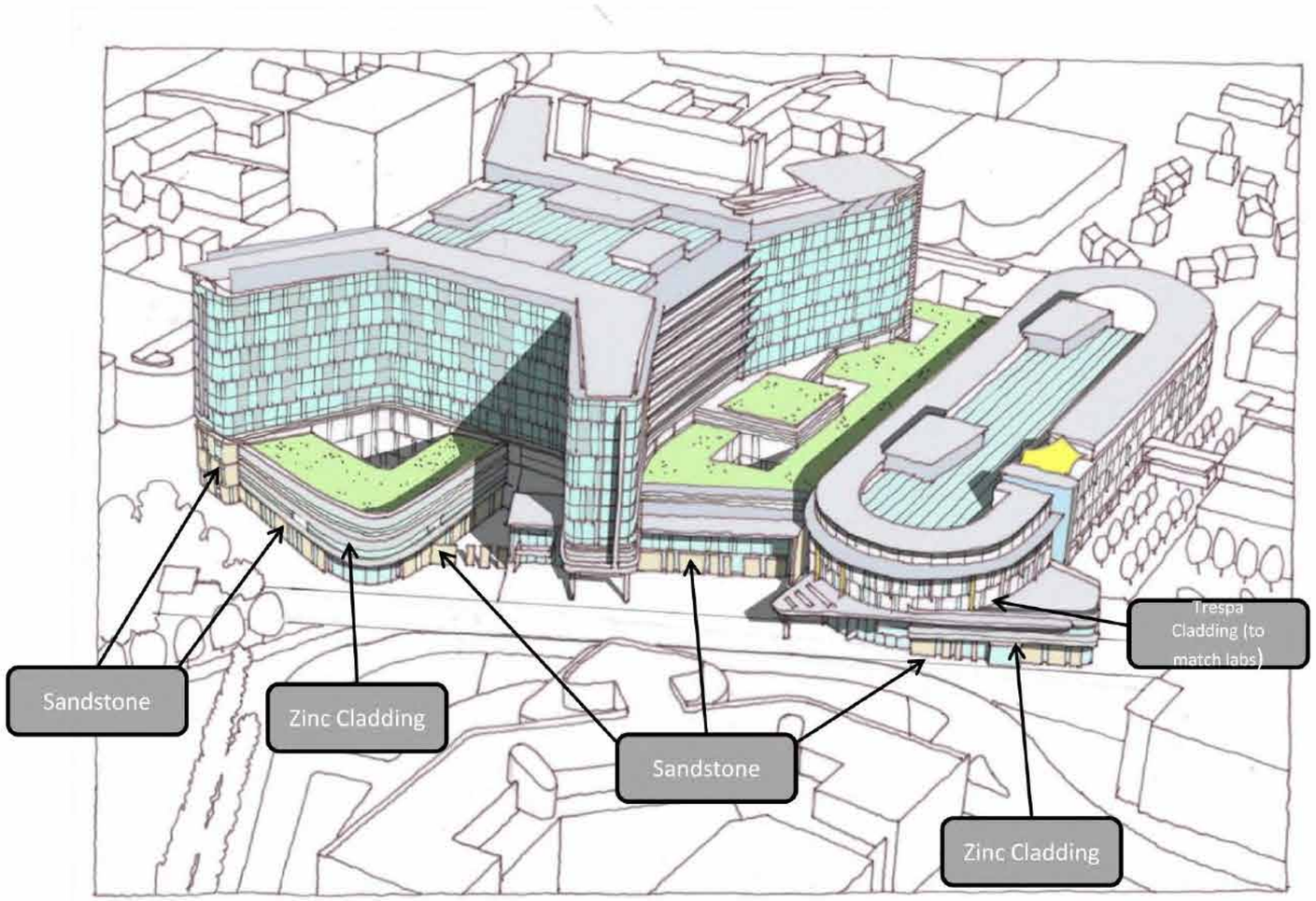
## 7.0 Materials/Finishes Strategy

### 7.1. Hierarchy

Engagement with GCC Planning department has identified the strategy for material selection and the adoption of an 'hierarchical' approach being key issues for discussion and development. It has been recognised that the scheme has a varied degree of public interface with some facades being dominant, due to the presence of main entrances such as the north elevation, and other facades, some of which are more functional such as the south façade where A&E is located, being treated in a more subservient manner. There has been an acceptance therefore that a uniform application of materials is not strictly necessary and that some facades, particularly where the main arrival zone is looked upon, should have an enhanced treatment.

### 7.2. Public Realm - North Elevation/Main Entrances/Public Park

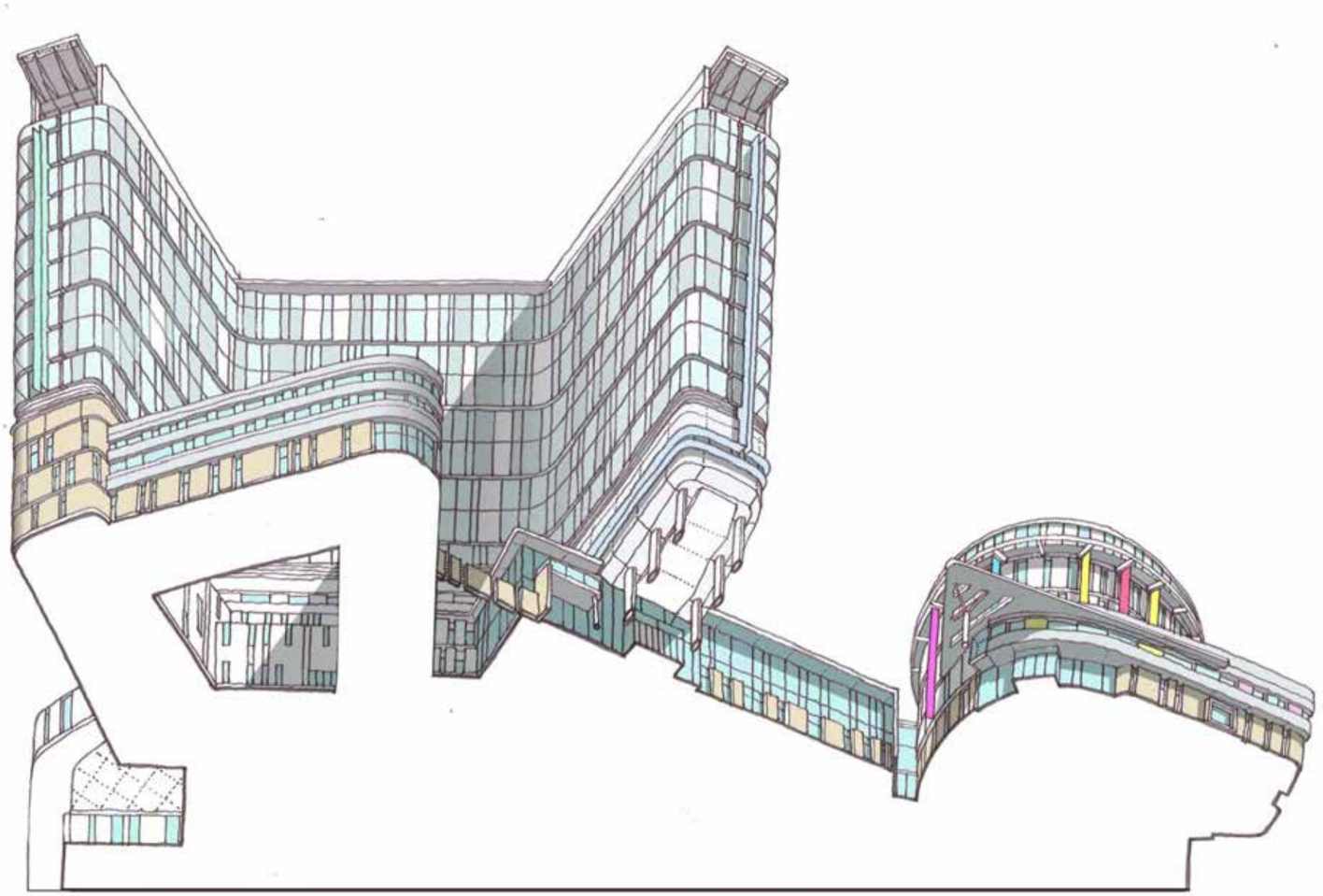
The importance of areas of major public interface has been recognised in material terms, particularly in relation to building facades that face the arrival zone (outside the laboratory block) and the main eastern car-parks/children's park. The north elevation and the return facades opposite, to the east, the main car-parks, and to the west, the children's park, and its reading as the main public face of the building has therefore been focussed upon as an area where the material treatment should be enhanced. Accordingly, high-quality natural materials are intended to be applied to these key areas. Natural sandstone (to match that installed at the existing neo-natal building and proposed car-park structures) is proposed as a plinth with fenestration adopting the 'DNA' patterning advocated in the base concept and used elsewhere. The curvilinear forms of the children's hospital and the outpatient block, which both engage with the diagonal 'pedestrian dock' element indicated in the masterplan, are expressed in zinc panelling with horizontal standing-seam joints. The material link between these two elements will provide the consistency and continuity to the arrival zone



frontage demanded by the masterplan whilst maintaining individual building identities.

Coloured panels are proposed between windows within the horizontal slots to the OPD block and projection to the children's hospital.

Matching the main panel treatment used in the laboratory block, the northern end of the children's hospital has a similar treatment through the use of vertical high-pressure laminate rainscreen panels (Trespa or similar). The base of the inpatient block, elevated above the main entrance to the adult facility, is expressed in aluminium panelling, which continues as a soffit treatment, as indicated in the sketch 'worm's-eye' view which has been generated in order to consider soffit treatments to this key façade.



'Worms Eye' Axonometric View of Northern Facade

### 7.3. Secondary/Tertiary Elevations/Spaces

Other areas of the building also adopt the 'DNA' approach mentioned above with a focus on panels of either masonry blockwork to ground floor areas with upper floors using through-colour render systems. Separation of render panels vertically, via the introduction of horizontal aluminium channels, assists in binding the whole composition together and mitigates against potential workmanship/weathering problems associated with render and the incorporation of movement joints, drips etc. The eastern, southern and western facades follow a treatment which uses a robust plinth (good quality facing blockwork) at ground floor with upper floors in render. Plant floors are treated with insulated aluminium panelling with continuous banks of horizontally laid aluminium ventilation louvers.

### 7.4. Inpatient Block

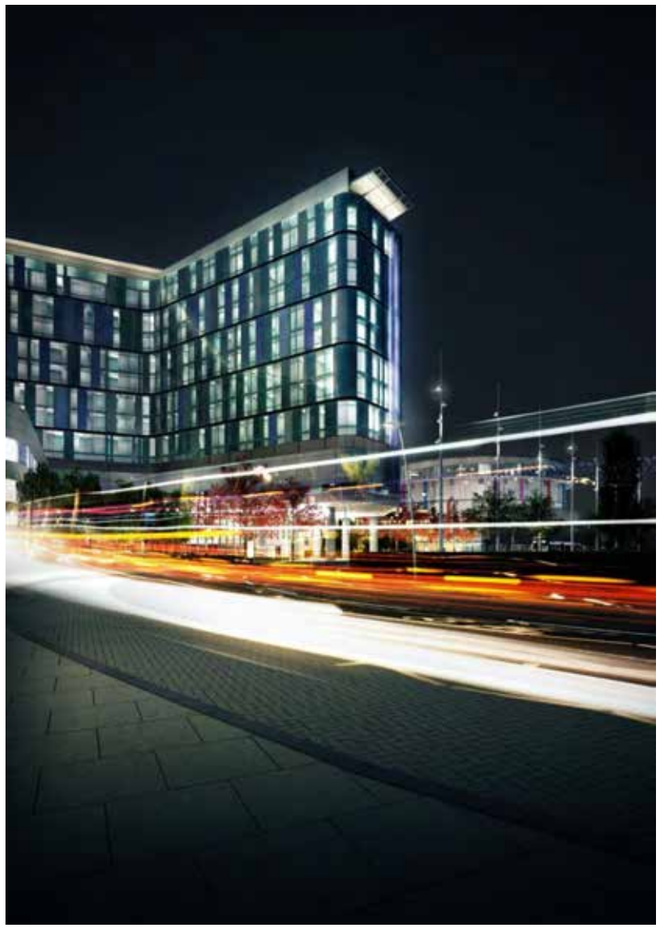
The inpatient block/beacon is expressed as a consistent glazed form. As discussed, with the expression of the block as two halves separated by a central linking element, the pairs of wings facing either north or south are

arranged in paired horizontal bands, separated by a recessed aluminium channel. The proposed glazing system is a unitised curtain walling system with no visible external transom/mullion caps. Vertical mullion lines are arranged based on a series of module widths. Verticals do not continue beyond paired floors with a staggered vertical effect lessening the uniformity that might otherwise result and enhancing the horizontal emphasis. As well as transparent elements ( a full height panel for each patient bedroom) the inpatient block cladding consists of a range of coloured enamel-backed glazed spandrel panels. These panels have a range of colour treatments with tones ranging from white through several shades of grey to a heather/grey purple colour. The colour is proposed to have a greater intensity on the flat north/south facing facades with a reduction as one moves towards the ends of each wing.

Colour is also proposed to be applied within the interior of each patient bedroom providing a layered approach. Opportunities to exploit the possibilities offered by applying colour to internal bulkheads/reveals and interstitial blinds fitted within a tertiary glazing system are being considered and will add further interest and depth to the glazed façade approach.

The ends of each wing (with the exception of the south western wing accommodating the helipad lifts/stairs) is highlighted with a pair of aluminium fins, located to accord with one of the main perimeter structural columns, and with a coloured central panel intended to be up-lit at night. These fins continue to form horizontal brise soleil elements to the horizontal windows at level 2 on the main entrance wing.

The linking central facades facing east and west are given a different treatment in order to break down the mass of the block, especially when viewed from a distance from the east and west. Rather than continuing the fully glazed treatment, this section is expressed as a more solid element through the use of aluminium panelling with a darker grey colour.



# *APPENDIX K*

# *DESIGN STATEMENT PART 2: LANDSCAPE AND PUBLIC REALM*

# New South Glasgow Hospitals

# Design Statement

## Matters Specified in Condition (2)

*Site Design, External Appearance and Landscaping*

## Part 2: Landscape and Public Realm

Brookfield

NHS Greater Glasgow and Clyde

# New South Glasgow Hospitals

# DESIGN AND ACCESS STATEMENT

| | |
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| Document Revision: | D03 |
| Issue Date: | 26/07/2010 |

Brookfield

NHS Greater Glasgow and Clyde

# document structure

part 1
## introduction

+ planning context
+ 2010 campus masterplan
+ msc process

part 2
## Masterplan & Designed Places

+ Masterplan Structure
+ Designed Places

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# 1.0
# Introduction

## Introduction

This document is part two of the Design Statement which has been prepared to discharge a number of conditions contained in the formal Matters Specified in Condition for the New South Glasgow Hospitals project. Part one presents the design intent for the architectural proposals. Part two (this document) relates to the external environment. The conditions are summarised below. This document is primarily concerned with Condition 2 – Site design, external appearance and landscaping but also responds to:

- No. 5 Tree Survey and Arboricultural Report,
- No. 8 Tree Protection Method,
- No. 26 Pedestrian and Cycle Routes,
- No. 28 Cycle Parking Provision .

## Structure of this Document

The first section places the MSC into the planning context for the project and describes in outline the process related to the consented 2010 Campus Masterplan. Section two presents the design proposals for the landscape and public realm. As such, it describes the designed places which together form the external environment of the hospitals, including primary arrival spaces, parks, internal courtyards, green roofs and roof gardens. These individual places are described in terms of their form, their function and their design. Each place is explained and presented in plan form, with additional supporting visualisations to communicate intentions related to appearance and character.

The third section presents the more detailed design intent for the campus environment. This illustrates how the design of the main places is to be realised in terms of materials and treatments, furniture and lighting. Through the use of a simple, consistent and robust palette of materials, the individual places will be drawn together to create a cohesive and legible campus environment. The Masterplan submission described the ambition for a landmark healthcare campus with a strong identity and an enduring legacy. This section describes how this is to be achieved.

It is intended that the design will support two strands of identity for the campus. The first is the high level brand and identity for the new campus as a whole, based upon the landmark character of the new hospitals. The second strand is the finer grain of identity which is to be created for each of the identifiable places within the campus  an aid to legibility.

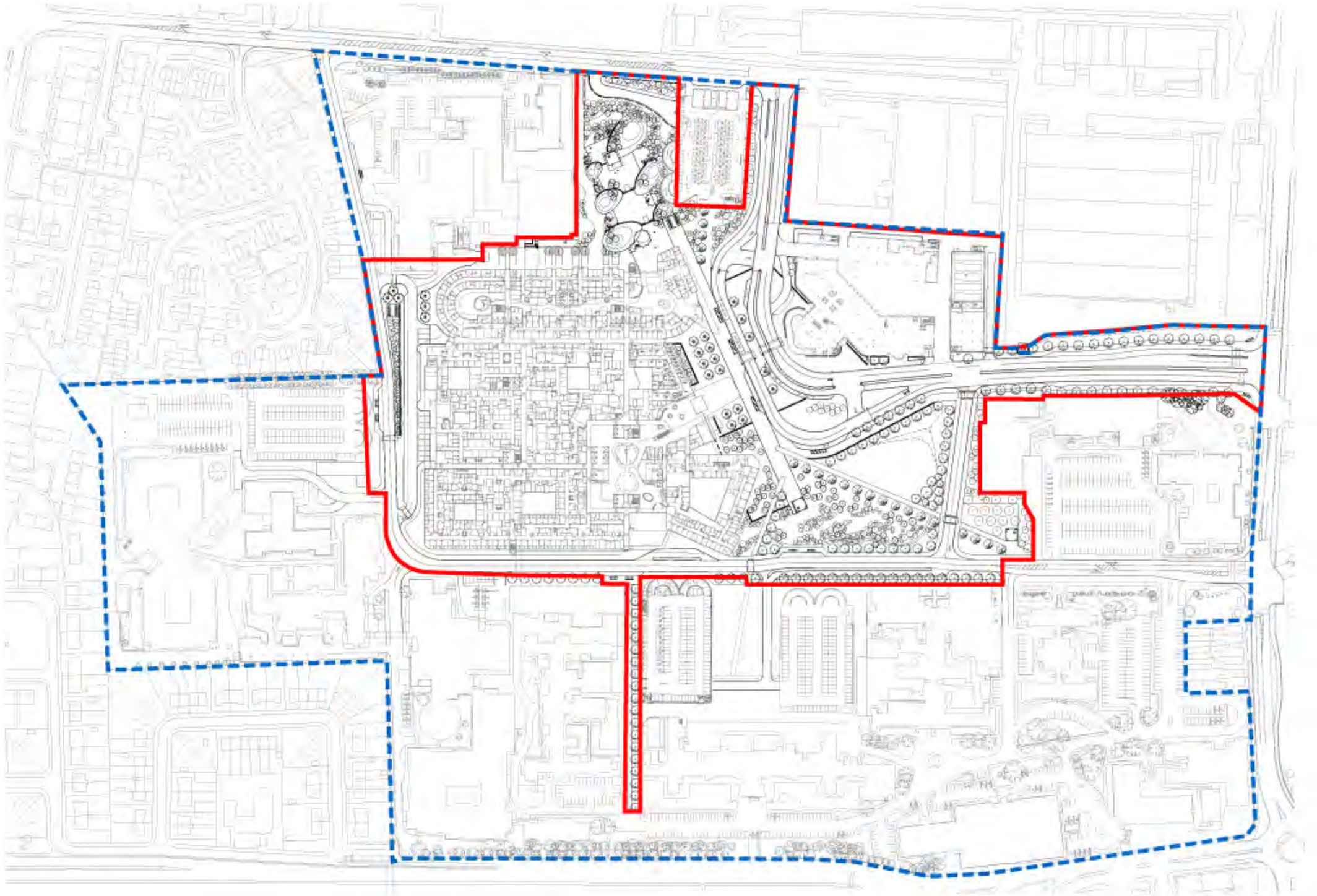
## Ongoing Design Activity

An outline strategy for signage within the campus has been included and more detailed design development related to the design and appearance of the coordinated suite of signs is to be undertaken as the design is developed.

A number of elements which will form part of the final scheme are being developed by the project team, in response to the consent which has been secured for the Masterplan. This landmark within the process has enabled certain intentions to be fixed as a platform for more detailed consideration. Some components have not been sufficiently developed at this point to support a detailed application. This reflects the complex and multi-faceted nature of the design process for a complex hospital environment. An example related to the external environment is the design of the courtyards within the footprint of the hospital. The design concept for these areas has been established, but resolution of the design at a more detailed level in each space will require further collaboration within the team and resolution of clinical programming and functions for adjacent room types at each level of the building.

A number of additional elements have been included as supporting appendices to reinforce the submission. These include management and maintenance proposals, plus the campus-wide strategy for pedestrian movements and facilities for cycling.

Central medical block and clock tower (listed building)



Red line and Blue line Boundary

part 1

# introduction

+ planning context
+ 2010 campus masterplan
+ msc process


**2.0 Planning Context**
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# 2.0
# Planning Context

## 2.1
## Outline Planning Consent

In April 2007 the Board lodged an outline planning application with Glasgow City Council which was accompanied by an Environmental Statement. The planning application and ES were the subject of consultation with an extensive range of statutory and non statutory bodies, agencies and the general public. The application was reported to the Council's Development and Regeneration (Development Applications) Sub Committee in January 2008, with a recommendation for approval. The Sub Committee voted to grant outline planning permission subject to 43 planning conditions and the signing of a Section 75 Agreement. The outline planning consent for the New South Glasgow Hospitals project was issued by Glasgow City Council on 30 July 2009.

The consent states that subsequent planning approvals will be dealt with as 'Reserved Matters'. This two-stage approach means that there will be a requirement for reserved matters applications to be scrutinised by the planning authority to determine whether further environmental information and assessment is required to allow the detailed consideration and determination of reserved matters.

The proposed Condition No. 2 of the Outline Planning Consent states that:

Approval of the details of the siting, design and external appearance of the building(s), the means of access thereto and the landscaping of the site (hereinafter called the reserved matters) shall be obtained in writing from the Planning Authority prior to the start of any work on site. All reserved matters to be submitted for approval within three years of the date of this permission.

Reason: In compliance with Section 59 of the Town and Country Planning (Scotland) Act 1997.

With the implementation of the Development Management component of the Planning Etc. (Scotland) Act 2006 on the 3 August 2009, the submission of 'reserved matters' applications was replaced by the submission of 'Matters specified in Conditions' applications.

## 2.2
## Masterplan Consent

In April 2010, a Matters Specified in Conditions (MSC) application (Ref: 10/00945/DC) was submitted to Glasgow City Council to audit the changes between the indicative campus masterplan and the finalised masterplan, and assess the extent to which the finalised masterplan accords with the ES, as required by Condition No.1 of the Outline Planning Permission. The application outlined the following information.

- Setting the scene
- Strategic Context
- 2007 Campus Development Plan
- 2009 Campus Masterplan
- 2010 Masterplan
- Site Context
- Design Vision
- Masterplan Layout
- Landscape Framework
- Elements of the Masterplan
- 2010 Masterplan Strategies
- Transportation
- Site Circulation
- Landscape
- Drainage
- Arts and Healthy Environment
- Sustainability

The MSC application was approved by Glasgow City Council on 24 June 2010, subject to six conditions addressing issues including waste management, surface water, residential amenity, and wind turbines.

This Document represents the next stage in the planning process and is accompanied by a set of drawings which complete the submission

2007 Campus Masterplan

Existing Site. River Clyde to the North

# 3.0
# 2010 Campus Masterplan

## 3.1
## Introduction

The 2010 Campus Masterplan updated the previous stages of the development process for the campus. The Masterplan document explained the extension of the proposal and the rationale for the design intent. It also explains the fictional characteristics of the site and made clear the relationship between the retained estate and the new buildings. This document is part of the planning process and follows a logical design sequence. This document should be read in conjunction with the 2010 Campus Masterplan and an understanding of this earlier document is required to complete the picture

## 3.2
## City Context

The New South Glasgow Hospitals project is located on the existing 28 hectare Southern General Hospital site, situated on the south side of the River Clyde in the Govan district of Glasgow. The surrounding land uses consist of a mixture of residential to the south and east, industrial and business to the west, hi-tech industry to the north and the Shieldhall Wastewater Treatment Works to the northwest. The area is suburban in character. The local environment is low in quality and most of the built form is industrial in design and poor quality in terms of fabric and finished materials.

The existing hospital site dates from 1872. Further expansion commenced in the 1900s and 1950s, followed by the Maternity Unit in 1970 and the Institute of Neurological Sciences in 1972. Additions in the last 5 years have included the Department of Medicine for the Elderly, the Westmarc building, extensions to both biochemistry and pathology buildings, and the recently commissioned Neonatal Unit.

Arrival Space concept sketch

Context plan

2010 masterplan aerial


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## 3.3
# Masterplan Principles and Design Development

### Design Vision

This section reaffirms the vision for the New South Glasgow Hospitals Project based upon design work by the appointed contractor and design team. The vision is based upon the creation of a landmark healthcare campus environment with emphasis upon a green character as an influential setting for state of the art hospital facilities. It is intended that the design of the external environment should be an appropriate response to the scale, significance and profile of the project.

The setting of the new buildings within a designed sequence of public spaces is intended to de-institutionalise the hospital environment as far as possible and to create an engaging environment with a variety of designed external spaces. The structure of the campus has been defined in response to function, clarity and ease of access and circulation. The 2010 Campus Masterplan has sought to make the best possible use of the site and the opportunities presented by the scale of the campus redevelopment. The design includes an arrival space which functions as a transport hub, an enhanced central park, a further Children's park dedicated to the new Children's hospital and a new entrance boulevard.

These primary spaces are complemented with additional primarily functional areas associated with Accident and Emergency and the creation of clear and direct routes for emergency vehicles. Different entrances and exits are located around the base of the podium to respond to the complex internal layout of the building. Simple functional access points will be clearly identifiable for visitors and patients.

The clear external way-finding continues within the buildings and the setting of entrances and buildings has been defined to optimise orientation and create an identifiable entrance area for the new public buildings. It is intended that the hospital buildings will be set within a green environment which is scaled in response to those buildings and to provide an extensive and influential green carpet. In this way other site buildings will also benefit from the enhanced green setting. Clear links to surrounding areas are proposed for pedestrians and cyclists and routes will be provided to create links through the large campus site. The Masterplan is intended to create a lasting green legacy for the site and the surrounding communities.

### Key Objectives:

- Maintaining the current and future operation of the site
- Intuitive way-finding throughout the site
- The creation of an approachable and compelling green healthcare campus
- A landmark design of appropriate quality
- The creation of a lasting legacy for Govan and Glasgow

### Design for the Future

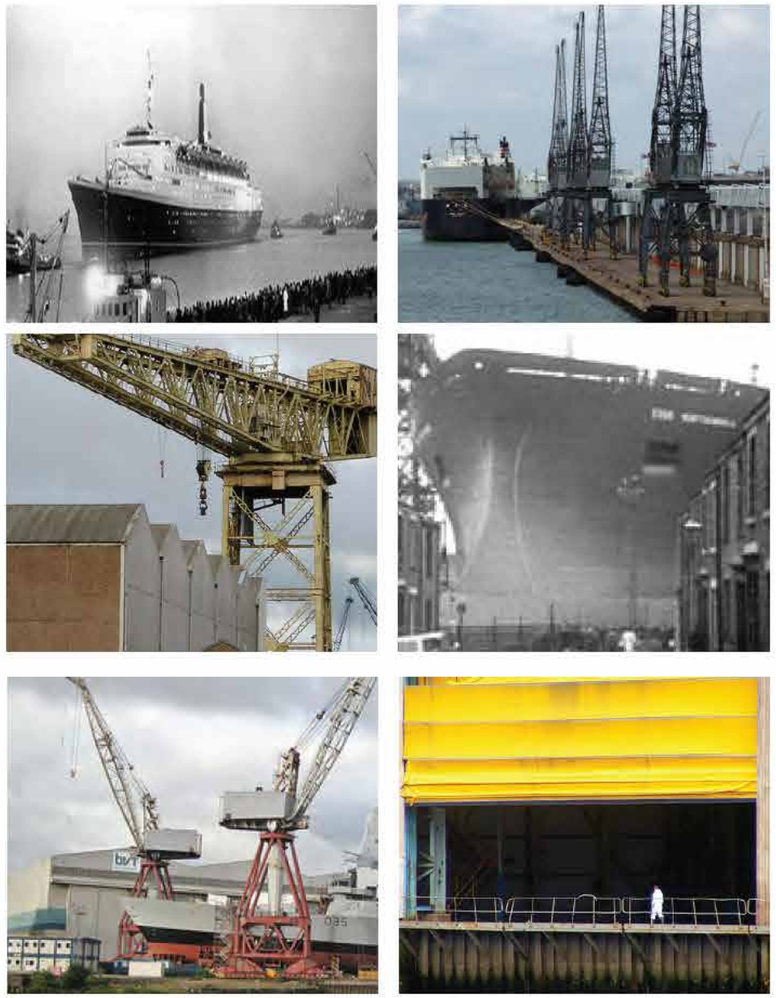
The design approach for the project has taken account of the location, the site context and the rich heritage of the River Clyde corridor. A creative response to this heritage has informed aspects of the design concept for the Masterplan and the buildings and it is intended that a creative approach to the healthcare environment is embedded within the ongoing design process. This is to be achieved through the extensive public art strategy, the activity of the Board's healthy living and environment teams and the creative response of the design team. Whilst heritage is an important point of reference, this project is of regional significance and is to be forward-looking to create a powerful legacy and regional landmark.

### Design Concept

At this stage, simple ship-building references have been used to describe some of the characteristics of the building forms and the functional characteristics of the masterplan scheme. The project is large and complex and a simplified conceptual approach to exploring the forms and their relationships can assist in explaining the design. The design concept is also useful as a means of exploring the intended character and 'personality' of important parts of the project.

The ship-building concept applies to the conceptual form and character of the new hospital buildings, which have been defined as a Dock (the broad podium), a Landmark Beacon (the ward tower located on the podium) and a vessel anchored alongside the dock (the Children's hospital). This captures the coming together of the primary components of the new hospital buildings and bridge links to maternity and neurosciences are referred to as anchor points for the new hospital buildings to connect appropriately with the existing site.

The Masterplan has been refined to enhance the intuitive way-finding and make clear the location of entrances and important destinations. The arrival square at the heart of the new green campus has been explored in simple functional terms as a dock edge where people are delivered by a variety of means (buses seen conceptually as ships coming and going). Visitors, staff and patients then move along a linear dock edge towards their destinations, which are positioned to relate to the layout of the dock.

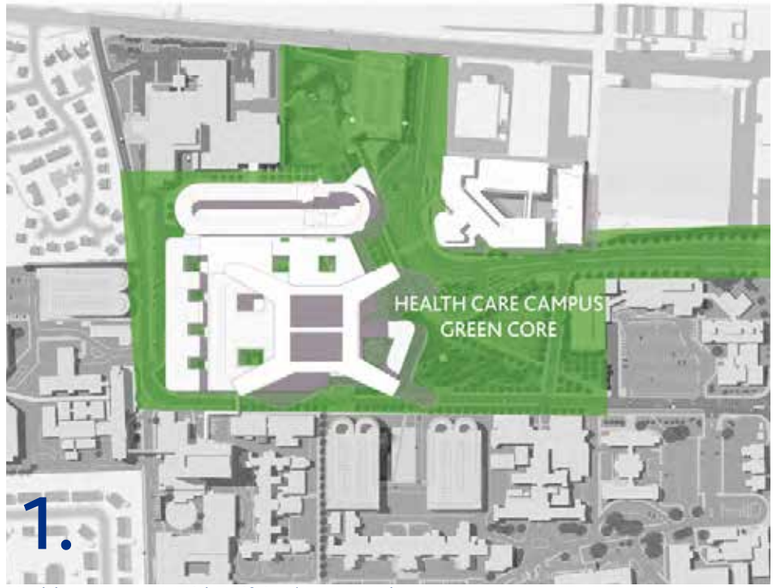


The Clyde corridor has a rich industrial heritage of large structures and big buildings

## Spatial Character

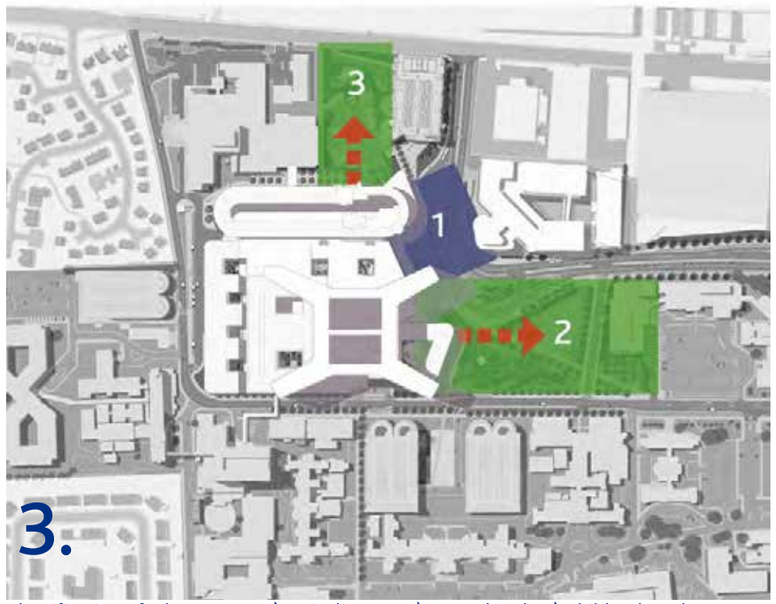
The following diagrams identify the key spatial concepts for the masterplan, which are then subdivided into smaller character areas responding to their immediate context whilst not losing sight of the over arching principle - that of the campus being essentially green at its core. The campus landscape functions to stitch the new and old architecture together through a consistent approach to the design language.

The process of establishing a hierarchy of spaces identifies an opportunity to link the 3 key spaces through the Arrival Space.




Healthcare campus with unifying 'green core'

Clear distinction between children's and adults/acute hospitals helps to inform adjacent landscape character




Identification of 3 key spaces: 1) Arrival Space 2) Central Park 3) Children's Park
The parks have direct connection to the respective buildings they serve

Establish connection between the two parks through the Arrival Space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# 4.0
# MSC - Landscape & Public Realm
## 4.1
## Matters specified in condition

The grant of outline planning permission for the New South Glasgow Hospitals project was issued by Glasgow City Council on 30 July 2009 (Ref: 07/01158/DC). In terms of landscape issues, the outline consent was granted subject to the six conditions which are listed below. These planning conditions form part of a comprehensive 'Matters Specified in Conditions' application lodged with Glasgow City Council in mid July 2010 for consideration and determination by autumn 2010 prior to the lodging of the Final Business Case with NHS – Greater Glasgow and Clyde.

### No. 2 Site Design, External Appearance and Landscaping

Approval of the details of the siting, design and external appearance of the building(s), the means of access thereto and the landscaping of the site (hereinafter called the reserved matters) shall be obtained in writing from the Planning Authority prior to the start of any work on site. All reserved matters to be submitted for approval within three years of the date of this permission.

Reason: In compliance with Section 59 of the Town and Country Planning (Scotland) Act 1997.

### No. 5 Tree Survey and Arboricultural Report

A detailed tree survey and arboricultural report shall be submitted a part of the landscape framework required under condition 3. This should show the exact location of all existing trees on site including a note of height, species, base level and extent of canopy or branch spread. The plan should indicate those trees it is proposed to retain and those which the applicant intends to remove. No trees on the site shall be lopped, topped, felled or removed without the prior written approval of the Planning Authority. Any tree removed under the terms of the written approval shall be replaced by a tree of similar species and appropriate size at the locus.

Reasons: (1) The site is currently the subject of Tree Preservation Order (TP0) GDC 052 1995 affecting those trees listed in its schedule protection under the Town and Country Planning (Scotland) Act 1997. (2) The tree cover on the site currently provides and contributes to wildlife habitat provision, visual amenity and diversity along with screening to external traffic.

### No. 8 Tree Protection Method

All retained trees on site shall be protected by a satisfactory method to be agreed in writing with the Planning Authority before any work commences on site. The agreed method of protection (as set out in BS5837/2005) shall be maintained on site until completion of all works in the vicinity of the trees.

Reasons: (1) To enable the Planning Authority to consider this/these aspect(s) in detail.
(2) In order to protect the trees on site and visual amenity of the surrounding area.

### No. 26 Pedestrian and Cycle Routes

A network of internal pedestrian and cycle routes shall be formed within the site to link the new hospital buildings with existing buildings, public transport hub and external pedestrians and cycle routes. Detailed proposals of these proposed pedestrian and cycle routes shall be submitted to the Planning Authority for approval.

Reasons: (1) In the interest of traffic safety at the locus and to ensure satisfactory traffic circulation within the site. (2) In the interests of pedestrian safety.

### No. 28 Cycle Parking Provision

Appropriate levels of safe, secure and sheltered cycle parking shall be provided for staff and visitors in accordance with Policy TRANS 6 of the Glasgow City Plan. The cycle parking shall be evenly distributed around the site, serving all new buildings within the site and suitably linked to internal and external cycle routes. Appropriate shower and changing / locker facilities should be provided for staff cycling to work.

Reasons: (1) In the interest of traffic safety and to safeguard the amenity of the surrounding area. (2) To enable the Planning Authority to consider this/these aspect(s) in detail.

No. 38 Landscape Framework and Management Plan Compliance with Advice Note 3

The 'detailed landscape framework and management plan' required under the provisions of condition 3 above must comply with Advice Note 3 'Potential Bird Hazards from Amenity Landscaping and Building Design'; (available at www.caa.co.uk/srg/aerodrome) unless otherwise agreed in writing by the Planning Authority. These details shall include:
(i) grassed areas,
(ii) the species, number and spacing of trees and shrubs and
(iii) details of any water features.

Reason: To avoid endangering the safe movement of aircraft and the operation of Glasgow Airport through the attraction of birds and an increase in the bird hazard risk of the application site.

4.2

## Ongoing design development and phased packages to follow

The detailed landscape drawings for the internal courtyards for the Adult Hospital are in preparation and will be submitted to Glasgow City Council when complete. In addition, the following planning conditions attached to the outline planning consent will be purified by a subsequent MSC application in August 2010:

No. 20 Ground Contamination Assessment
No. 37 Proposed SUDS Scheme
No. 39 Surface Water Disposal
No. 24 Compliance with GCC Roads Standards

Illustrative 2010 Masterplan aerial view



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part 2

# Masterplan and Designed Places

+ Masterplan Structure
+ Designed Places


5.0 Masterplan Structure
- 5.1 Introduction
- 5.2 Masterplan Structure

6.0 Designed Places
- 6.1 Arrival Space
- 6.2 Central Park
- 6.3 Childrens Park
- 6.4 Entrance Boulevard
- 6.5 Accident and Emergency
- 6.6 Children's Roof Garden
- 6.7 Courtyards and Roof Terraces
- 6.8 Green Roofs

# 5.0
# Masterplan Structure
## 5.1
## Introduction

The consented 2010 Campus Masterplan described the general character and distribution of public spaces within the landscape and open space strategy for the site. This was based upon the development of an expansive green heart to the campus and a connected network of high quality spaces. The landscape framework illustrated the character and form of the various components of the campus design by reference to the types of landscapes to be created. This begins with a summary and update of the structure of the external environment. This section of the design statement now explains the design intent in greater detail and provides an overview of the design process for each discrete place within the structure of the landscape.

Illustrative Campus Aerial View

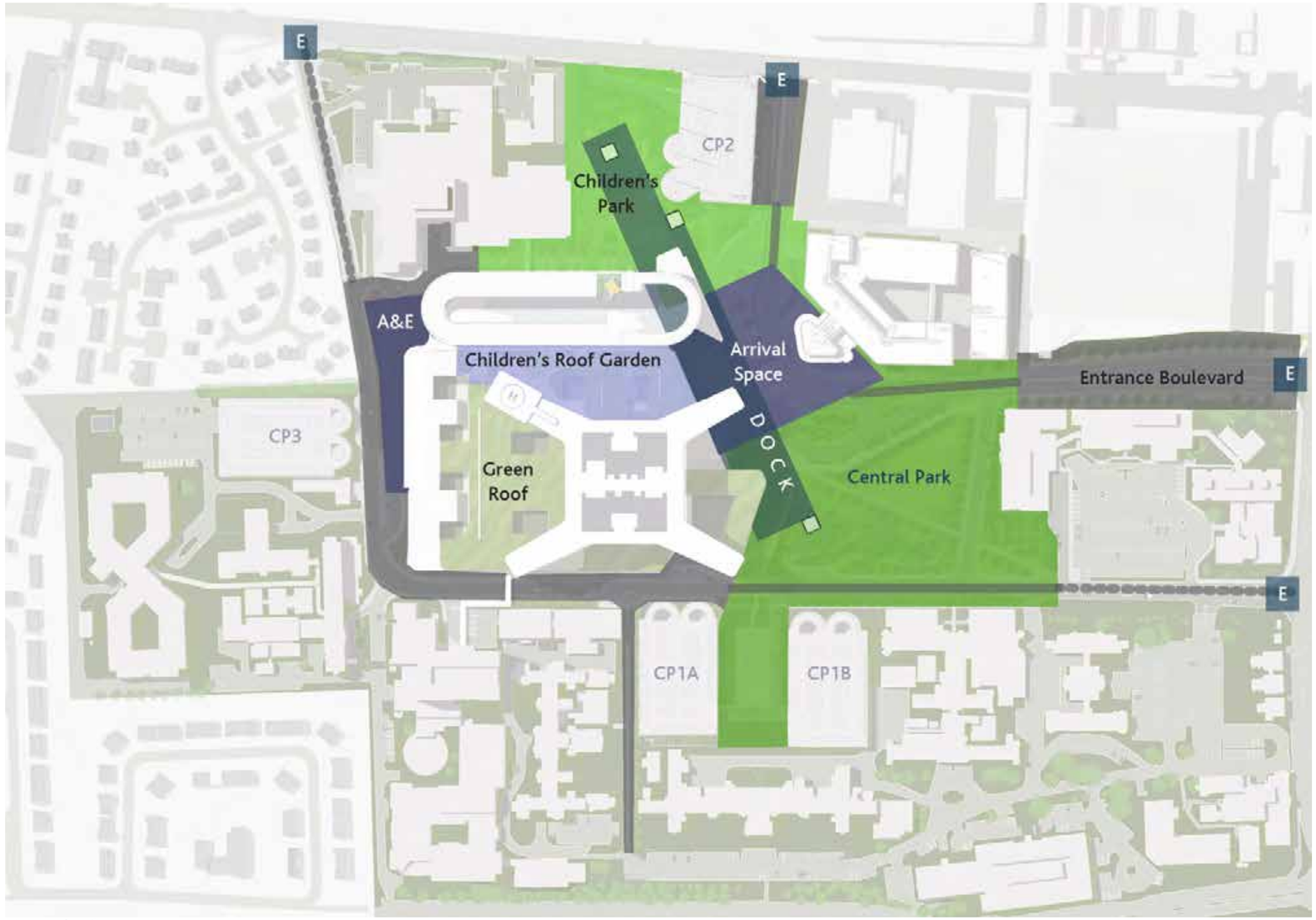
## 5.2
# Masterplan Structure

The layout of the new campus heart has been structured in response to the functional requirements of the hospital site. The hospital has three main entrances. The new entrance boulevard from Govan/Renfrew Road is aligned with the main entrance to the Acute Hospital. The layout has been arranged to aid way-finding and legibility through the placement of key destinations in visible locations. The main entrance is also visible from the Hardgate Road entrance to the site, on approach from the vehicular route and the pedestrian path from the main car park.

An arrival space has been defined to accommodate this main entrance and the entrance to the Children's Hospital. A public transport hub is located within this area to provide a high quality experience for bus users. The extent of the arrival space also encapsulates the entrance to the new laboratories building.

A separate blue light route for ambulances provides a second main route through the campus and this gives direct access to accident and emergency to the south of the building. This route is also used by buses within the campus and for access to the two eastern car parks which frame the listed clock tower and surgical block.

The network of vehicular routes within the campus has been defined in response to two key objectives. The first was to ensure the functional integrity of emergency routes from entry points and within the site. The second was to create a character which would not be dominated by vehicular movements around the extensive campus. Part of this second objective has included the creation of a green park-side setting for the hospital buildings, with direct pedestrian access to and from significant areas of park. This reflects the established intent to provide car parking within multi-storey car parks, thereby reducing the impact of car parking demands upon the layout of the campus.




Masterplan Structure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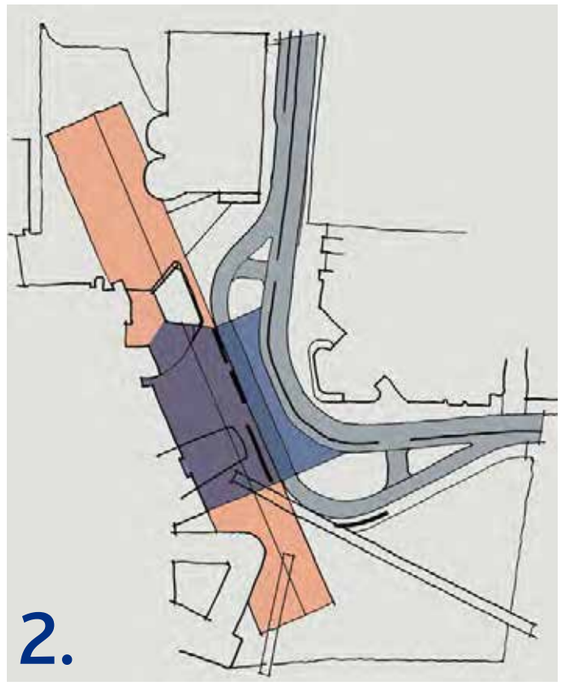
## Dock Geometry

A link between the two parks through the arrival space was defined through realignment of the highway layout to create a meaningful relationship with the form of the hospital entrances. This strong rectilinear feature forms an organisational function within the design and function of the campus. The linear form resembles a dock edge - a passing reference to Glasgow's recent industrial past.

Road and Dock concept
Vehicles draw alongside dock
Movement along dock links hospitals and parks
Focus for desire lines




Road and dock geometry combined with arrival space as a legible focal point combining main entrances

Road and dock located within a broad green campus environment

Geometry retained within a refined park setting to define a sequence of character areas within a clear and identifiable hierarchy of public spaces

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# 6.0
# Designed Places
## 6.1
## Arrival Space

### Structure

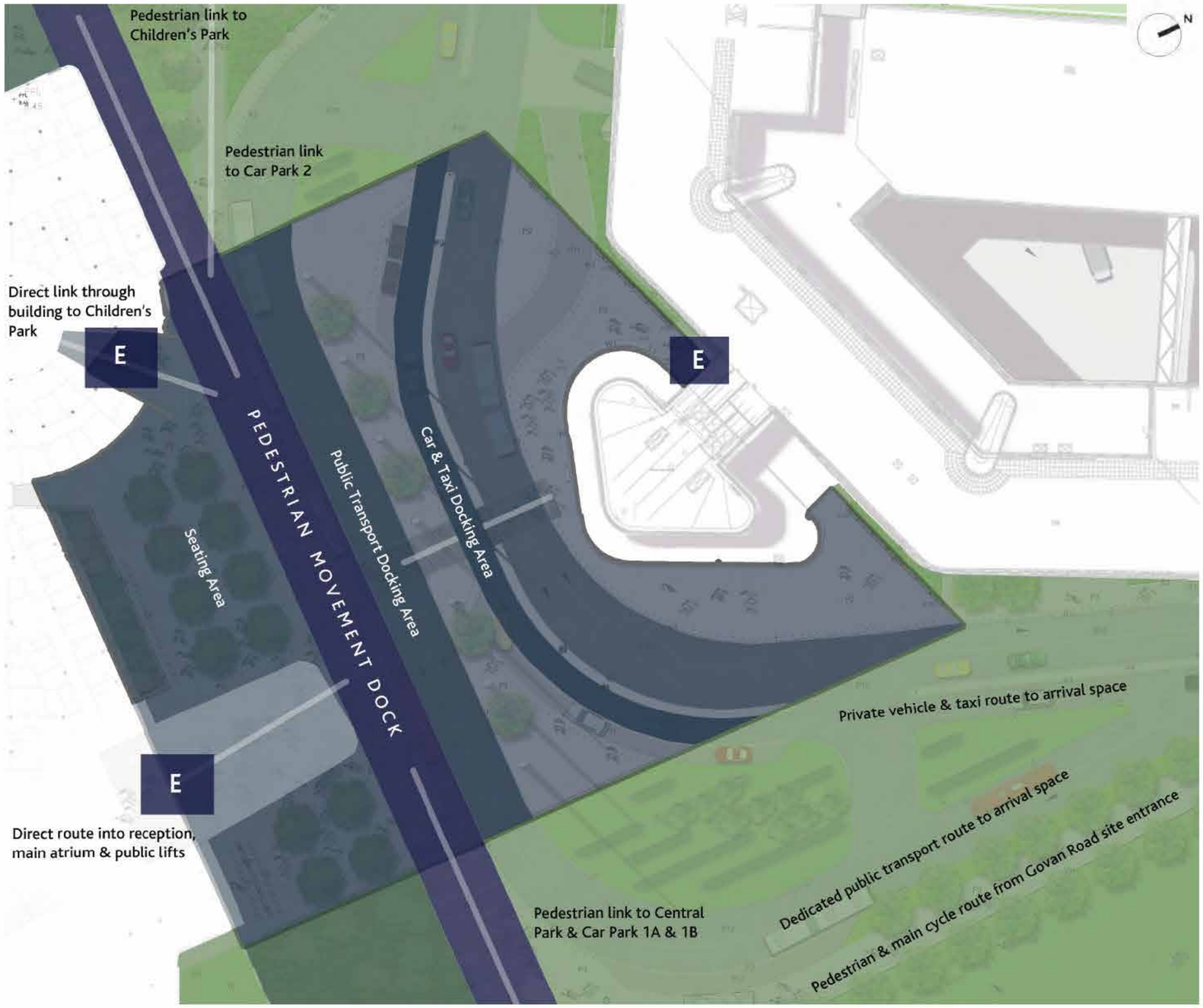
The arrival space has been defined by the arrangement of the built form around . The process of masterplanning the site was addressed collaboratively within the design team to establish purposeful relationships between the buildings and their setting. Built edges to the arrival space were placed to create an area of an appropriate scale for the significant functional demands placed upon this civic front door to the hospital. Building locations were defined in response to appropriate distances from roads to support pedestrian circulation. Entrances were located to make circulation and access as clear and logical as possible for hospital users.

The Acute and Children's Hospitals form the southern boundary to the arrival space, with the entrance areas overhanging to create shelter and clear points of entry. The northern edge is defined by the form of the new laboratories building and the east façade of car park 2 defines a more remote western edge. Open boundaries to the east and west are designed to connect the two parks and provide a clear structure which is reinforced by feature light columns. The threshold of the space is marked by a low wall with integrated lighting.

### Function

The arrival space is a functional point of arrival within the campus. The physical form is defined by the intention for this to serve as something of a 'welcome mat' for the primary buildings within the new campus heart. This is a destination for the majority of hospital staff and visitors, whether arriving by bus, car, bike or on foot. This is a high quality civic space with generous proportions related to the scale of the built surroundings.

The space is defined by a low informal seating wall with a sandstone capping to match the sandstone façade treatment of the acute hospital entrance. The wall is illuminated with a simple concealed LED strip light to provide a distinctive civic quality within the space by night. Feature light masts approximately 20 metres tall within the arrival space establish a scale, significance and personality for the space in response to the character and scale of the surrounding buildings.




Arrival Space Functional Plan

The functional arrival area has additional space for orientation, sitting and meeting. Mature standard trees are placed within a grid on both sides of the entrance to the Acute Hospital. The geometry of the space is defined in response to the main entrance and also reflects the general alignment of the River Clyde to the north of the site. The alignment of the main entrance is perpendicular to this and the public space extends into the building to lead visitors into the internal public atrium space. This organisational geometry is reflected in the structure of the roads within the space and a significant 'public dock' extends east and west, parallel with the linear geometry, to provide a link between the two parks.

The Public Dock is a significant designed element within the public realm of the hospital. This granite-paved feature makes informal reference to the industrial ship-building heritage of the Govan setting, but also performs a pivotal function for all pedestrian movements. This is the pedestrian arrival point from all directions and this generously proportioned space provides clear movement between entrances and access to the new laboratories building over the entrance road.

## Structures along the Dock

The pedestrian  Dock is a significant part of the organisational structure of the primary public spaces. It provides the link between the arrival space and the parks and connects with all the primary pedestrian and cycle routes. To support this function it contains a range of functional structures along its length, including seating and shelters. These have been designed in response to the character of the dock as a feature area and the interface with other public spaces.

Landmark pavilions are located at both ends of the Dock. To the east is a seating pavilion overlooking the reed beds and ecologically rich informal environment of the parkland swale. The integration of functional elements such as water management has enabled opportunities to be realised for the positive enhancement of the parkland environment as a valuable resource for the campus, providing an attractive setting and ecological variety.

To the west, the landmark takes the form of an elevated play stage and events pavilion within the heart of the children's park. It is intended that artist commissions will inform the design of the pavilion structures as part of the ongoing design development process and the embedded public art programming. An intermediate pavilion provides functional bike parking adjacent to the Car Park 2.

Illustrative Arrival Space aerial view



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The Pedestrian Dock is the setting for shelters and waiting areas associated with Fastlink and bus services to the heart of the campus. The design of these structures will also be considered as part of the artist commissions to ensure that a coordinated design language and an appropriate palette of materials is delivered without visual clutter or physical obstructions.

Buses draw up alongside the Dock to deliver and collect their passengers and public transport access is prioritised over other vehicular modes. Private cars and taxis drop passengers adjacent to the dock and access to the entrances and parks is via a crossing which acts like a gangplank.

KEY

1. TURF MOUND
2. COVERED CYCLE PARKING
3. BUS SHELTER
4. INFORMAL SPORT/PLAY AREA
5. ARTISTIC LIGHTING
6. RAISED PEDESTRIAN CROSSING
7. CYCLE STANDS
8. TAXI DROP OFF
9. PRIVATE CAR DROP OFF
10. BLOOD DROP OFF
11. ADULT ACUTE MAIN ENTRANCE
12. CHILDREN'S MAIN ENTRANCE
13. LABORATORIES MAIN ENTRANCE
14. PEDESTRIAN ROUTE FROM CAR PARK 2
15. SEATING WALL

Arrival Space- Ground level plan

Illustrative Adults Acute Hospital Main Entrance View

Illustrative Children's Hospital Main Entrance View

Illustrative Children's Hospital Main Entrance View



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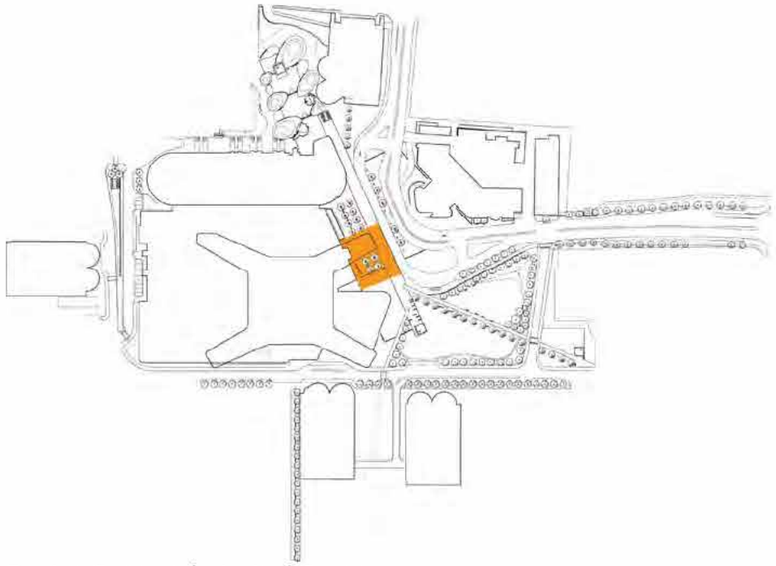
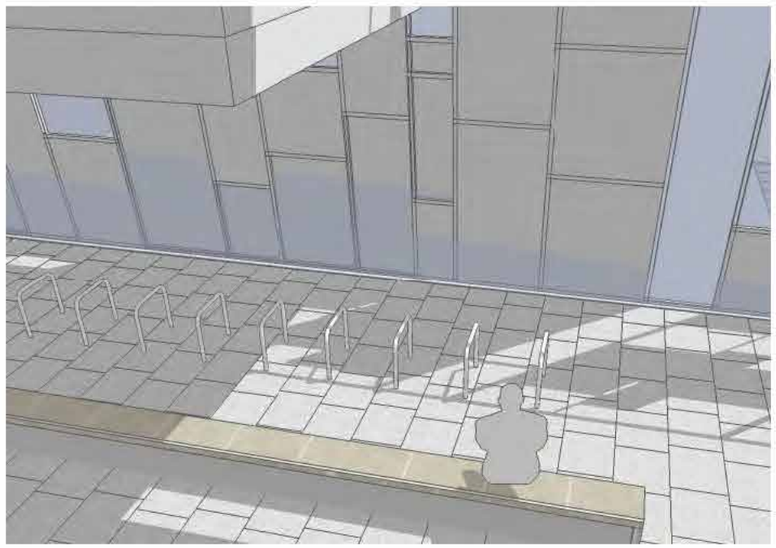
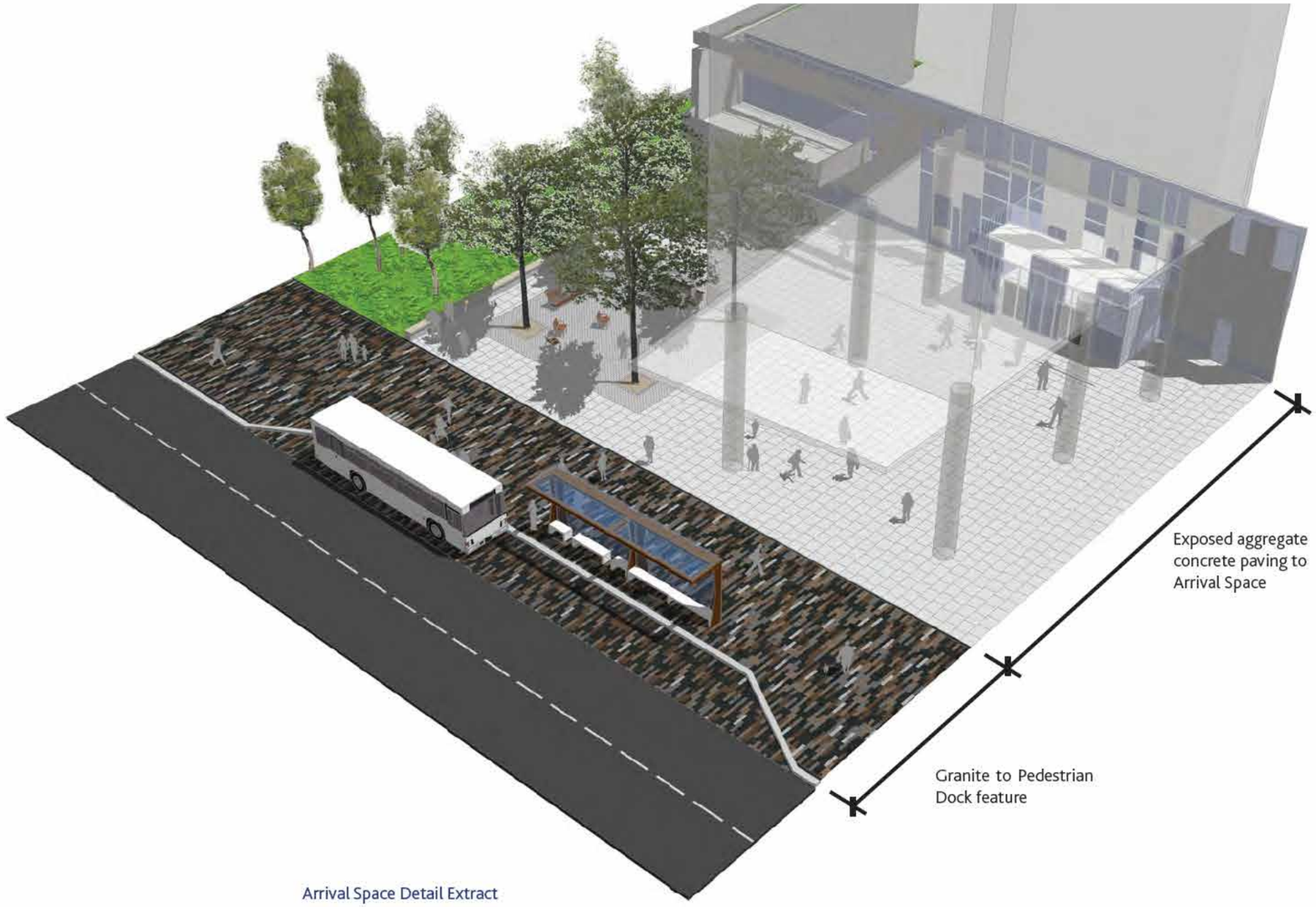


## Design Proposal- Arrival Space

This section illustrates the proposed arrangement of materials within the dock of the arrival space at the main entrance



Covered cycle stands adjacent to the Adults Acute main entrance




Arrival Space Detail Extract

Arrival Space View- along Dock from Central Park

Arrival Space View - from Adults Acute Hospital entrance

Arrival Space View- along Dock from Car Park 2

Arrival Space View - View of Adults Acute main entrance



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## 6.2
# Central Park

### Structure

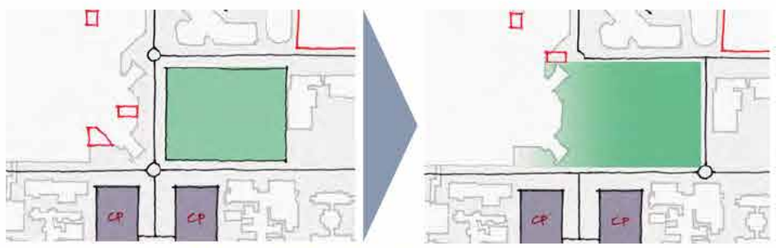
The Central Park has been designed as a new green heart to the campus. The influence of the green park character is intended to extend into other areas to create an extensive setting for the new project and set the tone for future developments. The new public park is intended as a valuable recreational opportunity for staff, hospital users and local residents.

The highway network within the campus has been defined to create a direct pedestrian link between the park and adult hospital. Roads have been pushed as far as possible from the centre of the park to create a critical mass of green space to deliver a park of appropriate scale. The park is bordered by the new boulevard and arrival space to the west and the blue light route through the site to the east. The northern edge is defined by the link road connecting the two, with the position of this having been set by the location of retained buildings (currently A&E) to the north

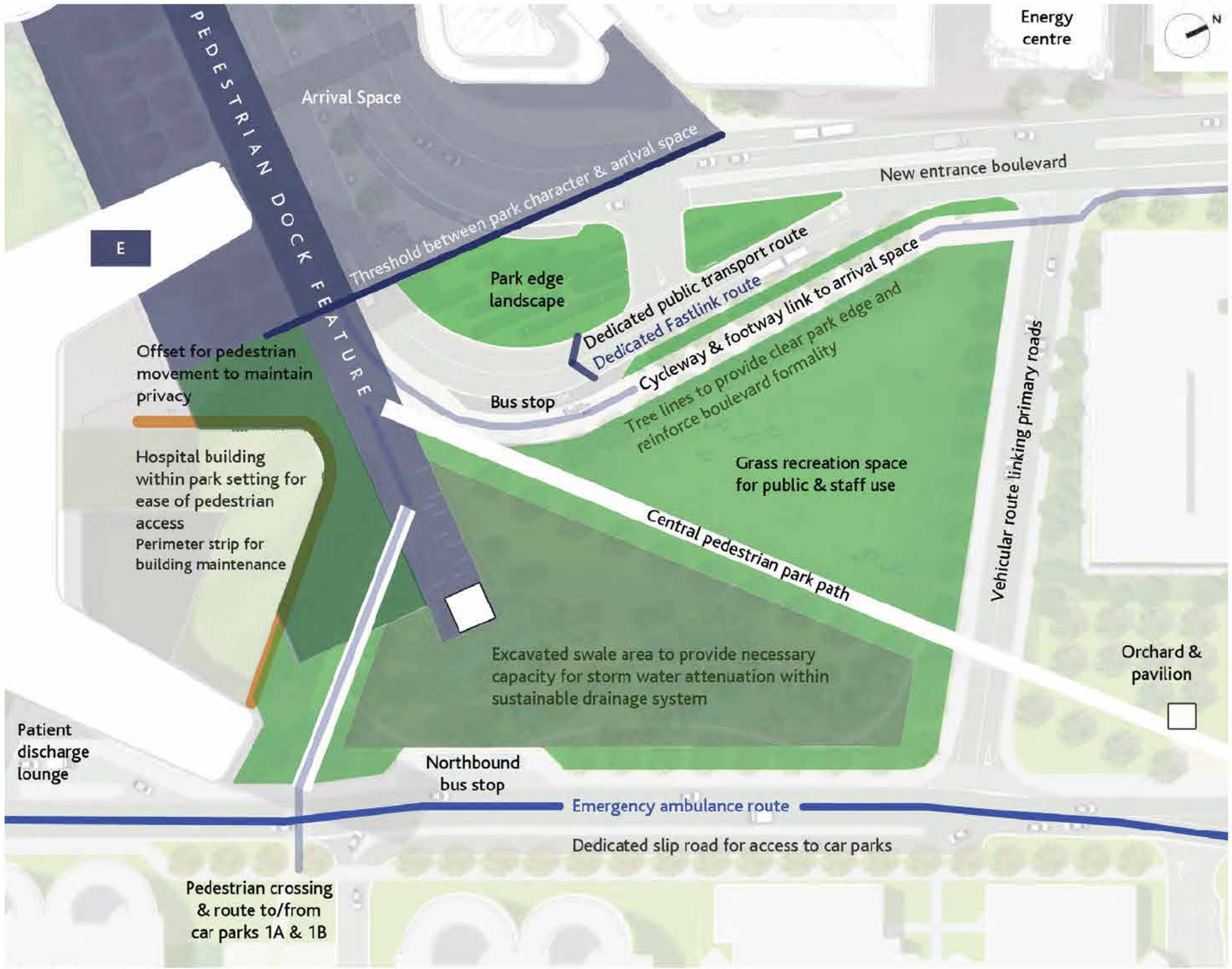
### Function

The park functions as a significant green setting for the new hospital buildings. The principal access routes also pass alongside or through the park to provide an informal and less institutional character for hospital approaches. There are numerous seating opportunities, including covered seating for contemplation. The park provides a useful contrast to the intensive and emotionally charged environment of a large hospital.

In addition to this 'humanising' function the park also forms part of the extensive water management network for the site, including storm water storage, flow attenuation and filtration. The park provides valuable ecological diversity and is intended to be a durable legacy for the future through the placement of new trees and durable materials.




Design concept sketch- hospital with park setting




Central Park Functional Plan

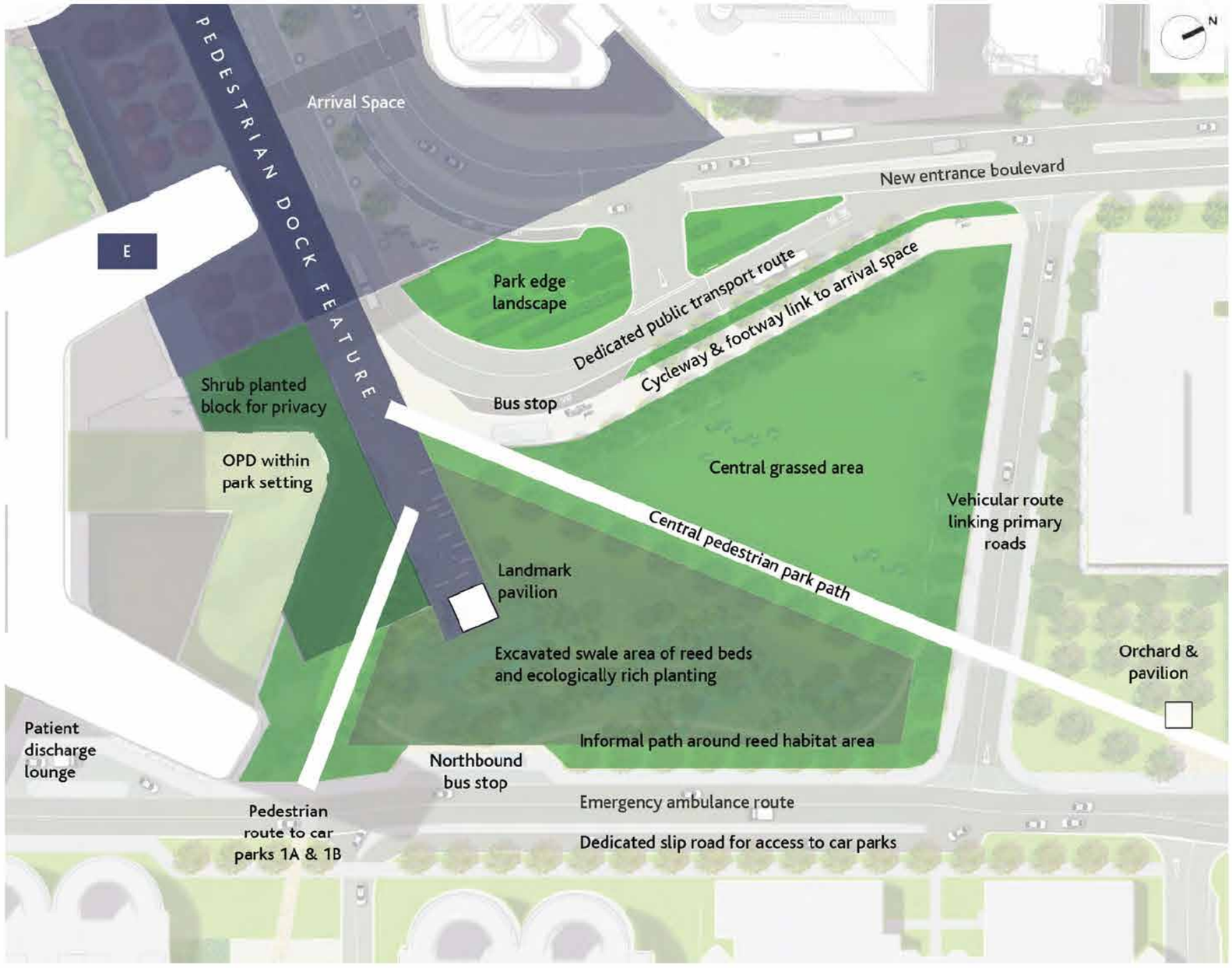
## Design

The design of the park is led by functional desire lines. These include the placement of a primary lit park route as a designed diagonal line to connect the entrances and arrival space to other approaches and northern and eastern areas of the campus. This clear route divides the park between the larger area of open and slightly undulating grassland from the eastern ecological swale area. The swale area is a designed and engineered depression within the park to accommodate storm water in extreme events and to manage the day to day treatment of rain water. The majority of the recessed area is therefore designed as a gentle grassed or planted slope.

The landmark pavilion the east end of the Dock has been located to provide a good view over this area. The sheltered pavilion commands and elevated position over the reed beds and a planted and terraced edge creates a characterful planted setting. The extension of the pedestrian Dock into the park is intended to encourage use and occupation of the park throughout the years.

The open grassed area also includes informal seating opportunities, which are intended to be provided in part by sandstone blocks reclaimed from existing buildings which will be demolished.

The Park edge is defined be lines of semi-mature standard tree to create visual containment and a strong identity for the park from surrounding roads. Trees are also used to aid the definition of the primary routes.

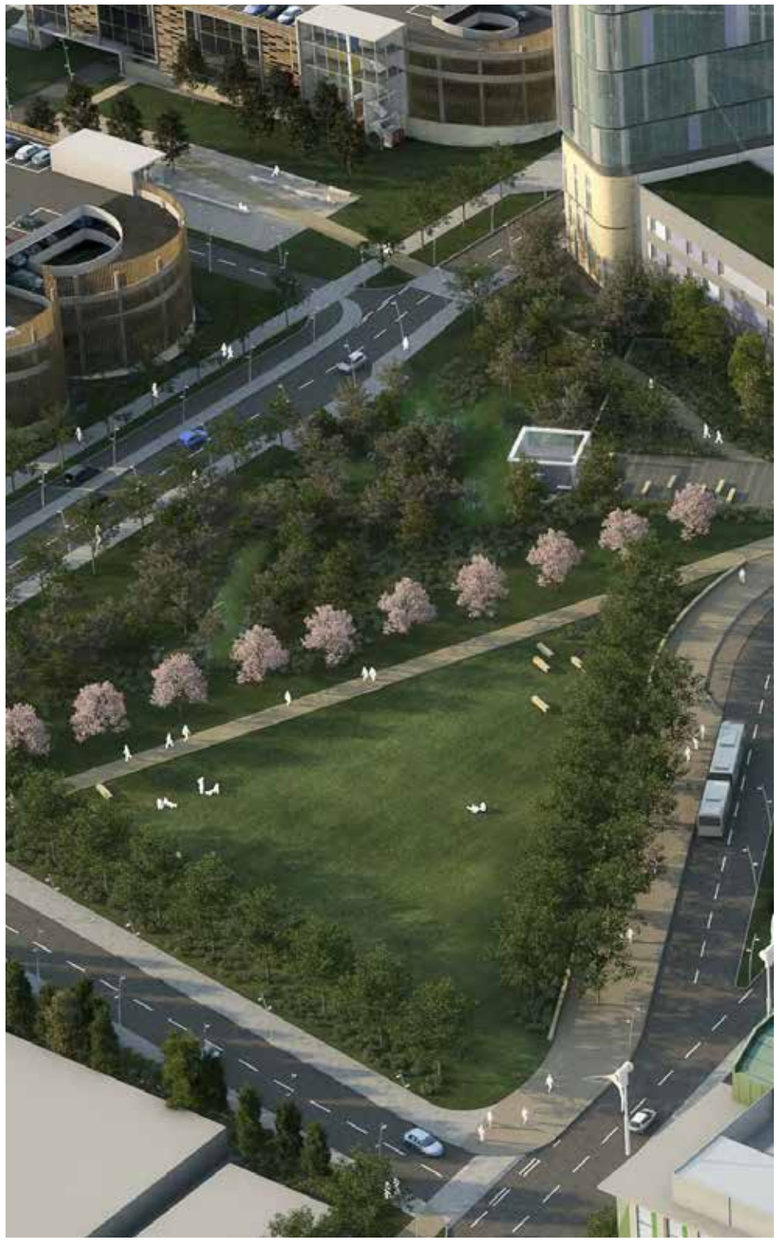



Central Park Design Structure Plan

KEY

1. TURF MOUND
2. COVERED CYCLE STANDS
3. BUS SHELTER
4. PARK SHELTER (PUBLIC ART INPUT)
5. ORCHARD
6. SUDS SYSTEM
7. INFORMAL SPORT/PLAY AREA
8. TRIM TRAIL/RUNNING TRACK
9. RELOCATED BUS STOPS
10. CHERRY AVENUE
11. AVENUE OF TREES
12. PARK EDGE TREE PLANTING
13. GREEN ROOF TO SOFTEN VIEWS INTO THE PARK FROM WARDS
14. INFORMAL SEATING

Central Park Plan



Illustrative Central Park Aerial View

Illustrative Elevated Central Park View



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## 6.3
# Children's Park

### Structure

The establishment of the park was the result of modifications to the footprint and alignment of car park 2, which originally had a north to south alignment. Rotation of the car park through ninety degrees and an increased height provided the space for a park to be created as a focal point for the new Children's Hospital and to create a unifying setting for this and the existing maternity and neo-natal buildings.

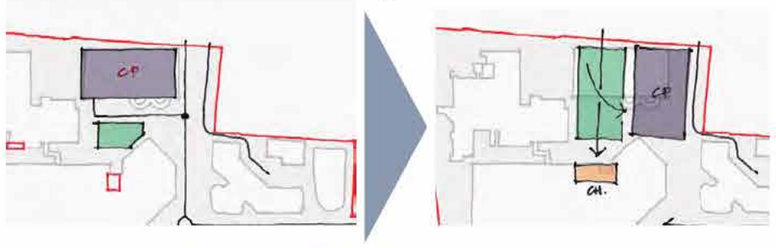
The form of the children's park is therefore defined by the built edges of the maternity building, the new hospital and the car park. The western edge is defined by the vehicular route into car park 2. The design of the new hospital building has responded to this opportunity to create a park-side façade with direct pedestrian access to the park and extensive views from within the building.

The park footprint is intended to be extensive and the character and quality of the green space extends to the surrounding areas and the threshold with the arrival space. The buildings define the park edges.

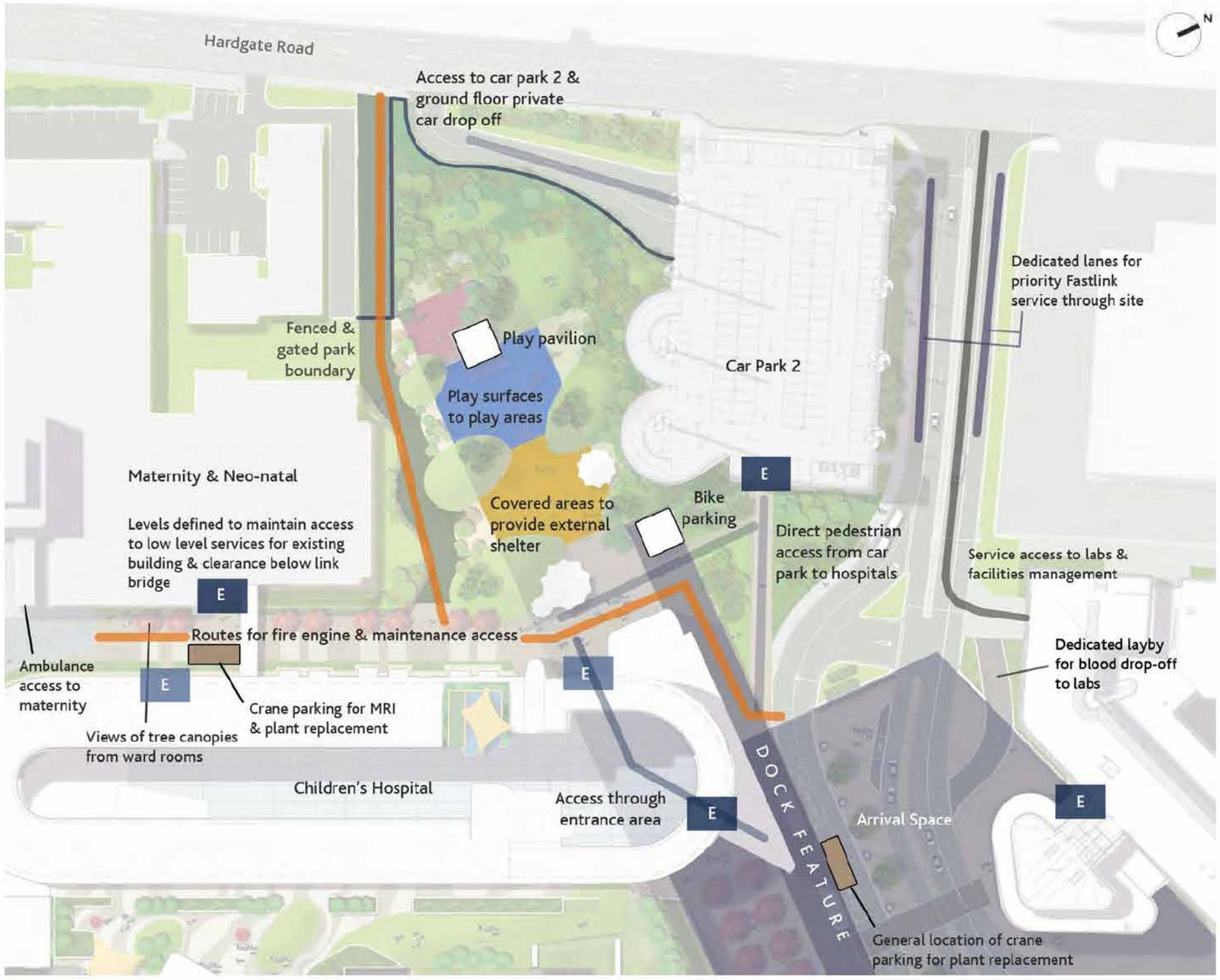
### Function

Through the co-location of hospital functions, the new park functions as an identifiable setting for services for families and children within the campus. This identifies the children's hospital as something more than a new building. The park provides a flexible open-air resource for staff, visitors and families and the play area can also be used by local residents. Covered seating areas are provided to make the space functional throughout the year.

The park provides seating, undulating landforms, play areas and new trees within a green planted character. The park provides an enhanced green setting for the new neo-natal building.




Design concept sketch-creation of Childrens Park




Children's Park Functional Plan

The functional demands upon the extensive park are defined by the operational requirements of the hospital. A vehicular route from the south through the park to the arrival space and also connecting with Hardgate Road provides access for fire engines, servicing and maintenance. Servicing requirements also include provision for plant replacement by crane (including generators from the elevated plant rooms of the children's hospital and MRI equipment from a temporary gantry beside the link bridge). General maintenance routes are also provided and access to existing buildings for servicing and emergencies is also maintained.

The western edge of the park is fenced to provide a secure environment for play and to prevent access by children onto the car park access road. A gate provides access for pedestrians and cyclists onto Hardgate Road as part of the permeable route network throughout the site.

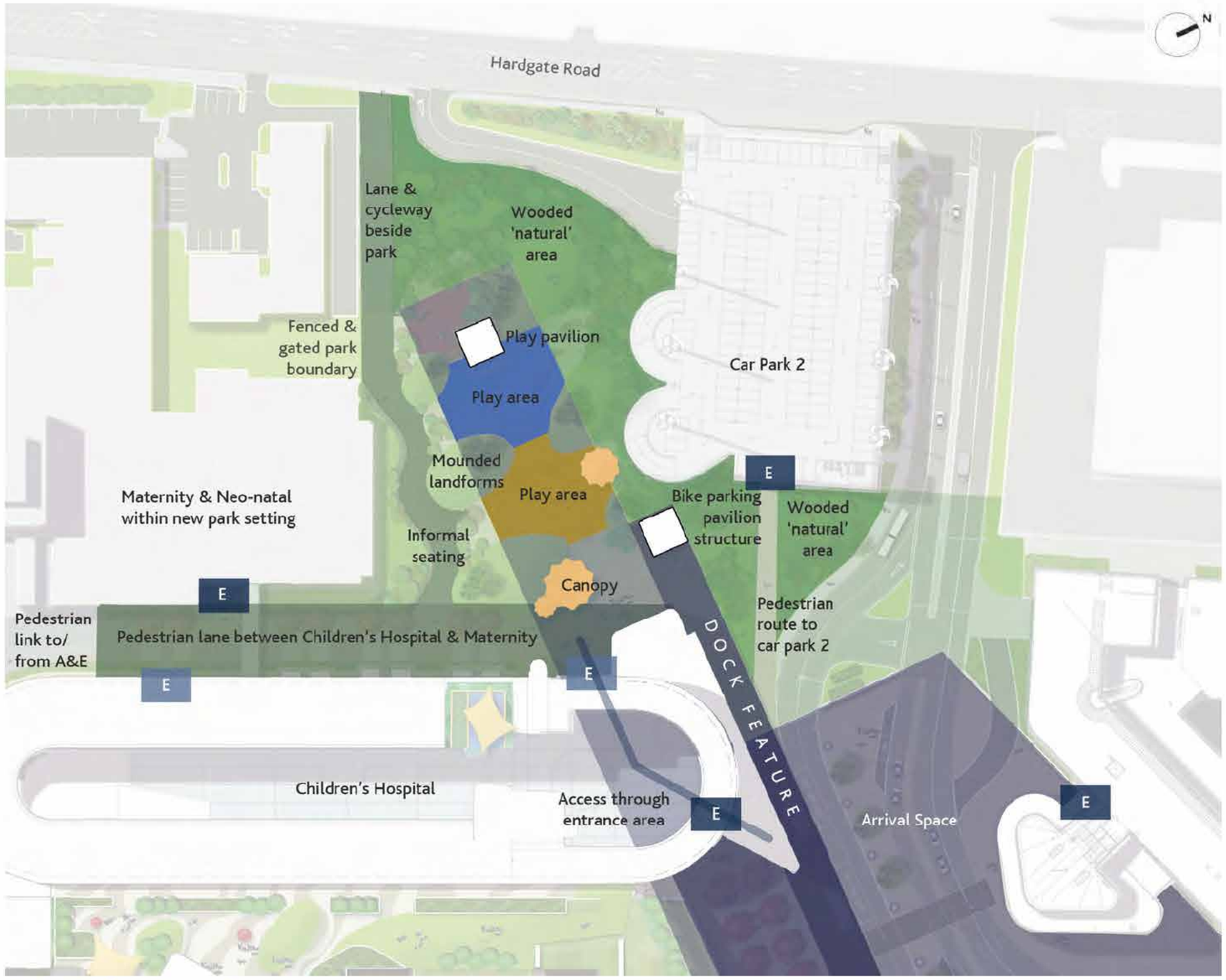
## Design

The design of the park is intended to create an informal, attractive and playful environment with access for all. The hospital building has been designed in parallel with this to create a well grounded and friendly building as a contrast to the more stressful aspects of the hospital environment.

The park geometry relates to the pedestrian Dock rather than the grid of the internal hospital structure. The design includes undulating grassed mounds to create an engaging and playful landscape with interesting areas for exploration. A semi-natural wooded landscape is proposed along the facade of the car park, to create ecological and habitat diversity and to screen this structure with a green park edge. The green border creates a sense of enclosure within a substantial park setting.

Play surfaces provide a safe and colourful ground plane adjacent to accessible play structures and the landscape is intended to be a playful environment, with flexibility for future enhancement and changes in response to opportunities for alternative uses and features.

The levels fall slightly towards the west. An elevated covered play stage & pavilion is a central landmark feature for the park. This marks the western extent of the pedestrian dock and creates opportunities for imaginative play and outdoor events – including music, drama and other arts activity. This is intended as an external resource for the hospital, for staff and for events.




Children's Park Design Structure Plan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KEY

1. TURF MOUND
2. BIKE SHELTER
3. PARK SHELTER / STAGE
4. PLAY AREA
5. CHILDREN'S DISCOVERY AREA
6. ARTISTIC LIGHTING FEATURE
7. INTERACTIVE PLAY FEATURE
8. CYCLE / PEDESTRIAN AND EMERGENCY FIRE ROUTE
9. CYCLE STANDS AT BUILDING ENTRANCE
10. DIRECT PEDESTRIAN ROUTE FROM CAR PARK 2
11. CHILDREN'S HOSPITAL PARK ENTRANCE
12. SHADE STRUCTURES
13. TREES ALONG PEDESTRIAN LANE WITH INFORMAL SEATING
14. PLANTED PERIMETER TO BUILDING AT GROUND FLOOR FOR PRIVACY

Children's Park Plan

Illustrative Children's eye view of the park

Illustrative Children's Park Aerial View



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## 6.4
# Entrance Boulevard

The entrance boulevard sets up an appropriately scaled high quality approach to the new hospital building by its conscious orientation towards the main entrance tower, which is reinforced with lines of semi-mature tree planting. It is intended that this gateway character will create a significant campus entry feature.

The width of the boulevard has been designed to accommodate the required bus and car circulation. In addition a shared pedestrian/cycle path is provided on the east side of the boulevard (to connect directly with the main entrance) and a further footpath is provided on the west side to serve the labs building and energy centre. Lighting columns will be used to create an appropriately formed character for the route. Swales are also incorporated to treat water runoff from the road.

Entrance Boulevard Functional Plan

KEY

1. UNDULATING GROUND PLANE WITHIN GRASSED AREA
2. COVERED CYCLE STANDS
3. BUS SHELTERS
4. GRASS SWALE
5. INFORMAL SPORT/PLAY AREA
6. FEATURE LIGHT COLUMNS
7. RAISED PEDESTRIAN CROSSING
8. CYCLE STANDS
9. ENTRANCE FEATURE
10. EXISTING TREES TO BE RETAINED
11. EXISTING OFF-SITE TELECOMMUNICATIONS MAST TO BE RETAINED

Entrance Boulevard -plan view

Entrance Boulevard - Illustrative pedestrian view along boulevard

Entrance Boulevard - Illustrative drivers view along boulevard

Entrance Boulevard -Illustrative typical section



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## 6.5
# Accident and Emergency

### Structure

Accident and Emergency is the second main façade to the hospital buildings. Direct access to accident and emergency is a clear priority for the effective function of the hospital. A&E has direct access along the existing spine road through the site. The effectiveness of this route has been enhanced through the creation of the new entrance boulevard, which – whilst providing a high quality approach route - will carry a proportion of the site traffic and direct this away from the blue light emergency route.

The blue light route has priority through the site and pedestrian crossings over this do not have raised tables, to ensure the smooth passage of emergency vehicles. Access to car parks 1A and 1B (to the east of the site) is via a dedicated slip road, which provides queuing capacity for cars. This ensures that delays associated with car park entry are unlikely to impact upon emergency vehicles.

The function of the A&E zone is supported by a large area of tarmac to enable ambulances and other vehicles to manoeuvre with ease and for stretchers to be wheeled over a smooth surface into A&E. A level change between this raised terrace and the adjacent road is achieved using a retaining wall against the footway at lower level.

A pavilion structure provides bike parking adjacent to the A&E entrances. This is to be designed as part of the consistent suite of external structures for the site. Car Park 3 provides parking adjacent to A&E for hospital visitors.

KEY

① BIKE SHELTER

② RELOCATED BUS STOPS

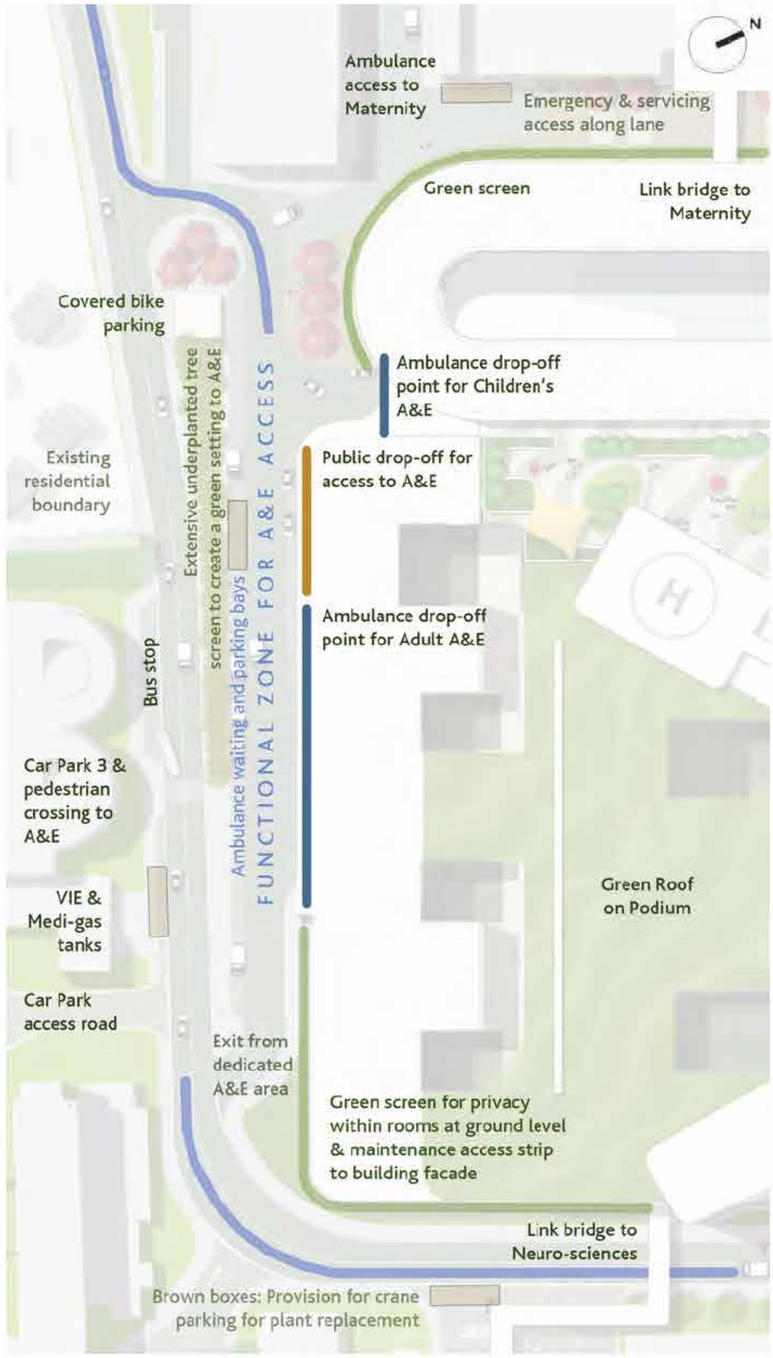
③ BIRCH TREE PLANTING SCREEN

④ RETAINING WALL

⑤ RETENTION OF EXISTING TRESS

⑥ VIE TANKS

⑦ PEDESTRIAN CROSSING




Accident And Emergency Functional Plan

Accident and Emergency Plan

## Design

The design of the A&E zone of the hospital externally is primarily functional, but this is also an area of considerable stress for hospital visitors. It is therefore intended that greening of the zone is achieved within the available space.

The tapering island between the blue light route and the ambulance bays is to be planted with a dense block of birch trees to create a visible block of planting on exit from the buildings and to create some effective green screening between A&E and the residential boundary. A planted perimeter around the southern corners of the new hospital buildings will provide an offset for pedestrians.

Illustrative Accident and Emergency Aerial View

Illustrative Accident and Emergency View



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## 6.6
# Children's Roof Garden

The roof garden has been introduced in response to the opportunity to create a physical link between the upper level of the children's ward rooms within the hospital with the flat roof of the adjacent hospital podium. The result is an extensive outdoor garden environment for the children's hospital. This provides a significant extension to the hospital environment and a secure area for families, for play, for education and for relaxation and occupational therapy. The roof garden has been defined as a valuable part of the healing environment for the hospital and as an aid to treatment and recovery.

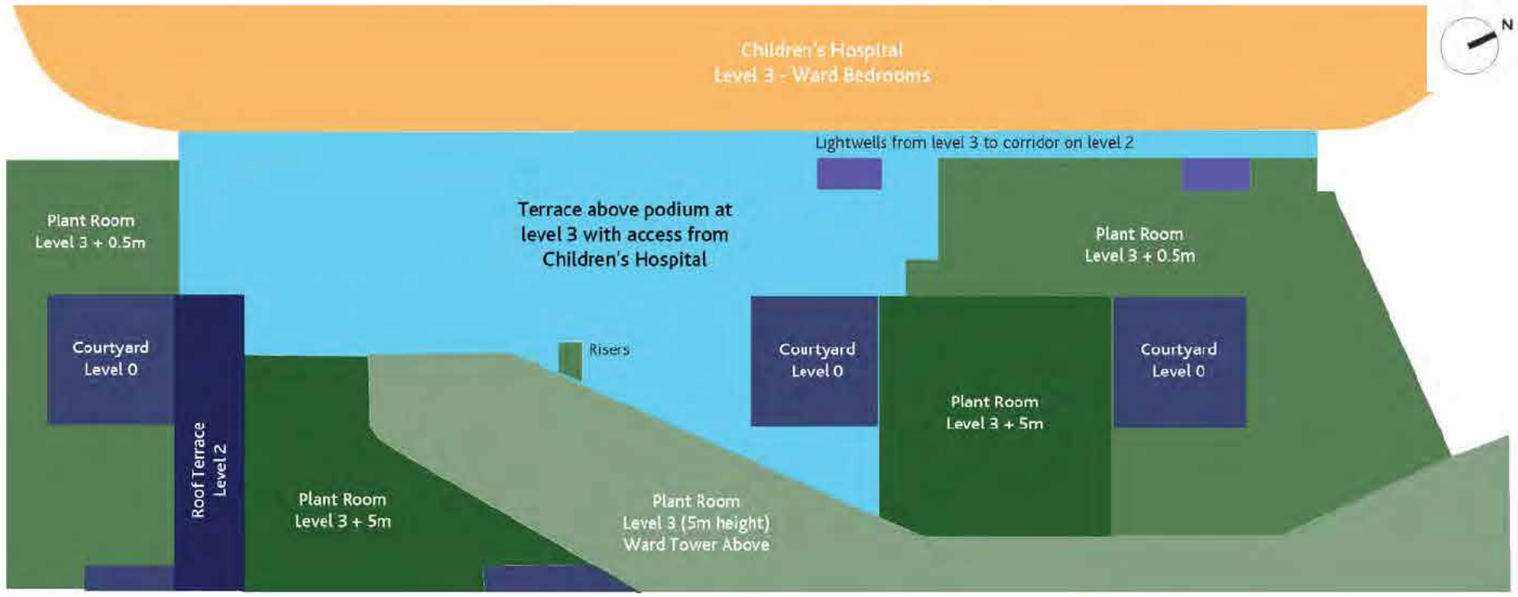
## Structure

The form of the garden is defined by the various components of the hospital buildings and the garden simply occupies the gap between the adult ward towers and the eastern edge of the children's hospital. Non-clinical plant rooms are located in and around this area and they have been screened or accommodated where possible to enhance the garden setting of this valuable space. The footprint of the roof garden includes a number of courtyard voids to provide light into areas of the podium levels below. A low planter runs along the western edge of the roof garden to provide an offset from windows for privacy and to give a clear access route between the three sets of access doors for maximum flexibility.

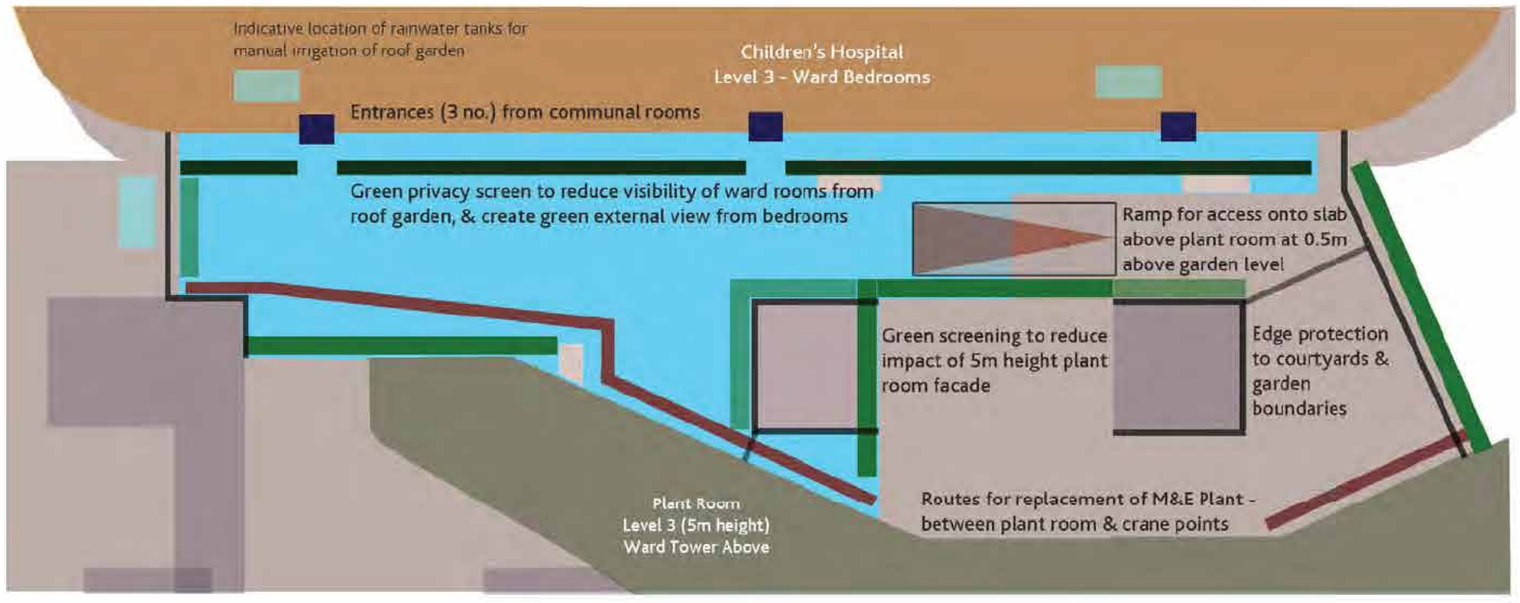
## Function

The roof garden is intended to provide a series of functional spaces which can be accessed by staff and patients from the upper ward floor of the children's hospital, including access for beds and wheelchairs. The more passive function of the garden is based upon providing views from windows facing towards the adult tower, and screening for views back in. Covered areas within the roof garden are intended to provide shelter from sun and rain, but also to provide a level of privacy for those using the gardens.

The plant rooms are a significant presence in this area of the hospital, providing mechanical and electrical services to clinical areas on the levels below. Access is required within the layout of the roof garden to transfer redundant or defective plant equipment from plant rooms to crane points for removal. These routes have been designed into the arrangement of the spaces.




Children's Roof Garden Structure Plan




Children's Roof Garden Function Plan

These plant rooms define the form of the structures surrounding the roof garden and also define the step in the ground plane towards the north. The step is addressed with a gentle slope to achieve the level change as a grassed area to extend the coverage of the roof garden to enhance flexibility and provide an area of informal meadow.

Screening has been proposed to reduce the visual impact of the more significant plant room facades, which are typically faced with louvres for ventilation. Edge protection is provided along all open edges and the height of this takes account of adjacent structures which could be climbed.

Taps are provided for maintenance and irrigation of the raised garden areas from rainwater tanks located within plant zones above the children's hospital. A maintenance compound is provided for the storage of necessary gardening equipment.

## Design

The design of the roof garden is divided between an area of grassland to the north and an area of play surfacing to the south. The active play area includes accessible grassed mounds with interactive play equipment and trees. The mounds are intended to provide a greater depth of topsoil to support trees and maintain healthy grass. The mounds create a contrast to the formal and regular built character of the hospital interior.

The perimeter of the southern end of the garden is defined with a variety of raised sensory gardens and growing areas which are intended to be planted and cultivated by patients, subject to opportunities, and to create a less institutional character for the hospital environment. External play space is seen as a significant benefit for many of the patients. These garden areas include pergola structures to define bays for use by families or to create quiet spaces.

The garden includes lighting to create a distinctive character for the roof garden by night and to enhance views for ward rooms and the communal socialisation spaces which are the location for the three access points.

Children's Roof Garden Design Plan

Children's Roof Garden View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Children's Roof Garden Plan

## KEY

1. SEDUM ROOF
2. STEPPING STONES
3. TURF MOUNDS
4. AMENITY GRASS
5. RAISED PLANTER
6. HERB GARDEN
7. GREEN SCREEN
8. SOFTFALL PLAY SPACE
9. SOFTFALL PLAY MOUNDS
10. SHADE CANOPY
11. TIMBER PERGOLA
12. CATENARY LIGHTING FEATURE
13. FEATURE SEAT
14. PLAY EQUIPMENT

Illustrative Children's Roof Garden Aerial View

Illustrative children's roof play mound



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## 6.7
# Courtyards & Roof Terraces

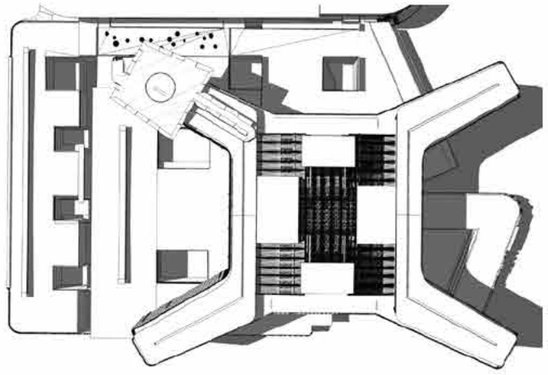
The podium level of the new hospital buildings includes a number of courtyards and light wells which have been located to enable natural light to penetrate the lower levels of the building. The podium provides a significant amount of accommodation and the deep form of the building combined with the height of the tower above significantly reduces the amount of direct sunlight at lower levels.

## Design

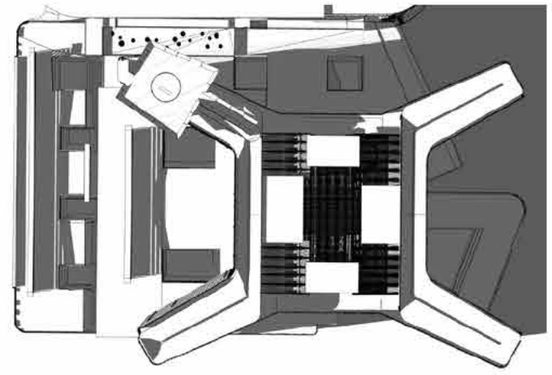
Design intent for the courtyards is based upon an offset irregular grid geometry which provides a deliberate contrast with the regular internal grid of the hospital. The grid for the courtyards is derived from the alignment of the pedestrian dock in the arrival space. The offset grid is proposed as the platform for the establishment of a variety of courtyard spaces which respond to opportunities presented by their scale, potential uses and potential for views and access. The access arrangements are intended to provide an appropriate amount of flexibility for future use.

The irregular nature of the grid is a mechanism for achieving the required maintenance access and window cleaning in relatively confined spaces, without maintenance and access ultimately defining the character of the courtyard.

The design of the courtyards on this basis is to be developed in response to the sign off for room types and adjacencies.

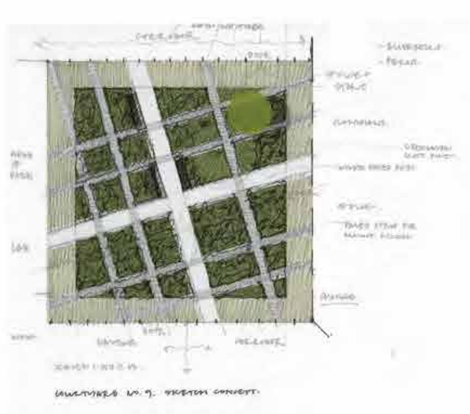


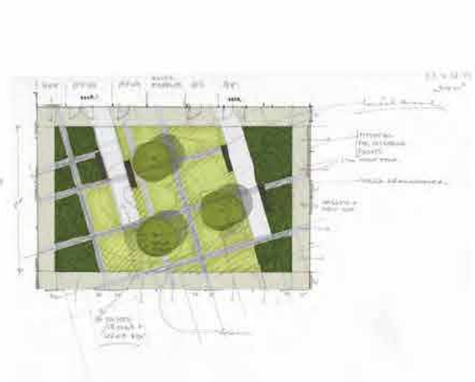
June (13:30)-some direct sun in summer months

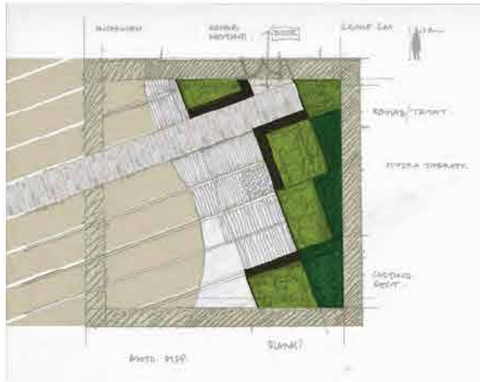


December (13:30)- limited direct natural light into courtyards

Shadow analysis

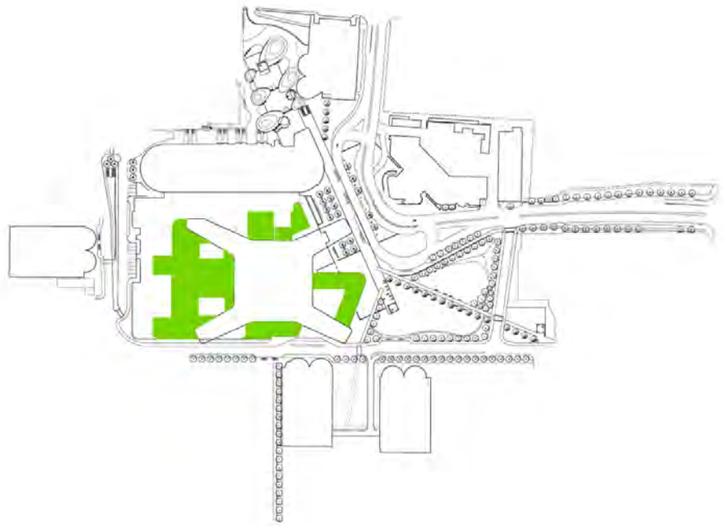






Concept sketches

## 6.8
# Green Roofs



A large area of the Adult's hospital is proposed an extensive green roof.

Green roof design is a rapidly developing technology, and many advances have been made with regards to species selection and provision of biodiversity within the low maintenance requirements of a green roof system.

The Adults hospital green roof will take full advantage of this latest thinking, and will be made up of approximately 70% plug planted sedum species and 30% plug planted perennials. In order to create a subtle roof pattern and to provide a greater number of habitats, the roof substrate depth will vary from approximately 80mm to 120mm. This enables sedum and perennial species to thrive. Opportunities to vary the substrate material will also be explored to provide further scope for roof pattern design.

Perennials suitable for inclusion with Sedum species (plug planted into substrate)

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part 3

# Masterplan Strategies

+ Landscape Feature Elements (Arts)
+ Hardscape Strategy
+ Softworks Strategy
+ Furniture Strategy
+ Lighting Strategy
+ Delivery & Maintenance
+ Sustainability/ BREEAM
+ Community Engagement


7.0 Landscape Feature Elements (Arts)
- 7.1 Childrens Park Play Equipment
- 7.2 Pavilions
- 7.3 Bus Shelters
- 7.4 Lighting Masts
- 7.5 Walls

8.0 Hardworks Strategy
- 8.1 Introduction
- 8.2 Granite Dock Feature Paving (P1)
- 8.3 Arrival Space Flag Paving (P2)
- 8.4 Footpath Paving (P3)
- 8.5 Natural Aggregate Finished Surface (P5)
- 8.6 Self Binding Gravel (P6)
- 8.7 Concrete Block Paving (P9)
- 8.8 Concrete Block Paving to Crossings (P11)
- 8.9 Tarmac (P12)
- 8.10 Soft Play Surface (P8)
- 8.11 Timber Decking

9.0 Softworks Strategy
- 9.1 Introduction
- 9.2 Entrance Boulevard Trees
- 9.3 Street Trees
- 9.4 Central Park Trees
- 9.5 Central Park Axis Trees
- 9.6 Plaza trees
- 9.7 Community Orchard Opportunity
- 9.8 Buffer Planting
- 9.9 Formal Planting
- 9.10 Woodland Planting
- 9.11 Hedgerow Planting
- 9.12 Wet Woodland Planting
- 9.13 Swale Planting
- 9.14 Bulb Planting
- 9.15 Childrens Roof Garden Planting

10.0 Furniture Strategy
- 10.1 Introduction
- 10.2 Informal Seating
- 10.3 Litter Bins & Bollards
- 10.4 Cycle Stands

11.0 Lighting Strategy
- 11.1 Introduction
- 11.1 Lighting Fixtures

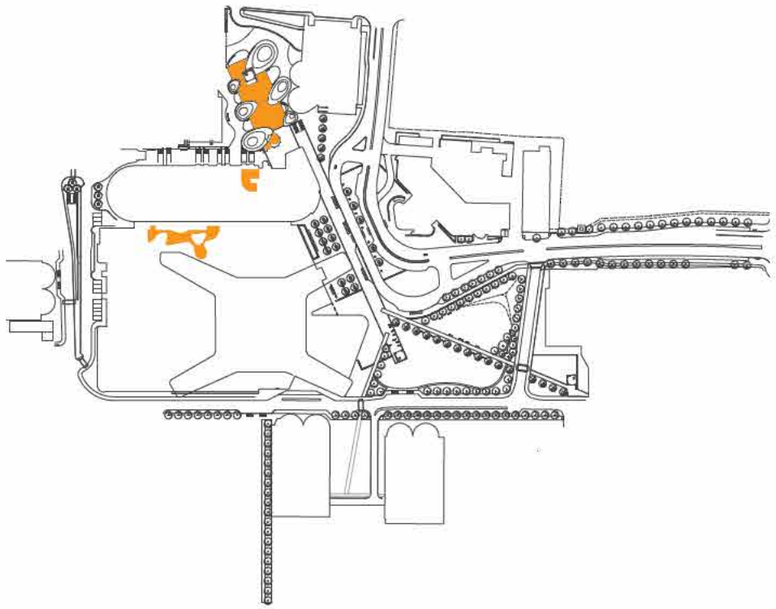
12.0 Signage Strategy
- 12.1 Introduction
- 12.2 Typical Journeys Dependant on Movement Mode
- 12.3 Wayfinding Plan
- 12.4 Designed Example - Pedestrian Sign

13.0 Delivery and Maintenance

14.0 Sustainability/ BREEAM

15.0 Community Engagement

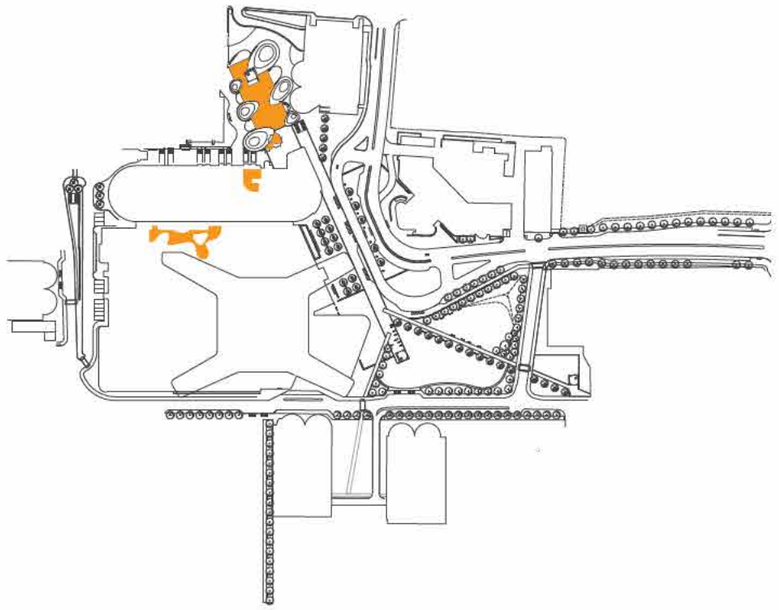
# 7.0
# Landscape Feature Elements (Arts)
## 7.1
## Children's Park Play Equipment



Play equipment is placed primarily on the linear softplay surface and occasionally in the seating bays that flank the softplay surface (where they will be surrounded with bark chippings).

Equipment has been chosen to provide a range of play experience within a pirate ship/sea faring/discovery theme. Equipment is constructed from treated and durable wood.

Timber ship wreck



Bespoke Play
A bespoke play feature is proposed as park of the arts strategy to encourage children to interact. This will be developed further as part of the arts strategy, but might feature moving/sliding elements as illustrated.

Natural Play
As per best practise guidelines such as Play England's "Design for Play: A guide to creating successful play spaces", opportunities will be sought to introduce natural elements and elements of risk and challenge within play provision, which are appropriate to the needs of different age groups, while balancing safety and maintenance needs.
Locally sourced logs and boulders placed in the parks provide an opportunity for children to play in a more natural context, and encourage basic jumping, climbing and balancing skills.

Inclusive Play
Consultation has shown that the provision of wheelchair friendly play equipment is key to inclusive play park design, and is all the more important in the context of a new children's hospital play space.

Bespoke play feature

Natural play -boulders and logs

Wheelchair friendly play equipment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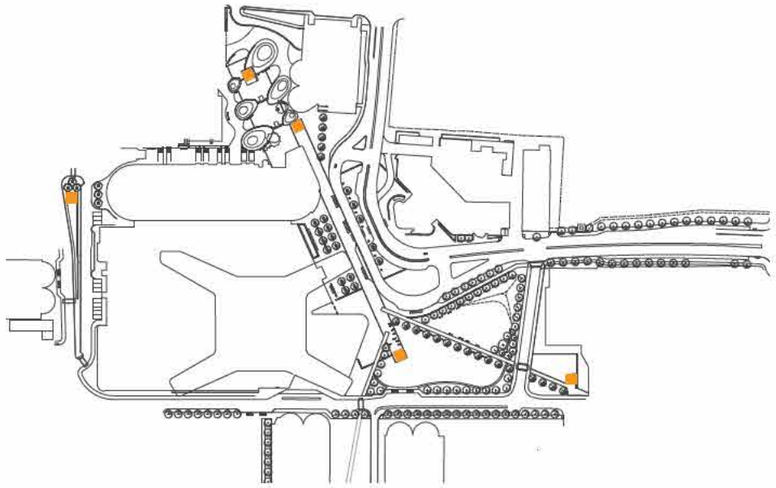
## 7.2
# Pavilions

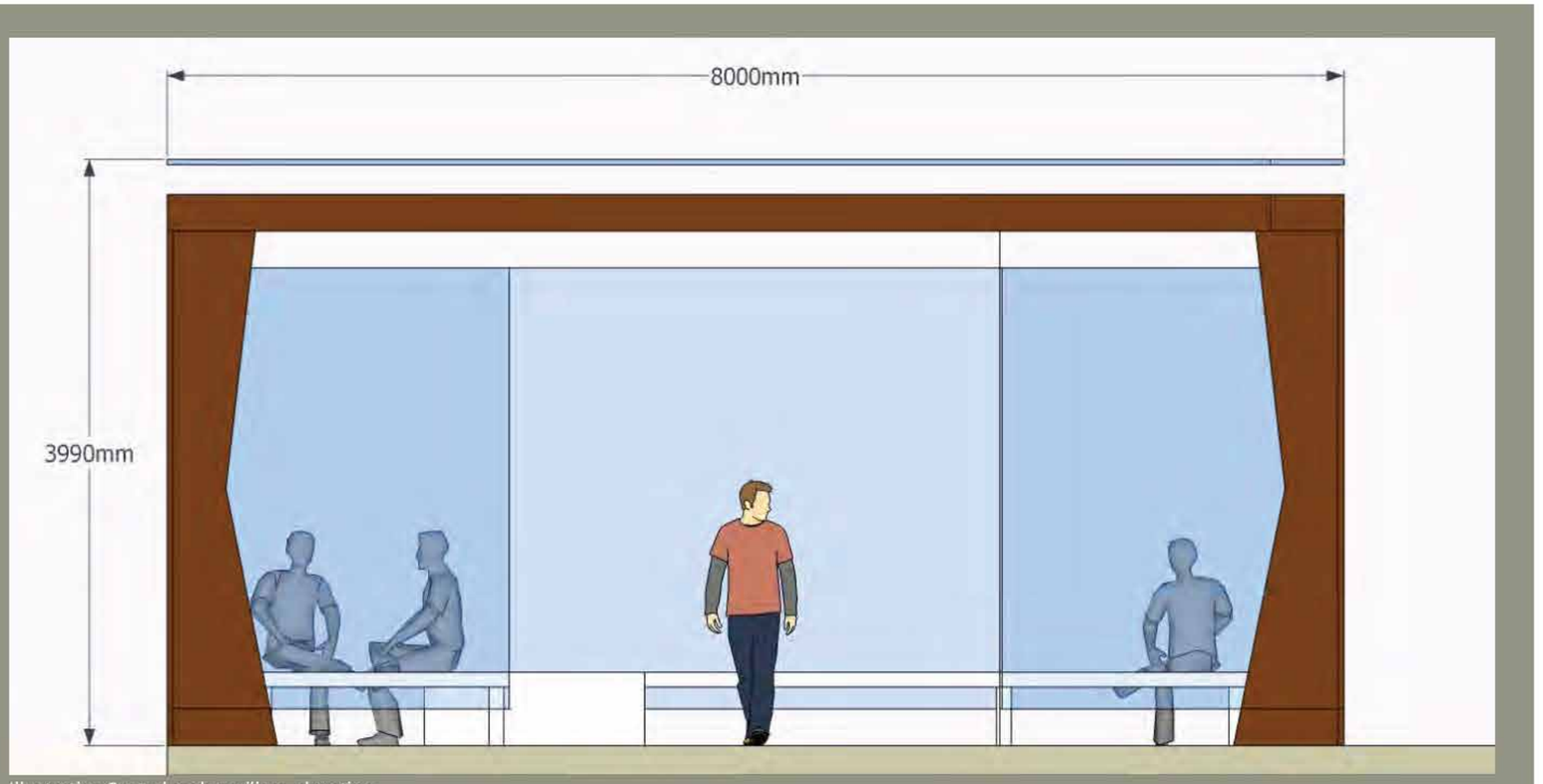


### Shelter Structures

The pavilions are designed as 8 x 8m square modular structures. The solid and robust uprights are designed to portray strength and solidity -characteristics that are well suited to Glasgow's ship building legacy. The structure makes reference to the base of a crane, and could be constructed from cor10 steel to add a warm and timeless character. Each pavilion has a glazed roof with integrated lighting and drainage. Side panels are either glazed or made from perforated metal panels depending on intended function.  It is our intention that the pavilions will be further developed as part of the arts strategy -therefore illustrations shown in this report form the brief for further artistic interpretation. The artist will use lighting, glass manifestations, panel design and other techniques to add richness and fine detailing appropriate to the landscape setting for each of the pavilions.

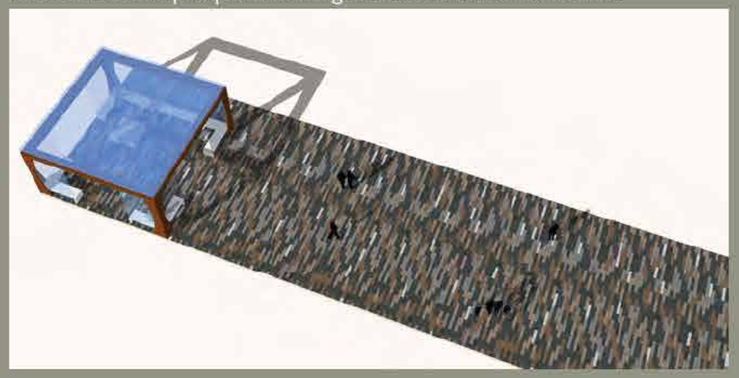
There are three park pavilions: One at the eastern end of the dock feature that overlooks the central park, one situated on a raised timber stage in the children's park and a third located within the community orchard. All three pavilions provide shelter and seating. The children's park pavilion has a further function to provide a flexible performance space for role playing, story telling, music and other small scale family events.

There are 2 pavilions that are adapted to provide a secure location for cycle storage. These are located at the western end of the dock feature and by the A&E entrance. The side panels and door will be constructed from perforated metal panelling to provide extra security.




Illustrative Central park pavilion -elevation

Illustrative Central park pavilion arranged at eastern end of dock feature



Illustrative Central park pavilion -perspective view

Illustrative Cycle shelter arranged at western end of dock feature

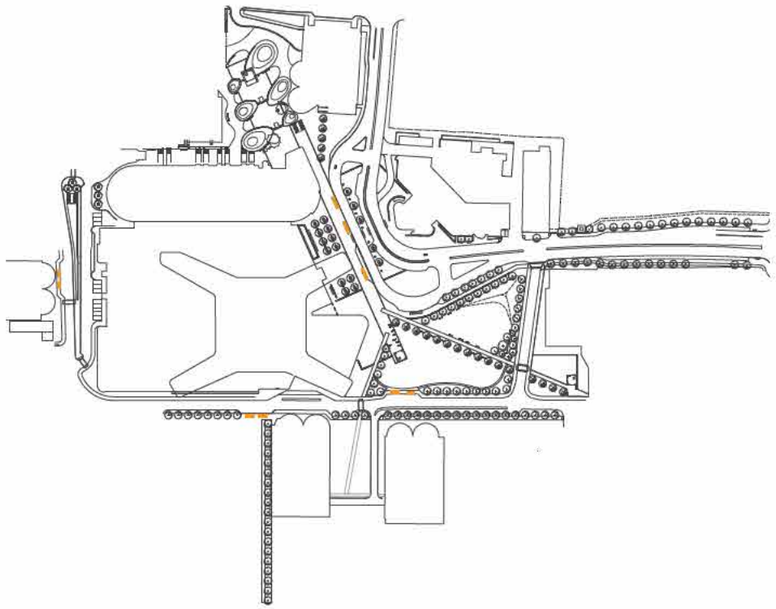
Illustrative Children's Park pavilion and stage from above

Illustrative Children's Park pavilion and stage showing back drop of park landscape

Illustrative Children's Park pavilion and stage aerial view

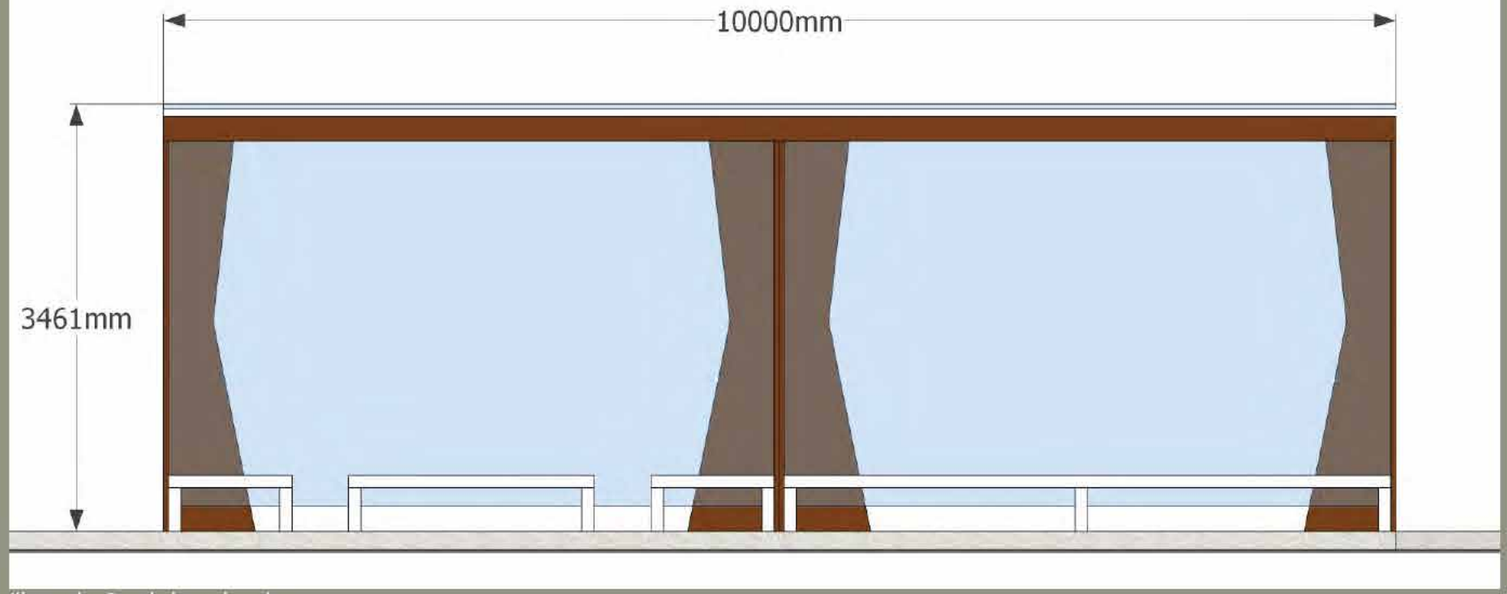
Illustrative Children's Park tensile shade structure

## 7.3
## Bus Shelters



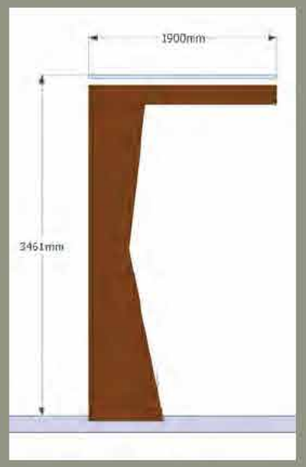
Bus shelters are illustrated to coordinate with the bold and simple industrial aesthetic of the pavilion structures. The tapered shelter supports provide a degree of side protection for the user and a glazed back ensures the shelter does not overly obstruct views of the main entrance. The shelter will include integrated lighting and drainage.

The shelter concept illustrated will be developed further as part of the arts strategy and in order to satisfy the requirements of Fastlink and GCC highways department.



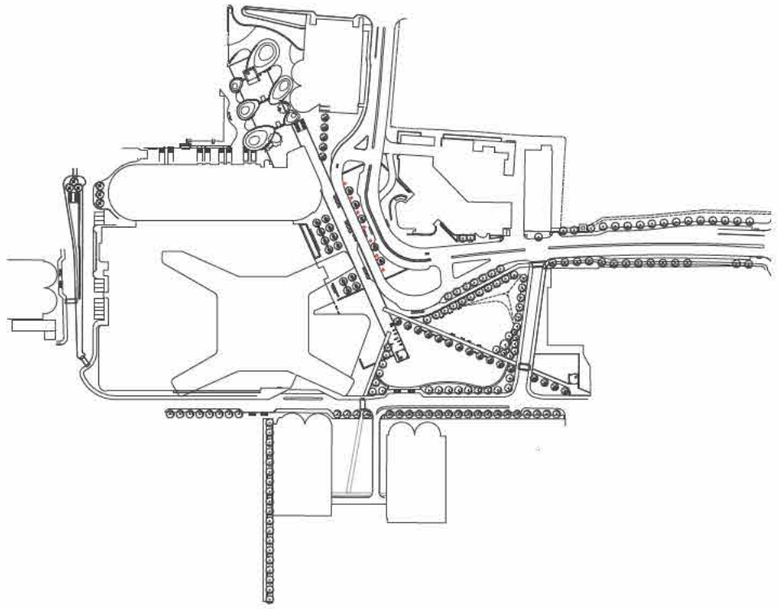

Illustrative Bus sheltter elevation

Illustrative Bus sheltter section

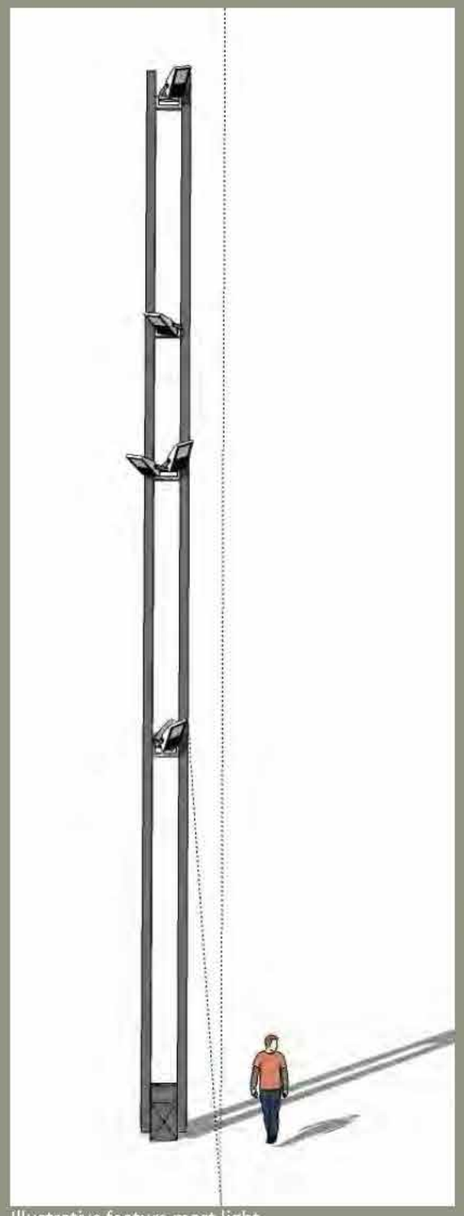



Illustrative Bus shelter perspective view

## 7.4
# Lighting masts



Bespoke 20m high steel lighting masts provide an iconic vertical statement in the arrival square. These will instil a sense of arrival and are sized to moderate between human scale and the 14 story Adults hospital. Design style again makes reference to industrial structures -in this case a steel girder form.  The rungs provide a series of heights from which to mount light fixtures necessary to illuminate the arrival space. The illustrated image is indicative of the scale and character envisioned.



Illustrative feature mast light

Illustrative image of feature mast lights arranged along the Arrival Space central island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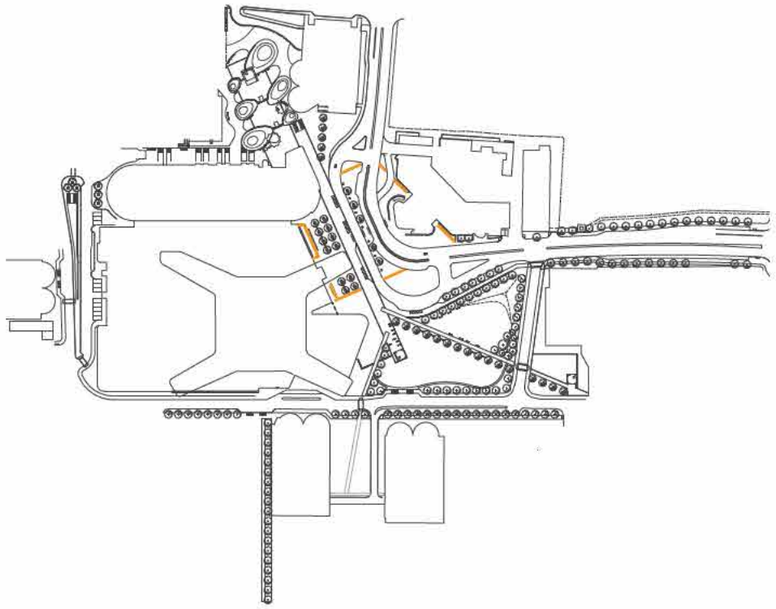
# 7.5
# Walls



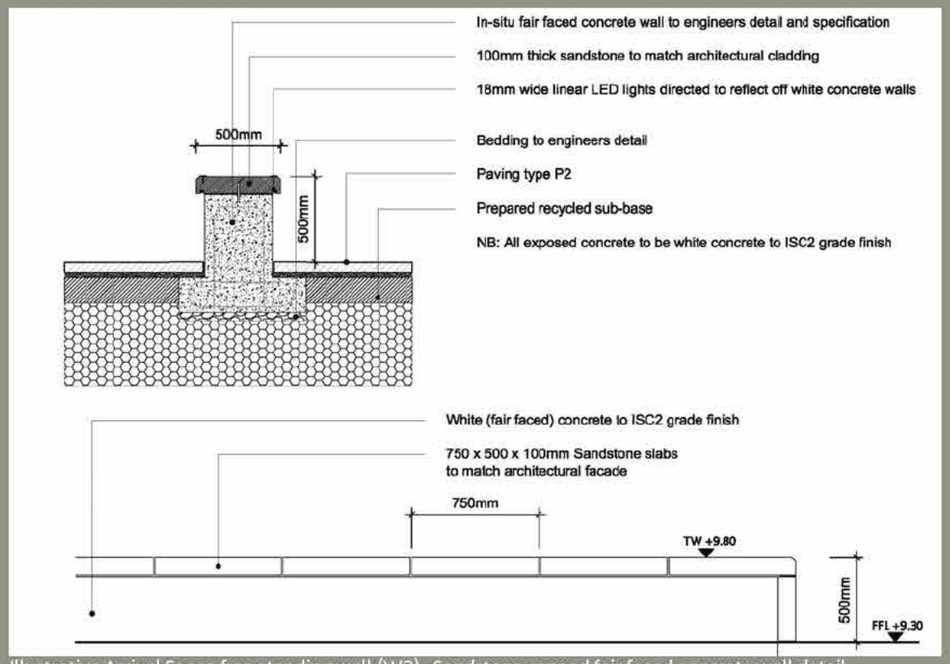
## General

Low walls are proposed in a number of locations to provide edge definition, lighting opportunities and to assist wayfinding. With the exception of wall type W3 (insitu wall not illustrated), they are all to be precast concrete with a white fair faced finish. The various configurations are described below.

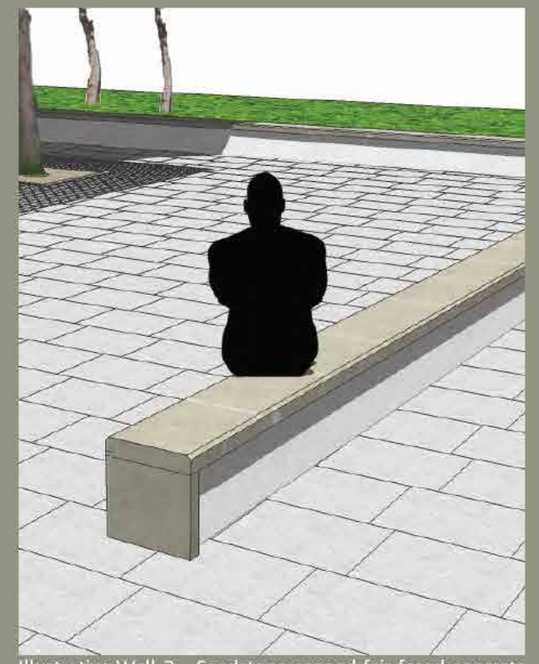
## Arrival space walls

A 500mm high x 500mm wide wall is proposed in the arrival space to provide the user with a clear sense of arrival and a feeling of entering a high quality robust space appropriate to the high level of activity expected. The wall is capped with a sandstone coping to match the proposed architectural cladding. LED strip lighting housed within the stone capping will wash a field of light down the white face of the wall. In order to fully contain the arrival space the wall is designed in two configurations: as a free standing wall and as a retaining wall for the planters adjacent to the building facades. Both walls are lit on the side facing inwards only.

The Labs building also includes a 700mm precast free standing wall that forms the threshold to the building entrance (not illustrated).

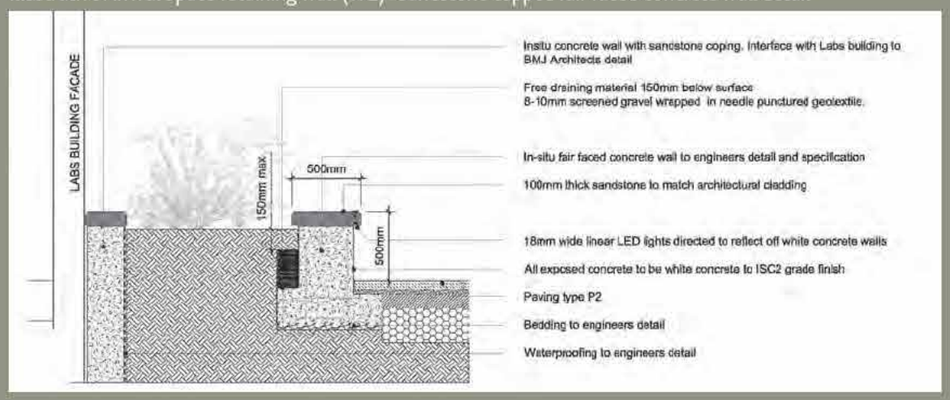



Illustrative Arrival Space free standing wall (W2)- Sandstone capped fair faced concrete wall detail

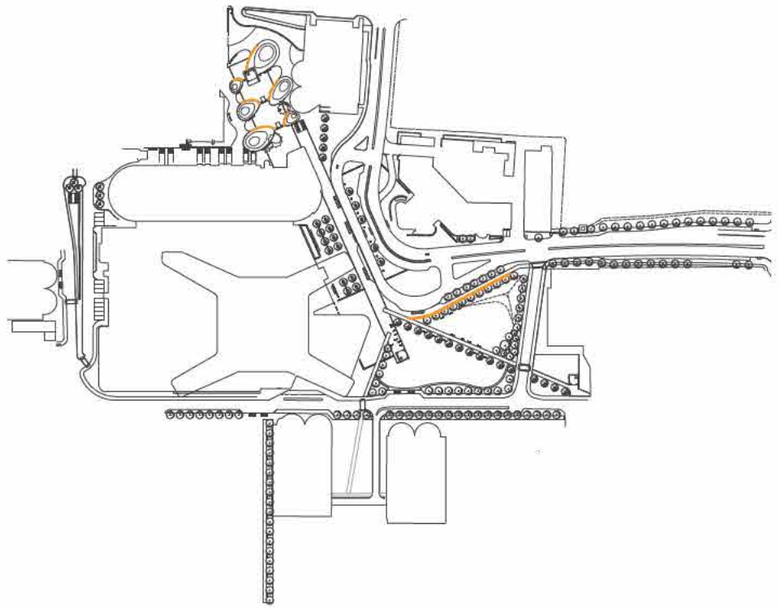


Illustrative Wall 2 - Sandstone capped fair faced concrete wall elevated view

Illustrative Arrival Space retaining wall (W2)- Sandstone capped fair faced concrete wall detail



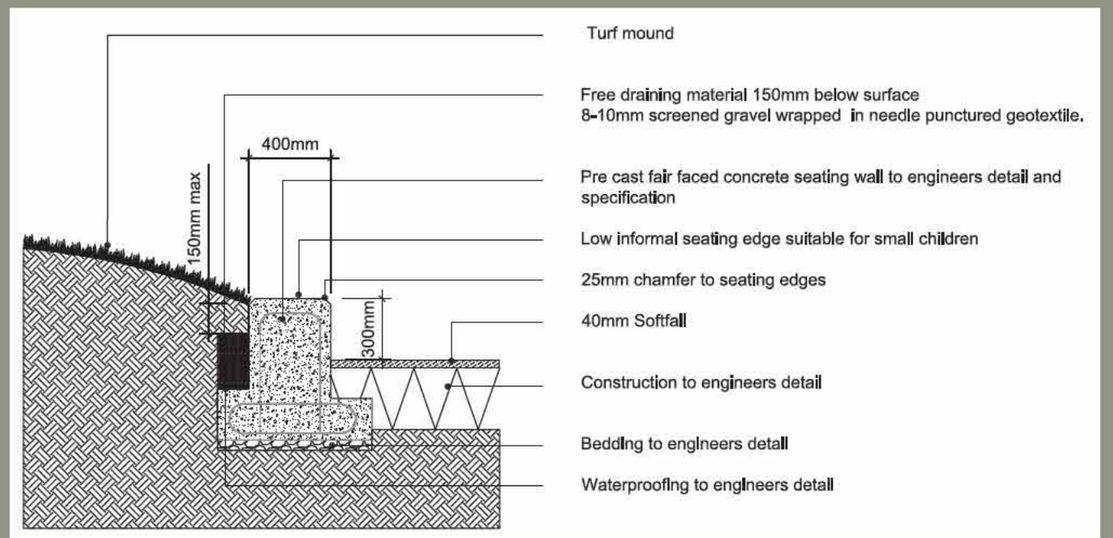

Indicative lit wall to Arrival Space

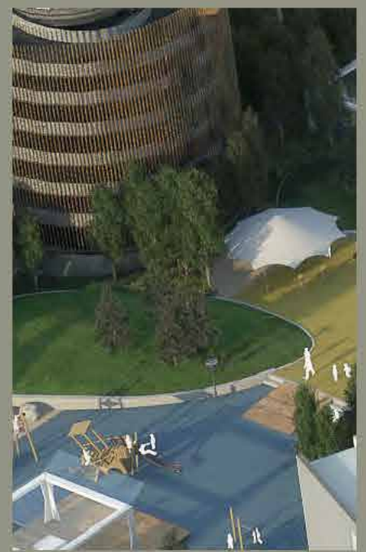


## Walls Outside Arrival Space

Outside the arrival space there are also a number of precast walls. In the Children's park a 400mm wide wall retains the western side of the grass mounds. This is set at 300mm high to absorb the level changes and to provide a low informal seating edge for small children.

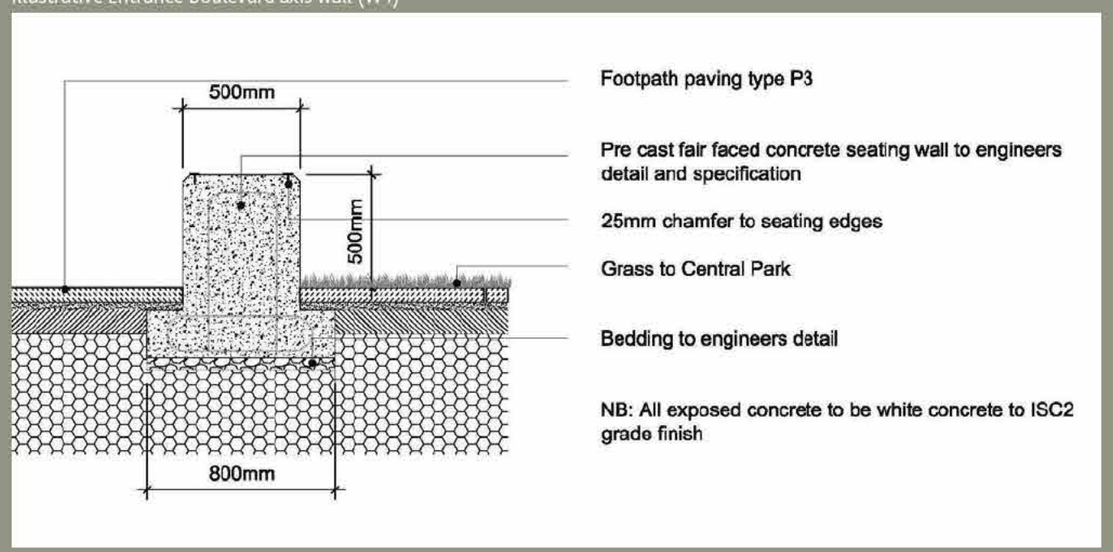
A 500mm wide free standing wall runs along the western edge of the central park to direct pedestrians towards the entrance, define the park edge and provide informal shaded seating edge under the Oak trees.



Illustrative Childrens Park Retaining Wall (W1)

Illustrative Entrance Boulevard axis wall (W1)



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# 8.0
# Hardworks Strategy
## 8.1
## Introduction

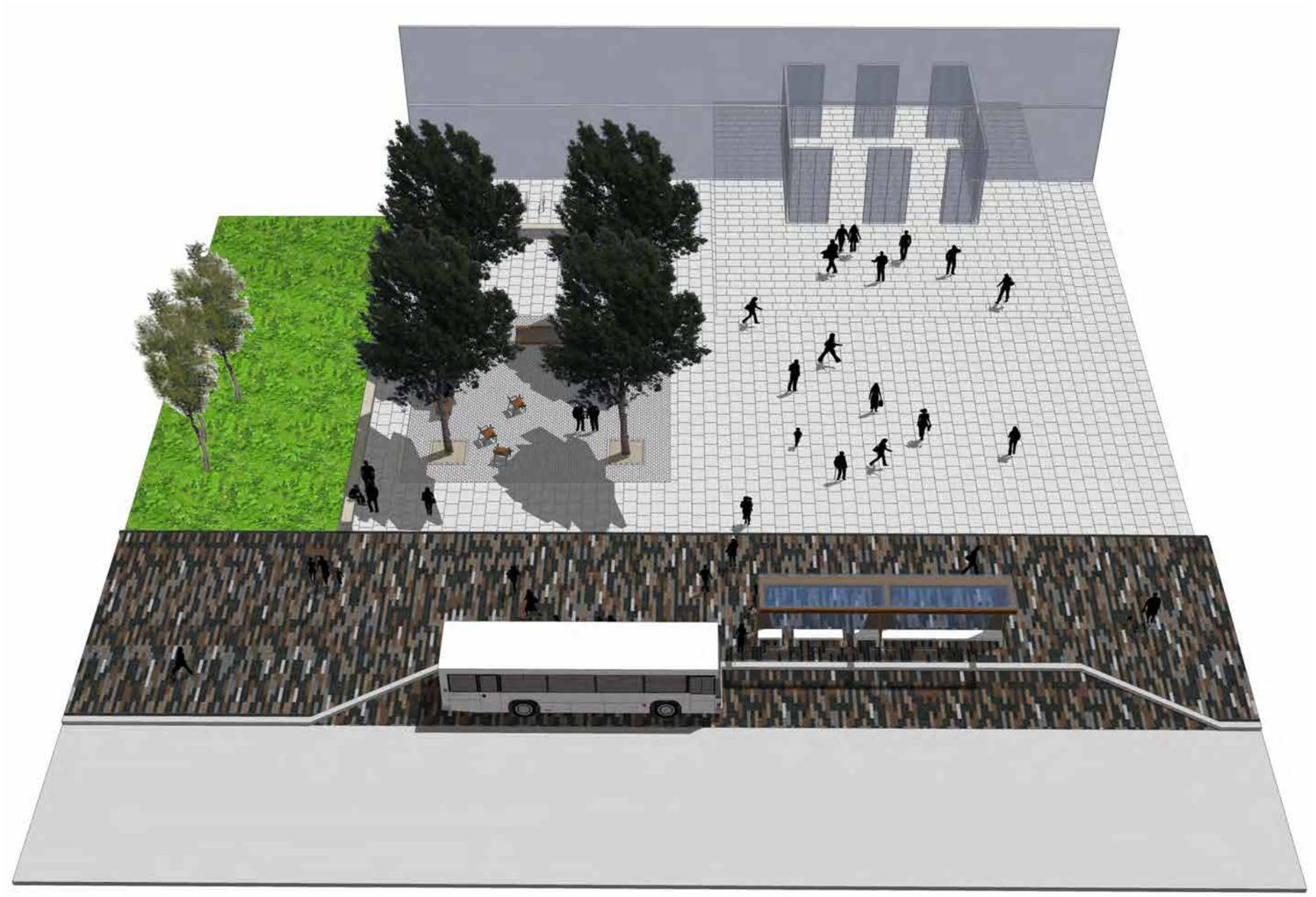
A palette of hard materials has been identified for the new development within the campus. This palette ranges from high quality natural materials in primary public spaces, to a more functional range of treatments in less significant areas.

The palette of hard landscape materials will create a cohesive and legible public realm to define a campus character which responds to the hierarchy of designed places. The design of a sequence of clearly identifiable places will enhance wayfinding and circulation. It will achieve this through the use of a range of surfacing materials which reinforce the character of particular areas. Hardscape treatments will act to differentiate as well as unify destination hubs and transition zones, responding to the environmental conditions, be it by providing pedestrian, shared or vehicular surfaces.

Variety is desirable and will ensure visual interest and richness as well as providing a clear hierarchy of spaces and a sense of arrival. Level transitions, pedestrian ramps and service covers are carefully considered to avoid clumsy transitions between surfaces at the point of construction.

## Functional Palette of Materials

The hardscape environment has been designed with regard to the environmental impact, function and sustainability of the materials. Permeable gravel surfaces permit surface water infiltration, whilst hard wearing surfaces delay the need for replacement materials and are used where the greatest level of activity is anticipated. Sustainable drainage systems are accommodated with surface run off being directed towards surface level drainage which is filtrated through a reed bed system. All materials will accord with the relevant British Standards and the palette has been configured to meet BREEAM standards for ‘Excellence’.



Arrival Space detail

LEGEND

PEDESTRIAN PAVEMENT (P1)
Granite Sett Paving (mixed colours)
750 x 150

PEDESTRIAN PAVEMENT (P2)
Exposed aggregate concrete paving
650 x 700

PEDESTRIAN PAVEMENT (P3)
Exposed aggregate concrete paving
400 x 400

NATURAL AGGREGTATE FINISHED SURFACE (P5)

SELF BINDING GRAVEL (P6)

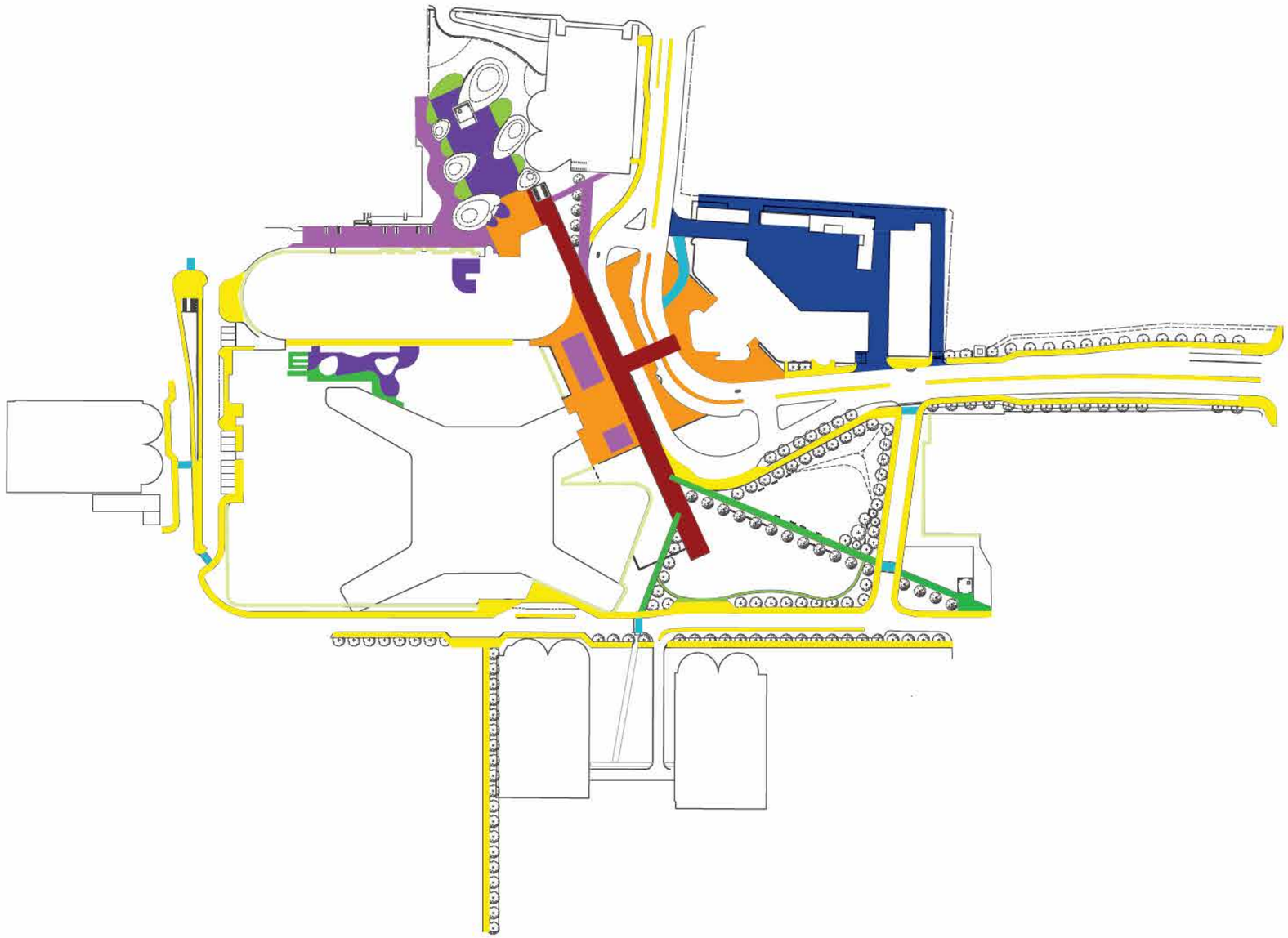
PEA GRAVEL (P7)
to maintenance strip around building

SOFT PLAY/RUBBER SURFACE (P8)

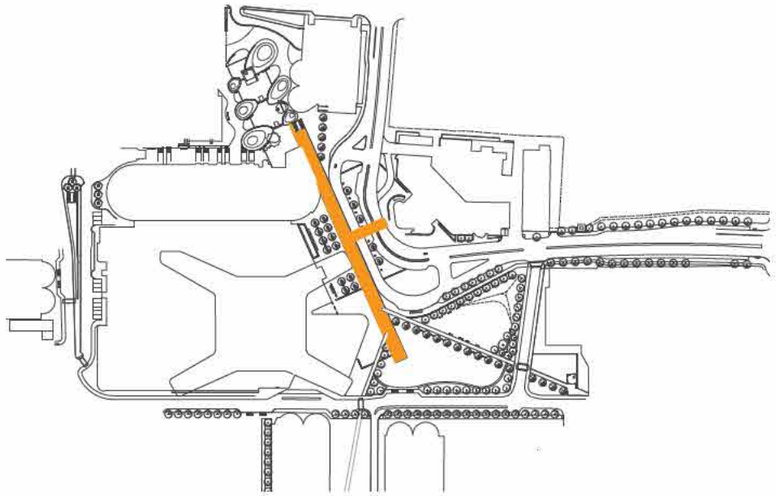
PERMEABLE PAVING (P9)

CONCRETE (P10)
To match Labs service yard finish
Refer to BMJ Specification

CONCRETE BLOCK PAVING (P11)
Dark grey graphite colour
134 x 200



## 8.2
# Granite Dock Feature Paving (P1)



The dock feature is to be paved with a high quality palette of warm colour granite setts. The colour pallet will reference the rich and distinctive granite streets found in Glasgow City centre, such as Buchanan Street and Candleriggs.

The slim paving module size has been chosen specifically to emphasise the linear dock geometry. The paving feature is further enhanced by a stainless steel edge that contains the granite within. The setts are to be laid on a rigid subbase with mortar joints in order to provide the necessary robustness for the expected level of foot fall and vehicular overrun. The bus stop bay incorporated within this paving will be constructed using shorter lengths of the same granite to increase rigidity.

Granite dock feature in context -Arrival Space plan

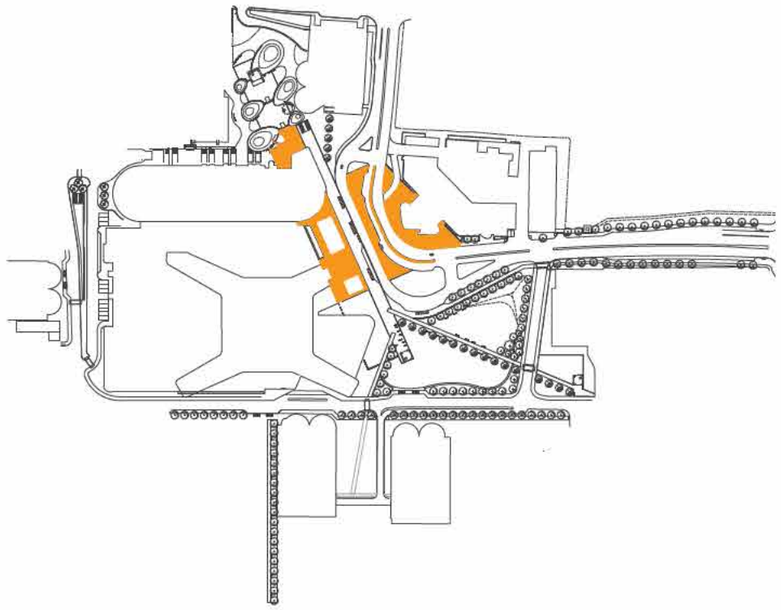
Granite dock feature in context -Arrival Space

| TYPE | GRANITE (P1) |
|---|---|
| LOCATION | 'DOCK' FEATURE |
| DIMENSIONS (mm) | L: 750mm W: 150mm D: 100mm |
| COLOUR | Black: 40%<br>Dark brown : 25%<br>Light brown: 15%<br>Mid grey: 15%<br>Silver grey : 5% |
| FINISH | FLAME FINISH TOP AND SAWN SIDES |

Candleriggs

Plan view

## 8.3
# Arrival Space Flag Paving (P2)



The arrival space is to be paved with a high quality exposed aggregate concrete paver. The large module size was chosen to provide a clear contrast with surrounding materials. This is necessary to strengthen the character and provide a sense of arrival for this space.

The material is a clean and contemporary silver grey colour, with a quantity of granite aggregate that provides a sparkle to the product. The light colour will lift the space which is in shadow much of the year. The paving extends between the Adults and Children's hospitals (including the islands crossings) and is bound by the low lit walls which further serve to mark the central arrival space as an area of high quality and significance of the scheme.

Granite dock feature in context -Arrival Space plan

P2 Concrete flag paving in context -Arrival Space

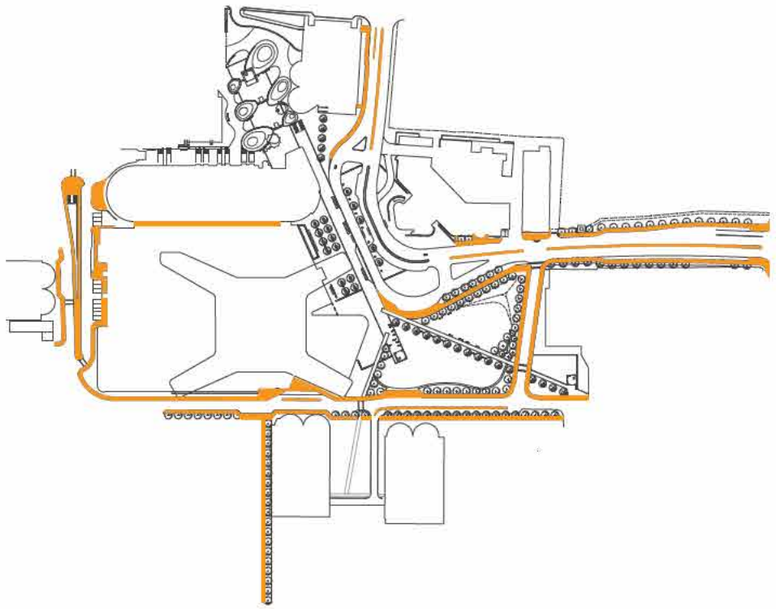
| | |
|---|---|
| TYPE | EXPOSED AGGREGATE CONCRETE PAVING (P2) |
| LOCATION | ARRIVAL SPACE |
| DIMENSIONS (mm) | L: 750mm W: 600mm D: 63mm |
| COLOUR | SILVER GREY |
| FINISH | TEXTURED |

Installed photo

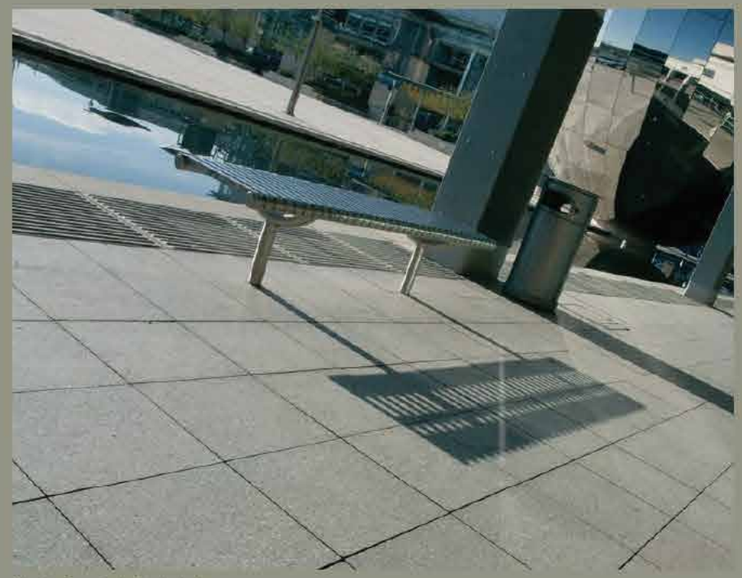
Plan view

A4984228S

## 8.4
# Footpath Paving (P3)



All footpaths leading up to the arrival space (excluding the parks) are to be paved in a small square mid/light grey concrete paving module. The 400mm x 400mm module is deliberately smaller to contrast with the arrival space paving and to suit the narrower pavement widths associated with areas outside of the hub. The paver will also feature a recycled content in its make up.

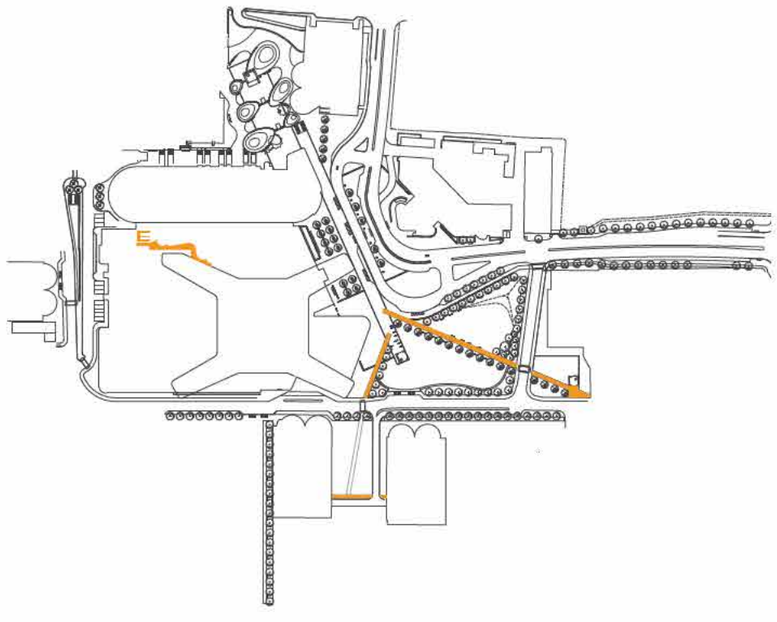


Illustrative Installed photo

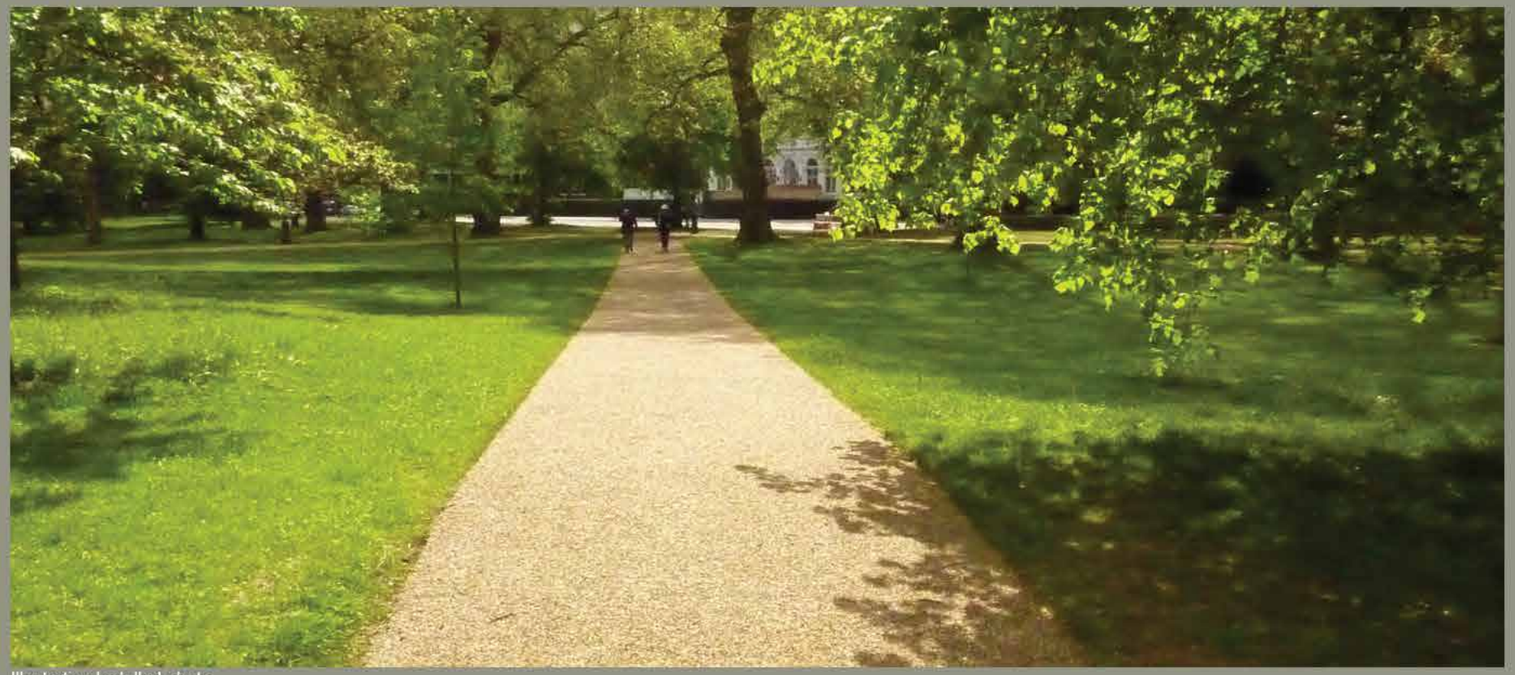
| TYPE | EXPOSED AGGREGATE CONCRETE PAVING (P3) |
|---|---|
| LOCATION | FOOTPATHS OUTSIDE ARRIVAL SPACE |
| DIMENSIONS (mm) | L: 400mm W: 400mm D: 65mm |
| COLOUR | SILVER GREY |
| FINISH | TEXTURED |
| SPECIAL FEATURES | RECYCLED CONTENT |

Plan view

## 8.5
## Natural Aggregate Finished Surface (P5)



The main hard surface proposed in the central park will be a buff coloured 'rolled in' natural aggregate surface to the diagonal footpaths. This will provide an informal but robust surface.



Illustrative Installed photo

| TYPE | NATURAL AGGREGATE FINISHED SURFACE (P5) |
|---|---|
| LOCATION | CENTRAL PARK |
| DIMENSIONS (mm) | NA |
| COLOUR | BUFF |
| FINISH | TEXTURED ROLLED IN |

Natural aggregate finished surface

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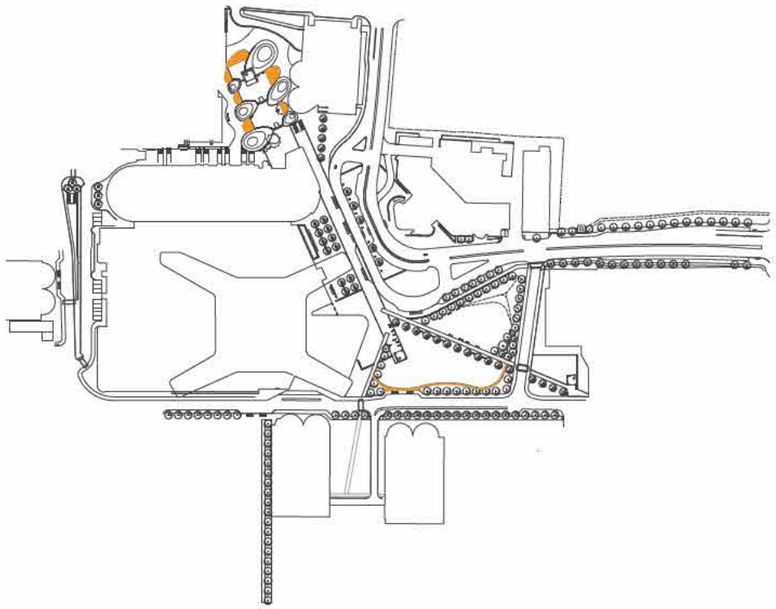
## 8.6
## Self binding gravel (P6)



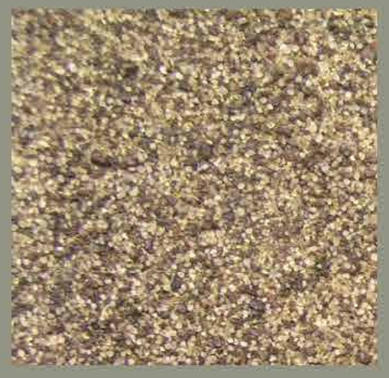
A secondary hard material to the parks will be a self binding gravel, which is proposed to the informal path/jogging track in the central park.

Self binding gravel is also proposed in the bays that flank the soft play surface in the Children's park. This softer material creates a softer surround to the boulders and logs placed in the bays. Where play equipment occurs the self binding gravel will be replaced with bark chippings locally to provide a safety zone

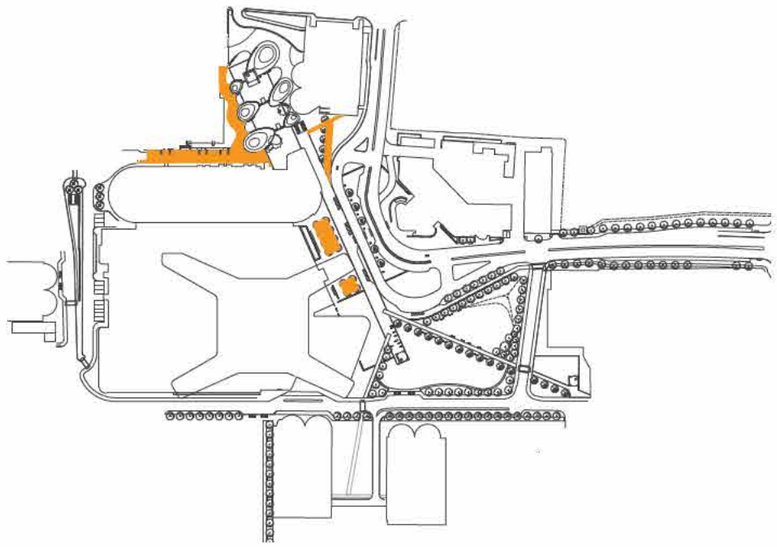
Installed photo

| TYPE | SELF BINDING GRAVEL (P6) |
|---|---|
| LOCATION | CENTRAL PARK / CHILDREN'S PARK |
| DIMENSIONS (mm) | NA |
| COLOUR | BUFF |
| FINISH | TEXTURED |

Self Binding Gravel



## 8.7
# Concrete Block Paving (P9)



Block pavers are proposed in 2 locations within the scheme. Permeable block pavers (P9) are proposed in the vicinity of the Children's hospital, to paths from car park 2 and under the trees in the arrival space. These are necessary to achieve the BREEAM excellent rating. Two shades of cream/ light brown are proposed in order to provide a warm surfacing for the campus.

Concrete block paving under trees in the Arrival Space

| | |
|---|---|
| TYPE | PERMEABLE BLOCK PAVER (P9) |
| LOCATION | CHILDREN'S HOSPITAL & UNDER ENTRANCE TREES TO ADULTS HOSPITAL |
| DIMENSIONS (mm) | L: 200mm W: 100mm D: 80mm |
| COLOUR | SILVER GREY<br>BUFF |
| FINISH | TEXTURED (STACK BOND) |
| SPECIAL FEATURES | PERMEABLE PAVER |

Plan

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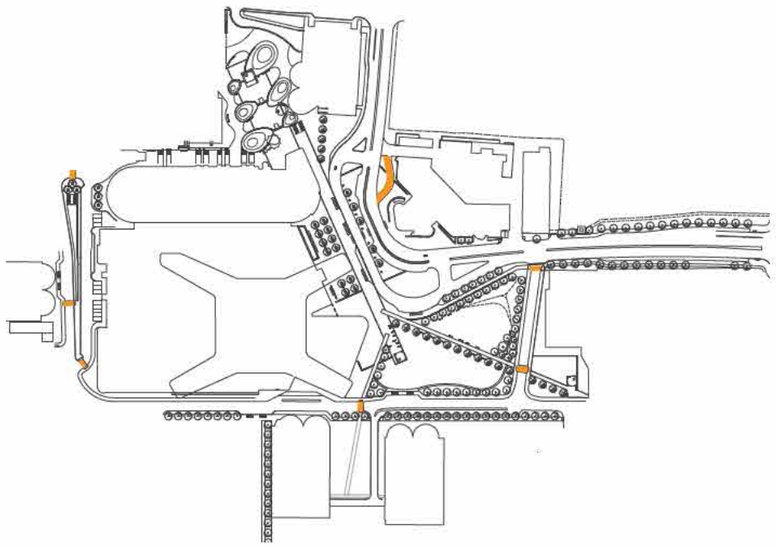
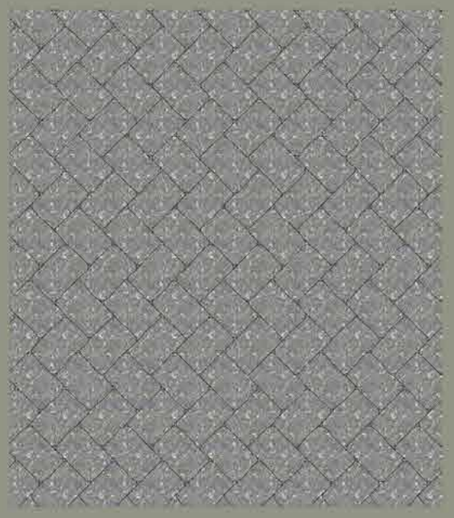
## 8.8
## Concrete Block Paving to crossings (P11)



Standard block pavers (P11) are also proposed on the pedestrian crossings in a herringbone pattern for rigidity. A dark grey colour is proposed in order to mask the inevitable oil stains released from vehicular traffic.

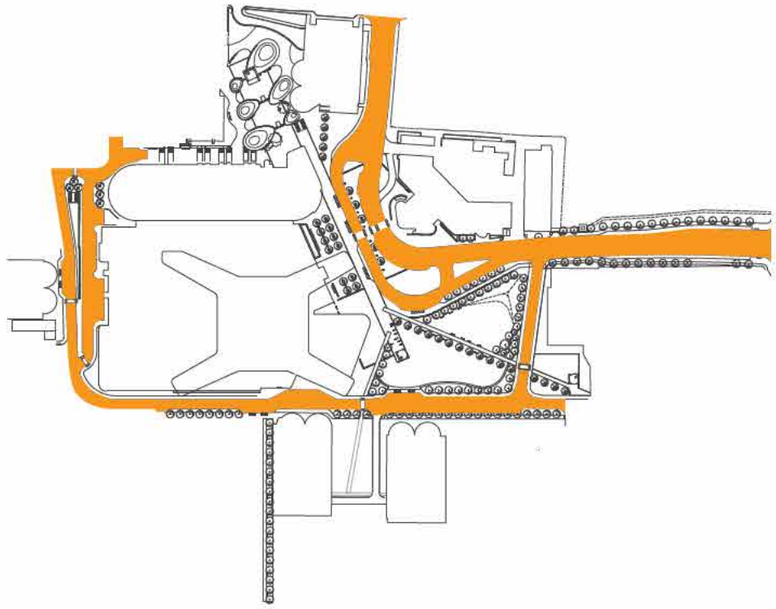
Installed Photo

Plan view



| TYPE | BLOCK PAVER (P11) |
|---|---|
| LOCATION | PEDESTRIAN CROSSINGS |
| DIMENSIONS (mm) | L: 200mm W: 134mm D: 80mm |
| COLOUR | Graphite |
| FINISH | TEXTURED (HERRINGBONE PATTERN) |
| SPECIAL FEATURES | SUB BASE TO TAKE VEHICULAR TRAFFIC |

## 8.9
# Tarmac (P12)



With the exception of pedestrian crossings, tarmac is proposed to all roads throughout the campus masterplan. This is to provide the necessary robustness particularly where bus traffic is concentrated.

The lane dedicated to fast link will potentially be a allocated a different colour (not shown), subject to further discussion with GCC and Fastlink.

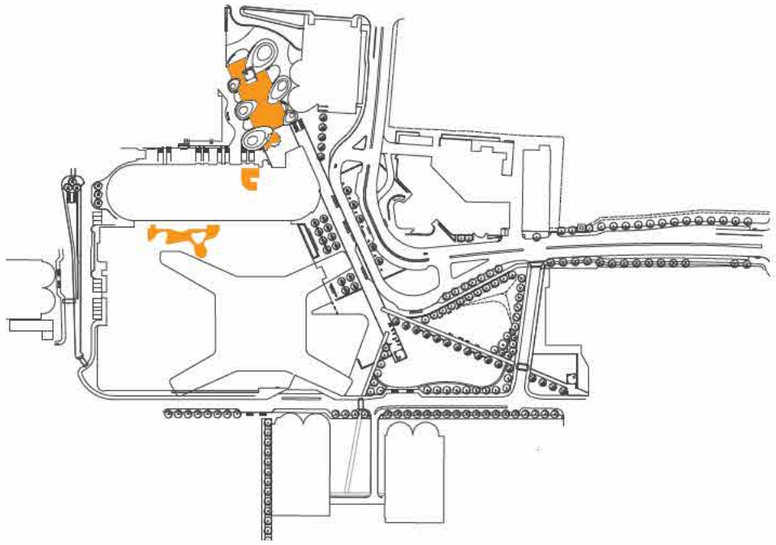
Illustrative Tarmac Image

| TYPE | ASPHALT TARMAC |
|---|---|
| LOCATION | ALL ROADS |
| DIMENSIONS (mm) | NA |
| COLOUR | MID GREY |
| FINISH | ROAD WEARING COURSE |
| SPECIAL FEATURES | POSSIBLE SEPARATE COLOUR FOR FAST LINK LANE |

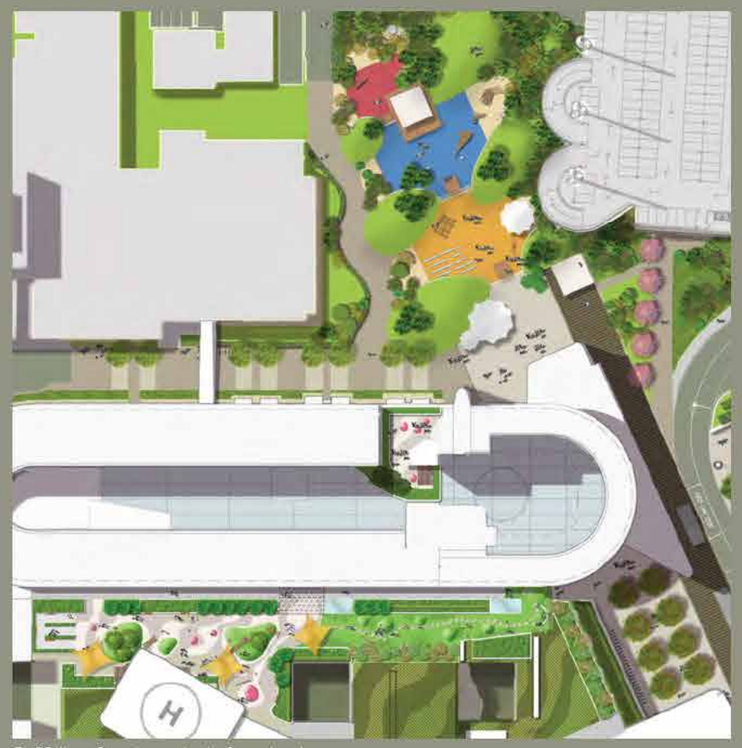
Plan View

A4984228

## 8.10
## Soft Play Surface (P8)



A rubberised surface is proposed in the following locations: Children's park, Childrens roof garden and DCFP Childrens roof garden. A range of colours are proposed and the surface will be mounded to provide a playful and fun environment. Colours, landform, and final extent of soft play surfacing is illustrative at this stage and will be further developed during the detailed design stage.



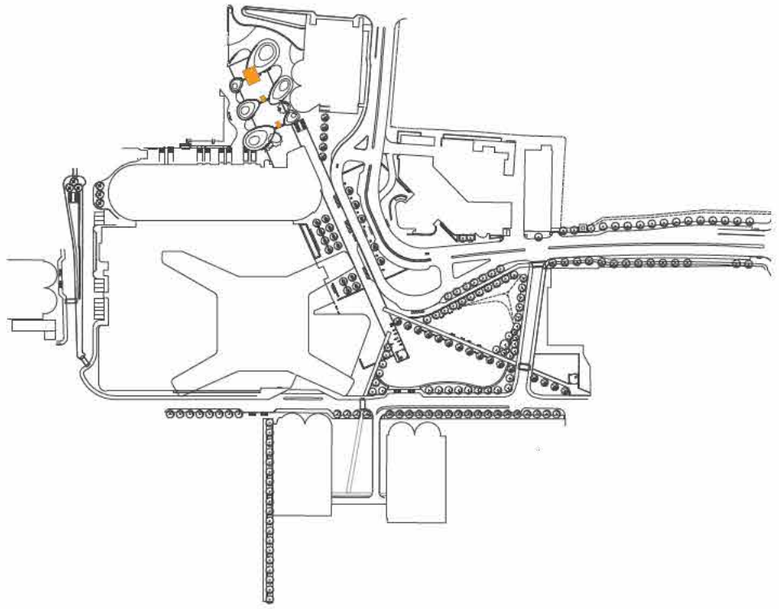
Softfall surface in context of masterplan

| | |
|---|---|
| TYPE | SOFT PLAY/RUBBER SURFACE (P5) |
| LOCATION | CHILDRENS PARK & ROOF GARDENS |
| DIMENSIONS (mm) | NA |
| COLOUR | BUFF, BROWN, RED, YELLOW, BLUE ETC |
| FINISH | RUBBER CRUMB |

Installed Photo

Installed Photo

## 8.11
## Timber Decking (or similar)



Timber decking (or similar) is proposed in the Children's park as a platform for the pavilion structure. The theme is also continued for the treatment of level changes within the Children's park. Timber ramps (or similar) are proposed in the middle of each line of steps to provide wheelchair users a means of access between the 3 levels.

Illustrative raised timber stage feature

Indicative Children's Park ramp

| TYPE | TIMBER DECKING (OR SIMILAR) |
|---|---|
| LOCATION | CHILDRENS PARK |
| DIMENSIONS (mm) | 120mm wide grooved anti-slip timber |
| COLOUR | Dark wood |
| FINISH | Anti slip resin to grooved recesses |
| SPECIAL FEATURES | FSC Certified Timber |

Indicative Installed photo

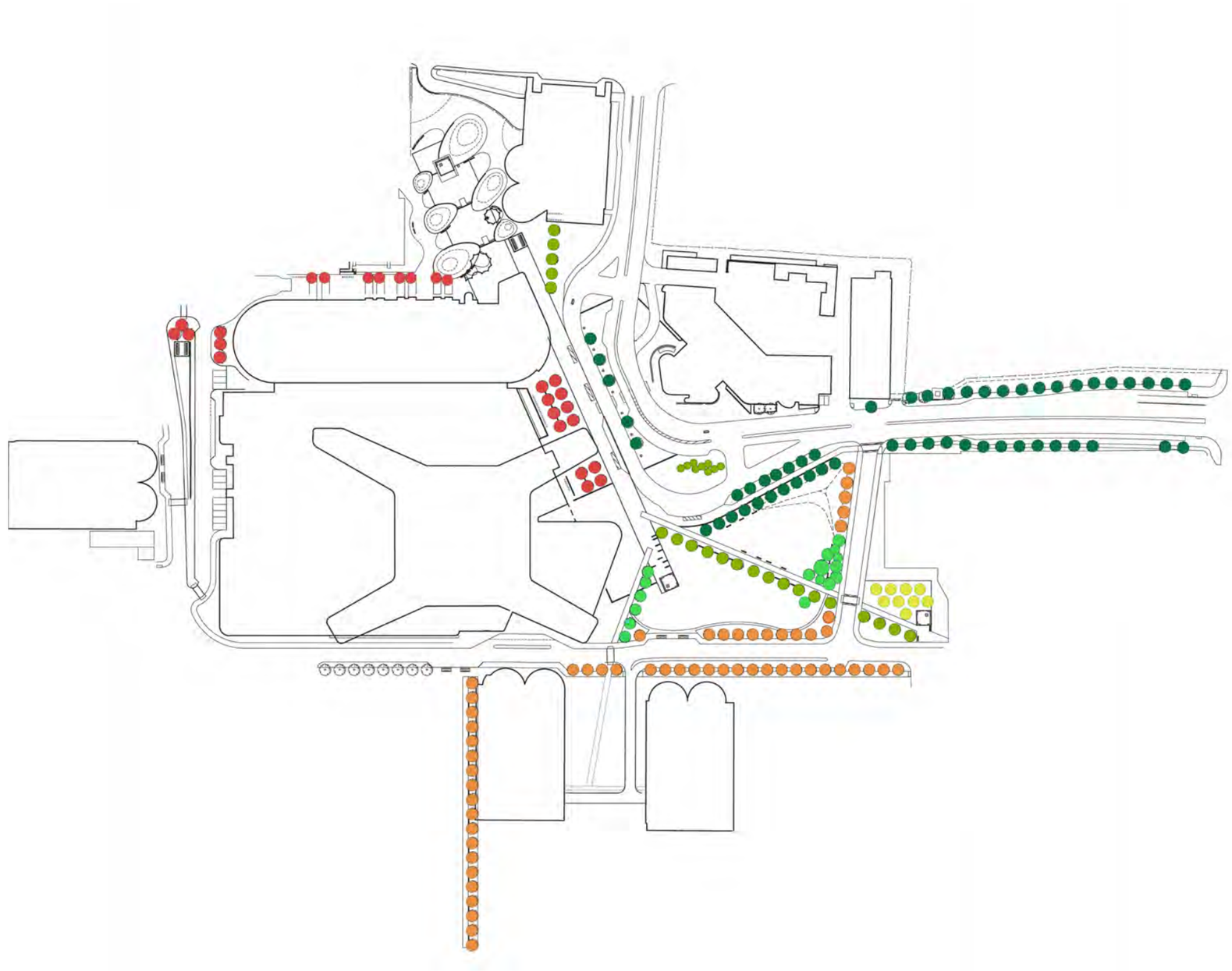
A4984228

# 9.0
# Softscape Strategy
## 9.1
## Introduction

A broad palette of soft landscape components has been proposed to articulate the design intent of the masterplan and to reinforce the character of the many designed places. This palette has also been selected to respond to the environmental conditions and settings defined by the built form.

The predominantly native palette including native hedgerows and native oak species has been chosen to increase biodiversity on site whilst achieving an appropriate maintenance level for the campus.

Initial consultation with Glasgow City Council has identified a desire to increase the berry bearing trees and shrubs in the locality, including the planting of Swedish whitebeams and other Sorbus species. These species will provide additional habitat for the local bird population notably the Waxwing. Silver birch and alder are also recognised as important species for local biodiveristy.



LEGEND

- ENTRANCE BOULEVARD TREE
- STREET TREES
- CENTRAL PARK TREES
- CENTRAL PARK AXIS TREES
- PLAZA TREES
- ORCHARD TREES

LEGEND
BUFFER / STRUCTURE PLANTING (P1)
Sun
BUFFER / STRUCTURE PLANTING (P2)
Shade
FORMAL / STRUCTURE PLANTING (P3)
Sun
FORMAL / STRUCTURE PLANTING (P4)
Shade
HEDGEROW PLANTING (P5)
WOODLAND UNDERSTOREY (P6)
WET WOODLAND UNDERSTOREY (P7)
FEN / MARSH PLANTING (P8)
BULB PLANTING (P9)
WOODLAND BULB PLANTING (P10)
INFORMAL MEADOW (P11)
AMENITY GRASS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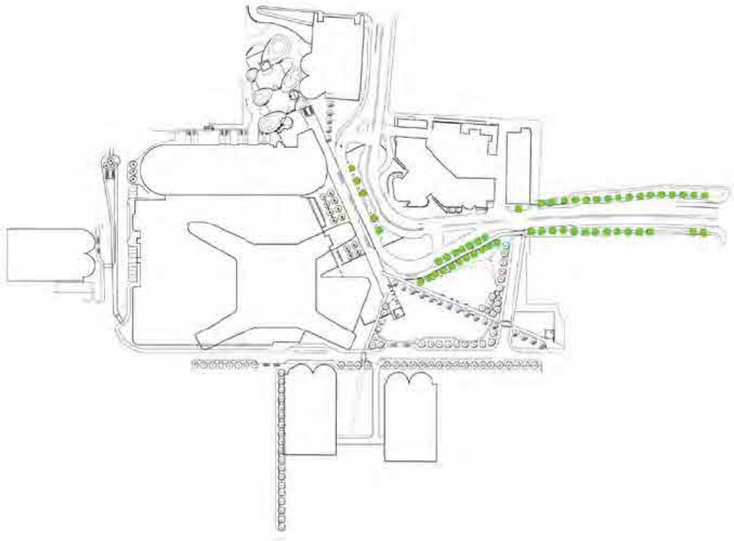
## 9.2
## Entrance Boulevard Trees



In reference to Glasgow's ship building past, Oak trees have been chosen to line the boulevard leading to the main hospital complex. They have been selected to replace oak trees that are scheduled to be felled during site clearance. The size (8-10m) and quantity of Oaks proposed will, in time far exceed the biomass of those lost during construction.

Both Pin Oak (Quercus palustris) and the native Sessile Oak are included within the soft landscape proposal.

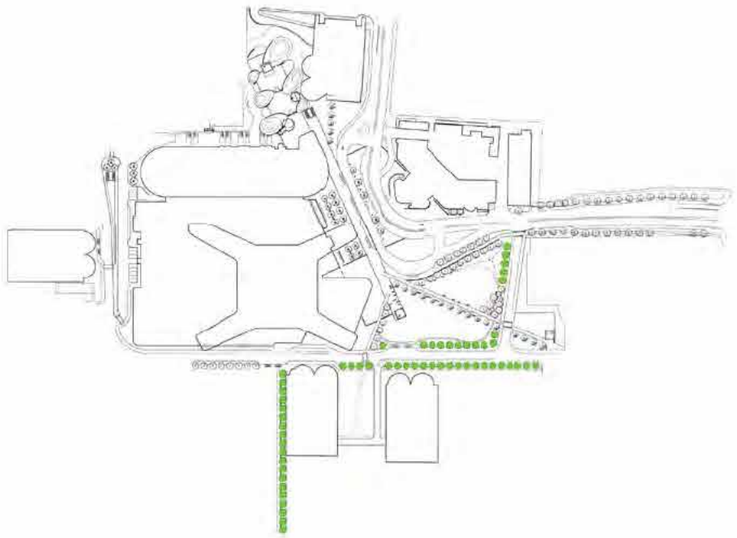
Stunning autumn colour along with the regal sense of legacy and stability inherent in the Oak will ensure that these trees make a significant contribution to the character of the site in years to come.

Autumn Colour - detail

Autumn Colour - form

Quercus palustris - street planting

## 9.3
## Street Trees



The Hornbeam (Carpinus betulus) is often used as a parkland or street tree due to it's fresh green foliage and form. These trees will inhabit the secondary roads around the site, surrounding the central park as a graduation between the civic character of the streets and the relaxed atmosphere of the park.

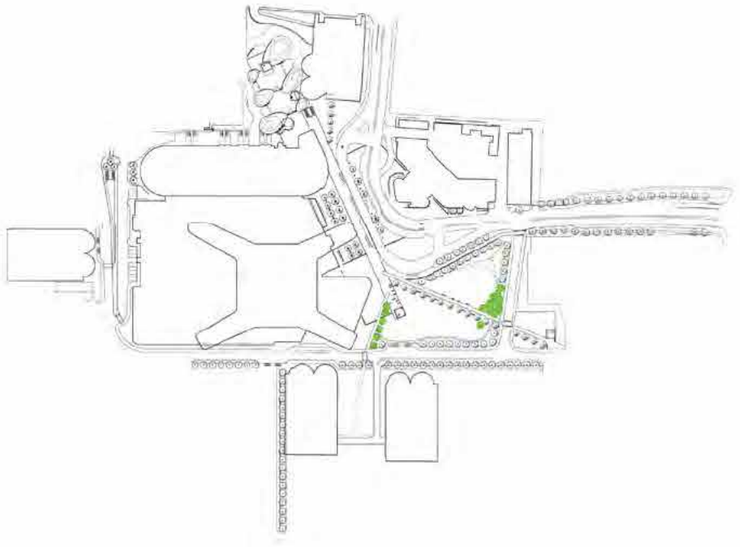
Carpinus betulus - foliage detail

Carpinus betulus - natural form

Carpinus betulus - foliage

Carpinus betulus - winter foliage

## 9.4
# Central Park Trees



In homage to it's use during the ship building past of Glasgow, a Sessile Oak (Quercus petraea) will anchor the corner of the park surrounded by Swedish Whitebeam (Sorbus intermedia), native Rowan (Sorbus aucuparia) and Hornbeam (Carpinus betulus).

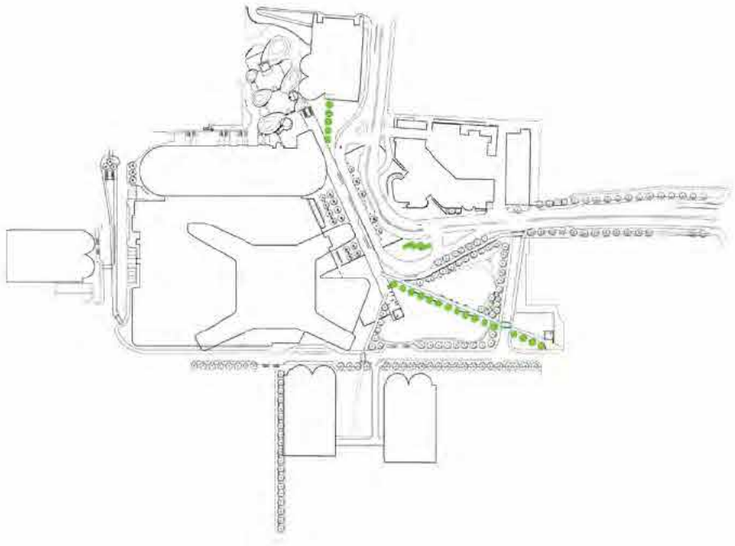
Quercus petraea, (Sessile Oak) - foliage detail

Sorbus intermedia (Swedish Whitebeam) - Foliage

Quercus patraea (Sessile Oak) - Parkland form

Sorbus aucuparia (Rowan) - berry detail

## 9.5
# Central Park Axis Trees



Wild Cherry (Prunus avium) forms an avenue along the main axis through the central park. It's biodiversity value, intimate scale and spring blossom will all contribute to emphasise the rhythm of the seasons throughout each year.

Prunus avium (Wild Cherry)

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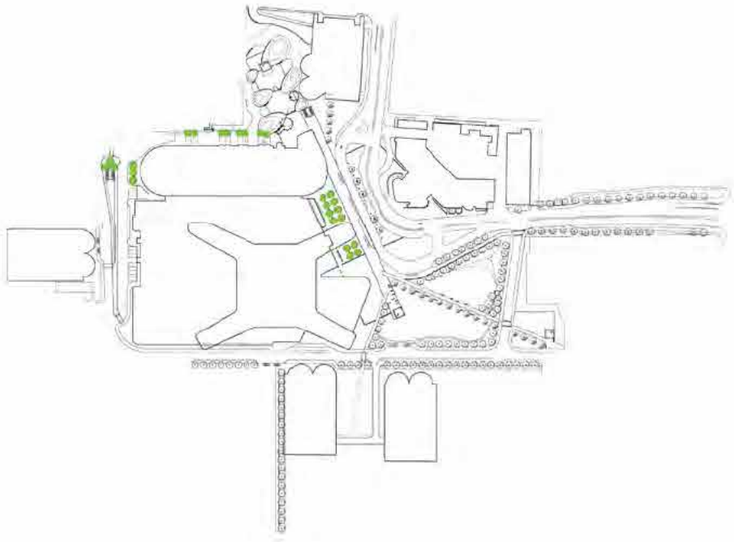
## 9.6
# Plaza Trees



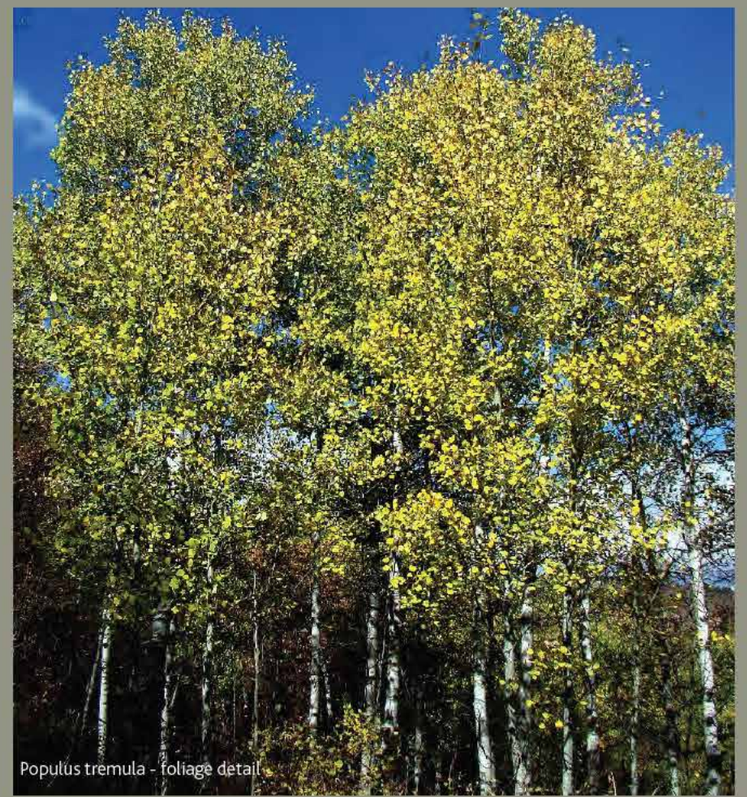
The entrance boulevard stretches into the Arrivals Space with a line of Pin Oak (Quercus palustris) opposite the main building. A group of native Aspen (Populus tremula) sit at the foot of the building, their fresh open canopy and audible foliage activating the entrance area. The tree canopy in this prime location will also help mitigate against adverse wind conditions.

Inhabiting the more intimate spaces adjacent to the Children's Hospital are native Rowan (Sorbus aucuparia 'Golden Wonder'), Pyrus calleryana 'Chanticleer', Amelanchier aborea 'Robin Hill' and Amelanchier lamarkii - all chosen for their stunning autumn colour, blossom and resilience to demanding weather conditions.

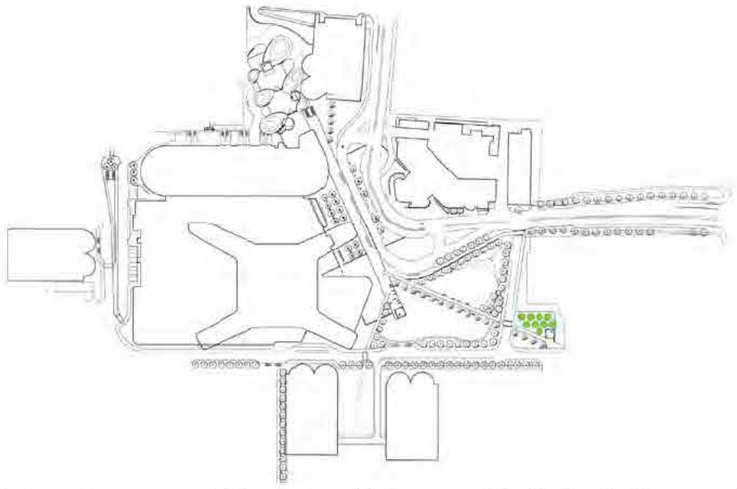
Sorbus aucuparia 'Golden Wonder' (Rowan)

Populus tremula - foliage detail

Quercus palustris (Pin Oak) Autumn Colour - form


Populus tremula - foliage detail

## 9.7
# Community Orchard Opportunity



Scotland has a long history of gardening associated with its towns and cities - of which orchards were an important part. Prior to the industrial revolution Glasgow was associated with gardens:

*"the city was surrounded by kitchen and flower gardens, and beautiful orchards, abounding in fruits of all kinds, which, by reason of the open and large streets, send forth a pleasant and odoriferous smell."*

John M'Ure, alias Campbell, Clerk to the Registration of Seisins, and other Evidents for the District of Glasgow

This space provides an opportunity to create a community orchard that draws on the heritage of Glasgow and it's environs as a fruit growing district. In partnership with the Commonwealth Children's Orchard Scheme this small orchard has the potential to provide a valuable link between the hospital landscape and the surrounding community acting as a space for education and food production.

As the proposed area is adjacent to the central park axis it could act as an easily accessible platform for those visiting the site to find out more about community food production. Ongoing management of this area is proposed to be handed over to these local groups with the intention of creating a sense of community ownership .

Malus domestica (Apple) - Blossom detail

Malus domestica (Apple) - Orchard

(Courtesy of John Hancox - Commonwealth Children's Orchard)

Community Orchard (Courtesy of John Hancox - Commonwealth Children's Orchard)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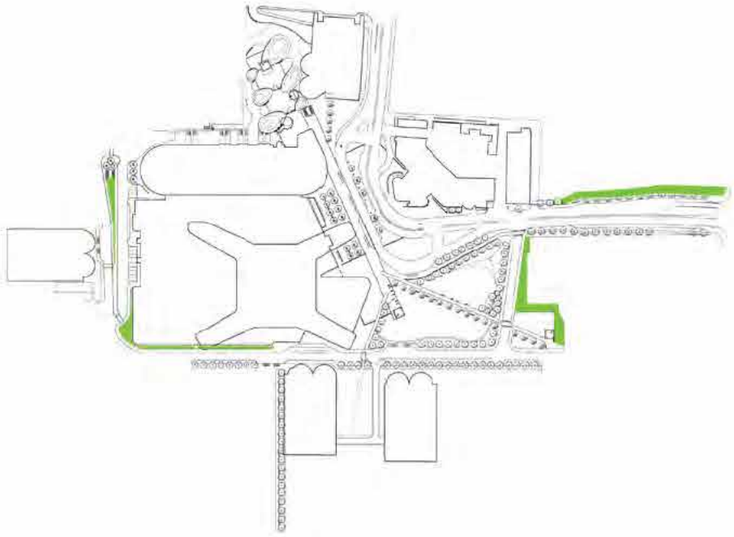
## 9.8
## Buffer Planting

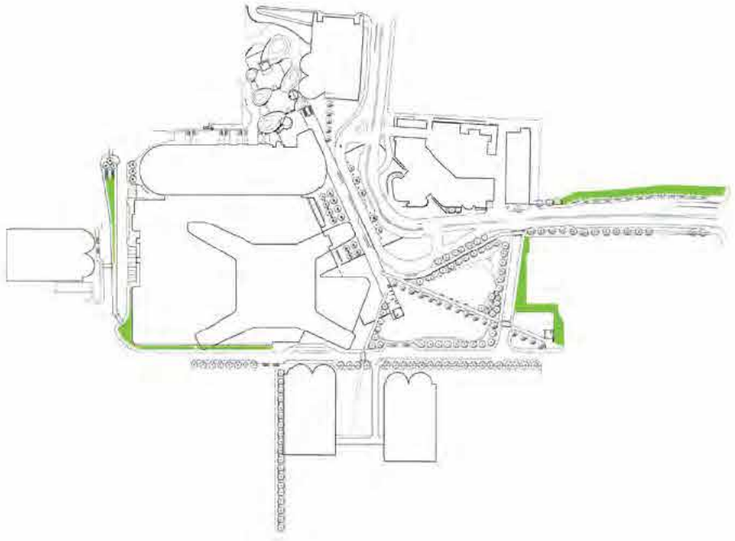


### Structure Trees (Sun)

The two natives Birch (Betula pendula) and Rowan (Sorbus aucuparia) are chosen for architectural qualities, seasonal interest and resilience. Planted as multistem specimens they are intended to interact with the shrub planting to provide texture and structure along with habitat potential to boundary areas within the landscape.

Sorbus aucuparia (Rowan) - berry detail

Betula pendula (Birch) - multistem



## Structure Planting (Sun)

A palette of mainly native planting chosen, like the trees, for architectural qualities, seasonal interest and resilience. The planting is intended to interact with the verticality of the multistem trees to provide texture and structure along with habitat potential to boundary areas within the landscape.

Ajuga reptans (Bugle) - flower

Euphorbia cyparissas (Spurge)

Symphytum ibericum (Dwarf Comfrey)

Rosa rugosa (Apple Rose)

Elaeagnus x ebbingei

Rosa canina (Dog Rose)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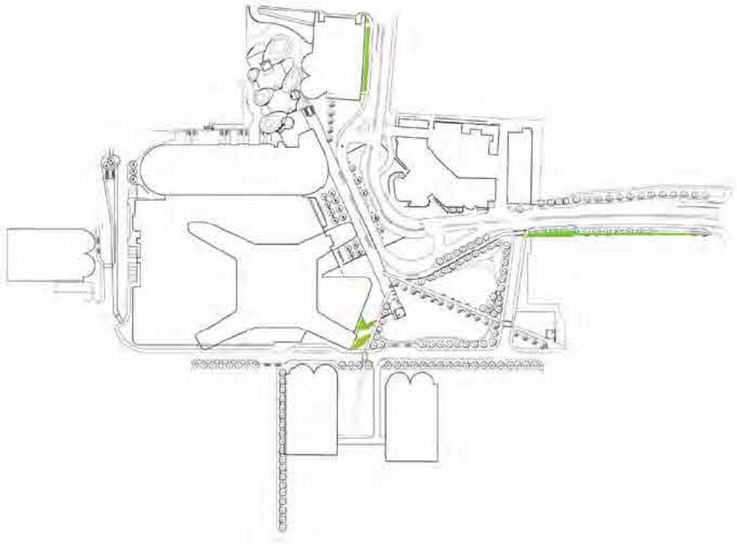


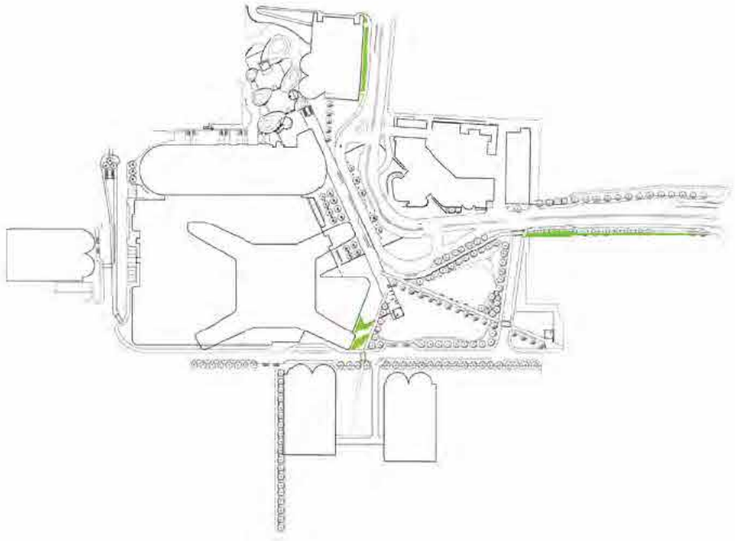
## Structure Planting (Shade)

The three natives Birch (Betula pendula), Rowan (Sorbus aucuparia) and Corylus avellana (Hazel) are chosen for architectural qualities, seasonal interest, shade tolerance and resilience. Planted as multistem specimens they are intended to interact with the shrub planting to provide texture and structure along with habitat potential to shaded boundary areas within the landscape.

Corylus avellana (Hazel) - winter catkins

Corylus avellana (Hazel) - foliage detail

Betula pendula (Birch) - multistem



## Structure Planting (Shade)

A palette of mainly native planting chosen, like the trees, for architectural qualities, seasonal interest, shade tolerance and resilience. The planting is intended to interact with the verticality of the multistem trees to provide texture and structure along with habitat potential to shaded boundary areas within the landscape.

Ajuga reptans 'Atropurpurea'

Elaeagnus x xebbingei 'Limelight'

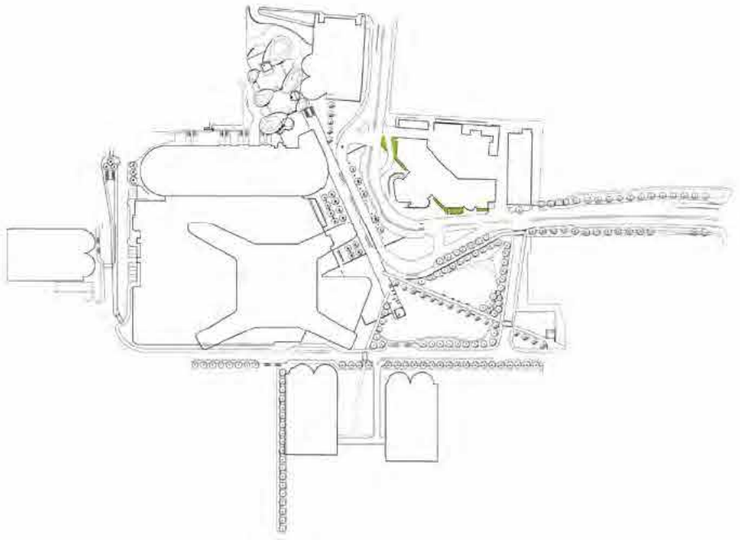
Polystichum setiferum 'Plumosodivisulobum Group' (Soft Sheild Fern)

Ilex aquifolium (Holly) - berry detail

Rosa canina (Dog Rose)

Viburnum opulus (Guelder Rose)

## 9.9
# Formal Planting

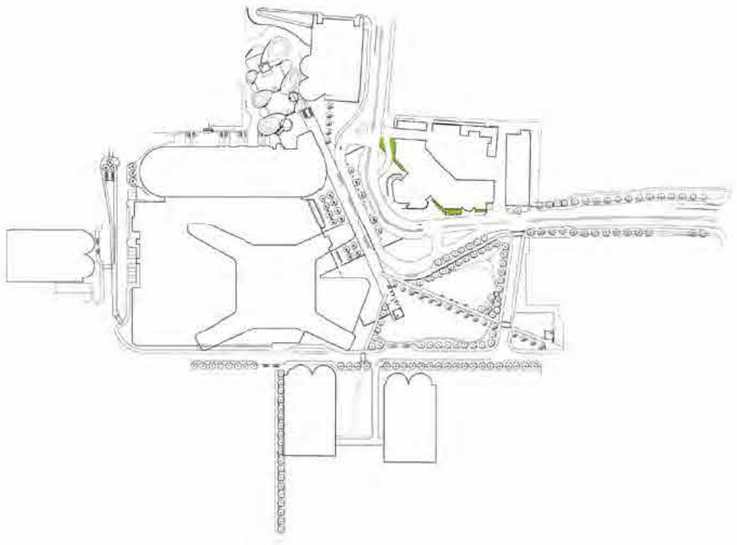


### Structure Trees (Sun)

A cultivar of the Himalayan Birch (Betula var. Jacquemontii 'Grayswood Ghost') is chosen for it's intense white bark and along with the Juneberry (Amelanchier lamarkii) is planted sparingly in planting beds adjacent to the laboratory building in order to provide a vertical dynamic to the more ornamental planting of these sunnier formal areas.

Amelanchier lamarkii (Juneberry)

Betula var. jacquemontii 'Grayswood Ghost'



## Structure Planting (Sun)

A more ornamental approach is taken to the planting in these areas. A mixture of herbaceous perennials, evergreen grasses and shrubs take advantage of the lighter aspect in these areas.

Most of the plants chosen here flower at different times of the year providing a colourful rhythm to the main thoroughfare and entrance to the laboratory building.

Liriope Muscari 'Big Blue'

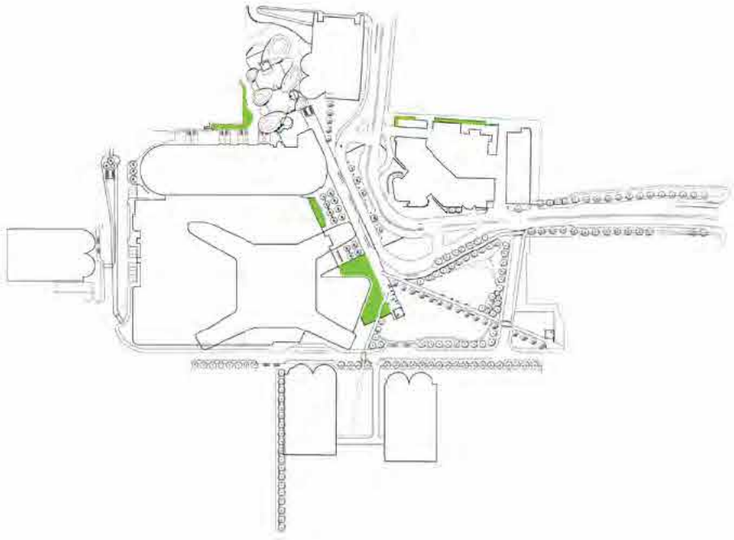
Salvia x sylvestris 'Rose Queen'

Libertia grandiflora

Verbena bonariensis

Choisya x dewitteana 'Aztec Pearl'

Polystichum setiferum 'Plumosodivisulobum Group'

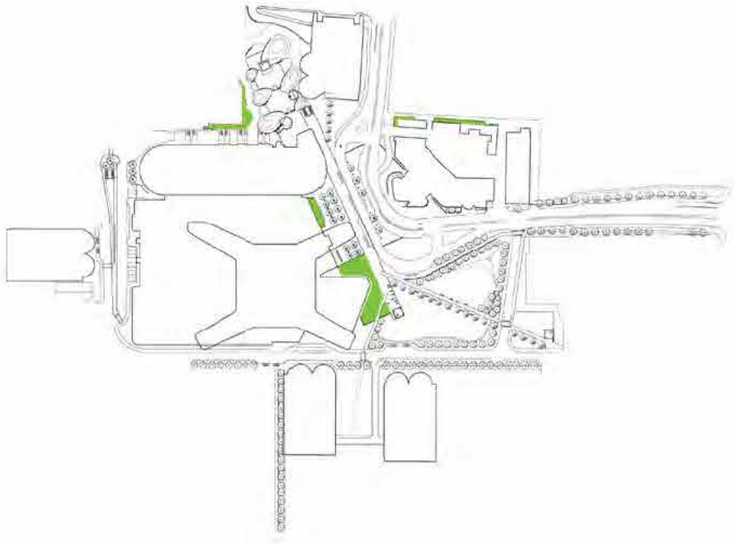


## Structure Trees (Shade)

This area is intended to be reminiscent of pioneer woodland found throughout the North of the UK.

A birch stand growing through a dense carpet of foliage will act as a memorable primeval landscape at the entrance of the main hospital building. As one moves passed and through this landscape and the bright white bark of the Birch (Betula var Jacquemontii 'Grayswood Ghost') is reflected in the glass of the building facade a rhythm is created as each white stem crosses another as viewing angles change.

Betula var. jacquemontii 'Grayswood Ghost'



## Structure Planting (Shade)

A mixed herbaceous groundcover layer consisting of evergreen ferns, Liriope and Variegated Comfrey.

The light foliage of the Birch allows a dappled light to permeate through the canopy picking out the blooms of the Liriope and the Comfrey as well as the gold edge of the variegated foliage. The semi evergreen ferns resonate with the theme of the primeval woodland whilst providing a binding groundcover texture that stretches out beneath the birch bark to the building facade.

Liriope Muscari 'Big Blue'

Polystichum-setiferum-'Herrenhausen'

Dryopteris affinis 'Cristata'

Symphytum x uplandicum 'Variegatum'

Polystichum setiferum 'Plumosodivisulobum Group'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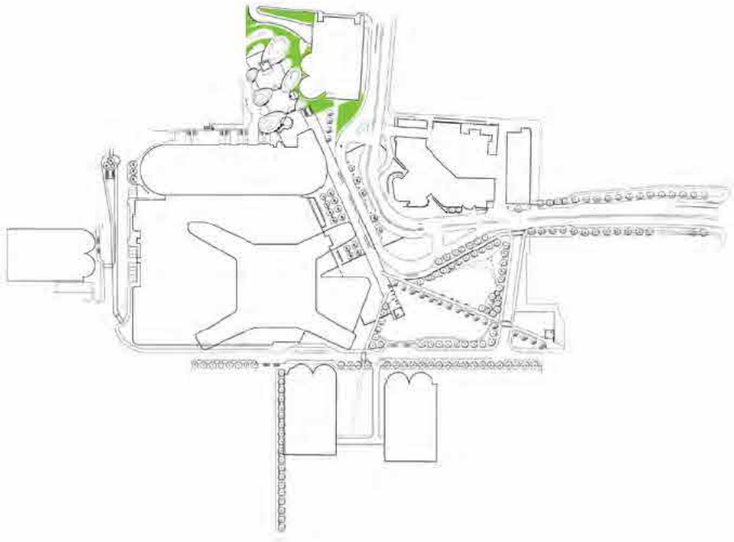
## 9.10
# Woodland Planting



### Trees

The theme of pioneer woodland is extended from the entrance of the main building to the form the setting of the play landscape.

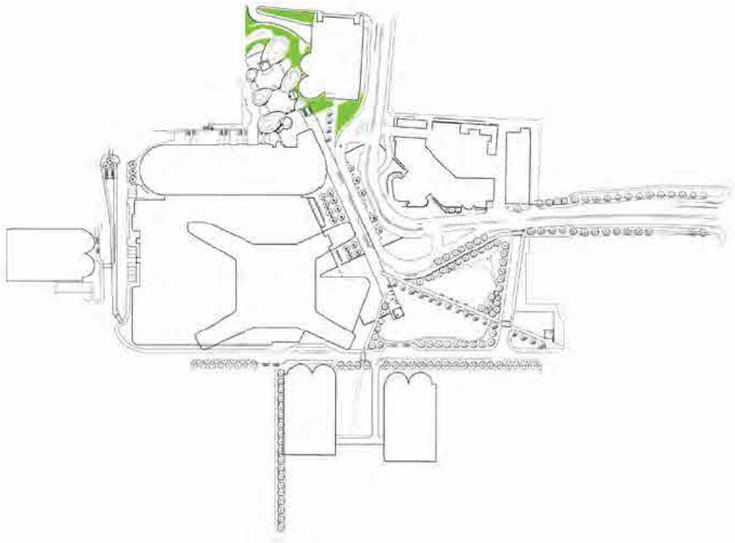
A range of standard specimens and multistem Birch (Betula pendula, Betula pubescens,) along with Scots pine create pockets of woodland that form around the landscaped mounds of the play zone whilst anchoring the pavilion structure into it's landscape setting.

Betula pubescens (Downy Birch) - catkins

Betula pubescens (Downy Birch) - foliage

Betula pendula (Birch) - multistem

Pinus sylvestris (Scots Pine)



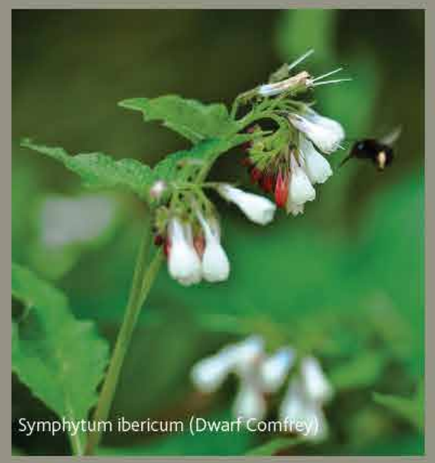
## Planting

Beneath the canopy of the woodland an intricate matt of woodland groundcover plants are encouraged to proliferate with the intention of creating an intriguing woodland environment that stimulates the imaginations of kids using the play zone.

Ajuga reptans (Bugle)

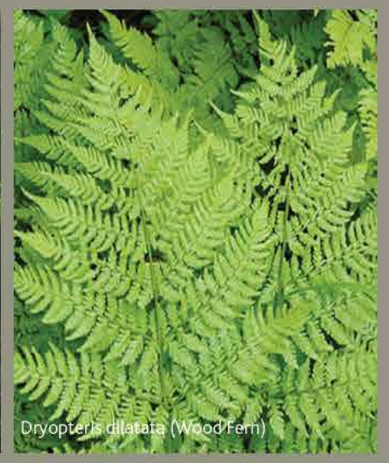
Asplenium scolopendrium (Harts Tongue Fern)

Fragaria vesca (wild Strawberry)


Symphytum ibericum (Dwarf Comfrey)

Carex pendula (Pendulous Sedge)

Matteucia struthiopteris (Ostrich Fern)


Dryopteris dilatata (Wood Fern)

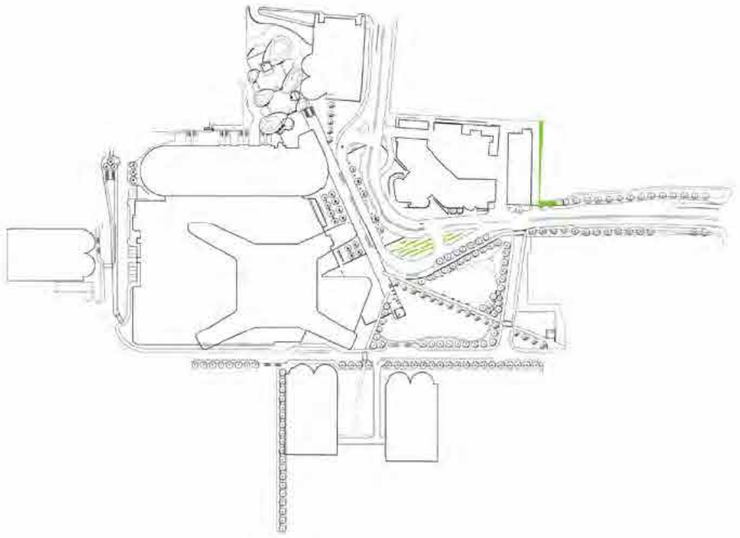
Helleborus foetidus (Stinking Hellebore)

Anemone nemerosa (Wood Anemone)

Alium ursinum (Ramsons)

Corylus avellana (Hazel)

## 9.11
# Hedgerow Planting

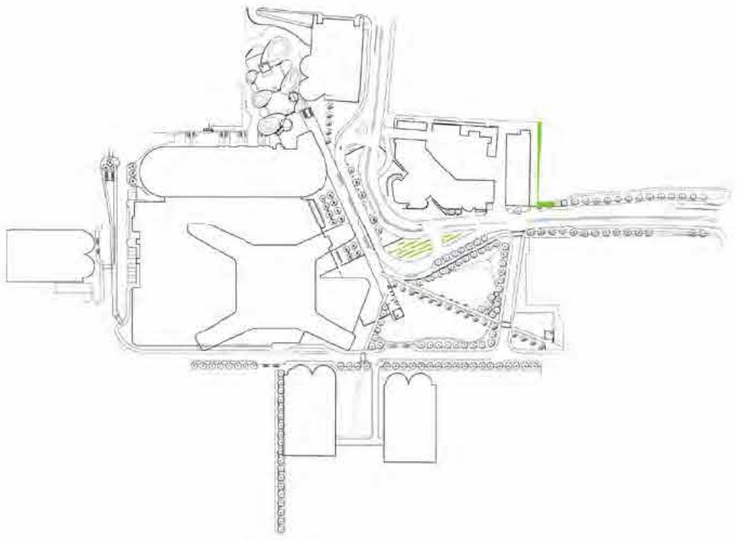


### Trees

The native Bird Cherry (Prunus padus) will punctuate the proposed hedgerow strips around the site. Its blooms are particularly good for attracting insects and therefore other wildlife into each hedgerow.

Prunus padus (Bird Cherry) - form

Prunus padus (Bird Cherry) - foliage and blossom



## Planting

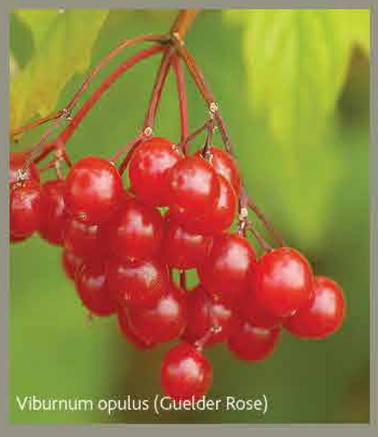
A palette of native hedgerow plants chosen for seasonal interest and wildlife value.

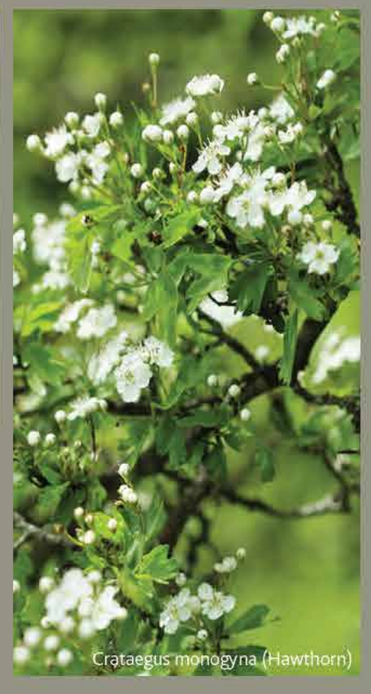
Each hedgerow strip can be managed to form a dense band of planting or left to grow taking on a more traditional rural form. Each providing a rich habitat for insects and birds.

Sambucus nigra (Elder)

Ilex aquifolium (Holly)

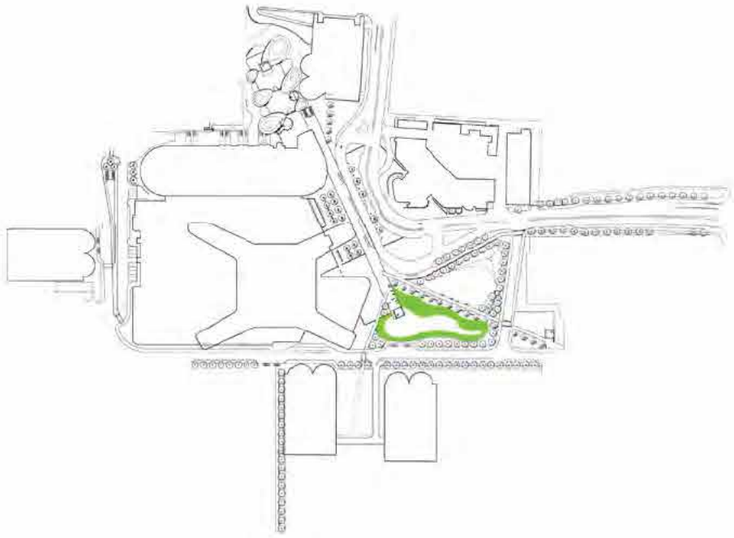
Ligustrum vulagare (Wild Privet)


Viburnum opulus (Guelder Rose)


Crataegus monogyna (Hawthorn)

Corylus avellana (Hazel)

## 9.12
# Wet Woodland Planting



### Trees

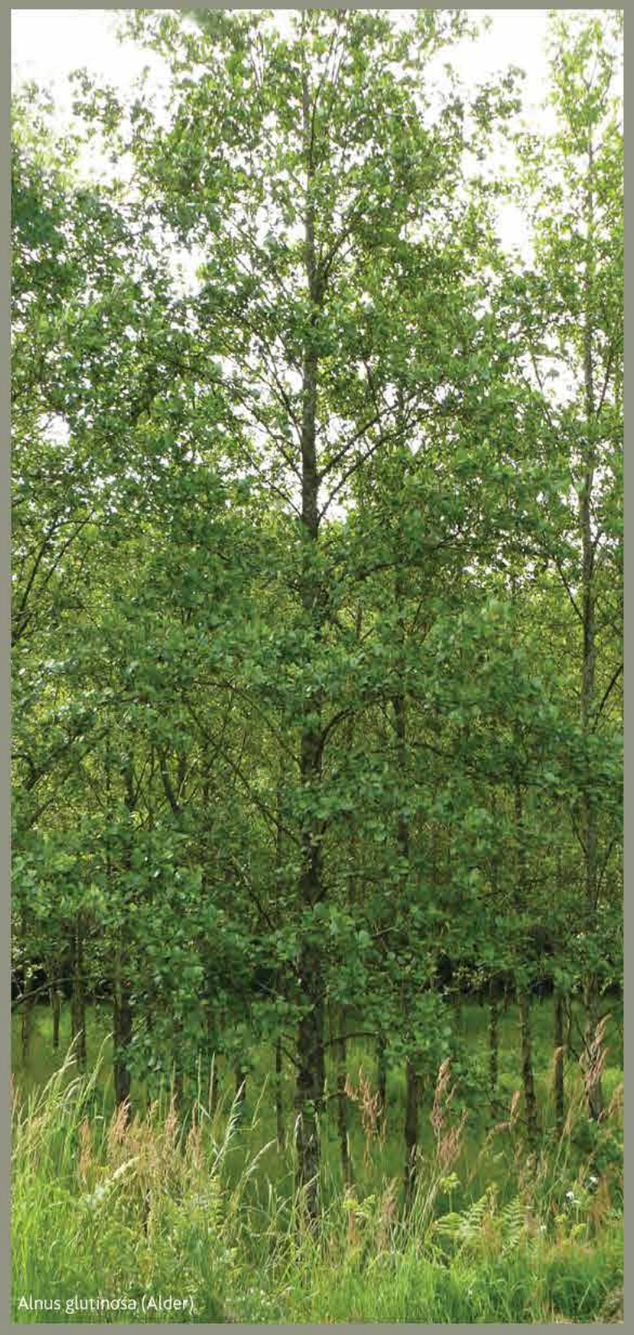
Wet woodlands in Scotland are traditionally semi natural landscapes that represent the succession from wetland to woodland. They are a unique and increasingly rare habitat populated by pioneer tree species and marsh plants.

One of the types of wet woodland intrinsic to Scotland is dominated by Bay Willow (Salix pentandra) and Bottle sedge (Carex rostrata), as is the case in this proposal area. Other species of pioneer tree proposed are: the Common Sallow (Salix cinerea ssp. oleifolia), Downy Birch (Betula pubescens), Goat Willow (Salix capraea) and Alder (Alnus glutinosa).

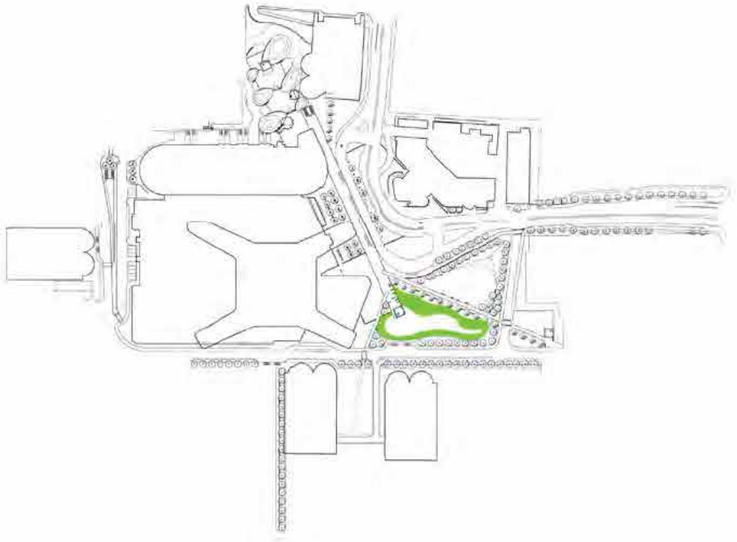
As an amalgamation of wet woodland planting types it is intended that this planting mix be allowed to evolve. The unique demand placed on this area as it receives landscape run off from the site means that certain species will thrive over others as it matures over time.

Salix pentandra (Bay Willow)

Salix caprea (Goat Willow)


Alnus glutinosa (Alder)

Salix cinerea ssp. oleifolia (Common Sallow)



## Planting

Native marsh and SUDS species that are often found in scottish wet woodland. These species are chosen as they are tolerant of both damp conditions, waterlogging and infrequent inundation.

As the boundary between the dry and wet areas in this space change, so will the range of each different species, thereby mapping the reach of seasonal inundation events.

Caltha palustris (Marsh Marigold)

Lytrum slicaria (Purple Loosestrife)

Carex paniculata (Great Tussock Sedge)

Angelica sylvestris (Wild Angelica)

Carex pendula (Pendulous Sedge)

Caltha rostrata (Bottle Sedge)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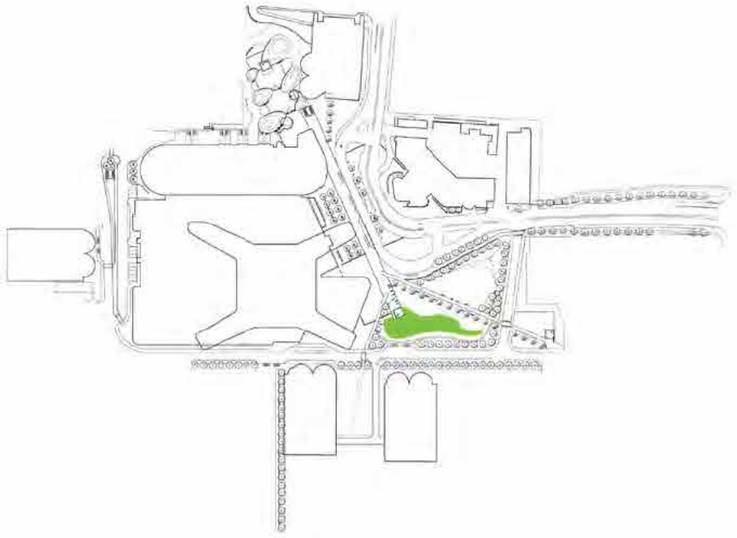
## 9.13
# Swale Planting



Native species are chosen for wildlife interest and vigour. The intention being to allow the more successful species to thrive forming a patchwork across the permanently wet areas within this functional and ecological diverse area.

As the boundary between the dry and the wet areas in this space change, so will the range of each different species, thereby mapping the reach of seasonal inundation events.

Carex rostrata (Bottle Sedge)

Phragmites australis (Common Reed) - winter

Mentha aquatica (Water Mint)

Juncus effusus (Common Rush)

Typha latifolia (Reed Mace)

Iris pseudocorus (Yellow Flag Iris)

Juncus articulatus (Jointed Rush)

Sparganium - erectum (Branched Bur Reed))

## 9.14
# Bulb Planting

### Central Park:

Classic parkland bulb species chosen to emphasise the seasonal changes throughout the year.

### Woodland:

Like the park species, each species within this range of bulbs will bloom at certain points in the  year thereby announcing the rhythm of the seasons and dramatically altering the whole woodland space during that moment in time. This is intended to add to the magical quality of the woodland play space.

Central Park ▼

Narcissus ssp. (Daffodil)

Crocus ssp.

Woodland ▶

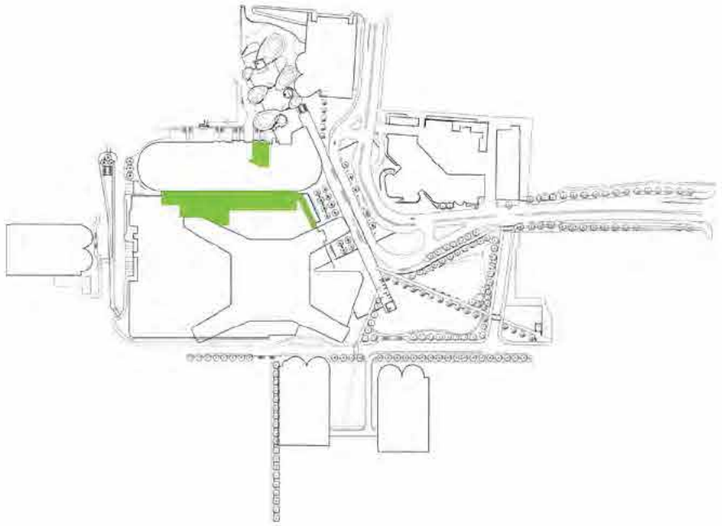
Alium ursinum (Ramsons / Wild Garlic)

Petasites hybridus (Butter Bur)

Galanthus ssp. (Snowdrop)

Hyacinthoides non scripta (Bluebell)

## 9.15
# Childrens Roof Garden Planting



### Trees

The intention of the Childrens Roof Garden is to stimulate the senses of the children staying at the hospital. The varieties of trees chosen extend the theme of seasonal change proposed within the ground floor landscape up onto the roof terrace. Blossom and autumn foliage will change the space throughout the year whilst providing wildlife interest, vertical punctuation and summer shading along with the pergola stuctures.

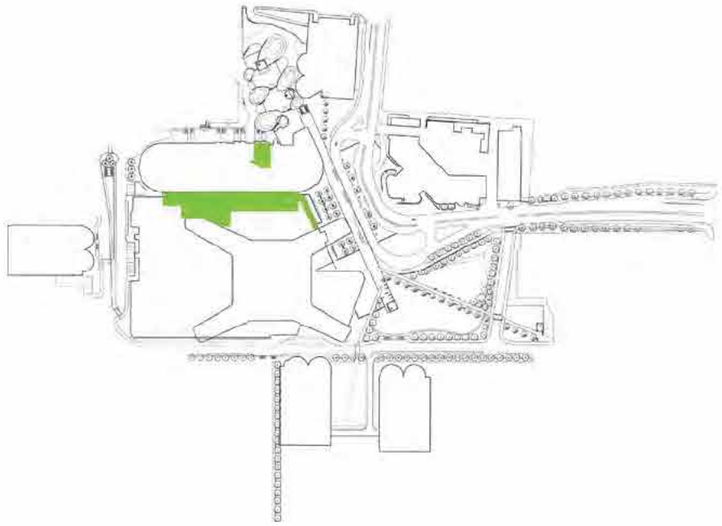
Amelanchier arborea (Downy Juneberry)

Amelanchier arborea (Downy Juneberry)-autumn

Amelanchier arborea 'Robin Hill' (Downy Juneberry)

Pyrus calleryana 'Chanticleer' (Ornamental Pear)

Sorbus aucuparia 'Golden Wonder' (Rowan) - berries and foliage



## Herb Garden

The herb garden offers kids the opportunity of outdoor activity. Easy access raised planters are provided to give kids access to gardening with edible and medicinal herbs and flowers. The intention being to boost levels of well being by providing interaction and tactile experience in an outdoor environment.

Rosmarinus officinalis (Rosemary)

Alium schoenoprasum (Chives)

Cynara cardunculus .Scolymus (Artichoke)

Echinacea ssp.

Tropaeoleum majus (Nasturtium)

Oreganum vulgare (Oregano)

Thymus citriodorus Variegatus (Lemon Thyme)

Salvia officinalis 'Purpurascens' (Purple Sage)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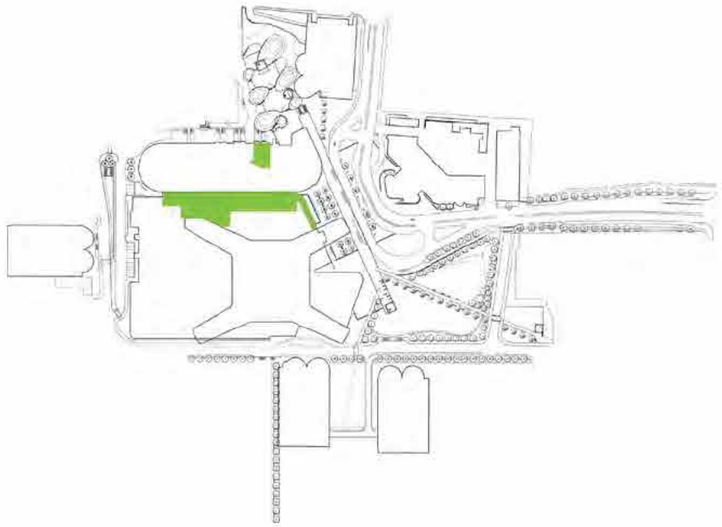


## Planting

A mixture of native and non-native sensory planting chosen for maximum colour, scent, sound and texture.

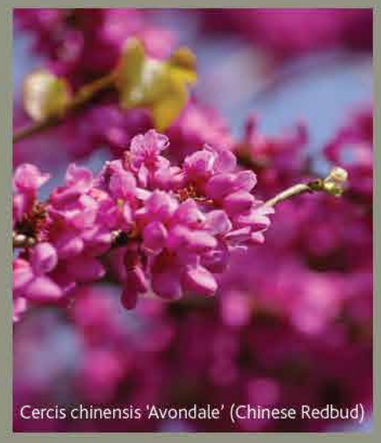
Coryllus maxima 'Purpureum' (Purple Hazel)

Lavandula angustifolia (Lavender)

Heuchera 'Rave On'

Iris foetodissima (Stinking Iris)

Libertia grandiflora


Cercis chinensis 'Avondale' (Chinese Redbud)

Heuchera 'Plum Pudding'

Heuchera 'Lime Rickey'

Miscanthus sinensis 'Gracillimus'

Miscanthus sinensis 'Zebrinus'

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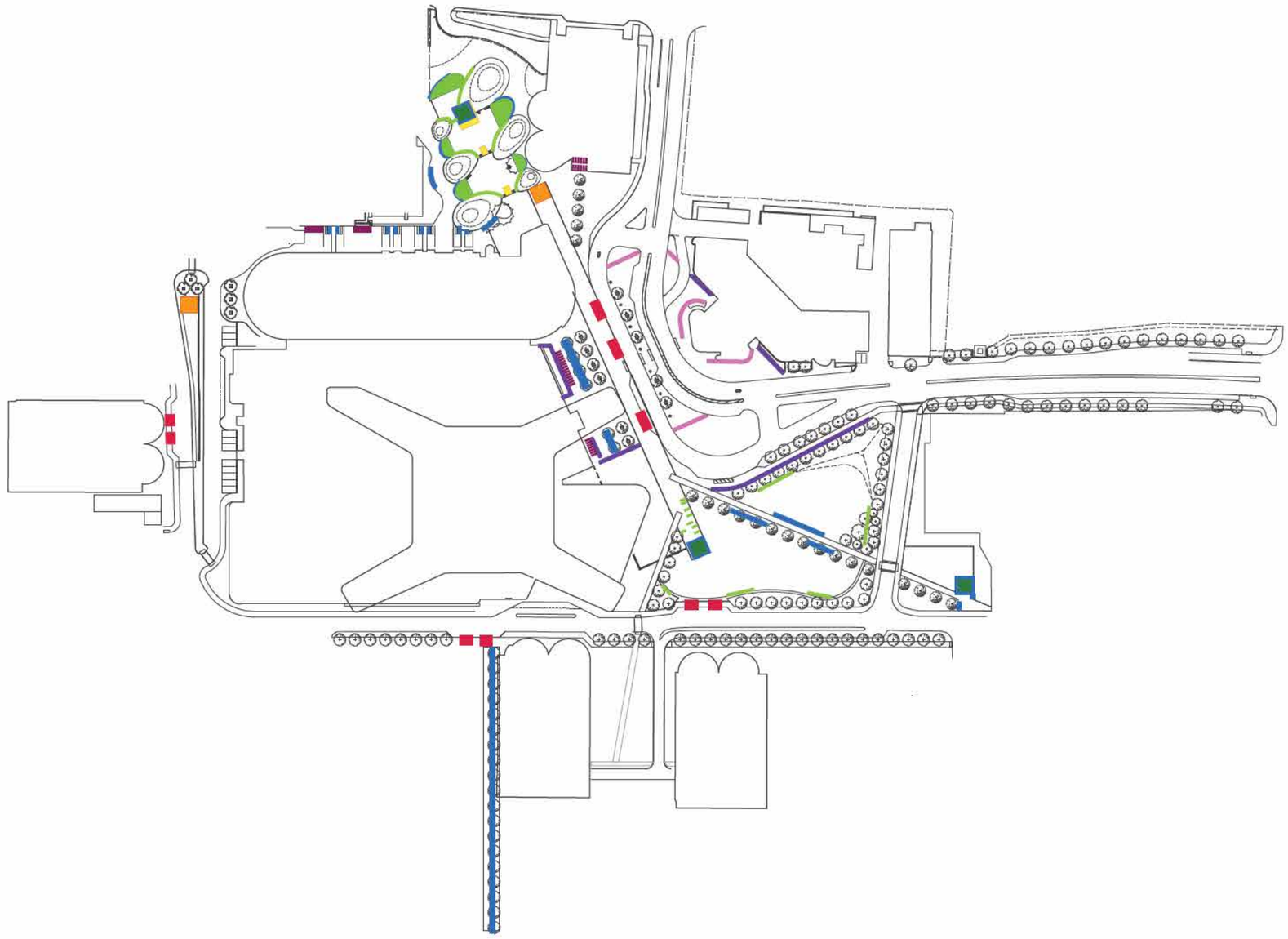
# 10.0
# Furniture Strategy
## 10.1
## Introduction

The furniture strategy is designed to respond to the variety of environments experienced across the campus, to provide robust, practical, comfortable and attractive features. Some seating is to be constructed on site, in the form of low seating walls, and other elements supplied as individual pieces of furniture. In addition the opportunity will be explored to utilise reclaimed sandstone from site demolition to create seating features in the parks.
Design will vary according to the locality but quality will not be compromised. A complementary palette of bins, bollards, railings and cycle stands all add to the character and identify of the space.

Illustrative furniture in context in front of the Adult Acute main entrance

LEGEND

- Cycle shelter with stands
- Cycle stands
- Park shelter
- Timber decking
- Bus shelter
- Formal seating
- Informal seating
- Wall
- Seating wall

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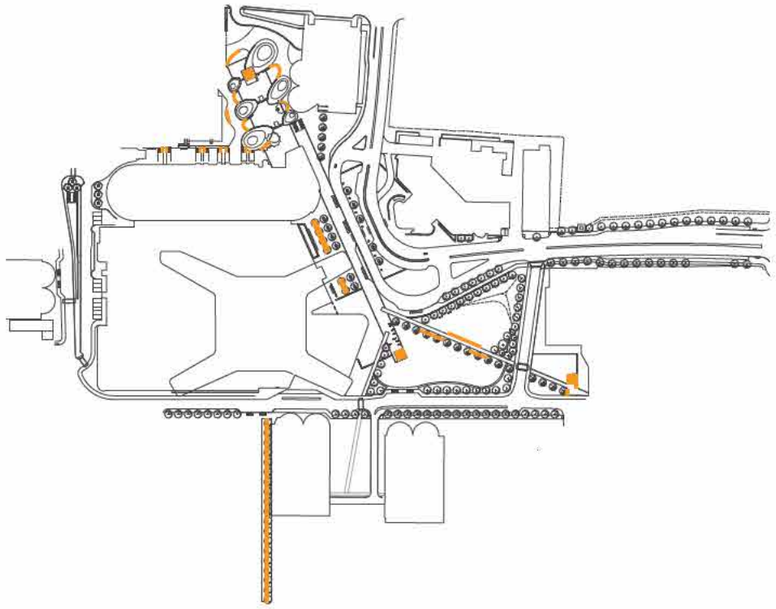
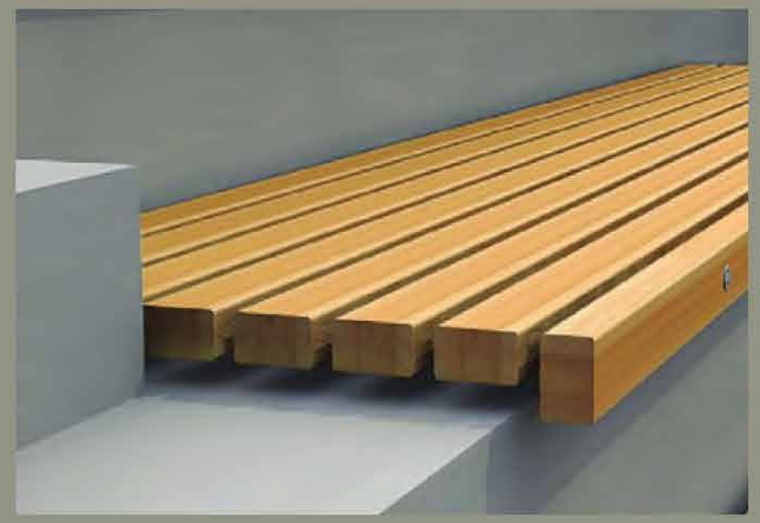
## 10.1
## Formal seating



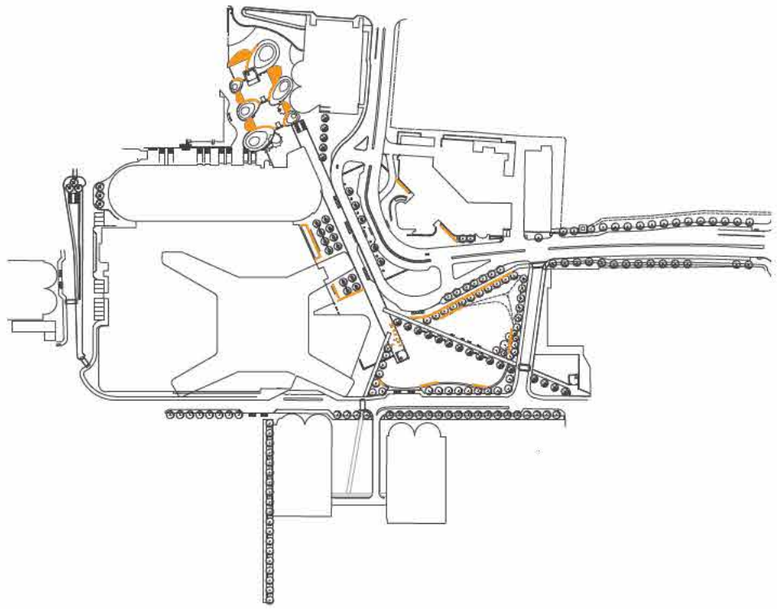
Formal seating is provided by ergonomically comfortable timber seats with back and arm rests to suit elderly users. In addition timber slats will be fitted to walls in key locations to provide a warmer seating opportunity.



Materials: Cast aluminium supports
Colour: Range
Finish: Sandblasted structure or plastic coated
Fixing: Surface mount, freestanding or embedded

Materials: Timber
Fixing: Fitted onto wall

## 10.2
## Informal Seating



In addition to timber seating with back and arm rests, more informal seating opportunities will be provided in the Children's park and central park. Furniture will be more playful and sculptural in character in the through placing of cast stone elements such as those pictured.

An opportunity has also been identified to reclaim a quantity of the sand stone lintels from the buildings scheduled for demolition. This will provide a local and sustainable source of stone suitable for placement in the parks as informal seating elements and as an edging/retaining material where necessary. Suitability of reclaimed material is subject to detailed survey prior to demolition works.

High Dependency Unit (Scheduled for demolition)

Materials: Cast stone
Colour: Grey
Finish: Acid etched & waterproofed
Seat Dims: 150Lx45Hx150D cm
Fixing: Free standing

Illustrative impression of a stone seat using a reclaimed lintel from the site (as above)



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## 10.3
# Litter Bins & bollards

Litter bins are to be simple in design and made from brushed stainless steel. They will be available in both free standing and pole mounted versions. Spacing of bollards indicated is illustrative only and will be further developed during the detailed design stage.

Materials: Stainless Steel
Finish: polished, brushed or satin

Illustrative arrangement

Materials: Stainless steel
Finish: Polished Top/Shot Peened Body

## 10.4
## Cycle Stands

Brushed stainless steel 'Sheffield' style cycle stands are proposed in open air locations, under the cafe terrace at the Adult's hospital entrance and under the link bridge between the children's hospital and maternity unit. Galvanized mild steel versions are proposed in indoor locations such as in car park 2.

In addition a two-tier cycle rack system is proposed in the cycle shelter pavilion structures to make full use of the available height. These are BREEAM compliant and are easy to operate, as proven in many successful schemes in Holland.

Two-tier cycle rack system

Materials: Stainless steel
Finish: Polished Top/Shot Peened Body

# 11.0
# Lighting Strategy
## 11.1
## Introduction

Lighting within the hospital campus will create an environment which is as welcoming and accessible during the night as it is by day. Functional lighting to routes is to be used in conjunction with feature lighting in key areas. The lighting strategy will help to identify the New South Glasgow Hospitals as a unique location whist also delivering seamless integration with the surrounding environment. The scheme will allow for the use of power efficient luminaires with appropriately low maintenance requirements. Fittings will limit light pollution by providing a variety of light levels appropriate to the locality. Stronger lights affixed on lamp posts will delineate the primary routes and entrances where high visibility is of greatest importance. Subtle use of lower intensity light fixtures, up lighters and illuminated bollards will create a more intimate and relaxed environment for secondary pedestrian destinations, whilst still providing sufficient light to permit ease of use and without disturbing wildlife which may inhabit the area.

Night time site plan

# Lighting Strategy Plan

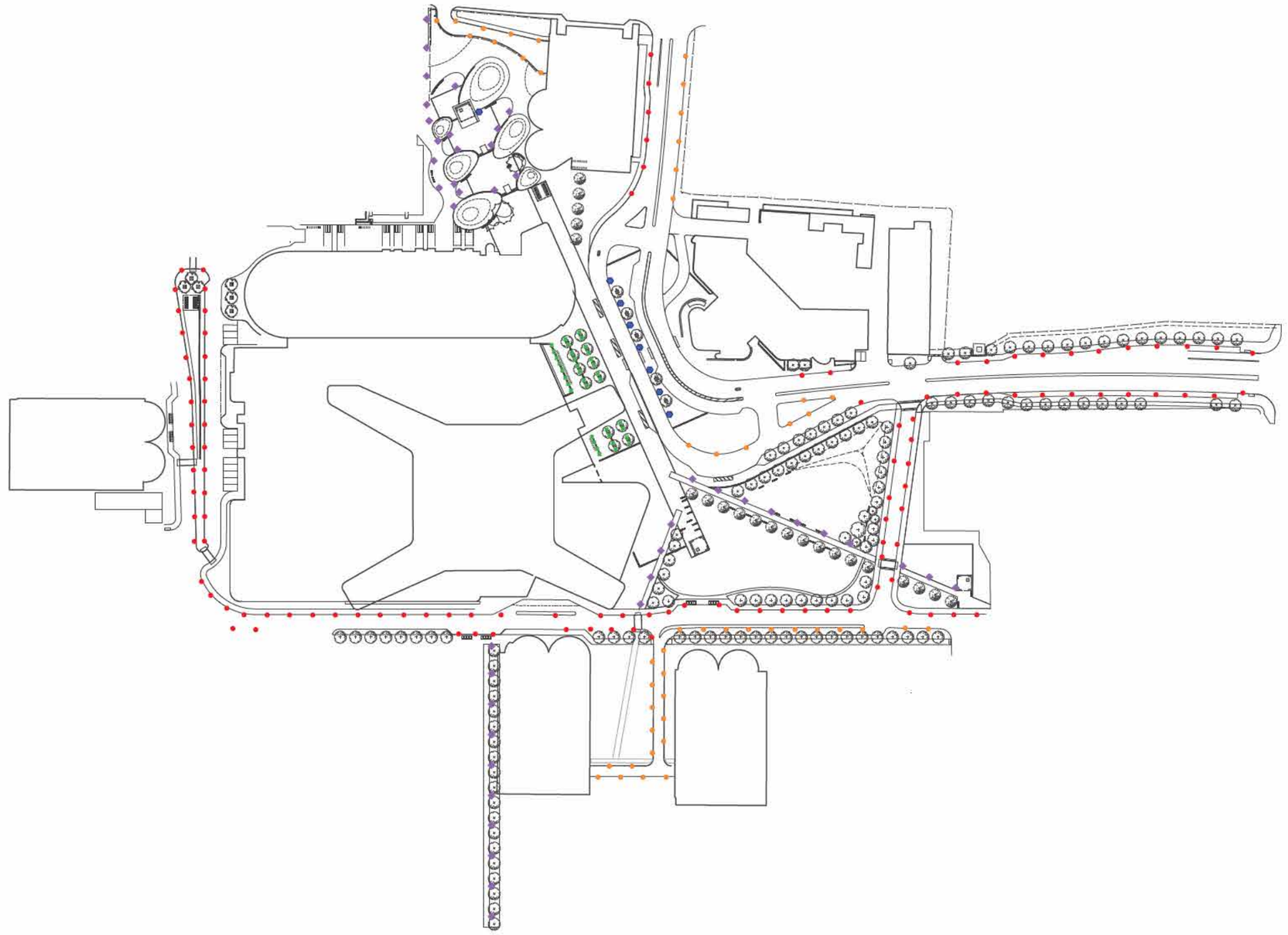
Feature light

Double pole top
road/pedestrian light

Single pole top road light

Park pole top light

Uplight

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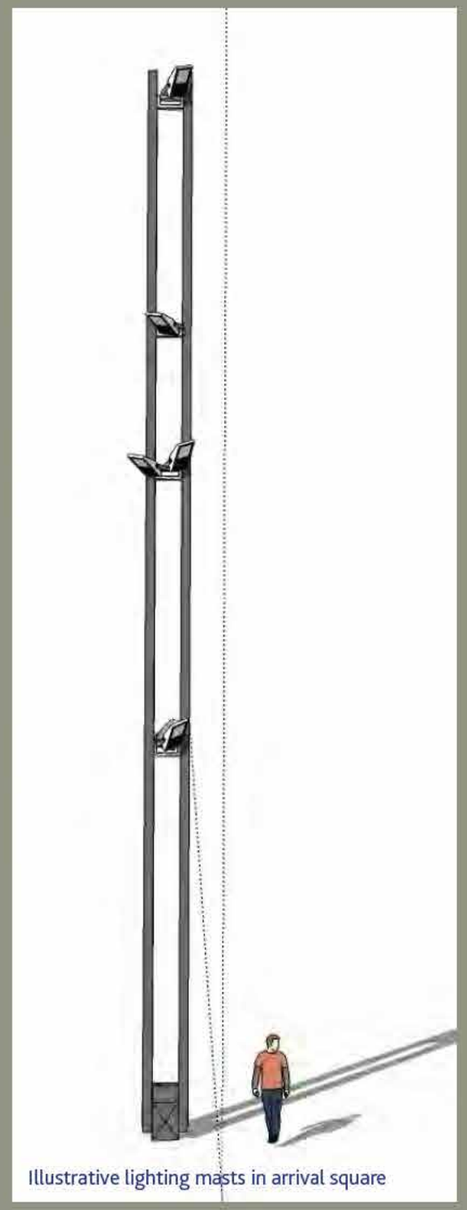
## 11.2
# Lighting Fixtures

The main feature lighting masts have already been described, and are illustrated again on this page for easy reference.

Human scale lighting will be provided within the parks, of a style that will complement other furniture and landscape features as pictured.

Integrally lit walls, illuminated bollards and in-ground tree up lights will provide the feature lighting for the scheme.



Illustrative lighting masts in arrival square

Illustrative Park feature lights

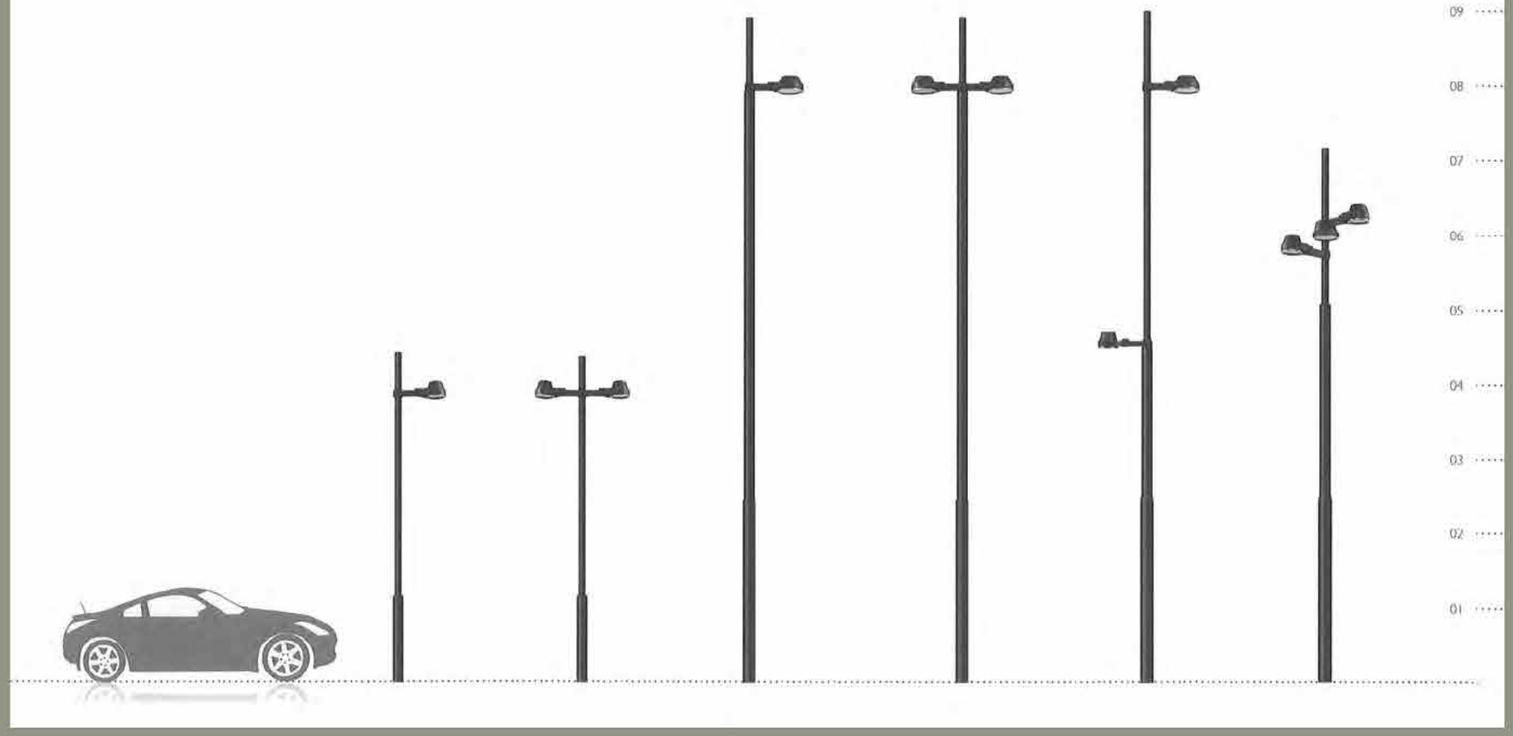
Illustrative Park light

Illustrative lit bollards

Illustrative Integral LED lighting to wall in

## Street Lighting

Simple and elegant street lighting  columns are proposed in a range of size options to suit the road size. The central boulevard will include the taller columns with longer arms in order to achieve the required spread of light over the highway and footpath.




Illustrative Street lighting  - range caters for a variety of road widths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# 12.0
# Signage Strategy
## 12.1
## Introduction

There is a considerable overlap between public art and signage, but effective functional signage will also be provided to support the core functions of the hospital facilities. This functional information will be supported by the creative use of colours, forms and imagery internally and externally and with specific regard to differentiating between different areas and moderating the significant scale of the hospital buildings. The character of the wayfinding components has a big impact upon the quality and the feel of the environment. A legible place is much easier to use and this creates a better and more successful environment for staff and for visitors. The setting of the buildings, the use of colours and familiar forms communicates a favourable character for the hospital.

### Signage types and users

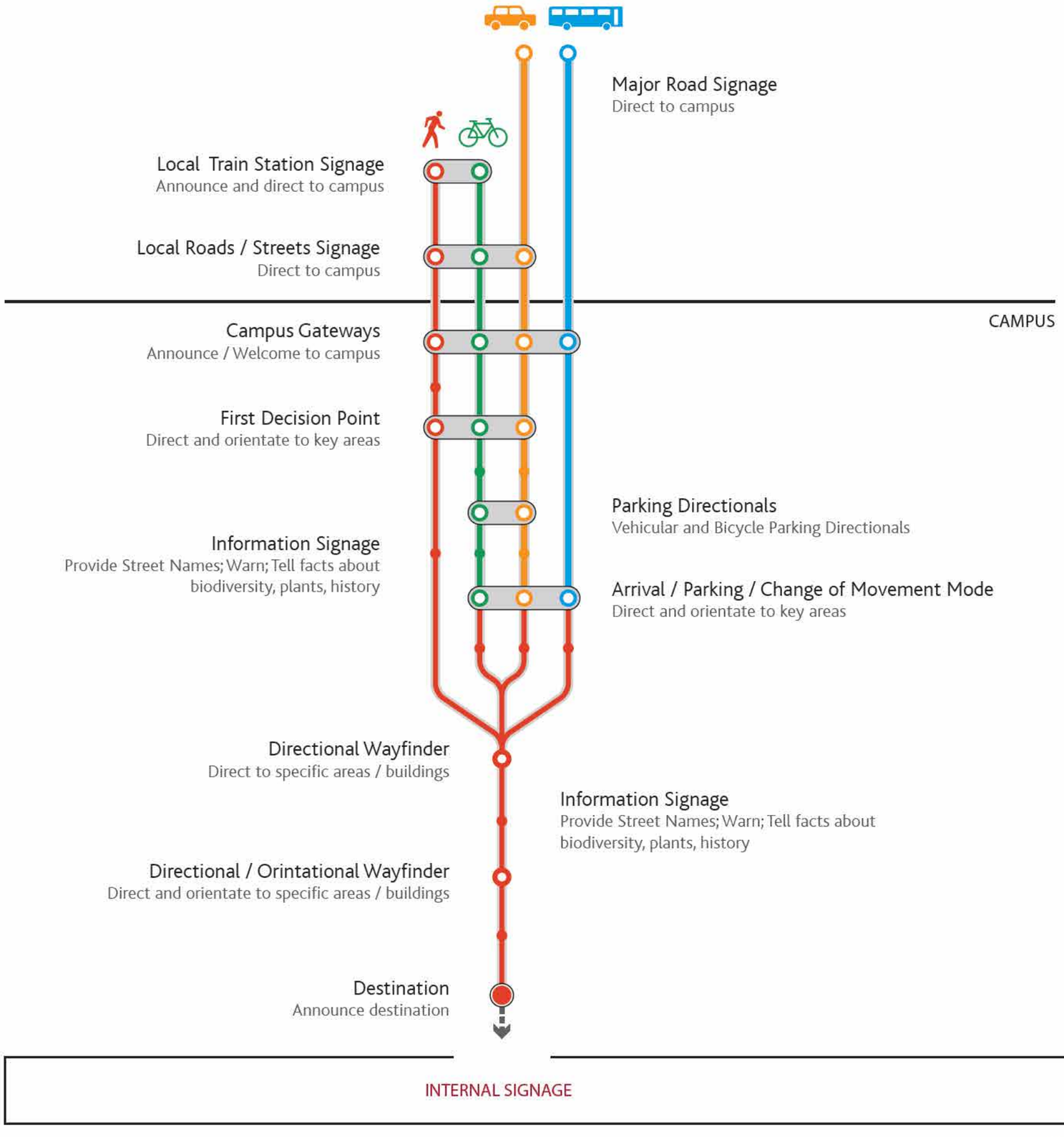
| | GATEWAY<br>Welcomes and Announces the Campus - Brand | ORIENTATION<br>Assists Wayfinding with Orientational Maps | DIRECTION<br>Assists Wayfinding with Directionals - Arrows / Fingerposts | INFORMATION<br>Street Names, Warnings, Info about Ecology / Biodiversity, History, etc. | DESTINATION<br>Announces Destination e.g. Building / Department |
|---|---|---|---|---|---|
| PUBLIC TRANSPORT | ← | | | ← | ← |
| VEHICLE | ← | ← | ← | ← | |
| CYCLE | ← | ← | ← | ← | |
| PEDESTRIAN | ← | ← | ← | ← | ← |

## 12.2
# Typical Journeys depending on Movement Mode

TYPE 1

## Gateway Signage

Welcomes and Announces the Campus



## 12.3
# Wayfinding Plan

TYPE 1
Gateway Signage
Welcomes and announces the campus

TYPE 2
Primary Vehicular
Directs to major destination points and areas

TYPE 3
Secondary Vehicular - Carpark
Directs to specific buildings / carparks

TYPE 4
Primary Pedestrian + Cycle
Orientates and directs to major destinations within the campus

TYPE 5
Secondary Pedestrian
Directs to specific buildings / areas

TYPE 6
Real Time Public Transport Information
Provides public transport arrivals and departures information

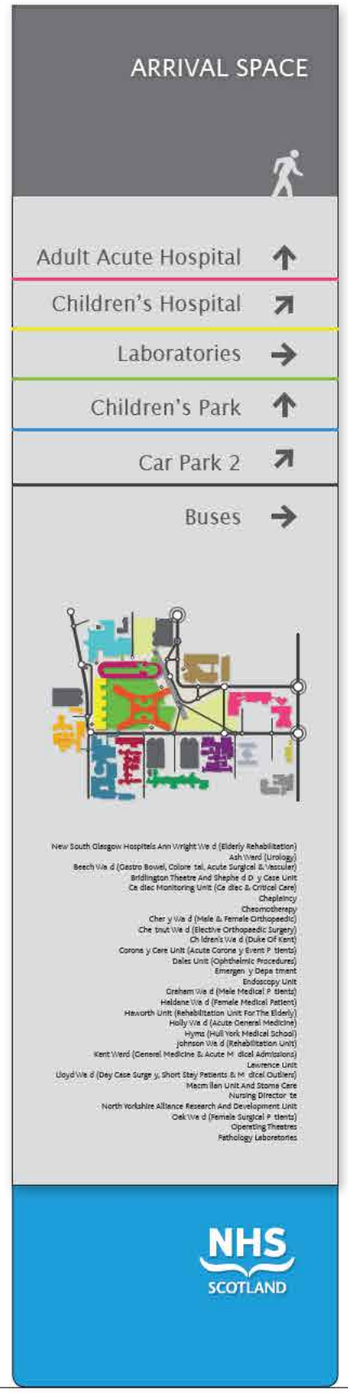
TYPE 7
Information Signage
Provides information about street names, history of the site, ecology / biodiversity

TYPE 8
Destination
Announces Destination - Building / Department

## 12.4
## Designed Example -Pedestrian sign

The illustration opposite provides an example of a typical pedestrian sign generated from the signage and wayfinding strategy for the campus. The sign is colour coded and legible with a clear hierarchy of information. Fonts are sized according to distance from eye level and positioning of the orientation map is consciously located in the middle at user eye level.







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# 13.0
# Delivery and Maintenance

## Overview

The table opposite summarises the key maintenance requirements for the campus with particular focus on soft landscape elements.

In addition there are numerous hard landscape elements proposed onsite. All hard landscape elements including fencing, furniture, gates, access barriers and hard surfaces are to be inspected on a regular basis and minor repairs carried out as necessary. Any items considered to be unsafe should be removed or made safe and replaced as soon as possible. Surface integrity should be closely monitored to prevent slip and trip hazards, through surface cracks or vegetation encroachment. Gullies should be kept free of debris to maintain surface water drainage.

**12.0 Frequency Tables with Approximate Costs**

| Action | Approximate Measure/ Quantity | Unit | No of ops/year | TIMING (MONTH) A | M | J | J | A | S | O | N | D | J | F | M | Unit rates (£'s) | Approximate Annual Costs (£'s) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SITE INSPECTIONS | | | | | | | | | | | | | | | | | | |
| Undertake weekly inspections | 14,000 | $m^2$ | 52 | 4 | 5 | 4 | 5 | 4 | 4 | 5 | 4 | 4 | 5 | 4 | 4 | 0.0006 | 8.4 | Area estimated on an approximate total area of amenity grassland, roads, car parks and major footpaths and footpath verges. |
| Undertake fortnightly inspections | TBC | $m^2$ | 26 | 2 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 0.0005 | TBC | Area includes informal footpaths, footpath verges (estimate of 2m wide either side of footpath) and ornamental planting beds. |
| CLEANSING | | | | | | | | | | | | | | | | | | |
| Undertake twice weekly cleanse- litter bins, dog bins and seating areas around Entrance Plaza | TBC | NA | 104 | 8 | 10 | 8 | 10 | 8 | 8 | 10 | 8 | 8 | 10 | 8 | 8 | 26.50 / hr | TBC | Cost estimated for 2 hours of work per operation at day work rates. |
| Undertake weekly cleanse in areas of high intensity use. | TBC | $m^2$ | 52 | 4 | 5 | 4 | 5 | 4 | 4 | 5 | 4 | 4 | 5 | 4 | 4 | 0.0105 | TBC | Area estimated on an approximate total area of amenity grassland, roads, car parks and major footpaths and footpath verges. |
| Undertake fortnightly cleanse to secondary spaces of medium intensity use | TBC | $m^2$ | 26 | 2 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 0.0105 | TBC | Area includes informal footpaths, footpath verges (estimate of 2m wide either side of footpath) and ornamental planting beds. |
| Undertake one off cleanse as required to remaining informal landscape areas of lower intensity use | TBC | $m^2$ | As necessary | * | * | * | * | * | * | * | * | * | * | * | * | 0.0105 | TBC | Estimated for 2 operations/annum across the entire site. |
| ***Fly tipping*** | | | | | | | | | | | | | | | | | | |
| Remove fly tipped material as identified in monitoring and inspection reports | TBC | NA | As necessary | * | * | * | * | * | * | * | * | * | * | * | * | 26.50 / hr | TBC | Cost estimated for 22.5 hours/annum of work at day work rates. |
| GRASSLAND | | | | | | | | | | | | | | | | | | |
| ***Amenity grass*** | | | | | | | | | | | | | | | | | | |
| Initial cut to a height of approx 35mm and remove cuttings | 7000+ | $m^2$ | 1 | | | | | | | | | | | | 1 | 0.0425 | 298 | |
| Fortnightly cut and disperse. To allow for pulling out/spot treating broadleaved weeds as required. | 7000+ | $m^2$ | 13 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | | | | | | 0.0120 | 84 | |
| ***Meadow grass*** | | | | | | | | | | | | | | | | | | |
| Meadow cut to a height of approx 50-100mm and remove cuttings. | 3551 | $m^2$ | 2 | | | 1 | | | | 1 | | | | | | 0.0731 | 259 | Timing dependant on species present |
| ***Long grass*** | | | | | | | | | | | | | | | | | | |
| Rough grass cut to a height of approx 50-100mm with cuttings dispersed | TBC | $m^2$ | 2 | | | 1 | | | | 1 | | | | | | 0.0373 | TBC | |
| ***Bulbs in amenity grass*** | | | | | | | | | | | | | | | | | | |
| Initial cut to a height of approx 35mm and remove cuttings | 200 | $m^2$ | 1 | | | 1 | | | | | | | | | | 0.0988 | 20 | Timing dependant on flowering |
| Fortnightly cut and disperse. To allow for pulling out/spot treating broadleaved weeds as required.<br>Note: Bulb areas in other grass types to be cut in accordance with routine grass cutting for these areas | 200 | $m^2$ | 7 | | | | 2 | 2 | 2 | 1 | | | | | | 0.0120 | 2.4 | |
| ***Weed Control to grass areas*** | | | | | | | | | | | | | | | | | | |
| Hand pulling of noxious weeds such as docks, rosebay willowherb infestations during growing season. | 7000+ | NA | As necessary | | * | * | * | * | * | | | | | | | estimated lump sum | TBC | |
| ***Sub-total*** | | | | | | | | | | | | | | | | | XXX | |

| Action | Approximate Measure/ Quantity | Unit | No of ops/year | TIMING (MONTH) A | M | J | J | A | S | O | N | D | J | F | M | Unit rates (£'s) | Approximate Annual Costs (£'s) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PLANTING | | | | | | | | | | | | | | | | | | |
| ***Structure planting & established Woodland Planting*** | | | | | | | | | | | | | | | | | | |
| Thinning and coppicing as required to create appropriate woodland structure and improve sightlines | 1656 | $m^2$ | 1 | | | | | | | * | * | * | * | * | * | 1.0950 | 1810 | To be undertaken on an annual cyclical basis. Area based on 5% of total structure planting and woodland areas. |
| Pruning of current years growth to improve sightlines adjacent to footpaths and entrances | TBC | NA | As necessary | | | | | | * | | | | | | | estimated lump sum | TBC | |
| Strim between trees in areas of poorly established canopy layer | TBC | NA | As necessary | | | * | | | | * | | | | | | estimated lump sum | TBC | |
| Hazard inspections and crown pruning/remedial works as required to ensure trees are safe and enhance crown form. | TBC | NA | As necessary | * | * | * | * | * | * | * | * | * | * | * | * | estimated lump sum | TBC | |
| ***Ornamental Planting*** | | | | | | | | | | | | | | | | | | |
| Hand weed within planting beds. | 400 | $m^2$ | 4 | | 1 | 1 | 1 | 1 | | | | | | | | 0.4680 | 187 | |
| Annual prune of previous years growth to promote new growth, enhance flowering and form and prevent encroachment onto footpaths. | 400 | $m^2$ | 1 | | | | | | 1 | | | | | | | 0.9010 | 360 | |
| ***Hedgerows*** | | | | | | | | | | | | | | | | | | |
| Prune of current years growth to maintain form and vigour. include for top and both sides of hedge | 630 | lin m | 1 | | | | | | 1 | | | | | | | 4.070 | 2540 | |
| Swales/ditches | | | | | | | | | | | | | | | | | | |
| De-silting to ditches and swales as necessary | TBC | NA | As necessary | | | | | | | * | * | * | * | * | * | estimated lump sum | TBC | |
| ***Bankside Vegetation*** | | | | | | | | | | | | | | | | | | |
| Policy to be developed in tandem with SUDS proposals -to be submitted as a separate application in August 2010. | TBC | NA | As necessary | | | | | | | * | * | * | * | * | * | estimated lump sum | TBC | |
| Japanese knotweed | | | | | | | | | | | | | | | | | | |
| Initial cut to a manageable height and arisings left in situ to be undertaken if knotweed is over 1.5m tall. | TBC | $m^2$ | As necessary | 1 | | | | | | | | | | | | 0.500 | TBC | |
| Six weekly glyphosate foliar spray to knotweed to be undertaken for a period of 3 or 4 years dependant upon re-growth. | TBC | $m^2$ | As necessary | | 1 | 1 | 1 | | 1 | | | | | | | 0.250 | TBC | |
| HARD LANDSCAPING | | | | | | | | | | | | | | | | | | |
| **Footpaths, boardwalks and hardsurfacing** | | | | | | | | | | | | | | | | | | |
| Repairs and patching as identified in monitoring and inspection reports | TBC | NA | As necessary | * | * | * | * | * | * | * | * | * | * | * | * | estimated lump sum | TBC | |
| Herbicide application to hard surfacing | TBC | NA | As necessary | | * | * | * | * | | | | | | | | estimated lump sum | TBC | |
| Reapplication of thermoplastic markings along footpaths and cycle paths based on a measure of 1/3 of total length | TBC | Lin m | 1 | * | * | * | * | * | * | * | * | * | * | * | * | estimated lump sum | TBC | |
| **Structural elements** | | | | | | | | | | | | | | | | | | |


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# 14.0
# Sustainability/BREEAM

## Overview

The landscape strategy seeks to support the long term sustainability requirement to achieve the BREEAM Healthcare "excellent" rating. In this regards reference shall be paid to the BREEAM "Green Guide to Specification" to maximise the use of materials and specifications achieving an A rating or better as far as is practicable.

The scheme has a number of sustainable principles imbedded within the masterplan design:

- Transportation strategy bias towards sustainable modes of transport
- Significant sustainable drainage 'swales' within park areas incorporating reed bed filtration
- Reuse of natural stone work from buildings to be demolished and incorporation into landscape as feature plinths/retaining edges etc.
- Predominantly native / wildlife value planting palette
- Use of permeable paving materials where appropriate to reduce run off
- Extensive tree planting programme to compensate trees removed to facilitate the development
- Sedum Roofs

For the full list of BREEAM points being targeted refer to:

New South Glasgow Hospital -Main building detailed action list report BREEAM healthcare 2008

## WRAP

The project will also meet good practice levels of waste minimisation and management throughout the project in accordance with WRAP guidelines. By considering waste avoidance early in the design process and by adopting the most significant cost-neutral opportunities to increase waste recovery, waste levels will be minimised. Opportunities will be investigated under two streams:

- Reused and recycled content
- Site construction waste management and minimisation

The contract documents address the key documents referred to in the Planning Committee report:

- Energy Efficiency and Micromanagement: Achieving a Low Carbon Future
- A Strategy for Scotland the Scottish Government, March 2007
- SPP 6: Renewable Energy
- PAN 45: Renewable Energy Technology 2002
- PAN 84: Reducing Carbon Emissions in New Development
- BREEAM Healthcare
- The Targets identified in SPP 6 Renewable Energy

# 15.0
# Community Engagement

## Overview

A Health Impact Assessment (HIA) is a process that seeks to identify the potential –or actual – health and equity impact of a proposal on a given population. It aims to enhance the positive impacts of a proposal and to remove or minimise the potential negative impacts on health, well-being or inequalities that might arise or exist. These may include:

- Socio-economic
- Physical environment
- Social and community environment
- Individual or family lifestyles
- Fixed/ constitutional

An HIA is an impartial, systematic consideration of the likely health consequences of implementing a policy, plan, programme or project on a population and the distribution of effects within the population. NHS Greater Glasgow and Clyde is looking to use an HIA to assess the likely impacts of the design of the New South Glasgow Hospitals and identify ways in which the positive effects may be enhanced and any negative effects minimised.

An initial scoping exercise was held in July 2009 to engage communities in scoping the extent of the analysis to be undertaken and in appraising the impact of the design solution in relation to health. The findings from the scoping exercise have been fed into the project team for consideration in developing the masterplan.

Following a review of the scoping analysis, it was clear that the board had already undertaken a number of related impact assessments i.e. environmental, transport, socio-economic and that any future analysis should bring additionally to the process. Work is going with the Glasgow Centre for Population Health, Scottish Health Impact Assessment Network and Glasgow City Council to take forward the findings form the scoping exercise and design an assessment process to build on progress. It is anticipated that the assessment process will be completed in the summer of 2010.

## Community consultation -July 2010

A series of three focused workshops were undertaken in May/June 2010 to discuss aspects of the consented masterplan and the external environment. The workshop included a site walk through with the proposals to enable users to better understand the scale and character of the development, and feedback has informed the MSC submission.

Consultation with the local community is ongoing and will involve further workshops with focus groups. On July 19th 2010 a public consultation was held on site to give local residents a chance to see the latest design. Displays were organized for the 4 key aspects of the scheme: Masterplan, Transport, Building Design and Construction/Demolition (see photos opposite). Comments and feedback will inform ongoing design development.

## Inclusive design

The external hospital campus has been designed as a resource for the local community and hopes to attract residents irrespective of whether they are requiring hospital treatment. The parks are open to the community and hope to provide a much needed safe green space for parents to take their children. The children's park in particular fulfils a local need could become a much valued resource for families.

In addition the proposed small community managed orchard adjacent to the central park has already attracted interest from the Commonwealth Children's Orchard group whom will be consulted further with regard to species and orchard management as detail design progresses.

## Further information

For further detail on community consultation the following documents can be obtained:

- Design Workshop April 2009 –Report on patient carer input to the design process for New South Glasgow Hospitals
- ASR Systems Redesign Group - New Hospitals and Laboratory Project Community Engagement in the South Glasgow Project 2010 - 2015 6th November 2009
- New Children's Hospital Youth Panel
- Business case: Inclusive Outdoor Play Area for Disabled Children and Young People

Community consultation

Community consultation



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# appendices


## A Appendices

1 Management Plan

2 Site wide Cycle and Pedestrian networks

# appendices

## 1 Management Plan

# New South Glasgow Hospitals Landscape Management Considerations

1.0 Introduction
1.1 Scope
1.2 Site Context

2.0 Securing Management in Perpetuity
2.1 Financial Resource
2.2 Management of Resources
2.3 Financial resources – Projected Expenditure
2.4 Financial resources – Projected Income
2.5 Financial Resources – Projected Income
2.6 New South Glasgow Hospital Management Structure

3.0 Aims and Objectives

4.0 Site Appraisal

5.0 Landscape Management Recommendations

6.0 Community Engagement Initiatives
6.1 Voluntary Workers

7.0 Marketing

8.0 Management Targets

9.0 Monitor and Review

10.0: Potential Funding opportunities

11.0: Environmental, Social and Legal Considerations
11.1 Compliance with Environmental Legislation
11.2 Social Factors
11.3 Environmental Factors

12.0 Frequency Tables and Approximate Costs



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## Introduction

This Landscape Management Strategy has been prepared to set out a broad overview of objectives and actions required for the ongoing management for the landscape of the New South Glasgow Hospitals grounds with a review of the resources desirable to secure the future delivery of outputs and the various levels of intervention required.

The landscape in the New South Glasgow Hospital is of considerable environmental, social and economic value, comprising a series of hard and soft, formal and informally designed landscaped areas, including; young woodland planting, ornamental shrub and herbaceous planting, wildflower meadows, and significant hardscape areas of civic and amenity open space. With this the landscape has great potential to meet a number of ecological, recreational and health benefits for both staff and patients. It is therefore crucial that the ongoing management of the space considers the requirements of the individual spaces within the wider context of the area.

Management of the New South Glasgow Hospital grounds will be delivered through a number of employed and voluntary organisations, groups and forums (personnel to be confirmed). These roles will evolve with the development of the area and responsibilities may change (or be novated) to another managing body at a later stage. This landscape management strategy should be used for guidance as a basis for long-term management by all parties and stakeholders concerned to ensure a holistic approach to management is achieved, and that delivery is consistent throughout in accordance with BREEAM requirements. By appropriately allocating resources, skills and expertise, the long-term sustainability of the development will be achieved.

## 1.1 Scope

This landscape management strategy considers the future landscaped areas of the New South Glasgow Hospital which are indicated throughout the accompanying landscape design strategies, Masterplan and detailed landscape plans. At the time of writing a number of design elements are as yet unconfirmed. Where this is the case assumptions and general guidelines have been provided.

## 1.2 Site Context

The footprint for the New South Glasgow Hospitals and their associated grounds date back to 1872, with further additions and expansions creating the site we see today. The recent development of the site considers an area of around 8.6 hectares within the overall hospital grounds which cover around 28.6 hectares in total. The site is located 500m south of the River Clyde to the south-west of Glasgow City Centre. The site's northern boundary is defined by Renfrew Road/Govan Road with the eastern boundary defined by Moss Road (Clyde Tunnel approach road). Langlands Drive and residential developments delineate the southern boundary and Hardgate Road runs north-westwards to identify the western boundary of the site.

## 2.0 Securing Management in Perpetuity

Landscape management roles and responsibilities are subject to change and this may affect the delivery and cost of the management operations. This will be addressed through frequent reviews of this management strategy, which will involve all management personnel and supporting groups. Sufficient time should be allocated by managers to programme reviews in.

## 2.1 Management of Financial Resource

The New South Glasgow Hospitals grounds will initially be managed by (**Management Body TBC**). The following sections summarises the basic management and maintenance requirements and the operative who will carry out specific operations.

| New South Glasgow Hospital Landscape Management Resource | | |
|---|---|---|
| **Organisation** | **Responsibilities** | **Comments** |
| Landscape Contractor(s) | **Routine Management Operations**<br>• Inspections and cleansing of all publically accessible areas. Frequency of visits will be determined by intensity of use (play areas, accessible roof gardens and ornamental landscaped areas will require greatest attention).<br>**Softscape Maintenance:**<br>• Mechanical weed control (in line with BREEAM)<br>• Formative pruning of shrubs<br>• Arboricultural inspections and remedial works.<br>• Amenity grass/rough grass / meadow grass mowing<br>• Swale maintenance (cleansing/inspection)<br>**Hardscape Maintenance**<br>• Treatment of hard surfaces (bound and unbound)<br>• General H&S checks of estate furniture<br>• Fencing integrity checks and repairs<br>• Repainting/staining of furniture (allowing for treatment on rotational basis). | All landscape maintenance work is carried out by mobile teams **(TBC)** |
| Outdoor Leisure Management team | • Estate wardening (including security, enforcement of byelaws)<br>• Managing of lettings (shops etc)?<br>• Recreational equipment management (staff/equipment/storage facility)<br>• Leading events/walks/educational services<br>• Youth Worker<br>• ROSPA Inspector (annual play area inspections). | A ranger could be based at the site forming part of a small team of site managers **(TBC)** |
| Property Services Team | • Exterior property maintenance, repair and replacement (café/toilet/Community garden shed etc and all associated hard landscaped features)<br>• Energy management<br>• Lettings for small scale businesses | Hospital Buildings are not included in this section. These buildings will be those which may generate monies to be reinvested into the landscape to aid ongoing management. |
| Strategic Development Team | • Sports development<br>• Play management<br>• Nature conservation team<br>• Access management<br>• Local business reps<br>• Cross cutting issues<br>• Parkland strategy and development | Includes both salaried and voluntary members, (Forums, Friends Groups etc). |





## 2.2 Financial resources – Projected Expenditure

At the time of preparing this report, the provisions for expenditure for the site wide landscape management was estimated at £**TBC** per annum.

## 2.3 Identification of Basic Landscape Maintenance Requirements

The following section provides the basic level of landscape maintenance expected for the Hospital grounds. These operations will vary in terms of intensity following the initial years of establishment.

**Cleansing and Inspections**

- Weekly site inspections (including production of written report) for all publically accessible landscaped areas, including all areas of hard and soft landscape, furniture….
- Twice weekly litter picks to all publically accessible areas.
- Sweeping hard surfaces, large mechanical sweeping of roads, large areas of hardstanding
- Emptying litter bins and dog bins,
- Arboricultural inspections (annual survey, H&S inspections).
- Waterbody inspection (waterside H&S, equipment, water quality, vegetation encroachment).

**Grass / Reed cutting**

- Formal amenity grass cuts (amenity lawn 15 cut and remove operations per year)
- Rough grass cuts / meadow grass /wildflower (1 -2 cut and remove operations per year)
- Cut and removal of riparian vegetation (cuts to be limited to 1/3 of vegetation at any one time, allowing arisings to stand for 24 hours before removal to habitat piles /compost facility).

**Repairs and replacements**

- Renovation of site furniture and paraphernalia. Frequency is informed by manufacturer's recommendations, but a minimum allowance should be made for a cyclical maintenance regime accounting for repairs/repainting programme of 1/3 of facilities on an annual basis (in areas of greatest use).

**Weed control**

- Mechanical weeding (only) of shrub beds and tree pits.
- Mechanical weed removal from hard surfacing (bound and unbound).
- Treatment of Japanese knotweed (regular inspections will determine whether this is still present). **Herbicide treatment would be required for this operation.*

**Pruning**

- Free-form pruning of ornamental shrub beds and trees (annual operation)
- Formal hedge pruning (annual operation)
- Cutting back / dividing herbaceous vegetation (annual operation following establishment)

**Newly Planted Trees**

- During establishment period, checking stakes, ties and reaffirm tree in pit where required. Replacements to match original specification.

## 2.4 Identification of Initial Staff Requirements

As the hospital campus develops and visitor numbers with it, the predicted number of permanent staff required for the landscape management will increase. The table below indicates the initial requirements (first **TBC years**).

| Onsite Staff required for landscape works (£ per annum exclusive of equipment and resources needed) | |
|---|---|
| Full time Grounds team - Number TBC | £ TBC |
| Site Warden(S) - full time worker | £ TBC |
| Community Events - part time (Voluntary position?) | £ TBC |

**2.5 Financial Resources – Projected Income**

The following figures provide a snapshot of the income generated within the park at the time at which this report was prepared:

| Projected Income from businesses within New South Glasgow Hospital to be reinvested in the landscape | |
|---|---|
| Café (%) | £ TBC |
| Business Lettings | £ TBC |
| Youth Services | £ TBC |

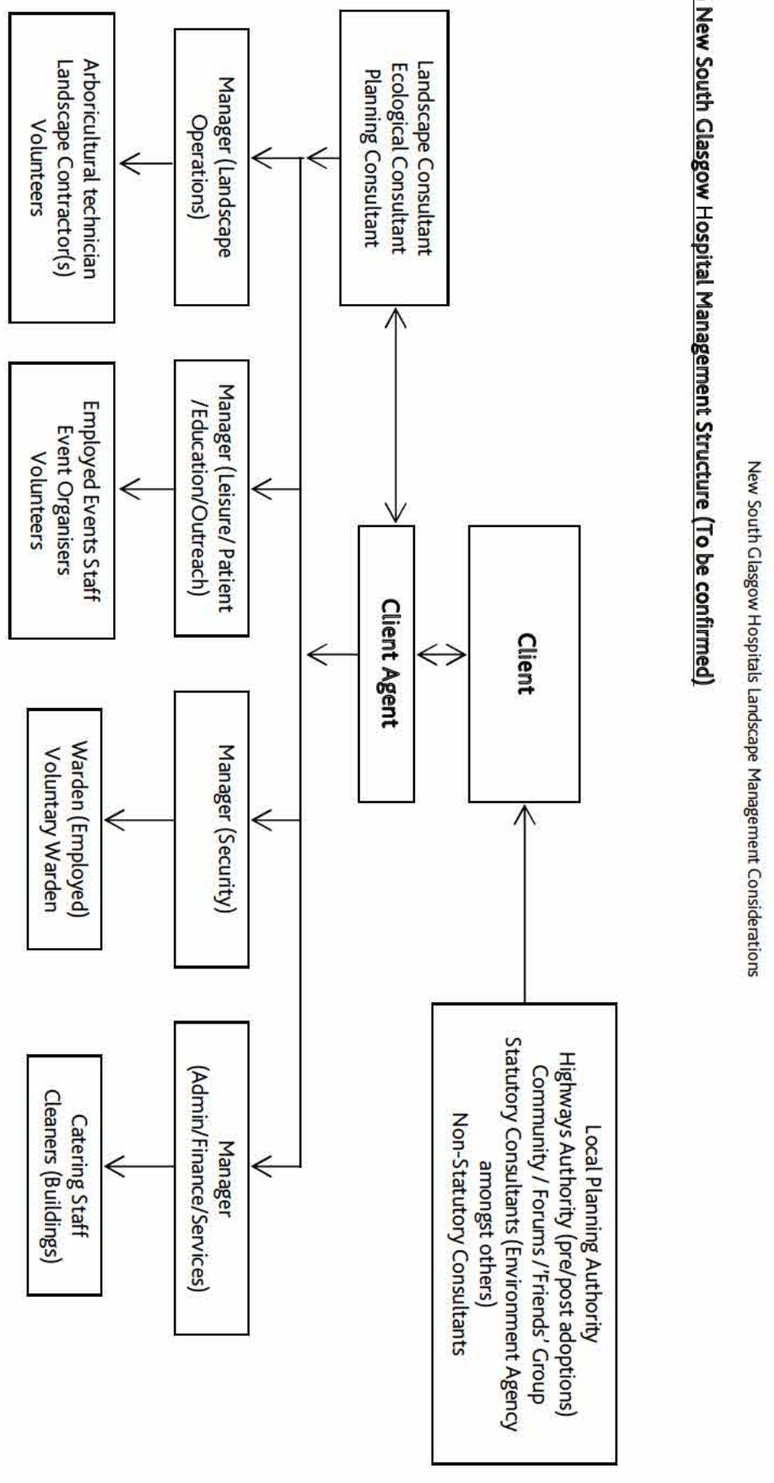
| Potential Income from Social Enterprise to reinvest into landscape works | |
|---|---|
| Community Markets/Community Orchard Fruit Stall | £ TBC |







**2.6 New South Glasgow Hospital Management Structure (To be confirmed)**



## 3.0 Aims and Objectives

- To maintain a low impact, holistic approach to site management, consistent in delivery and flexible to changing site demands;
- To efficiently manage a low maintenance, minimum waste landscape;
- To adapt management in accordance with the changing needs, requirements, desires and legal and BREEAM requirements;
- To establish a strong marketing campaign to attract investors and strong community support;
- To engender a strong sense of character through a high standard of management;
- To promote the understanding of the value of the landscape to its users by building links with the community and the installation of information boards;
- To promote biodiversity within the scheme wherever possible.

## 4.0 Site Appraisal

The site includes a number of clearly defined environments, each with specific management approaches needed in response to their intended level of use.

### Hospital building Entrance Plaza

The hospital entrance plaza is of area facilitates safe and easy access into the hospital building from the car park /bus and ambulance drop off. This area should be maintained to a high visual standard and provisions should be made to target this area as a priority for maintenance operations.

### Active Areas of Recreation and Play

The Children's Park and Central Park (amenity areas) provide areas of formal play for a range of users and age groups whilst residing in the hospital grounds. Again maintenance requirements for these areas are substantial so as to create a safe and accessible environment. Certain areas may see controlled access during certain hours of the day to retain greater control of use. An annual evaluation of current usage (based on frequent site reports by maintenance operatives) as well as a review of annual expenditure will determine the need/scope for additional/replacement facilities. Future assessments can determined the scope for providing official training grounds for local teams (potential revenue). This could be approached with a review of available grants.

### Areas of Passive Recreation and Recovery

External enclosed courtyards form protective environments for recovering patients. These areas provide simple terrain for patients to use for passive recreation with an ornamental landscape and supporting furniture and paraphernalia. The protective nature of the space combined with views looking in will ensure the space is not subject to mistreatment and should lower unforeseen maintenance issues, though a high level of input is still required to ensure the space is easily used by all.

### Interlinking/Transitional Areas of Paths Roads and Car Parks

These areas include, road infrastructure, pedestrian paths, linear walks and cycle routes which serve to facilitate access between the hospital buildings, parkland and surrounding environment. The maintenance of these areas will focus on maintaining ease of site access, which will include reviewing and updating wayfinding information, maintaining road/cycleway delineation markings and maintaining site lines through vegetation management in addition to general site cleansing and inspection operations.



### Roof Gardens

The roof gardens provide a safe retreat away from the busy hospital environment. These user environments will be subject to climatic variations and exposure at an increased level and management must respond accordingly. Maintenance here will reduce following establishment though initial input will be higher (including the need for controlled irrigation).

### Habitat Areas

The increase in site biodiversity will support a number of new habitats, more 'wild' in character and providing shelter for invertebrates and fauna, with green corridors linking to the wider green network in the local area. These zones will be largely inaccessible to site users through use of dense native vegetation and maintenance will consider local BAP and management guidance. A review of successful establishment of these areas will determine an approach for encourage the local residents to assist with further habitat creation and management.

### Community Orchard

The proposed Community Orchard is an area of site managed collectively by a group of people (staff, patients and local community). The Likely uptake of this area is to be discussed further. At a minimum managers need to consider a base level maintenance operations to maintain a desirable standard where required. Maintenance requirements will reduce as a result of community input, but a contingency should be in place to ensure standards do not drop below a given level. Successful uptake could eliminate any maintenance input from grounds staff. Further links with surrounding projects in the future may help to increase interest and raise the profile of the scheme leading to further projects in and around the hospital grounds, promoting a more healthy way of life.

## 5.0 Landscape Management Recommendations

This section details the general maintenance requirements for all landscaped areas within the site boundary. Frequencies of operation for each element are also provided in the accompanying tables.

### Cleansing
A general scavenge of all public areas should be conducted on a frequent basis (timing to be confirmed but as a guide, frequency will vary according to perceived intensity of use for each area) and immediately following periods of bad weather, as excess litter and debris may have been blown/washed into the site.

'Cleansing' should consist of the routine collection and removal of all litter and debris as described below to the Contractor's tip. Litter should include; paper, wrapping material, glass, metal and plastic, with no lower size limit. Other debris should consist of bricks (greater than ¼ brick size), stones (greater than 100 mm in any dimension), concrete, bottles, cans, tipped material, garden refuse (not including leaf litter), grass cuttings, all prunings, dead trees, small or broken furniture, household effects, dead animals, and any other materials whatsoever their composition and by whomsoever deposited, that the Site Manager considers detrimental to the appearance of the site. Dog faeces shall be cleared from all areas by the Contractor. Litter and debris lodged in hedges, fences and trees shall be removed as part of the cleansing operation.

### Fly tipping
Fly tipping may occur from time to time and an allowance should be made to remove this as quickly as possible after it appears.

### Vandalism (Generally)
Any damaged items should be replaced or cleaned as quickly as possible, as experience has shown that damage left untreated will tend to encourage further mistreatment.

### Inspections
Regular patrols of the site (weekly/ fortnightly/monthly) will be undertaken to monitor use/abuse, to identify any problems or conflicts that may arise with regards to the landscape development and general health and safety issues that need addressing. Superficial inspection from a distance is not acceptable and the site requires coverage by walking. The inspection shall be carried out independently of any routine maintenance works which may be in progress. The contractor should use a site inspection sheet making specific notes on site maintenance issues.

### Weekly inspections
Site inspections in areas if high intensely use are to be carried out on a weekly basis and inspection reports should be compiled and provided to the contract administrator, identifying any management issues relating to the landscape within or on the boundary line. Inspections should cover the following:

- Landscape maintenance issues (resulting in an inability to undertake landscape maintenance operations).
- Cleansing issues (repeated littering, fly tipping, facilities)
- Repairs required for all hard landscape elements, site features, furnishings and safety equipment
- Assessment of any potential hazards (waterside H&S, trip/slip hazards)

### Annual inspections
An appropriately qualified Arboriculturalist should carry out an annual inspection of all trees within or adjacent to areas of public access. These assessments should check for damage and disease to ensure that the tree is in a safe, sound condition, to permit free access and maintain appropriate height clearances for pedestrians and vehicular access.

Annual inspections should be undertaken to assess the condition of structural elements such as retaining walls. This inspection should also include a condition survey of all road markings, railings and site furnishings which inform site managers of work priorities for the upcoming year.





### Tree Planting
#### Individual mature trees

It is recommended that an appropriately qualified Arboriculturalist should be commissioned to carry out annual inspections of any individual mature trees within or adjacent to areas of public access in order to maintain public safety and permit access. In addition, any remedial arboricultural work should be undertaken whenever required in order to ensure the longevity of the tree and the health and safety of the site users. Where Tree Preservation Orders (TPO's) are in place, the local planning authority must be consulted prior to undertaking any remedial works, including any topping, loping, crown shaping and/or limb removal. Any trees accessible to the public should be crown pruned as required to maintain healthy growth. Allowance shall be made for thinning, trimming and shaping according to species, variety, season, stage of growth, and required visual effect. All prunings/thinnings are to be removed offsite unless otherwise instructed. All landscape management staff should record any incidences of any disease/fungus found during site inspections.

When trees are ultimately felled, replacement planting should be of the same species, or at least of a native long-term deciduous species to maintain a diverse age structure. Standing deadwood should be retained onsite wherever possible to enhance ecological diversity, but only where visually appropriate and where access should not be compromised.

#### Individual young specimen trees

Where trees are staked, the stakes and ties should be checked frequently and it is anticipated that they should need adjusting at least twice annually. To reduce excessive competition a suitable mulch should be laid around any trees less than 3m in height and should be maintained to a diameter of 1m around the base of the trees. This should be topped up during the first three years of management as required to maintain a depth of 75mm. Between April and September frequent inspections should be undertaken, and undesirable weeds should be removed by hand weeding. Young trees should require formative pruning to maintain a desirable shape as well as to maintain health and vigour. Any broken or damaged stakes should be replaced and ties re-fixed at a slightly lower position, allowing for growth since planting. Remove stakes as necessary, when the tree is suitably established.

Once young trees attain a height of at least 4m, the maintenance of a mulch layer and formative pruning can be discontinued. However, crown pruning is still desirable and any dead or severely damaged trees should be felled and replaced accordingly.

### General Arboricultural Operations
The following specifications are applicable to all arboricultural works onsite.

a. An appropriately qualified operative such as Arboriculturalist or Tree Surgeon must be consulted prior to undertaking any major tree works within the site boundary.
b. Formative tree works must be undertaken during the winter months (preferably January – February) outside of the bird-breeding season.
c. Where bat roosts may be present, tree works must be authorised and supervised by an appropriately qualified ecologist.
d. Wood under 250 mm diameter collected from thinning, brashing, or coppicing should, wherever possible, be chipped and used on site for mulching, either by blowing directly back into planting areas or by storing on site for future use.
e. Trees for coppicing should be cut back to 50 mm above ground level. Where a number of stems are coppiced on one plant, cut faces are to slope away from the centre. Care should be taken to ensure that thinning operations do not cause damage to desirable plants, or rutting of the ground in wet conditions.
f. Trees for thinning should be cut to a level stump length of 150 mm for treatment with stump killer. A minimum of 50% of the stump surface should be scored over and treated to stop re-growth. Future growth of stumps should be monitored and additional cuts and applications of stump killer should be made over the following two or three years as required.
g. The removal of a particular branch or limb, for whatever reason, might leave the overall appearance of the crown unsightly. Steps may be required to soften the impact of the works required by judicious pruning

of other, adjacent, parts of the canopy to ensure a healthily balance is maintained. Judgements should be made on an individual basis and should consider the individual species concerned to maintain the trees natural form.

h. Epicormic shoots resulting from limb removal should be removed where appropriate.

### Weed Control

Within the first ten years of establishment (or until canopy layer closes) wood chip, bark mulch or leaf litter (collected from surrounding amenity areas) should be laid around the base of young plants to suppress weed growth. Between April and September periodic inspections of these areas should be undertaken and weeds within 0.5m of young trees should be removed by hand weeding to help tree establishment.

### Rabbit Guards, Stakes and Ties

Monthly inspections of rabbit proof guards should be undertaken during the establishing period of the tree planting and replacements should be made as necessary. Replacement guards should use the same spiral guards as those originally approved and supplied. Remove guards once tree planting has established, in order to facilitate growth.

### Hedge Cutting

Initial formative hedge cuts to young hedgerows should be undertaken once it has reached a sufficient stage of growth so as to establish the desired height and width of the hedgerow for future maintenance cuts. Initial cuts should be undertaken using appropriate hand or power tools. Once hedgerows have reached sufficient maturity they shall be cut once a year unless otherwise instructed.

### Ornamental Planting: Shrubs, Herbaceous Planting

With respect to the management of the ornamental shrub planting beds, the approach here should focus on maintaining a neat and tidy appearance, which should also encourage plant growth. Any failed plants during the 3 years covered by this management plan should be replaced as required using like for like species and using the planting list provided for guidance.

### Weed control

Within the first three years of establishment, a mulch should be laid around the base of all young plants to suppress weed growth and should be maintained to a depth of 50mm. Between April and September frequent inspections of these areas should be undertaken, removing weeds wherever necessary by hand pulling to assist the successful establishment of plants.

Pruning of ornamental shrubs should be undertaken in order to clear deadwood, promote healthy growth and produce desired growth of flowers, fruit, foliage or winter colour as appropriate. Pruning should also include for clearing out crossing and damaged branches. Where the pruning is limited to the extent of the current year's growth, work can be carried out at anytime of year. Extensive pruning works, thinning or coppicing works should however be carried out outside the bird nesting period e.g. between September and February.

### Watering of Trees

Watering of young trees and ornamental shrub/herbaceous planting might be required during periods of prolonged drought (in excess of 14 days) in the first 2 years of establishment. Particular care should be taken during such periods to ensure sufficient watering is carried out to facilitate healthy growth. Watering should not take place where local water restrictions are in place.

### Bulb Planting

Areas of bulbs should not be cut until the leaves have died down in late June/July (dependant upon species present). Thereafter routine cuts to bulbs in grass should be undertaken in concurrence with the surrounding formal grass cutting regime.





### Ornamental Grasses

Ornamental grasses should hand cut between late January and early March as required in order to clear dead vegetation, and promote healthy re-growth. Care must be taken not to damage new growth. All arisings should be collected and removed.

### Grassland

### Amenity grassland

These areas are scattered throughout the development areas. These areas serve both an aesthetic and passive recreational purpose. The focus of the management approach in these areas should be to maintain a neat and tidy appearance which facilitates public use.

Grass cuts should be undertaken as required to maintain a neat and tidy appearance throughout the growing season (minimum 15 times per annum). Herbicide weed control should be limited to spot application of translocated herbicide to control persistent and noxious weeds such as docks, thistles, nettles, ragwort and shouldowherb during periods of active growth. Application should be at the manufacturer's recommended rates, as a spot-treatment to undesirable species or a blanket treatment where infestation is severe.

Any areas to be re-seeded as general amenity grassland should be seeded with a mix approved by the Site Manager.

Where considered visually appropriate (informal areas only), retain any arising for composting onsite.

### Wildflower Meadow

The wildflower meadow is important for providing valuable wildlife habitats for insects, invertebrates, small mammals and birds. Whilst conserving wildlife habitats, the management of this grassland should ensure that species diversity is enhanced in the long-term and that invasive species are not permitted to compromise the integrity of the grassland.

The suggested timing and frequency of grass cuts aims to maximise the conservation benefits provided by the meadow. Management should include a twice yearly cut and remove of all arisings to help maintain lower levels of soil fertility. As with amenity grassland areas, herbicide weed control should be limited to spot application of translocated herbicide to control noxious and invasive weeds such as rush, dock, thistle and nettle.

Any re-seeding of the Meadow Grassland should comply with the original landscape design unless otherwise instructed and approved.

When undertaking grass cutting operations on roof gardens, a method statement for working at height should be provided to the Site Manager for approval.

### SUDS

**NB: SUDS and management proposals to be submitted as a separate application in August 2010.**

### Swale Planting

Maintenance of marginal vegetation within the swale should include cutting back invasive species to prevent them from dominating. Regular removal of dead vegetation and litter, should ensure the swale does not dry out and that the drainage in the area is not compromised through natural succession. It is important that cutting does not take place over the entire swale in one operation, and should therefore be cut in alternate sections on annual rotation leaving uncut areas as refuge for wildlife. Management must also consider the weather conditions at any given time as the swale is likely to dry out during periods of prolonged drought. Consideration should be given to watering these areas if it is deemed necessary.

## Japanese Knotweed

Japanese Knotweed has previously been discovered in the northern section of the site. This has significant management implications as Japanese knotweed is classified as an invasive weed in the Wildlife and Countryside Act 1981, under which Schedule 9, Section 14 makes it an offence for anyone to knowingly allow the species to spread.

Where Japanese Knotweed is identified on site (seek advice from Ecological consultant if unsure), one of the following control strategies should be undertaken. The type of control strategy to be undertaken should be determined by the Site Manager and is dependant upon the current or future usage of the area in question

Before or after spraying, cut Japanese knotweed within 100-150mm of ground level using strimmers, hand tools or mechanical mowers. Cut stems can then be retained in situ where they should be treated with subsequent herbicide control.

Arisings of cut Japanese knotweed may alternatively be disposed of by one of the following methods:

## Removal to landfill

All contaminated material should be loaded directly onto wagons for removal to a licensed landfill. Before leaving site, the wagons should be sealed using tarpaulin covers. The contractor should provide all tip weighbridge receipts for the attention of the Site Manager. At the end of each working day all machines used for excavation should be brushed clean to ensure that no soil leaves the site. If required, a representative of the Site Manager should note the time of departure and registration of each wagon for checking against authentic tip weighbridge receipts in order to demonstrate that the material has been removed in accordance with the EPA (Duty of Care) Regulations 1991. High costs are generally associated with off-site disposal. It is advisable to check with the relevant landfill operators as some may not be willing to accept Japanese knotweed contaminated material. As the material is classed as a controlled waste, all producers, carriers and disposers of waste must be in possession of relevant licences. Material must be appropriately covered during transit in order to minimise additional contamination.

## Treatment of Japanese knotweed with non-persistent herbicide containing Glyphosate

Three glyphosate applications are to be undertaken at a minimum of six weekly intervals between May and September (i.e. in May, July and September) or as instructed by the Site Manager.

Application is to be undertaken as a foliar spray when shoots have fully open leaves and are in active growth. The spray must not be permitted to contact desirable plants. Where Japanese knotweed is within vegetation to be retained or where small amounts of re-growth are present, spot application of glyphosate using a suitable method is to be substituted. In some areas, specialised application methods such as telescopic lances may be required to achieve good spray coverage. Where spraying of flowering Japanese knotweed is required spraying should be undertaken in late evening.

If Japanese knotweed vegetation is over approximately 1.5m tall, or obscured by tall dead stems making a thorough application impossible, vegetation is to be cut prior to herbicide application and left in situ. The Glyphosate is then to be applied after regrowth of shoots has established fully open leaves. Once vegetation has died back fully, and no later than the first emergence of new shoots, standing vegetation is to be cut and retained in situ, to be treated again by subsequent herbicide application.

## Hardscape

There are numerous hard landscape elements on site including bound and unbound tracks, paths and roads as well as furniture, including; benches, bollards and cycle racks. It is important that these features are





appropriately maintained to retain their respective functions and aesthetic properties. Fencing in and around the site perimeters should be regularly inspected and repaired promptly to prevent uncontrolled access.

All hard landscape elements including fencing, furniture, gates, access barriers and hard surfaces are to be inspected on a regular basis and minor repairs carried out as necessary. Any items considered to be unsafe should be removed or made safe and replaced as soon as possible. Surface integrity should be closely monitored to prevent slip and trip hazards, through surface cracks or vegetation encroachment. Gullies should be kept free of debris to maintain surface water drainage.

### Hard surfacing generally

The management of all hard surfacing throughout the site must seek to maintain a formal, tidy appearance which is safe to all users, free from any potential slips or trip hazards and free from sharp debris. Weed control should be undertaken between four to six times per year as required during the growing season, and should involve hand weeding and spot treatment of glyphosate to control the growth of any deep-rooted noxious weeds. Weed control to areas of bound surfacing is likely to be limited to perimeters of the surfacing whereas a higher percentage of weed control should be required to unbound and paved surfacing to eradicate weeds throughout the area. Moss should be cleared from hard surfacing when required by hard brushing and removing the subsequent arising. Sufficient maintenance access (vehicular/pedestrian) should be maintained at all times.

### Cycle Route Markings

Thermoplastic markings along cycle tracks should be review as part of regular site inspections. Allowance should be made for an annual application of the markings to 1/3 of the total length from year 2 onwards.

### Retaining Walls

Management of retaining walls should ensure the continued structural integrity of the materials, making sure surfaces are hazard free and that the structure remains intact. Any slumping/damage to the walls should be reported immediately.

### Cycle Stands, Bollards and Paraphernalia

Any equipment that has been damaged or considered to be unsafe should be replaced or made safe and replaced as soon as possible. The use of materials for re-painting, repairs and replacements should conform to the original design specification for external works.

## Management Initiatives

### Training

The site's potential for training purposes should be explored. Training may range from opportunities for local students with a professional interest in environmental management to both general skills and specialist training through the employment of Intermediate Labour Market (ILM) teams to undertake aspects of the management. The objective should be to work with existing local providers, using the site as a venue for their activities, developing their capacity and expertise rather than developing something separate.

### Social Enterprise

As well as the potential to use local ILMs the potential to use and develop local social enterprises should also be explored, helping to ensure that the local people and communities benefit financially from the sites as well as in other ways. Again this should be developed in partnership with existing local deliverers.

### Other

Means of engaging local people more proactively in having a say in the management of the site should be explored, including the setting up of a 'Friends Group' and volunteer wardens. However, it must be

recognised that such involvement must spring from a genuine desire and commitment on behalf of local people and cannot be forced upon them. In addition, although beneficial it can also be time consuming to manage and is not a way of managing more cheaply. As the site is an active hospital site, it is recommended that such groups be targeted towards developing the lower intensity use areas and habitat areas rather than the high intensity entrance areas and forecourts.

## 6.0 Community Engagement Initiatives

The Project Team and the Board's Community Engagement Managers have established the required community benefit considerations for incorporation in the procurement of the Project. These have been developed in line with the Scottish Government's Guidance on Community Benefits in Public Procurement. In particular the Board should seek to work in partnership to develop initiatives around the following:

- Targeted recruitment & training;
- Developing Small and Medium Enterprises (SMEs); and
- Developing Social Enterprises.

### 6.1 Voluntary Workers

These should be considered in the following categories:

- **Casual** – Frequent park users who simple want to help out with the management of the area.
- **Corporate** - Many companies have corporate responsibility targets which could involve having an activity involvement in the local environment.
- **Organised volunteers** – These include; local school, Duke of Edinburgh groups and other such organisations.

The management team should establish a timeline for engaging the community at a variety of levels and assisting with the creation of community led groups. This could include:

- **Environment management events** – Run by onsite staff. Volunteers pay a nominal fee for taking part which pays for resources for the day. Could include:
  - Installing and monitoring habitats (bat/bird boxes, hedgehog boxes etc).
  - Bulb and plug planting days
  - Wildflower seed collection and sewing to be reused elsewhere onsite for experimentation and habitat creation
  - Woodland works (coppicing, scrub clearance and hedge laying)
  - Creation of 'Land Art' by simple variations in maintenance regimes.
  - Allotment development and links with nearby projects and associations.
  - Establishing links with surrounding developments, pooling resources and holding joint social events to aid community integration.

- **Voluntary workers** – This could include part-time patrolling (a well known and respected member of the local community should be approached to champion this as this should help to encourage responsible behaviour). Summer work for school kids, including working in the shop etc.

- **Education Events** – Local forum members could provide educational events on their areas of expertise. Establish group ASAP. Participants pay nominal fee for taking part. Social events for children may be developed and run largely in the school holidays, with educational activities planned during term-time. Weekend events such as guided walks and health walks could be developed and run throughout the year. Establishing a contact at the local primary and secondary schools should be crucial to achieving success in this area.





- **Training** - Opportunities for students with a professional interest in environmental management and specialist training for site workers, working with local experts/ranger etc. This could provide an opportunity for a part-time voluntary Ranger.

- **Social Enterprise** - Helping the local community to benefit financially from the site. Again this could be developed in partnership with local deliverers. The Community garden could form a basis for this and a vegetable box scheme should be considered.

- **'Friends' Group** - A number of precedent projects across the country have established 'Friends Groups' early in their development to gain a level of community support during the establishment period. This should be explored further and links with other developments in the surrounding area should be considered to establish a network of supportive groups.

## 7.0 Marketing

Marketing the park should be focused towards raising the general profile of the grounds. A number of techniques could be incorporated to achieve this, including;

- The development of a website
- Production and distribution of promotional material for events, business opportunities amongst others
- Suggestion of events to raise profile (an assessment needs to be made by the management teams as to who is responsible for organising internal and external events)
- The organisation of local forums

## 8.0 Management Targets

Following on from initial establishment of groups (including the management body), the team should outline and identify a series of management targets for the first year. This should be considered at a variety of levels of intervention, including;

| | |
|---|---|
| **Minimum** | All necessary works/changes following annual site review |
| **Medium** | Covers all basics requirements and some aspirations |
| **Maximum** | Implementation of large scale proposals and developments (in addition to minimum and medium intervention) |

## 9.0 Monitor and Review

This management strategy should be considered when producing future management plans as well as subsequent revisions, which maybe created for the Hospital grounds. It may also be necessary to re-assess and update this strategy upon final completion of the individual landscape zones indentified in the Site Appraisal Section. It is recommended that landscape management operations are reviewed on a **five** yearly basis in order to ensure they are meeting the overall aims and objectives identified in this strategy and to ensure that it is responding to the current and perceived future needs of the site as it develops. This can be facilitated by undertaking site surveys, which should identify the need for additional operations and inform future management decisions in relation to continual improvement of bio-diversity and the amenity value of the landscape.

## 10.0 Potential Funding opportunities

**FUNDING OPPORTUNITIES**

The following opportunities could be explored for the provision of further funding for the development and future management of the New South Glasgow Hospital.

***Big Lottery Fund***
This was launched in June 2004 as a single new lottery distributor combining the New Opportunities Fund and the Community Fund. The fund should continue to provide for charities, the voluntary sector and health, education and environment projects in addition to large-scale regeneration projects. A key theme is "promoting community safety and cohesion", and aims to encourage people to become actively involved in their local communities. Other goals include enhancing the urban and rural environment to make public places safer, and better designed/maintained whilst enabling communities to tackle local environmental problems.

The following Big Lottery funding streams could be explored if the 'Living Landmarks' Big Lottery application if unsuccessful or to fund projects not covered by the 'Living Landmarks' application.

***Young Peoples Fund*** provides grants of up to £200,000.00 for projects that should improve local communities and offer more opportunities to young people. In particular it aims to encourage the involvement of young people from disadvantaged backgrounds. Applications are open to voluntary and community organisations.

***Children's Play Initiative*** has funds of £155 million to be delivered in areas of deprivation. Funding streams include:

- *Playful Ideas Programme*: provides capital and revenue grants of £10,000-£250,000 for projects lasting up to five years. Projects must focus on innovative and new ways of providing for children's play. Applications are open to voluntary and community groups, the social enterprise sector, and town and parish councils.
- *Play England Project*: £15 million partnership between the Big Lottery Fund and the Children's Play Council. The Play England Project is available to provide advice and support to both local authorities and the voluntary and community sector.
- *Children's Play Programme*: £124 million programme open to applications from Local Authorities. The amount of money allocated is based on the areas child population and level of deprivation. Local authorities are required to develop a local play strategy as part of the application process. Applications should comprise a portfolio of projects.

***Reaching Communities*** £60 million for 2008-2009 for projects which improve the quality of life of communities most in need, aiming to:

- improve access to training and development of life skills
- improved rural and urban environments
- develop stronger communities

***Changing Spaces*** has £234 million available to help communities in England improve their environment focussing on community spaces; local community enterprises and access to the natural environment. BIG is currently appointing Award Partners to manage grant schemes on their behalf and deliver a 'portfolio of projects' which comprise of a number if individual projects which together form a cohesive strategy. Applications are open to Voluntary, public or private sectors.

*Heritage Lottery Fund*

*Awards for All* provides grants of between £300 and £10,000 for people to take part in art, sport, heritage and community activities and projects that promote education, the environment and health in the local community. Not-for-profit groups, parish or town councils or public bodies can apply. Eligibility is assessed on the following criteria amongst others:

- evidence of having successfully undertaken similar work in the past
- the project meets aims to extend access and participation, increase skills and creativity and improve quality of life
- appropriate and realistic budget
- identification of the community benefits

*Parks for People* is funded by Big Lottery Fund (BIG) and Heritage Lottery Fund (HLF) and provides grants of £250,000-£5 million available for projects involving urban or rural green spaces designed for informal recreation and enjoyment – usually those owned and managed by a local authority. Not-for-profit organisations can also apply. Applications must show that:

- The local community values the Park as part of their heritage;
- The parks meets local social, economic and environmental needs; and
- The park actively involves local people.

Applicants are required to raise at least 25% of the project costs from other sources and at lease 5% of partnership funding must be from their own resources. Deadlines for applications are 31 March and 30 September (annually).

***Your Heritage*** provides grants of between £5,000 and £50,000 to support community-focused heritage projects. Projects must conserve the heritage and should provide educational and recreational benefits. Projects include caring for the natural landscape, conserving historic environments.

*Heritage Grants* offers grants of over £50,000 for projects which conserve and enhance local heritage and/or encourage community involvement and education of their heritage. Projects can include nature conservation and projects relating to the UK's industrial transport history amongst others.

***ODPM Funding***

*Biffa Award*
Up to £50,000 available for projects showing innovation, community involvement, and partnership with relevant groups and meet targets set out in the Government's strategy: 'A Quality of Life'. Projects include amenity projects to improve access and biodiversity projects to restore and manage areas specifically for biodiversity. Applicants must be enrolled as an environmental body with Entrust.

Barclays Spaces for Sports
Barclays, in partnership with the Football Foundation and Groundwork provide capital grants of up to £25,000 for new or renovation of existing sports facilities. Applications are made through Groundwork Trusts and the Football Foundation.

***Corporate Sponsorship***

Local businesses are often keen to provide sponsorship for various forms of artworks, events and promotional material which they see as a marketing opportunity, particularly where the applicant can demonstrate links to their company objectives. Many companies have funds designated specifically within their Corporate Plan for community projects.

*Voluntary and Community Sector*

The voluntary and community sectors are able to access various sources of funding, particularly for capital works. The VCS, supported by the local authority can also provide skilled people to help manage and maintain the environment, run events and activities, and raise funds. It can, for example, provide resources to support 'friends of' groups and match-funding for projects and maintenance activities. Partnerships should be established with organisations such as BTCV, Groundwork and the Wildlife Trust to maximise opportunities for such funding.

## 11.0: Environmental, Social and Legal Considerations

The following section provides a summary of the principal constraints and considerations to be taken into account when implementing this and subsequent management plans. It is not an exclusive list and consideration must be given to changes in government legislation at any given time.

### 11.1 Compliance with Environmental Legislation

The following legal and non-legal obligations, among others have to be considered in carrying out any management operations:

The Health and Safety At Work Act 1974:
All operations carried out on site must only be undertaken by trained personnel, using methods and equipment approved by the Health and Safety Executive.

Working at Height Regulations 2005 (as amended):
A risk assessment must be undertaken prior to any working at height (including Arboricultural operations over 4m or where a ladder is required to carry out works).

Wildlife and Countryside Act 1981:
There is an obligation to comply with legislation for UK species protected (including amphibians, reptiles and bats) under this Act. Of particular relevance to the Wildlife Conservation Area is legislation relating to great crested newt, lizards and bats.

Occupiers Liability Act 1984:
The Occupier's Liability Act imposes an obligation on the chosen management organisation to ensure that every reasonable care is taken to remove any risks to both legitimate visitors and to any trespassers on the land. In compliance it should be necessary:

a. To make sure that all stiles, footpaths and any other structures are safe.
b. To remove any hazardous objects.
c. To conduct an annual safety audit in order to identify any further hazards.

Protection of Badgers Act 1992:
The Act provides legal protection of badgers and their setts which, amongst other things, makes it illegal to:

a. Disturb a badger when it is occupying a sett;
b. Intentionally/ recklessly damage, destroy or obstruct access to a sett;
c. Wilfully kill, injure or take any badger or attempt to do so.

The Conservation (Natural Habitats etc) Regulations 1994:
There is an obligation to comply with legislation for European species protected under these regulations, notably great crested newts.

Environmental Protection Act 1990:
There is an obligation to keep the site free from litter and refuse.

Countryside and Rights of Way Act 2000:
The CROW Act imposes a new right of access on foot to registered common land and other areas of 'open countryside' which under certain circumstances allows access without being confined to footpaths. It also increases the protection of great crested newts introducing the new offence of a 'reckless' act affecting great crested newts.





Other Relevant Legislation includes:

- Alcohol Consumption in Public Places Order 2003
- Clean Neighbourhoods Act 2004
- Control of Pesticide Protection Act 1986
- Countryside and Rights of Way Act 2000 and increments
- Countryside & Right of Way Act 2000
- Disability Discrimination Act 1998
- Health & Safety at Work Act 1998
- Litter Act 1983
- Ministry of Housing and Local Government Provisional Order Confirmation (Greater London Parks & Open Spaces Act )1967
- Occupiers Liability Act 1957
- Road Traffic Act 1988 (as amended 1991)
- The Country Code (2004)
- The Anti Social Behaviour Act 2003

### 11.2 Environmental Factors

*Invasive species*
Japanese knotweed has previously been recorded onsite and it is important that management continues to monitor for the occurrence of invasive and noxious species such as Japanese knotweed, Giant Hogweed and Himalayan Balsam and ensure that appropriate programmes of monitoring, reporting and eradication are implemented as required.

*Control of natural succession*
Habitats should require ongoing maintenance works to protect them from scrub invasion and over-enrichment which may otherwise result in a loss of terrestrial or aquatic habitat. This must remain consistent with the local Biodiversity Action Plan prepared in partnership with local and regional groups.

*Control of introduced problem species*
The introduction of fish to waterbodies through illegal or unintentional activity (e.g. by children) is a threat in publicly accessible waterbodies which must be closely monitored to protect amphibian habitats.

*Sensitivity of wildlife habitats*
NB: Policy to be developed in tandem with SUDS management proposals to be submitted as a separate application in August 2010.

Any maintenance works to be undertaken within close proximity to any badger setts found (e.g. 10m) are to be undertaken in accordance with UK guidelines.

*Climate Change*
Future development and management proposals need to reflex climate change objectives. Management practice should remain mindful of government initiatives and legislative changes. Programmes should be adapted accordingly, whilst ensuring operational targets are met.

*Water Demand*
The contractor must consider local water restrictions which may have been imposed during periods of prolonged drought. Watering operations must cease during this time.

## 11.3 Social Factors

***Pollution***
Urban run-off from the building and car parks should be discharged into the swales via a Sustainable Urban Drainage system. Reed beds should act as a filtration system, however proposals for pollution control measures should be finalised as part of the detailed design proposals.

***Public Amenity***
The balance of both wildlife conservation and public amenity interests must be carefully managed due to the close proximity of the built environment and public open space. In addition to providing valuable wildlife habitat it is important that designated ecological and wildlife conservation areas continue to provide an attractive setting for the adjacent amenity open space and residential development.

***Public Access***
The site must be monitored for signs of unofficial public access and the potential development of desire lines. During any additional construction operations, public access should be clearly defined in the interests of public safety. Temporary diversions must be clearly defined and signage should be provided explaining the need for the diversion, alternate routes and likely duration of the diversion. This should be overseen by the landscape management team.

Undesirable behaviour (e.g. vandalism and the threat to habitats) should be monitored, dealt with and taken into account when planning any future management initiatives. Irresponsible behaviour by members of the public in accessible areas or trespassing in restricted access areas has the potential to create management requirements that may require enhanced levels of staffing.

***Trades Access***
Trades access should be catered for around shops etc. Unauthorised access should be monitored and mitigated where required. Management staff should report any unauthorised access.

***Health and Safety Issues***
Public health and safety must be considered at all times. In particular this should relate to presence of trip hazards, sightlines, air quality and condition of equipment within areas of public access.

***Compliance with wider area initiatives***
The implementation of this management plan and future revisions should acknowledge the implementation of local, regional and national initiatives to which the management plan may contribute.

## 12.0 Frequency Tables with Approximate Costs

| Action | Approximate Measure/ Quantity | Unit | No of ops/year | TIMING (MONTH) A | M | J | J | A | S | O | N | D | J | F | M | Unit rates (£'s) | Approximate Annual Costs (£'s) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SITE INSPECTIONS** | | | | | | | | | | | | | | | | | | |
| Undertake weekly inspections | 14,000 | $m^2$ | 52 | 4 | 5 | 4 | 5 | 4 | 4 | 5 | 4 | 4 | 5 | 4 | 4 | 0.0006 | 8.4 | Area estimated on an approximate total area of amenity grassland, roads, car parks and major footpaths and footpath verges. |
| Undertake fortnightly inspections | TBC | $m^2$ | 26 | 2 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 0.0005 | TBC | Area includes informal footpaths, footpath verges (estimate of 2m wide either side of footpath) and ornamental planting beds. |
| **CLEANSING** | | | | | | | | | | | | | | | | | | |
| Undertake twice weekly cleanse- litter bins, dog bins and seating areas around Entrance Plaza | TBC | NA | 104 | 8 | 10 | 8 | 10 | 8 | 8 | 10 | 8 | 8 | 10 | 8 | 8 | 26.50 / hr | TBC | Cost estimated for 2 hours of work per operation at day work rates. |
| Undertake weekly cleanse in areas of high intensity use. | TBC | $m^2$ | 52 | 4 | 5 | 4 | 5 | 4 | 4 | 5 | 4 | 4 | 5 | 4 | 4 | 0.0105 | TBC | Area estimated on an approximate total area of amenity grassland, roads, car parks and major footpaths and footpath verges. |
| Undertake fortnightly cleanse to secondary spaces of medium intensity use | TBC | $m^2$ | 26 | 2 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 0.0105 | TBC | Area includes informal footpaths, footpath verges (estimate of 2m wide either side of footpath) and ornamental planting beds. |
| Undertake one off cleanse as required to remaining informal landscape areas of lower intensity use | TBC | $m^2$ | As necessary | * | * | * | * | * | * | * | * | * | * | * | * | 0.0105 | TBC | Estimated for 2 operations/annum across the entire site. |
| ***Fly tipping*** | | | | | | | | | | | | | | | | | | |
| Remove fly tipped material as identified in monitoring and inspection reports | TBC | NA | As necessary | * | * | * | * | * | * | * | * | * | * | * | * | 26.50 / hr | TBC | Cost estimated for 22.5 hours/annum of work at day work rates. |
| **GRASSLAND** | | | | | | | | | | | | | | | | | | |
| ***Amenity grass*** | | | | | | | | | | | | | | | | | | |
| Initial cut to a height of approx 35mm and remove cuttings | 7000+ | $m^2$ | 1 | | | | | | | | | | | | 1 | 0.0425 | 298 | |
| Fortnightly cut and disperse. To allow for pulling out/spot treating broadleaved weeds as required. | 7000+ | $m^2$ | 13 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | | | | | | 0.0120 | 84 | |
| ***Meadow grass*** | | | | | | | | | | | | | | | | | | |
| Meadow cut to a height of approx 50-100mm and remove cuttings. | 3551 | $m^2$ | 2 | | | 1 | | | | 1 | | | | | | 0.0731 | 259 | Timing dependant on species present |
| ***Long grass*** | | | | | | | | | | | | | | | | | | |
| Rough grass cut to a height of approx 50-100mm with cuttings dispersed | TBC | $m^2$ | 2 | | | 1 | | | | 1 | | | | | | 0.0373 | TBC | |
| ***Bulbs in amenity grass*** | | | | | | | | | | | | | | | | | | |
| Initial cut to a height of approx 35mm and remove cuttings | 200 | $m^2$ | 1 | | | 1 | | | | | | | | | | 0.0988 | 20 | Timing dependant on flowering |
| Fortnightly cut and disperse. To allow for pulling out/spot treating broadleaved weeds as required. Note: Bulb areas in other grass types to be cut in accordance with routine grass cutting for these areas | 200 | $m^2$ | 7 | | | | 2 | 2 | 2 | 1 | | | | | | 0.0120 | 2.4 | |
| ***Weed Control to grass areas*** | | | | | | | | | | | | | | | | | | |
| Hand pulling of noxious weeds such as docks, rosebay willowherb infestations during growing season. | 7000+ | NA | As necessary | | * | * | * | * | * | | | | | | | estimated lump sum | TBC | |
| ***Sub-total*** | | | | | | | | | | | | | | | | | XXX | |

| Action | Approximate Measure/ Quantity | Unit | No of ops/year | TIMING (MONTH) A | M | J | J | A | S | O | N | D | J | F | M | Unit rates (£'s) | Approximate Annual Costs (£'s) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PLANTING** | | | | | | | | | | | | | | | | | | |
| ***Structure planting & established Woodland Planting*** | | | | | | | | | | | | | | | | | | |
| Thinning and coppicing as required to create appropriate woodland structure and improve sightlines | 1656 | $m^2$ | 1 | | | | | | | * | * | * | * | * | * | 1.0950 | 1810 | To be undertaken on an annual cyclical basis. Area based on 5% of total structure planting and woodland areas. |
| Pruning of current years growth to improve sightlines adjacent to footpaths and entrances | TBC | NA | As necessary | | | | | | * | | | | | | | estimated lump sum | TBC | |
| Strim between trees in areas of poorly established canopy layer | TBC | NA | As necessary | | | * | | | | * | | | | | | estimated lump sum | TBC | |
| Hazard inspections and crown pruning/remedial works as required to ensure trees are safe and enhance crown form. | TBC | NA | As necessary | * | * | * | * | * | * | * | * | * | * | * | * | estimated lump sum | TBC | |
| ***Ornamental Planting*** | | | | | | | | | | | | | | | | | | |
| Hand weed within planting beds. | 400 | $m^2$ | 4 | | 1 | 1 | 1 | 1 | | | | | | | | 0.4680 | 187 | |
| Annual prune of previous years growth to promote new growth, enhance flowering and form and prevent encroachment onto footpaths. | 400 | $m^2$ | 1 | | | | | | 1 | | | | | | | 0.9010 | 360 | |
| ***Hedgerows*** | | | | | | | | | | | | | | | | | | |
| Prune of current years growth to maintain form and vigour. Include for top and both sides of hedge | 630 | lin m | 1 | | | | | | 1 | | | | | | | 4.070 | 2540 | |
| **Swales/ditches** | | | | | | | | | | | | | | | | | | |
| De-silting to ditches and swales as necessary | TBC | NA | As necessary | | | | | | | * | * | * | * | * | * | estimated lump sum | TBC | |
| ***Bankside Vegetation*** | | | | | | | | | | | | | | | | | | |
| Policy to be developed in tandem with SUDS proposals -to be submitted as a separate application in August 2010. | TBC | NA | As necessary | | | | | | | * | * | * | * | * | * | estimated lump sum | TBC | |
| **Japanese knotweed** | | | | | | | | | | | | | | | | | | |
| Initial cut to a manageable height and arisings left in situ to be undertaken if knotweed is over 1.5m tall. | TBC | $m^2$ | As necessary | 1 | | | | | | | | | | | | 0.500 | TBC | |
| Six weekly glyphosate foliar spray to knotweed to be undertaken for a period of 3 or 4 years dependant upon re-growth. | TBC | $m^2$ | As necessary | | 1 | 1 | 1 | | 1 | | | | | | | 0.250 | TBC | |
| **HARD LANDSCAPING** | | | | | | | | | | | | | | | | | | |
| **Footpaths, boardwalks and hardsurfacing** | | | | | | | | | | | | | | | | | | |
| Repairs and patching as identified in monitoring and inspection reports | TBC | NA | As necessary | * | * | * | * | * | * | * | * | * | * | * | * | estimated lump sum | TBC | |
| Herbicide application to hard surfacing | TBC | NA | As necessary | | * | * | * | * | | | | | | | | estimated lump sum | TBC | |
| Reapplication of thermoplastic markings along footpaths and cycle paths based on a measure of 1/3 of total length | TBC | Lin m | 1 | * | * | * | * | * | * | * | * | * | * | * | * | estimated lump sum | TBC | |
| **Structural elements** | | | | | | | | | | | | | | | | | | |
| Repairs and replacement as identified in monitoring and inspection reports | TBC | NA | As necessary | * | * | * | * | * | * | * | * | * | * | * | * | estimated lump sum | TBC | |
| **VANDALISM** | | | | | | | | | | | | | | | | | | |
| Repair hard and soft landscape elements as identified in monitoring and inspection reports. | TBC | NA | As necessary | * | * | * | * | * | * | * | * | * | * | * | * | estimated lump sum | TBC | |
| ***Sub-total*** | | | | | | | | | | | | | | | | | | |

| Action | Approximate | Unit | No of | TIMING (MONTH) | Unit rates | Approximate | Comments |
|---|---|---|---|---|---|---|---|

| | Measure/ Quantity | | ops/year | A | M | J | J | A | S | O | N | D | J | F | M | (£'s) | Annual Costs (£'s) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **STAFFING** | | | | | | | | | | | | | | | | | | |
| Employment of a XXXXXXXX | 1 | No | NA | * | * | * | * | * | * | * | * | * | * | * | * | NA | TBC | |
| Employment of Park Ranger (Full Time) | 1 | No | NA | * | * | * | * | * | * | * | * | * | * | * | * | NA | £22,000 | |
| ***Sub-total for Staffing Costs*** | | | | | | | | | | | | | | | | | ***XXX*** | |
| ***GRAND TOTAL*** | | | | | | | | | | | | | | | | | ***XXX*** | |

# appendices

## 2 Site wide Cycle and Pedestrian networks

LEGEND

- Pedestrian route
- Secondary pedestrian route
- Internal pedestrian route
- Bus stop
- Fast link bus stop
- Relocated existing bus stop

A49342285

Notes:
- This drawing is copyright.
- Do not scale from this drawing.
- All dimensions are to be checked on site and reported to the architect.
- Do not modify any element of this drawing.
- Use drawing only for purpose(s) issued.

| No. | Design Risks Register |
|---|---|

| Rev | Date | Revision Notes |
|---|---|---|
| 03 | 15.07.10 | For Planning |
| 02 | 14.07.10 | For Planning |
| 01 | 12.07.10 | For Planning |

Client: NHS

Contractor: **Brookfield**

**GILLESPIES**

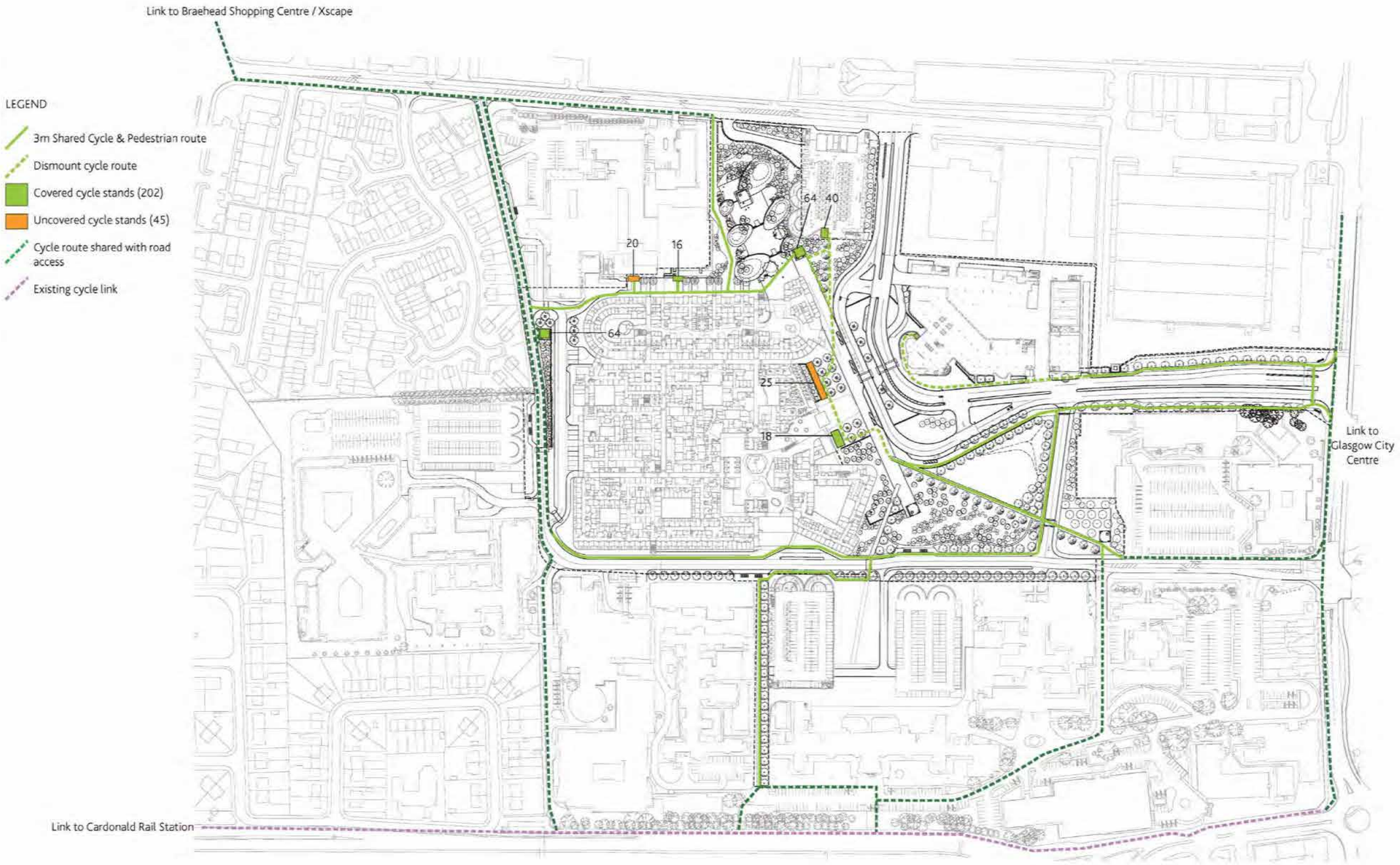
Project: NEW SOUTH GLASGOW HOSPITALS (NSGH) PROJECT

Drawing Title: Pedestrian Route

| Job No | Date | Scale@A1 |
|---|---|---|
| OX4640 | 12/07/10 | NTS |

Status: Planning

| Drawing No | | | | | | | Rev |
|---|---|---|---|---|---|---|---|
| Origin | Zone | Level | Type | Content | Sequential | | |
| GIL | EW | XX | PL | 700 | 031 | | 03 |




A49342285

Notes:
- This drawing is copyright.
- Do not scale from this drawing.
- All discrepancies must be checked and reported to the architect.
- Do not modify any element of this drawing.
- Use drawing only for purpose(s) issued.

| No | Design Risk Register |
|---|---|

| Rev | Date | Revision Notes |
|---|---|---|
| 03 | 23.07.10 | For Planning |
| 02 | 14.07.10 | For Planning |
| 01 | 12.07.10 | For Planning |

Client: NHS

Contractor: **Brookfield**

GILLESPIES

Project: NEW SOUTH GLASGOW HOSPITALS (NSGH) PROJECT

Drawing Title: Cycle Routes and Cycle Parking Provision

| Job No | Date | Scale@A1 |
|---|---|---|
| OX4640 | 12/07/10 | NTS |

Status: Planning

| Drawing No | | | | | | Rev |
|---|---|---|---|---|---|---|
| Origin | Zone | Level | Type | Content | Sequential | |
| GIL | EW | XX | PL | 700 | 030 | 03 |

# *APPENDIX L*

# *COMMUNITY ECONOMIC BENEFITS*

## *Appendix L*

## *Community Economic Benefits*

### Introduction

NHS Greater Glasgow and Clyde recognises within the current economic climate the need to utilise its infrastructure investment in South West Glasgow effectively to support and sustain business and jobs in the wider economy.

The redevelopment of the Southern General site is recognised by partners as a catalyst for broader economic and social regeneration, contributing positively to the physical development of the local area and contributing significantly to the South West economy and that of the wider locality.

This section outlines the approach undertaken by NHS Greater Glasgow and Clyde to engage partners and communities in maximising the economic impact of its investment in the New South Glasgow Hospitals Campus.

### Economic impact

A key consideration in planning for the new hospitals campus is to engage partners in identifying and maximising the potential economic and social benefits from the planned investment in South West Glasgow.

The board secured funding from partner organisations and commissioned an economic and social impact analysis of its planned investment in the Southern General site.

The anticipated benefits and impacts were assessed at three geographically defined levels:

- South West Glasgow
- Glasgow City
- Glasgow City Region.

The analysis estimated that based on final service configurations the NSGH site will make a combined direct, indirect and induced contribution of between £30m and £40m per annum to the South West Glasgow economy; £110m – £140m to the City economy and £240m - £290m to Glasgow City Region once fully implemented. (see Table 1).

**Table 1: NSGH Economic Impacts Summary (£m)**

| | Estimated future direct impact of services locating to NSGH (using scenario 2) (£m) | Estimated combined future impact, with multiplier effects (£m) | Estimated combined future impact of the site based on employment level of 8,400, with multiplier effects (£m) |
|---|---|---|---|
| South West Glasgow | £30 | £30 – 40 | £40-£50 |
| Glasgow City | £90 | £110 - £140 | £140 -£175 |
| Glasgow City Region | £170 | £240 - £290 | £300 - £370 |

Source: SQW Socio-Economic Impact Analysis

Based on final service configurations on the South Glasgow Campus, the economy in South West Glasgow will gain approx 5600 jobs. In addition to the economic impact of the development upon completion, the analysis also estimated the economic impact of the construction programme.

It estimated that the construction programme associated with the development will support between 1300-1700 jobs per year within the construction industry and related sectors throughout the construction phase of the project.

The analysis identified a number of opportunities and made a series of recommendations for partners to progress in maximising the economic impact of the development. These included:

- Collaboration with the housing sector to support NHS staff access affordable housing in South West Glasgow, maximising the economic impact within the local economy
- Maximise training, recruitment and employment opportunities for communities in the construction phase of the project.
- Establish a workforce development plan to equip communities in South West Glasgow with the skills and competencies to pursue a career in Healthcare
- Maximise the impact on the local economy through providing opportunities for business to engage in procurement processes
- Engage in partnership structures to facilitate integrated planning and maximise the impact of the NSGH investment within its wider “place” context
- Maximise biomedical research, knowledge transfer and commercialisation opportunities within the life sciences sector.

The analysis concluded that the Southern General development is seen as a catalyst for regeneration activity, contributing positively to social, economic and physical renewal in South West Glasgow.

However, the analysis was also clear the potential impact of the new South Glasgow Hospitals Campus will only be realised through effective collaboration between partner organisations, building on existing partnership structures in South West Glasgow and Glasgow City.

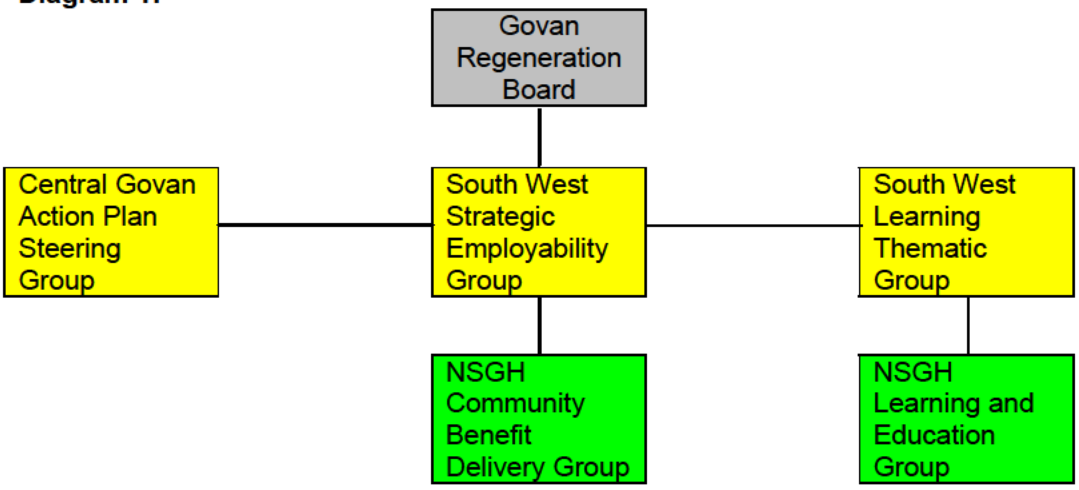
**Partnership Working**

The analysis recognised that to realise the potential social and economic development opportunities required effective joint working and collaboration across partner organisations.

Actions were required to be embedded within established partnership structures in South West Glasgow, avoiding potentially duplicating/overlapping structures. The analysis was clear that NHS Greater Glasgow and Clyde should be fully engaged as partners but, importantly, not positioned to "own" the whole social and economic development agenda that can be advanced by the NSGH investment

There is in place a well established partnership environment in South West Glasgow. In furthering socio-economic objectives, the board has sought to embed planning and delivery of economic impacts through these planning structures. Where appropriate, the board has established additional planning groups to support delivery of socio-economic objectives (Diagram 1).

**Diagram 1:**




In addition to the above structures, the board is engaged in specific projects, programmes and initiatives to further economic and social objectives in South West Glasgow. These include the development of Govan Community Campus in partnership with Education Services and the Fairfield Farm house project in partnership with Linthouse Housing Association.

**Economic Impacts from the Construction Programme**

The Scottish Government has played a leading role in developing new ways to deliver added social benefits through procurement. In February 2008 Scottish Government guidelines on the use of Community Benefit Clauses in public procurement were published.

In taking forward the recommendations from the socio-economic analysis NHS Greater Glasgow and Clyde incorporated Community Benefit considerations in the procurement process for the New South Glasgow Hospitals project.

Through incorporating community benefits in the procurement process, the board is seeking to work in partnership with the successful bidder to ensure as far as possible, that a significant proportion of the investment is retained in the local economy, supporting local businesses, sustaining local employment and creating new training and employment opportunities.

The community benefit provisions within the procurement process focussed on:

- Targeted Recruitment and Training
- SME supplier development
- Social Enterprises development

**Training and Recruitment**

BCL have committed to deliver a target of 10% of total labour required to deliver the project (including those works delivered by specialists, or sub-contractors) to be delivered by New Entrants. In addition, BCL has also committed to deliver additional targets in relation to training and learning (see Table 2).

**Table 2: Training and Recruitment Targets**

| **Indicator** | **Total** |
|---|---|
| Total number of people employed in delivery of contract. | 2505 |
| New Entrants | 250 |
| Qualifications to be achieved by new entrants | 315 |
| No. of Apprentices | 88 |
| Work Experience Places | 184 |
| Lifelong Learning Opportunities | 1060 |

BCL have entered into a partnership with Glasgow South West Regeneration Agency (GSWRA) to deliver training and recruitment targets. In furthering the training and recruitment targets, GSWRA working with BCL will:

- Devise a Local Labour Action Plan and establish requirements with Sub-Contractor/s to recruit and source supplies locally where these exist.
- Establish an operational team to deliver services including: vacancy promotion, skills assessment and matching, general and vocational training and business development.
- Establish a “Recruitment & Training Centre” in close proximity to the New South Glasgow Hospitals Project.

- Share relevant data and management information to ensure collaborative working.
- Identify and source funding from various agencies, development programmes, charities to ensure that aims and objectives are achieved.
- Engage effectively with the community and other stakeholders on the work of the Partnership.
- Recruit relevant partners to enable effective delivery of these aims.

In addition to the above, BCL has adopted a recruitment protocol were all vacancies resulting from the construction project will be notified to GSWRA to support mainstream recruitment form communities in South West Glasgow.

To support this activity, GSWRA have launched a web portal for individuals interested in securing recruitment and training opportunities www.nsgh.jobs.com.

**Developing the Supply Chain**

In assessing and developing the capacity of Small Medium Enterprises (SMEs) BCL has entered into partnership with Glasgow City Councils Supplier Development programme (SDP) to support and develop the capacity of Small Medium Enterprises by undertaking:

- Activities to identify Small Medium Enterprises (SME's) and assess their capacity.
- Actions to assist Small Medium Enterprises (SME's) to obtain contracts
- Actions to ensure that the sub-contractors make work packages available to Small Medium Enterprises (SME's)
- Measurement of the social and economic impact of the engagement with the Small Medium Enterprises (SME's)
- To provide support for the Small Medium Enterprises (SME's) to assist them to work in Partnership.

In assessing and developing the capacity of social enterprises, BCL have entered into partnership with Community Enterprise in Scotland. Community Enterprise in Scotland under the Scottish Governments "Ready for Business" programme will support and develop the capacity of Social Enterprises by undertaking:

- Activities to identify Social Enterprises and assess their capacity.
- Actions to assist Social Enterprises to obtain contracts
- Actions to ensure that the sub-contractors make work packages available to Social Enterprises
- Measurement of the social and economic impact of the engagement with the Social Enterprises
- To provide support for Social Enterprises to assist them to work in Partnership.

BCL are working with Glasgow City Council and Community Enterprise in Scotland to provide training and support to equip SMEs and social enterprises with the relevant expertise and policies to enable them to bid for potential sub-contracting opportunities.

Recognising that the scale of opportunities available may be prohibitive for smaller SMEs and social enterprises, BCL has committed to identify construction and non-

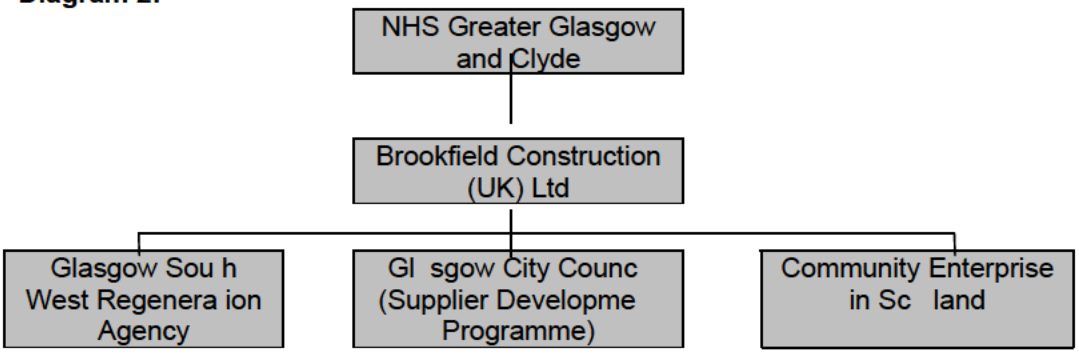
construction related 'work packages', which are accessible to SMEs and social enterprises who otherwise would have found it difficult to secure a contract.

BCL have agreed a protocol for SMEs and SEs wishing to engage in the project. This has been supported by the establishment of a portal, www.nsghproject.com for individuals and businesses to register for procurement opportunities.

**Implementation**

The successful bidder, Brookfield Construction Ltd (BCL) has established a partnership structure, supported by a partnership agreement to support the delivery of its community benefit programme (Diagram 2).

**Diagram 2:**

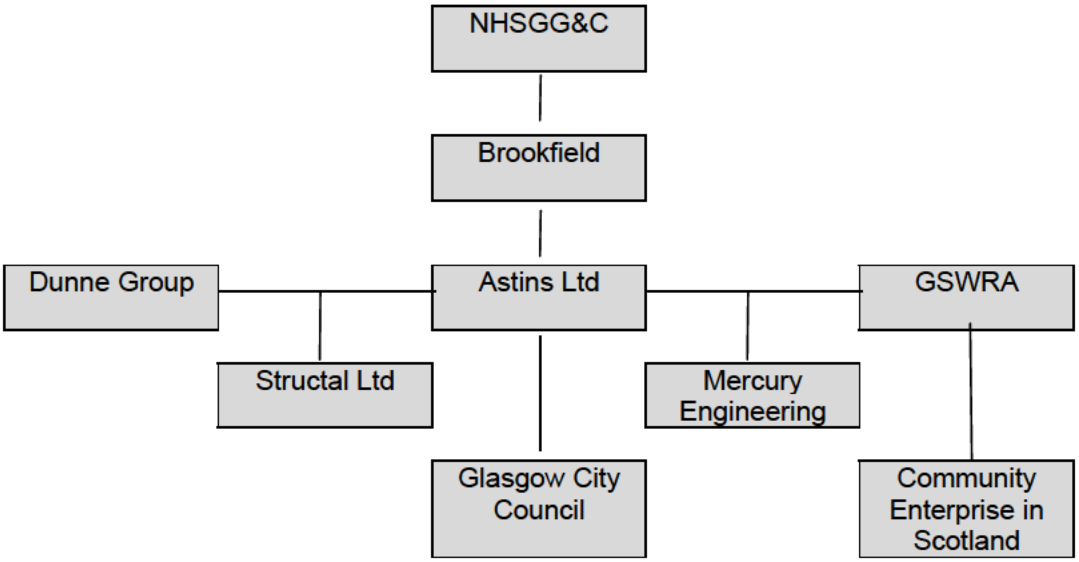



In implementing the community benefit programme BCL will ensure as a condition of contract that all sub-contractors engaged on site are required to deliver targets in relation to training and recruitment, SMEs and Social Enterprises.

BCL are required to provide regular monitoring information to NHS Greater Glasgow and Clyde on a quaterly basis, enabling the board to measure performance against agreed measures. (See Appendix 1 and 2). This is reported to the NHS board through the ASR Systems Redesign Group.

A Community Benefit Delivery Group (see Diagram 3) has been established with partners and sub-contractors. This group is responsible for co-ordinating partners' activities, overseeing the implementation of the community benefit programme and ensuring the project is achieving the targets set out in BCLs bid submission.

**Diagram 3: Community Benefit Delivery Group**




The structures outlined above have been developed as part of the implementation of the laboratory project currently under construction.

This has helped establish the foundations to maximise the economic impact from the construction phase of NHSGG&Cs investment. Subject to the FBC being approved, BCL and partners will accelerate the implementation of the community benefit strategy contained within their bid submission.

**NHS Careers**

As described in the workforce section, NHSGGC recognises that in order to deliver new models of care within the new provided hospitals significant workforce development will be required.

In addition to targeted training and recruitment linked to the construction of the new hospitals, a key objective of the project is to equip communities with the appropriate skills and competences to meet NHSGG&CS future workforce requirements.

In order to maximise the economic impact form NHSGG&Cs investment, it is important that the proportion of staff employed on site and resident in South West Glasgow is maximised (see Table 3).

Recognising the need to develop a long term strategic approach the report recommended that in maximising the impact of NHS Greater Glasgow and Clyde's investment in South West Glasgow, the following actions were required:

- Raising aspirations - a sustained programme of activities with schools to communicate future opportunities for young people presented by the NSGH
- Recruitment planning - the development of an integrated plan to support local recruitment to non-professional posts

- Education pathway - development of an integrated plan to support progression to professional qualifications

- Readiness for work: the development of a readiness for work programme focused on the opportunities offered by the NSGH for those presently far from the labour market

- Skills and training: improved linkages with NHS workforce development function for FE colleges to develop a shared action plan to address needs and opportunities of mutual interest

A Force for Improvement: The Workforce Response to Better Health, Better Care recognises the requirement for NHS Boards to take account of the changing expectations of the workforce and wider labour market to ensure it becomes an employer of choice and develops sustainable workforce solutions.

NHS Greater Glasgow and Clyde has developed clear, structured and well-supported pathways to enable people from marginalised groups to access employment opportunities. Specific initiatives to recruit to hard-to-fill posts and the use of work experience, pupil experience placements, volunteering and socially inclusive employment opportunities are included in the NHS Board recruitment strategies.

In the context of the New South Glasgow Hospitals Campus, NHS Greater Glasgow and Clyde aims to build on existing programmes and initiatives, supporting communities in South West Glasgow access future employment and training opportunities.

In planning to meet the future workforce requirements, NHSGG&C is working in partnership with training and education providers across Greater Glasgow and Clyde and has established an Education Partnership. The Education Partnership comprises NHS Greater Glasgow and Clyde, Anniesland College, Cardonald College, James Watt College, Glasgow Caledonian University and the University of the West of Scotland with a range of national stakeholders.

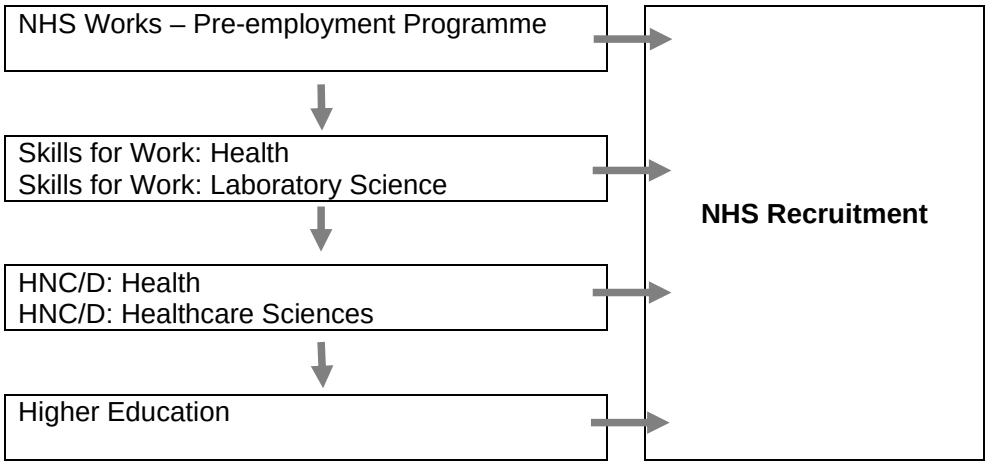
The Partnership has been established to develop and deliver comprehensive education and qualifications for our support services workforce on NHS Career Framework Levels 1 – 4. As discussed in the workforce section, a significant component of the redesigned workforce will include the greater use of trained workers on levels three and four of the NHS career framework.

In taking forward the work of the partnership in South West Glasgow, a partnership group including representation from NHSGG&C, South West Community Health and Care Partnership, Community Planning Glasgow, Glasgow South West Regeneration Agency, Glasgow City Council Education Services and Cardonald College has been established.

Working across existing partnership structures, the groups remit is to co-ordinate and manage joint working with stakeholders, maximising learning, education and training opportunities for communities in South West Glasgow. In doing so, the partnership aims to establish a learning pathway that equips individuals with the skills and competencies to pursue a career in healthcare and contribute to NHS Greater Glasgow and Clyde meeting its future workforce requirements in South West Glasgow.

The partnership aims to raise aspirations within South West Glasgow to pursue a career in healthcare and focuses on supporting individuals achieve the skills and competencies to access the workforce at NHS Carers Framework levels 1-4 (Scottish Curriculum and Qualifications Framework Levels 5-9).

**Diagram 4:**: Proposed Learning Pathway




The board has already undertaken a number of early actions to support the implementation of the learning pathway in South West Glasgow, these include:

- Presentations and briefings to Skills Development Scotland staff working with school age children and adult returners
- Programme of careers sessions undertaken by NHS recruitment in secondary schools in South West Glasgow.
- Engaging secondary schools in South West Glasgow to increase number of pupils indicating a preference for NHS work experience placements
- In partnership with Job Centre Plus, Skills Development Scotland and NHS Recruitment deliver monthly NHS careers sessions in Govan and Shawlands Job Centres.
- In partnership with Cardonald College establish HNC/D Applied Science to be delivered in 2011
- Increase participation on the HNC/D programme through piloting Skills for Work: Applied Science qualification in South West Glasgow.
- In partnership with workforce development establish HNC/D Health to be delivered through Cardonald College in 2011
- Increase participation on the HNC/D programme through piloting Skills for Work: Health qualification in South West Glasgow.

As the final configuration of services on the NSGH is implemented, NHSGG&C will work in partnership with employability services in South West Glasgow and Glasgow City to maximise opportunities for communities and co-ordinate activities with partners to implement a long term strategy.

**Housing Sector**

Through established partnership structures, NHSGG&C continues to work closely with Glasgow City Council, GHA and local housing providers in South West Glasgow. The focus of this engagement has been to inform future housing investment and improve access to affordable housing for NHS staff in South West Glasgow. This includes planning for the East Govan/ Ibrox transformational area and Central Govan.

The Central Govan Action Plan is investing £68 million providing 508 new homes for over 1,800 people. NHS Greater Glasgow and Clyde is a partner the project Steering Group. Through the work of the partnership, new developments delivered through the Central Govan Action Plan now include NHS employees under the priority purchase scheme criteria. The next phase of development undertaken by Govan and Elderpark Housing Associations are currently under construction and will be pro-actively marketed to NHS staff as part of this scheme.

To support this programme, Govan and Elderpark Housing Associations and Crudens Homes in partnership with the NHS Credit Union and Glasgow Credit Union launched Unique Property Solutions. The project aims to provide financial support through the NHS Credit Union to support NHS staff access affordable housing in South West Glasgow.

In doing so, the board aims to retain the economic impacts in South West Glasgow through increasing the proportion of staff employed in the NSGH resident in South West Glasgow. In doing so, the board will also contribute to the projects sustainability by encouraging staff to locate with in walking and cycling distance.

In addition to the above, through the established housing forum, the board has been actively engaging housing providers in South West Glasgow to establish co-ordinated marketing and communications to raise awareness of rental and purchasing options available for existing and re-deployed staff in South West Glasgow.

**Life Sciences**

Life science has become a key sector in Glasgow due to the benefits it derives from being part of a comprehensive national life sciences strategy, backed by industry, academia, the National Health Service and the government.

The Royal Hospital for Sick Children, as the largest children's hospital facility in Scotland, is a key centre of under-graduate and post-graduate teaching and clinical research. The opportunities afforded by co-location will foster increased academic collaboration between paediatric, obstetric and adult specialities across a range of common education research interests.

The Southern General hospital is a key centre of under-graduate and post-graduate teaching and clinical research with key linkages.

NHS Greater Glasgow and Clyde has established innovative partnerships with Universities, these include the Glasgow node of the Scottish Academic Health Sciences Collaboration, Glasgow Bio-medicine and Strathclyde Institute of Medical Devices and the Glasgow Centre for Cancer Research.

In order to meet the life science sector's capacity for innovation and research, Scottish Enterprise Glasgow has proposed the establishment of a science and technology diamond in Glasgow to capture the economic potential of the investment; this includes the development of South Glasgow Medipark to the West of the NSGH project.

A study of land availability and land designation adjacent to the NSGH site undertaken by Scottish Enterprise concluded that in order to proceed with establishing the Medipark proposal, the availability of land and its designation in the existing development framework was prohibitive.

The board has been working with partners to establish a planning framework to unlock the economic potential from NHS Greater Glasgow and Clyde's investment. This is supported in City Plan 2 which recognises the significance of the NSGH Project and proposes bringing forward a development framework for the broader area.

The requirement for a development framework to bring forward higher value developments in the area around the NSGH is critical if the economic impact is to be realised. This is of particular importance in relation to life sciences and bio-medical developments.

Subject to FBC approval, NHS Greater Glasgow and Clyde will engage Scottish Enterprise and the University sectors to establish a site commercialisation strategy based on the future configuration of university services to be delivered on site. This will be supported through existing planning structures to establish a land use strategy conducive to supporting investment in life science related industries.

**Appendix 1:**

**SME/ Social Enterprise Indicators**

| Target Number | Indicator | Target | | |
|---|---|---|---|---|
| | | Direct | Indirect | Total |
| | **SME/SE development** | | | |
| **1** | No of sub contracts advertised | | | |
| | Value of contract advertised | | | |
| **2** | No sub contracts not advertised | | | |
| | Value of NON advertised contracts | | | |
| | Total value of Contracts awarded this period | | | |
| | % Value of contracts advertised | | | |
| **3** | No of SME/SE completing Procurement Registration | | | |
| | No of SME/SE deemed Business Ready | | | |
| | No of SME/SE NOT Business Ready | | | |
| | % Value of contract awarded | | | |
| | % Value of contract awarded V's Annual Turnover | | | |
| **4** | No of SME/SE in receipt of Advice & Guidance | | | |
| **5** | No of SME/SE participated in workshops | | | |
| **6** | No of SME/SE attending Meet the Buyer Events | | | |
| **7** | No of SME/SE reaching "Business Readiness" | | | |
| | No of jobs created | | | |
| | No of jobs safeguarded | | | |
| | No of employees undertaking training | | | |
| | No of qualifications gained by employees | | | |

**Appendix 2:**

**Training and Recruitment Indicators**

| Target Number | **Indicator** | Target | | |
|---|---|---|---|---|
| | | Direct | Indirect | Total |
| | No of employees on site during period | | | |
| **1** | No of New Entrants | | | |
| **2** | No of Added Value Job Starts | | | |
| **3** | No of Apprentices recruited | | | |
| **4** | No of Work Experience / Placements | | | |
| **5** | No of vacancies in period | | | |
| | No of vacancies notified to partnership | | | |
| | No of vacancies filled by New Entrants | | | |
| | % vacancies filled as New Entrants | | | |
| | No of vacancies filled as added value | | | |
| | % vacancies filled as added value | | | |
| **6** | No of NE gaining qualifications | | | |
| | No of NE achieving Core skills | | | |
| | No of NE achieving Level 3 + (SVQ 2) | | | |
| | No of NE achieving Level 4 + (SVQ 3+) | | | |
| **7** | No of existing workers upskilled as result of partnership | | | |
| | No of employees achieving Core skills | | | |
| | No of employees achieving Level 3 + (SVQ 2) | | | |
| | No of employees achieving Level 4 + (SVQ 3+) | | | |
| **8** | No of existing workers upskilled as part of Employer CPD | | | |
| | No of employees achieving Core skills | | | |
| | No of employees achieving Level 3 + (SVQ 2) | | | |
| | No of employees achieving Level 4 + (SVQ 3+) | | | |
| **9** | Retention of New Entrants | | | |
| | 13 weeks | | | |
| | 26 weeks | | | |
| **10** | Retention of New Starts | | | |
| | 13 weeks | | | |
| | 26 weeks | | | |
| **11** | No of Community Events | | | |
| | No of individuals attending events | | | |

# *APPENDIX M*

# *GOVERNANCE ARRANGEMENTS: WORKGROUPS AND REMITS*

*Appendix M*

*Governance Arrangements: Workgroups and Remits*

**NEW SOUTH GLASGOW HOSPITALS AND LABS PROJECT**

**GOVERNANCE ARRANGEMENTS**

Performance Review Group

Terms of Reference

- Monitor Boards organisational performance
- Monitor resource allocation and utilisation
- Monitor the implementation of agreed Board strategies
- Oversee all aspects of property matters and transactions

Membership

| | |
|---|---|
| Mr A O Robertson OBE - Chair | Mr R Cleland |
| Ms R Dhir MBE | Cllr D Mackay |
| Mr P Hamilton | Cllr D Yates |
| Mr D Sime | Mrs E Smith – Vice Chair |
| Mr P Daniels OBE | Mr I Lee |
| Mr K Winter | |

Frequency - Bi-monthly

Acute Services Strategy Board

Terms of Reference

- Oversee the delivery of the Acute Service Review
- Oversee the performance of the Acute Services Acceleration Plan
- Report and advise the Performance Review Group on all aspects of the implementation of Acute Services Review
- Monitor all aspects of performance of the implementation of the New South Glasgow Hospital Development.
- Approve change control in that any change which impacts upon the project must be authorised by this Board before it can be implemented.
- Ensure that progress is maintained and business is concluded especially where time is critical to the New South Glasgow Hospital Development with respect to financial aspects and the implementation of works programme and exercise appropriate delegated authority to enable the progress on the contract
- Ensure that all activities of the Acute Services Review Systems Redesign Group are co-ordinated and achieving the appropriate progress.
- Review updates regarding all aspects of planning and implementation of Acute Services Review
- Consider the wider implications of implementing the Acute Services Review including any impact on local communities
- Ensure necessary linkages between elements of Acute Services Strategy are in place to enable delivery of Acute Service Review
- Ensure financial control is being managed and kept within the agreed parameters.
- Approve and monitor the appropriate governance is in place to ensure successful outcome for each major element of the Acute Services Review.
- Approve Full Business Case for New South Glasgow Development and any subsequent Business Cases for associated projects such as; car parks; education centre and academic centre etc
- Liaise with Communications and Marketing Group to ensure they are sighted on the relevant issues in order that they can proactively support the planning and implementation of all activities
- Overseeing the Risk Management process by reviewing the risk register on a regular basis
- Carry out the management, control and approval of Compensation Events up to a maximum of £1.5M

Membership

| | |
|---|---|
| Robert Calderwood (chair) | Jane Grant |
| Rosslyn Crocket | Jim Rundell - Audit Scotland – Observer |
| Alan McCubbin | Representative from Scottish Government Performance Dept – Observer |
| Mike Baxter Scottish Government – Observer | Brian Cowan |
| Douglas Griffin – In attendance | Alan Seabourne – In attendance |

Frequency - Bi-monthly

Acute Services Strategy Board Executive Sub Group

Terms of Reference

- Exercise delegated authority to make decisions on project issues to maintain programme
- Exercise delegated authority to commit funding for new or additional works associated with project (includes management and control of compensation events)
- Receive reports from Acute Directors and Project Director on changes being proposed with financial implications
- Keep Acute Services Strategy Board informed of all issues and decisions taken regarding the project
- This group has delegated authority in line with Boards SFI's which has an agreed delegated limit for the Acute Service Review Executive Board and the Project Manager.
- The Scheme of Delegation appropriate to this project is advised as follows

    - Project Manager approve expenditure up to £10,000
    - Project Director approve expenditure up to £100,000
    - Acute Services Strategy Board and Executive Sub-Group approve expenditure up to £1.5M
    - Performance Review Group approves expenditure over £1.5M

Membership

| | |
|---|---|
| Robert Calderwood | Jane Grant |
| Alan McCubbin | Peter Gallagher |
| Alan Seabourne | Brian Cowan (as required) |
| Rosslyn Crocket (as required) | |
| In attendance : relevant Director | |

Frequency - Weekly

Acute Services Review Redesign Group

Terms of Reference:-

- Participate in the development and implementation of the overall Acute Services Strategy for the NHS Board
- Agree governance and performance management arrangements for the Division covering the range of the Division's responsibilities in relation to the delivery of the Acute Services Strategy and the Accelerated Capital Programmes and monitor performance against these arrangements
- Monitor the delivery of the programmes agreed within the Acute Services Strategy
- Discuss significant programme deviations by exception and propose remedial actions required to bring delivery programmes on time and within budget
- Develop a structured re-design programme to maximise patient and service benefits in the new hospital through ensuring that the physical design of the new hospitals deliveries the clinical performance requirements in line with National and Board policies and requirements
- Maximise PFPI input along with other key stakeholders in new hospital design
- Ensure health inequalities issues are addressed in a structured and focused manner
- Ensure issues such as art in design and transport have a distinct focus and plan within new hospital project
- Co-ordinate regeneration aspects of project to ensure greatest impact
- Consider and manage key areas of clinical and non-clinical risk, drawing any significant issues to the attention of relevant Board officers
- Liaise with Communications and Marketing Group to ensure they are sighted on the relevant issues in order that they can proactively support the planning and implementation of all activities

Membership:-

| | |
|---|---|
| Jane Grant (Chair) | 1 Representative from each Clinical Directorate (6) |
| Anne MacPherson | Alan McCubbin |
| Sharon Adamson | Brian Cowan |
| Alex McIntyre | Richard Copland |
| Rory Farrelly | Iona Colvin |
| Donald Sime | Anna Baxendale |
| Ann Crumley | Niall McGrogan |
| Karen Murray | Alan Seabourne + Team |
| Peter Gallacher | |

Frequency:- Monthly

Joint Project Steering Group

Terms of Reference

- On a monthly basis identify key Strategic Drivers for the coming quarter
- Carry out a monthly review of Project Strategic Drivers providing direction to the Project Management Group (PMG) as required
- Carry out a monthly review of project issues (reported from sub groups via the PMG) that have not been cleared at sub group level
- Provide direction to the sub groups on the resolution of issues
- Monitor and identify any shortfalls in Project resources
- Monitor critical path of Project Programme
- Ensure that Brookfield's communication support work effectively with the Communications and Marketing Group

Membership represents the Board and Brookfield

| | |
|---|---|
| Alan Seabourne (chair) | Ed McIntyre – Mercury |
| Peter Moir | Neil Murphy – Nightingale Associates |
| Alan McCubbin | Ross Ballingall – Brookfield |
| David Hall – Currie and Brown | Steve Pardy – ZBP |
| Douglas Ross – Currie and Brown | Tim Bicknell – Brookfield |
| Chris Lovejoy – Brookfield | |

Frequency - Monthly

Sub Groups

Project Management Group
Commercial Group
Construction Interface Group
Technical Design Group
Design & Health Environment Strategy Group
Joint Commissioning Group
Medical Planning Group
IT Group
Equipment Group
Communications and Marketing Group

Laboratory Medicine Project Group

Terms of Reference

- Act as an Overarching Governance Group to ensure delivery of ASR Programme
- Ensure a coherent and coordinated approach to the delivery of the Laboratory Project
- Manage communications to all stakeholders
- Ensure project programmes are delivered on time
- Oversee sign-off Reviewable Design Data
- Ensure IT and equipment requirements are addressed and embedded in design detail
- Provide decision on all potential changes and to ensure any decisions fall within the current cost programme plan
- Facilitate progress when situations are complex and/or difficult
- Review and advise on project risks
- Responsible for all staff issues and the commissioning programme
- Receive reports and take necessary action from Laboratory Sub Group

Frequency - Monthly

Project Team

Terms of Reference

- Responsible for the overall delivery of the project including programme, costs, quality, health and safety etc
- Responsible for managing all compensation events by actively applying mitigating strategies to contain costs

Frequency - Weekly

NCH Project Group

Terms of Reference

- To oversee the work of the Clinical Planning Group
- To recommend, sign off proposals in regard to development of NCH
- To ensure work programmes are completed on schedule by the NCH User Groups
- To inform and update the Acute Services Review Redesign Group
- To ensure involvement of staff and other stakeholders
- To make recommendations on any financial consequences regarding the cost of the NCH

Frequency - Monthly

Adult/Children's Users Groups

Terms of Reference

- Review architectural design progress for 1:200 and 1:50 drawing detail
- Provide professional input into design process
- Communicate with other colleagues and stakeholders
- Liaise with Acute Directors on progress and any issues requiring their attention
- Do not add costs to project budget
- Sign off design details

Frequency - every 6 weeks

Site Co-ordinating Group

Terms of Reference

- Ensure there is an overall site development plan which identified all aspects of change planned for SGH site
- Monitor the critical path to ensure key milestones are planned and met
- Ensure adequate level of health and safety planning is maintained
- Receive reports from individual projects on the SGH site to ensure they are planned and implemented in a co-ordinated way to take account of all interfaces and risks

Frequency - Bi-monthly

Project Supervisor (Stages 1 & 3)

Terms of Reference

- Compliance with agreed specifications
- Testing of installed product strength and tolerance
- Quality of finish checks
- Area compliance checks
- Exemplar rooms checks
- Monthly reporting
- Inspections identify, record and sign off as complete – defects
- Health and safety assurance
- QA/Document control management

Frequency - Weekly

Communications and Marketing Group

Terms of Reference

To plan strategically for the handing of proactive communications milestones, staff communications, marketing (social and advertising), media and joint working with the PR/Marketing Departments of Brookfield and others as appropriate

Frequency - Quarterly

# *APPENDIX N*

# *PROJECT EXECUTION PLAN*

***Appendix N***

***Project Execution Plan***

Currie & Brown

**Project Execution Plan**
Relating to:

**NHS Greater Glasgow & Clyde**
**New South Glasgow Hospitals and Laboratories**

Stages 1 & 2

*Prepared by*

David B Hall
Currie & Brown
140 West Campbell Street
Glasgow
G2 4TZ

Tel [redacted]
Fax

www.curriebrown.com

# Project Preface

| | |
|---|---|
| Employer Name: | NHS Greater Glasgow & Clyde |
| Employer Address: | NHS Greater Glasgow & Clyde<br>Project Office<br>1 Jubilee Court<br>Hillington Industrial Estate<br>Hillington<br>G52 4LB |

| | |
|---|---|
| Supervising Director: | James R Hackett |
| Prepared at: | 140 West Campbell Street<br>Glasgow<br>G2 4TZ |
| Document Prepared by: | David B Hall |

| | |
|---|---|
| Job Reference: | GW 4854M |

| |
|---|
| Reviewed by: |

| Revision Issue | Agreed By | Signature | Details of Revision |
|---|---|---|---|
| 001 | James Hackett | | First Issue |
| 002 | Mark Baird | | Appendices Review |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

# Executive Summary

Background:

| | |
|---|---|
| Project | New South Glasgow Hospitals including Adult Acute (1109 beds), Children's (256 beds), Laboratories and Mortuary |
| Report | Project Execution Plan (PEP)<br><br>Stage 1 Laboratories Construction<br><br>Stage 2 Adult & Children's Hospital Design Development |

This plan describes the procedures and systems, which should be used by the Project Team to manage and control the development of the Design Development and Construction phases for the development at the Southern General Hospital site.

The intention of this document is to create an easily understood management framework, which recognises the project requirements and constraints and facilitates the delivery of a successful product.

Every effort has been made to ensure that the contents of this plan are in line with the various legal agreements that are in place. However, in the event of a conflict between this manual and the formal agreements, the provisions of the formal agreements will always prevail.

It is the intention that a draft version of this document will be circulated to the project team for comment with the objective being to ensure the information contained within the document is accurate and that no conflict occurs between the PEP and the project particulars, Employer's processes & procedures and quality standards required by all parties including the Employer.

The Project Execution Plan (PEP) will be managed by the Project Manager. The PEP will be further developed during the project with any relevant changes resulting in a revised PEP being issued to the project team. This will be recorded by the way of a sequential number change.

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# 1 Introduction

## 1.1 Principal Parties

The development works are commissioned by NHS Greater Glasgow & Clyde, who is the Client/Employer and they have appointed Currie & Brown to provide Technical Advisor Services for the Development to deliver the new facilities covering:

- Project Management
- Cost Management
- Architectural Design Review
- Mechanical & Electrical Engineering Design Review
- Civil & Structural Design Review
- CDM Coordination

In supporting the development, Currie & Brown will interact with both The Board and other professional advisors including:

- Shepherd & Wedderburn – Legal
- Ernst & Young – Financial
- SFT – Procurement
- JMP Consultants – Transport
- Capita Symonds – NEC3 Project Supervisor

The Currie & Brown led Technical Advisory Team is as follows:

| | |
|---|---|
| Project Manager | Currie & Brown UK Limited |
| Cost Manager | Currie & Brown UK Limited |
| Medical Planner | Buchan Associates |
| Master Plan Architect | HLMAD Limited |
| Adult Acute Hospital Architect | HLMAD Limited |
| Children's Hospital Architect | Boswell Mitchell & Johnston |
| Civil & Structural Engineer | URS Corporation |
| Hospitals M&E Engineer | Wallace Whittle Limited |
| CDM Coordinator | URS Corporation |
| Fire Engineer | Buro Happold Consulting Engineers |

## 1.2 Principal Documents

The current documents previously issued are as follows:

- The Works Information Part 1 – Employer's Requiremernts
- The Works Information Part 2 – Contractors Proposals
- Outline Business Case - Hospitals
- Full Business Case - Laboratories
- Outline Planning Consent
- Environmental Impact Analysis
- Traffic Impact Analysis

These documents are in circulation and copies can be issued on request.

Work in the next stages of the programme will generate or update the following in accordance with Appendix K of the Employer's Requirements:

Hospitals (Design Development)

- 1:500 Adjacency Layouts
- 1:200 Departmental Layouts
- 1:50 Room Layouts
- Schedules of Areas
- Room Data Sheets
- Equipment Lists
- Masterplan to achieve Planning Consent
- Building form & materiality to achieve approval of Matters Specified in Conditions
- M&E Design

Laboratories (Construction)

- 1:200 Departmental Layouts
- 1:50 Departmental Layouts
- Room Data Sheets
- Equipment Lists
- IT Solutions
- Breeam Performance Rating
- FM Provision

## 1.3 Roles of Parties

The role of each of the development team and contractor are set out in Organisation charts showing the contractual and communication links included in Section 3. The roles are defined within the NEC3 contract and are clearly split between Client and Contractor as indicated.

## 1.4 Project Ethos

The Client intends that the project team maintain a balanced view of the project objectives. Crucially, value considerations are of paramount importance and the correct balance between environmental issues, design, quality, programme and cost in use must be found. The process will involve full consideration of the project objectives in conjunction with a process of risk and value appraisal.

The NEC3 Contract has embedded within it the ethos of working in partnership and this has to be extended across the entire project delivery team, both client and contractor to maximise the inherent benefits and realise optimum value.

## 1.5 Project Directory

The project directory is included in Appendix A

# 2 Development Details

This section provides a brief introduction and overview of the development.

## 2.1 Development Name

NHS Greater Glasgow & Clyde: New South Glasgow Hospitals & Laboratories

## 2.2 Development Objectives

The principle objectives are as follows:

- To develop the site in accordance with the requirements of the Client's Development Brief.
- Delivery of the product within the contract sum.
- Delivery of the project, as scoped, not later than 07 January 2015.

## 2.3 Project Description

The delivery of a staged programme of facilities including:

- Mortuary, including The City Morgue.
- Laboratory facilities for Haematology, Biochemistry, Pathology and Medical Genetics.
- New 256 Bed Children's Hospital linked to Maternity and Adult Hospitals.
- New Adult Acute Hospital linked to Children's Hospital and Neurosurgery Institute.

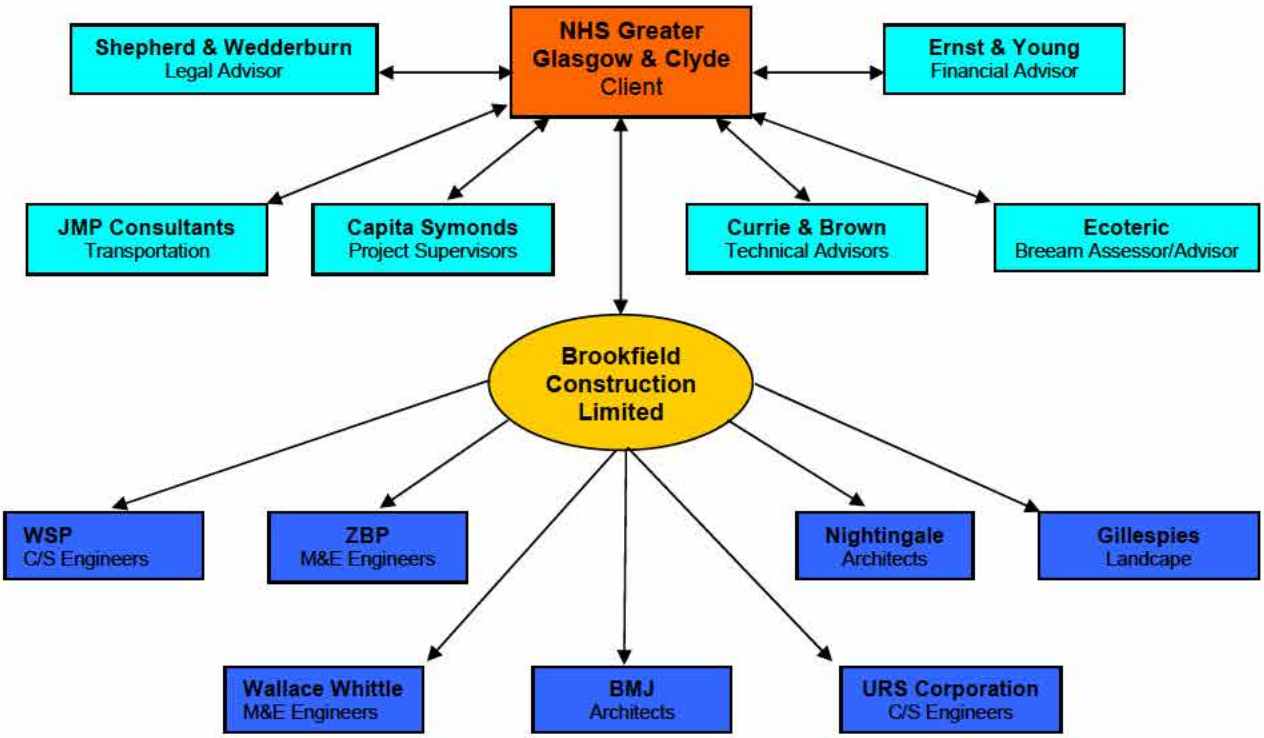
# 3 COMMUNICATIONS

## 3.1 General Provisions

Effective communication between all parties is vital to the success of the Development and to achievement of the time, cost and quality objectives. It is the responsibility of each and every member of the project team to ensure that their information is clearly co-ordinated and communicated to all **relevant** members of the team.

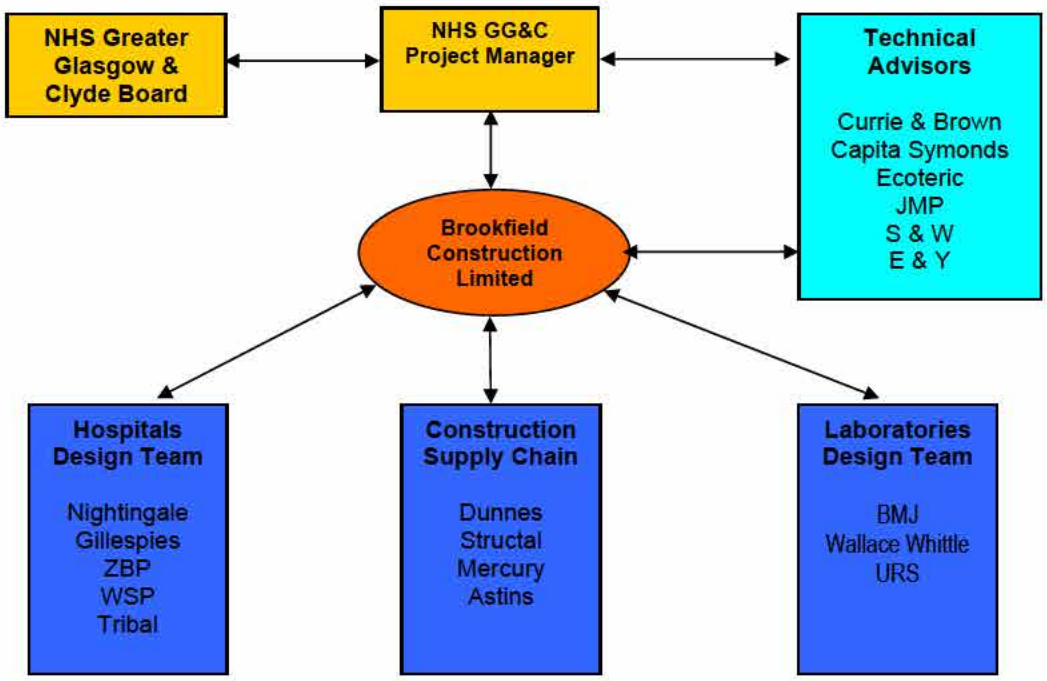
## 3.2 Contractual Links

In order to guide parties the contractual links for design have been illustrated below.



## 3.3 Communication Links

In order to guide parties on the appropriate communication and information distribution links the following table has been prepared.




In general the Project Manager is to be included in **ALL** communications.

If there is any doubt as to the importance, urgency, or to whom information is relevant, the matter should be referred to the Project Manager.

## 3.4 Verbal Communication

The most important means of communications will be verbal, either face to face, via the telephone or via e-mail.

It will always be considered as the primary means of conveying information. Unnecessary written correspondence is discouraged.

Significant verbal communications are always to be confirmed by e-mail.

## 3.5 E-mail

All e-mails will be headed "NSGH:", followed by the subject title. Every Effort must be made to use discrete, short and descriptive headings.

If an e-mail response is required that day then the subject title must be followed by the word "URGENT" and followed up with a phone call. it is worth while noting that "URGENT" emails must be that and this should not be used on general emails.

Efficiency will be improved if communications are appropriately targeted. Due to the size of the project team, blanket communications MUST be avoided.

All drawings must be sent in dwg and PDF format. Hard copies will be issued by request only.

## 3.6 Facsimiles

Facsimiles should only be used where e-mails are not suitable and they must be kept to a minimum length.

All facsimiles will be headed "NSGH:", followed by the subject title. Every Effort must be made to use discrete, short and descriptive headings.

## 3.7 Written Correspondence

Matters of a contractual or commercial nature shall always be confirmed in writing.

Such letters and notices should also be sent in duplicate by e-mail to allow parties to commence preparation of an associated response at the earliest.

# 4 Meetings

## 4.1 General Provisions

Meetings can consume a large amount of the team's time and their size, length and the number of attendees should be kept to an effective minimum. The Chairman in each case will be responsible for:

- Preparation and circulation of an Agenda at least 24 hours prior to the meeting.
- Decisive chairing of the meeting to ensure all parties are heard and those meetings do not lose focus.
- Ensuring that effective decisions are made and that responsibility for additional actions and target dates are agreed and understood.
- The preparation and distribution of the minutes to be issued generally within 3 working days, with copies to all present plus any other defined parties. The chairperson of each meeting is responsible for ensuring that all members of the team receive copies of the minutes.

Meetings will generally be conducted as set out below.

## 4.2 Project Steering Group

These meetings have commenced, following appointment of Brookfield Construction Limited and are intended to provide a high level overview of the project and to provide a final point of escalation prior to referral to the Acute Services Strategy Board.

| | |
|---|---|
| Purpose: | To monitor progress and to resolve blockages |
| Location: | Project Site Offices, 1st Floor Boardroom |
| Frequency: | Monthly |
| Attendees: | Alan Seabourne<br>Peter Moir<br>Alan McCubbin<br>Shiona Frew<br>Douglas Ross<br>David Hall<br><br>Ross Ballingall<br>Tim Bicknell<br>Chris Lovejoy<br>Steve Pardy<br>Ed McIntyre<br>Neil Murphy |
| Chair: | Alan Seabourne |
| Agenda/Minutes: | Alan Seabourne |
| Indicative Agenda: | • Introductions/Apologies<br>• Action Notes from Previous Meeting<br>• Matters Arising<br>• Monthly Progress Report/Critical Path Review<br>• Risk Review<br>• Monthly Look ahead/Strategic Drivers<br>• AOB<br>• Next Meeting |

## 4.3 Project Management Group Meeting

These meetings have commenced, following appointment of Brookfield Construction Limited and are the principal point of review and escalation for significant issues which cannot be resolved in the regular management groups. This Group will receive the monthly progress report and will be responsible for approving the Executive Summary for submission to the Project Steering Group and the Acute Services Review Board.

| | |
|---|---|
| Purpose: | To review Progress & Manage Change on:<br>Stage 1: Laboratories Construction<br>Stage 2: Adult & Children's Hospitals Design Development<br>Report key issues to Project Steering Group |
| Location: | Project Site Offices, 1st Floor Boardroom |
| Frequency: | Fortnightly: Every second Tuesday at 12:30pm |
| Attendees: | Alan Seabourne<br>Peter Moir<br>David Hall<br>Douglas Ross<br>Mark Baird<br>Mark McAllister<br>Ross Ballingall<br>Paul Serkis<br>David Bower<br>Darren Smith<br>Ed McIntyre<br>Tom Allan |
| Chair: | Alan Seabourne |
| Agenda/Minutes: | Chair to issue agenda and meeting minutes to the attendees. Minutes to be issued 3 days after meeting. |
| Indicative Agenda | • Apologies<br>• Action Note from Previous Meeting<br>• Matters Arising<br>• Progress Report<br>  o Laboratories Construction<br>  o A&C Design Development<br>  o Statutory Approvals<br>  o Equipment & IT<br>  o Commercial<br>  o Enabling & Infrastructure<br>• Laboratories Construction – Progress Update<br>• Information Required<br>• AOB<br>• Next Meeting |

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## 4.4 Commercial Group

These meetings have commenced, following appointment of Brookfield Construction Limited and are the principal point of review and escalation for commercial issues. This Group will receive the monthly commercial report and will be responsible for approving the report submission to the Project Steering Group and the Acute Services Review Board.

| | |
|---|---|
| Purpose: | To manage commercial issues relating to:<br>- Scope Change<br>- Valuations and Payment Process<br>- Risk<br>- Early Warnings & Compensation Events |
| Location: | Project Site Offices, 2nd[t] Floor Boardroom |
| Frequency: | Fortnightly |
| Attendees: | Alan McCubbin<br>Alan Seabourne<br>Douglas Ross<br>Peter Moir<br><br>Paul Serkis<br>Eric Napier<br>Tom Allan |
| Chair: | Douglas Ross |
| Agenda/Minutes: | Chair to issue agenda and meeting minutes to the attendees. Minutes to be issued 3 days after meeting. |
| Indicative Agenda | ▪ Introductions/Apologies<br>▪ Previous Meeting Action Notes<br>▪<br>▪ Any Other Business<br>▪ Date of Next Meeting |

## 4.5 Technical Design & Medical Planning

These meetings have commenced, following appointment of Brookfield Construction Limited and are the forum for review of all technical and medical planning issues arising from user group meetings and design development.

| | |
|---|---|
| Purpose: | Monitor the Progress of:<br>- Statutory Approvals<br>- Design progress & compliance with ER's<br>- Design sign-off<br>- Design Strategy Development<br>Manage clarifications process and alternative design solutions |
| Location: | Project Site Offices, 1st Floor Boardroom |
| Frequency: | Fortnightly |
| Attendees: | Alan Seabourne, Peter Moir, Frances Wrath, Heather Griffin, Mairi Macleod, Hugh McDerment, Jackie Stewart, Karen Connelly, David Hall, Mark Baird, Darren Smith, Manny Ajuwon, Chris Lovejoy, Ed McIntyre, Emma White, Alastair Leighton, Tony Duddy, Paul Britton, David Bower |
| Chair: | Darren Smith |
| Agenda/Minutes: | Chair to issue agenda and meeting minutes to the attendees. Minutes to be issued 3 days after meeting. |
| Agenda | ▪ Introductions/Apologies<br>▪ Minutes of Previous Meeting<br>▪ Technical Issues<br>▪ Information Required<br>▪ Any Other Business<br>▪ Date of Next Meeting |

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## 4.6 Construction Interface Group

These meetings have commenced, following appointment of Brookfield Construction Limited and are the principal point of review and escalation for site management issues relating to the existing hospital operation and neighbours.

| | |
|---|---|
| Purpose: | Identify short term works on site which may impact upon the existing hospital<br>Identify short term hospital activities that may impact upon the site<br>Manage communication of construction activities to relevant 3rd parties<br>Monitor impacts of work on site |
| Location: | Project Site Offices, 1st Floor Boardroom |
| Frequency: | Fortnightly |
| Attendees: | Hugh McDerment<br>Sam Suddese<br>Shiona Frew<br>Estates Dept<br>Facilities Dept<br>Health & Safety<br><br>Alan Keeley<br>Dave Jordan<br>Kevin Graham<br>Dave Bower<br>Norman Sutherland |
| Chair: | Alan Keeley |
| Agenda/Minutes: | Chair to issue agenda and meeting minutes to the attendees. Minutes to be issued 3 days after meeting. |
| Agenda | ▪ Introductions/Apologies<br>▪ Minutes of Previous Meeting<br>▪ Technical Issues<br>▪ Information Required<br>▪ Any Other Business<br>▪ Date of Next Meeting |

## 4.7 Design & Health Environment Strategy Group

| | |
|---|---|
| Purpose: | - Review the opportunities to incorporate art into the design<br>- Develop Art Strategy<br>- Advise the design process on spatial and technical requirements<br>- Report to Techbical Design Group |
| Location: | Project Site Offices, 2nd Floor Boardroom |
| Frequency: | As Required |
| Attendees: | Alex McIntyre<br>Anna Baxendale<br>Dan Harley<br>David Hall<br>Dorothy Cafferty<br>Frances Wrath<br>Heather Griffin<br>Jackie sands<br>Kate Munro<br>Louise Watson<br>Mairi Macleod<br>Peter Moir<br>Darren Smith<br>Neil Murphy<br>Liz Petrovitch<br>Tom Littlewood |
| Chair: | Anna Baxendale |
| Agenda/Minutes: | Chair to issue agenda and meeting minutes to the attendees. Minutes to be issued 3 days after meeting. |
| Agenda | ▪ Introductions/Apologies<br>▪ Minutes of Previous Meeting<br>▪ Laboratories<br>▪ Adult & Children's Hospital<br>▪ Any Other Business<br>▪ Date of Next Meeting |

## 4.8 IT Group

| | |
|---|---|
| Purpose: | Manage:<br>- the production of Project IT strategy<br>- Coordination of IT spatial requirements<br>- Coordination of technical requirements into the design |
| Location: | Project Site Offices, 2nd Floor Boardroom |
| Frequency: | Monthly |
| Attendees: | Alan Seabourne<br>Alasdair Finlayson<br>Marion Stewart<br>Frances Wrath<br>Hugh McDerment<br>Mark Greig<br>Kenny Birney<br>Lorraine Peebles<br>Fiona McCluskey<br>Karen Connelly<br><br>Chris Lovejoy<br>Tony Duddy<br>Ed McIntyre<br>Steve Pardy<br>Michael Frain |
| Chair: | Alan Seabourne |
| Agenda/Minutes: | Chair to issue agenda and meeting minutes to the attendees. Minutes to be issued 3 days after meeting. |
| Agenda | ▪ Introductions/Apologies<br>▪ Minutes of Previous Meeting<br>▪ Laboratories<br>▪ Adult & Children's Hospital<br>▪ Any Other Business<br>▪ Date of Next Meeting |

## 4.9 Equipment Group

| | |
|---|---|
| Purpose: | Manage:<br>- the production of Project Etquipment strategy<br>- Coordination of Equipment spatial requirements<br>- Coordination of technical requirements into the design<br>- Equipment Selection<br>- Change Control related to Equipment |
| Location: | Project Site Offices, 2nd Floor Boardroom |
| Frequency: | Monthly |
| Attendees: | Robert Stewart<br>Peter Moir<br>Frances Wrath<br>Hugh McDerment<br>Isobel Ferguson<br>Lorraine Peebles<br>Fiona McCluskey<br>Karen Connelly<br>Paul Fairie<br><br>Darren Smith<br>Manny Ajuwon<br>Chris Lovejoy<br>Steve Pardy<br>Michael Frain<br>Dave Bower |
| Chair: | Robert Stewart |
| Agenda/Minutes: | Chair to issue agenda and meeting minutes to the attendees. Minutes to be issued 3 days after meeting. |
| Agenda | ▪ Introductions/Apologies<br>▪ Minutes of Previous Meeting<br>▪ Laboratories<br>▪ Adult & Children's Hospital<br>▪ Any Other Business<br>▪ Date of Next Meeting |

## 4.10 Joint Commissioning Group

These meetings have still to commence. The initial group, to be formed by November 2010 will address the commissioning of the Laboratories and this will be followed in 2011 by the group to manage the Hospital commissioning.

| | |
|---|---|
| Purpose: | - Review of design relative to commissioning activities<br>- Ensure equipment installation is integrated with construction programme<br>- Monitor production and implementation of a commissioning plan<br>- Manage specialist validations |
| Location: | Project Site Offices, 2nd Floor Boardroom |
| Frequency: | Monthly |
| Attendees: | Fiona McCluskey<br>Frances Wrath<br>Heather Griffin<br>Mairi Macleod<br>Karen Connelly<br>Peter Moir<br>Capita Symonds<br>Paul Fairie<br><br>Ross Ballingall<br>Chris Lovejoy<br>Ed McIntyre<br>Dave Bower<br>Ron King |
| Chair: | Fiona McCluskey |
| Agenda/Minutes: | Chair to issue agenda and meeting minutes to the attendees. Minutes to be issued 3 days after meeting. |
| Agenda | ▪ Introductions/Apologies<br>▪ Minutes of Previous Meeting<br>▪ Laboratories<br>▪ Adult & Children's Hospital<br>▪ Any Other Business<br>▪ Date of Next Meeting |

## 4.11 Schedule of Meetings

Refer to Appendix B

# 5 Third Party Approvals

## 5.1 Planning Permission

Responsibility for the obtaining of consents, other than the Laboratories is the responsibility of Brookfield Construction Ltd, although time related delays as a result of the Planning Process are a client risk unless caused by delay in submission of application or subsequent information by BCL.

Master Plan – to be sought as an application for matters specified in conditions (MSC) as specified in the outline consent granted in July 2009. This application was submitted in April 2010 and approval was granted, subject to conditions, in June 2010. BCL remain responsible for addressing the conditions contained within the approval.

Laboratories – Consent already granted, with conditions. All pre-start conditions have been purified and work to continue up to occupation to purify the remaining conditions. BCL are responsible for addressing the outstanding conditions following novation of the design team.

Adult & Children's – These will be dealt with as MSC applications as specified in the Outline Consent granted in July 2009. The applications will be grouped to purify the pre-start conditions in the first instance, followed by further applications throughout the lifetime of the project.

## 5.2 Building Regulations/Fire Certification

The Laboratories Stage 1, sub-structure, application was submitted by NHS GG&C in advance of contractor appointment. Subsequent stage applications (2,3 and 4) are the responsibility of BCL.

The Contractor will be responsible for all Building Control matters relative to the Adult Acute and Children's Hospitals.

The Contractor is responsible for complying with the Building Regulations and liaising with Building Control Inspectors with regard to appropriate site inspections. The contractor must notify the project team when inspections from Building Control are programmed and inform the team at the site progress meetings comments from BC during these visits.

# 6 Progress Reporting (Construction Phase)

## 6.1 Contractor

Programmes

The Contractor must establish Programmes, including the following requirements, at the earliest possible date:

- Pre-construction procurement (long lead items)
- Construction (Master)
- Design (Request for Information)
- Submissions Approval Schedule (SAS)
- Completion Inspections, Testing, Commissioning

The Programmes must indicate all long lead items of plant and materials. In addition, indicative information required dates are to be provided. Throughout the Design Development and Construction period the Main Contractor should keep these programmes updated, and finalise the information required dates.

The programme must show earliest and latest start and finish dates for each activity, and identify all critical activities and milestone payment stages (if any).

### Construction Programme

The Main Contractor will produce the Construction programme.

This programme is to be developed as works progress and monitored on a fortnightly basis with Submission of the Progress Report on the third Friday of each month.

(The Contractors programme identifies the inter-relationship of procurement for detail design, critical works and equipment).

The programme will be actively managed and reported against by the contractor as part of the NEC3 Contract process.

The programme will incorporate key stages where the consultants are required to inspect the works. The key stages are provided in section 9 of this document.

The Contractor should submit at each progress meeting, to the Project Manager a short-term detailed 6-week programme, together with an analysis of performance against the previous 6-week programme.

## 6.2 Contractor's Progress Reports

Upon commencement of the construction Phase, the Contractor will be required to provide monthly written reports for submission to the Project Manager (4 copies) issued at least 48 hours prior to the Progress Meeting. The content of these reports should be inclusive of the following information:

- The activities begun and completed since the previous report and upon what dates.
- The expected remaining duration of all activities begun but not completed.
- Additional activities with expected durations, methods, resource requirements and sequence assumptions.
- Method statements for four weeks work from two weeks hence.
- Any changes to expected duration, methods, resource requirements and sequencing assumptions of future activities.
- Forecast completion date for all works and slippage or advance upon the contract completion date and intermediate milestone dates.
- Programme comparison between actual and programmed in a percentage format for design, procurement and construction.
- Health and Safety information and matters arising.
- Outstanding Information Schedule.
- Resource levels (man hour labour returns)
- Weather records.
- Costed Variation schedule
- Colour copies of a selection of five to seven weekly progress photos.
- Schedule of Contract instructions.
- Submission Approval Schedule (SAS) Status Report.
- Programmes as set out above.

The Contractor will be requested to submit a copy of the proposed format of the above report for approval by the Project Manager three days prior to the Pre-Construction Meeting.

## 6.3 Project Manager Status Report

The Contractor will issue a Project Status Report to the Project Manager shortly after the Progress Meeting, which will summarise the key matters arising. This report will form the basis of the Project Steering Group review meetings undertaken monthly. The following headings will be reported:

- Programme/Progress
- Health & Safety
- Statutory Consents
- Information required from NHS GG&C
- Other Risks/Other Major Issues

## 6.4 Architect Reports

The Architect will prepare a brief report on the issues discussed at the Technical meetings and issue to the design team and to the Project Manager. This report should include a summary of the status of the design, key factors influencing design and risk issues.

## 6.5 Design Consultants Reports

Each consultant will prepare and circulate a brief report at least one day prior to the Technical meetings and project design team meetings outlining actions against the minutes of the previous meeting and detailing issues relevant to their particular areas of concern. The consultant reports should include the following information.

Pre-construction – Technical and Project design meetings

- Design development status
- Status of tender documents
- Information produced during the month

Construction Site meetings

- Change orders design progress
- Information requirements/request status
- Status of contractor, sub-contractor, drawings/subsistence
- Quality Control

## 6.6 Cost Consultants reports

Monthly reports

The Contractor will be required to submit monthly reports to the Project Manager. This monthly report will be discussed with the Client PM at the Commercial Group meetings and, where necessary, at the Project Steering Group Meetings .

## 6.7 Risk Management and Associated Reporting

In accordance with the Contract the Contractor will be responsible for undertaking a risk assessment process with the Contractor/EA during all phases of the project to establish that risks are properly identified and managed. This should be conducted at the Site Meetings.

The Contractor will prepare a pre-construction Risk Register however the Contractor is to submit his risk register at commencement. The analysis is to be prepared in accordance with good practice.
The register must be updated as part of each progress report submission.

# 7 Project Economics

## 7.1 Contract Sum

The contract has “target price” and “maximum price” sums and these can only be varied by a compensation event agreed following Early Warning, Risk Reduction Review and agreement of value all as set out in the change control process.

# 8 Design Development and Change Control Management

## 8.1 Information Issue, Control and Co-ordination

The Contractor is primarily responsible for ensuring the integrity of the design data being produced and for controlling its distribution by means of a continually updated Design Register (drawing list, specification list etc). This list must be issued prior to Technical, Project Design & Site meetings if changes have been made from previous issues.

All drawings are to be in an agreed CAD format, with a suitable layering configuration agreed between the Contractor and Professional Team. All drawings issued to the client Project Manager should be in PDF format.

## 8.2 Revisions to Drawings

All revisions to be highlighted on the drawings with "clouds" and must be clearly explained in the revision column.

## 8.3 Design Data Distribution

Exchange of information electronically via Aconex will be strongly encouraged, particularly in respect of draft data. E-mail addresses for the individual team members are contained on the project directory contained in Appendix A. Drawings must, however, be distributed via Aconex as a PDF file and hard copy if requested.

Formal design review submissions must be made in electronic version with supplemental hard copy information if requested.

## 8.4 Design Consultations

The Submissions Approval Schedule (SAS) sets out areas where consultations with the end users are available and suggested in advance of design development. The Contractor is encouraged to take advantage of these opportunities to help ensure their design proposals accord with the Employer's Requirements and end user requirements.

## 8.5 Design Review

### 8.5.1 Information request schedule

The Contractor must review all design information and prepare a list of information required to satisfy its self that all relevant information to commence and complete the works. The list of information required, will be named 'Request For Information Schedule' (RFIS) for the purpose of this project.

The Contractor is responsible for managing the (RFIS) and ensuring that all information is correct and issued to the consultants within the stated timescale. The design team are responsible for ensuring that all information is issued to the contractor within the correct agreed timescales.

### 8.5.2 Reviewable Design Data: The contractor shall issue and maintain an RDD schedule.

## 8.6 Request for Information Schedule

The Contractor must provide a Request for Information Schedule (RFIS) in sufficient time for the Employers Project Team to provide information as not to delay the programme. The (RFIS) must clearly detail the type of information required and the date on which this information is needed. Every item must be numbered for tracking and identify purposes. The Contractor will manage and update the (RFIS) at regular periods. The team should issue all information on a Submission form 'S' as previously described under this section. The RFIS will be discussed under design development at site meetings.

## 8.7 Change Control Procedure

A Change Control Procedure has been established and is managed via the online Sypro system. The procedure must be completed and formal instruction must be issued before the contractor commences any associated works. This procedure is relevant at any stage of the Project's lifecycle.

## 8.8 Level of Authority

Appropriate levels of authority are detailed in the within the Full Business Case.

# 9 Site Management – Construction Phase

## 9.1 General

Presentation of the site is considered by both the Employer and end user to play an important role and reflects on the corporate/department image and hence public perception. Specific issues to be managed:

- Noise.
- Dust, dirt and debris.
- Removal of debris and soil, cleaning public highways.
- Out of hours working.
- Access and maintenance thereof.
- Hoardings and advertising.
- Maintenance of services, provision of toilet facilities and minimisation of disruption.
- Site personnel around entrance areas (discourage eating and smoke outside entrance).

## 9.2 Access for Inspection by the Client and the Client's Technical Advisors

The Employer and their technical advisors may visit site during normal hours of operation at any time subject to permission of the Contractor, which must be sought before entering the site. If prior arrangements have not been made the contractor may deny access.

All personnel including members of the Employer's organisation must comply with the contractors signing in/out procedures, directions and requirements for personal protective equipment.

# 10 Health And Safety

## 10.1 Policy

The Employer's intention is that all work will be carried out in accordance with the relevant statutory provisions and that all practicable measures will be taken to avoid risk to those who may be affected by the works.

All consultants, contractors and suppliers are required to co-operate with the Employer in carrying out this Policy and must ensure that their own work is carried out without risk to themselves or others.

## 10.2 Construction (Design & Management) Regulations

The Client has appointed a CDM Coordinator in accordance with the requirements of the Construction (Design & Management) Regulations.

## 10.3 Consultants responsibility

The design consultants will carry out a risk assessment relevant to their element of design. These risks should be recorded on a register format with associated mitigation strategy. The residual risks of the project in relation to their design issues should also be identified and issued to the Planning Supervisor for inclusion in the Pre-tender Health and Safety Plan.

## 10.4 Contractors Responsibility – Construction Phase

The Contractor will observe and provide everything necessary to comply with all relevant requirements of the Factories Act 1961, the Occupier's Liability Act *1957,* Control of Pollution Act 1974, Health and Safety at Works etc., Act 1974, Public Health Acts *1875* to 1961 and all statutory requirements or modification thereof and any regulations, rules or orders made pursuant thereto.

The Contractor will be required to report formally, in writing, on Health and Safety matters at each Site Progress Meeting.

Any notifiable accidents or incidents should be reported immediately to the HSE, Project Manager, CA and Planning Supervisor. A written report should be submitted subsequently setting out the cause and circumstances of the incident and detailing the measures the Contractor proposes to take to prevent a re-occurrence.

The Project Manager should be advised immediately of a visit to site by the Health & Safety Executive, and of any notices or directions that have been issued as a result.

## 10.5 Health and Safety File

It is the responsibility of the contractor and consultants to produce the information to be included in the H+S file. It is the responsibility of the CDM Coordinator to ensure that the H+S file is prepared and issued within the agreed timescale and in the appropriate format. The information required for the H+S file is contained in section 10 of this document.

# 11 Completion and Handover

The period immediately prior to handover can be a particularly arduous time for all parties involved in the construction process, including the Employer organisation. Procedures for final inspection of the works are set out in section 9 of this document and will be discussed and agreed between the PM, and the Contractor, in consultation with the Employer's Professional Team. The procedures will take account of the need for early inspection of areas of the works, which will be covered up, and the phasing of final inspections. The Contractor must prepare a co-ordinated programme for phased final inspections and commissioning. The programme will be agreed with the NEC3 Supervisor.

The NEC3 Supervisor has a duty to the Employer to inspect and sign-off the works. The Contractor should satisfy himself before any work is offered that it has been carried out and completed in accordance with the Contract.

The CDM Coordinator will advise the Principal Contractor on the contents and the format of the Health and Safety File at the commencement of the works. The final completed document, prepared by the Principal Contractor is to be issued to the CDM Coordinator for comment and approval prior to issuing to the Employer.

Final issue of the Health & Safety File, including all as-built drawings, operating & maintenance manuals and substantially all test certification shall be a pre-condition of Practical Completion being awarded. (See below). This information below is a guideline of information and the Contractor and Consultants must ensure compliance.

Implementation procedures to deal with the foregoing will be developed by the NEC3 Supervisor and issued to all.

It is anticipated that a Validation/Acceptance Team will be formed to facilitate a smooth and efficient process.

# 12 Dispute Management

Potential disputes between project team shall be communicated to the Project Manager at an early stage. The Project Manager will mediate in any dispute in an attempt to obtain an amicable resolution of the difference.

Failure to resolve the dispute after this process will result in the dispute being referred to the contractual remedy provisions.

Every team member should seek to find co-operative methods of working with other team members

# 13 Publicity and Third Party Relations

## 13.1 Publicity

No material relating to the project will be published or otherwise released by any member of the team without the prior permission of the Employer, which shall be obtained through the Project Manager. This is to avoid prejudicing any provisions of any formal agreement between all parties to the project.

## 13.2 Photography – Construction Phase

The Contractor is required to take regular progress photographs throughout the construction phase of the project and present these bound as part of the monthly report. The primary purpose of the photographs is to record the state of progress of the works at the time, and the photographer should, therefore, be directed as to what should be recorded, not simply left to take 'nice' photographs.

Any problem, or disruption, that occurs should be recorded for the Employer. This will usually mean taking additional photographs to be presented to the Employer. The Project Manager may direct the Contractor in this regard.

Consideration should be given to the use of digital photographic techniques because of the greater ease of storage and retrieval.

## Third Party Relations

All reasonable measures should be taken to develop and maintain good relations with the Local and Statutory Authorities, and any owners of properties adjoining the site or likely to be affected by the development and others who have a legitimate interest in the development.

The strategy for dealing with any third party must be agreed with the Project Manager before an approach is made. This is to ensure a co-ordinated overall strategy is adopted.

# 14 Development Review – Post Completion

The process should be positive and identify improvements to the delivery of future developments.

The Project Manager will be responsible for co-ordinating the review process and all team members will be expected to participate. It is envisaged that the process will take the form of informal group discussions supplemented with one on one interviews, as necessary, culminating in a concise report published by the Project Manager to the Employer. The close out report should make a thorough assessment of all elements of this Project and to draw out or feed back, for the benefit of the client the project team and lessons for application for further projects.

Appendices

Appendix A - Project Directory

Appendix B - Schedule of Meetings

Appendix C- Strategic Programme

# Appendix A - Project Directory

| COMPANY | ROLE | CONTACT(S) | TELEPHONE | MOBILE | EMAIL |
|---|---|---|---|---|---|
| **NHS Greater Glasgow and Clyde** | **Client**<br>NHS Greater Glasgow & Clyde<br>Site Offices, Top Floor<br>SGH Construction Site<br>Off Hardgate Road<br>Glasgow<br>G51 4SX | **Mr Alan Seabourne**<br>Project Director NSGH | [redacted] | [redacted] | [redacted] |
| | | **Ms Fiona McCluskey**<br>Senior Nurse Advisor | [redacted] | | [redacted] |
| | | **Ms Frances Wrath**<br>Project Manager - Enabling | [redacted] | | [redacted] |
| | | **Ms Heather Griffin**<br>Project Manager - New Adult Hospital<br>**Ms Jackie Stewart**<br>Infection Control Nurse<br>**Mr Hugh McDerment**<br>Project Manager | [redacted] | | [redacted] |
| | | **Ms Karen Connelly**<br>Commissioning Manager | [redacted] | [redacted] | [redacted] |
| | | **Ms Mairi Macleod**<br>Project Manager - New Children's Hospital | [redacted] | | [redacted] |
| | | **Mr Peter Moir**<br>Head of Major/Capital Projects | [redacted] | [redacted] | [redacted] |
| | | **Mr Sam Suddese** | [redacted] | | [redacted] |

| | | | | | |
|---|---|---|---|---|---|
| | | Project Manager | | | |
| | | **Mr Mark McAllister**<br>Community Engagement Manager | [redacted] | | [redacted] |
| | | **Mr Stephen Gallacher**<br>Consultant Physician | [redacted] | | [redacted] |
| | | **Dr Jane Peutrell**<br>Consultant Physician | [redacted] | | [redacted] |
| | | **Ms Shiona Frew**<br>Project Administration | [redacted] | | [redacted] |
| | | **Ms Liane McGrath**<br>Project Administration | [redacted] | | [redacted] |
| | | **Ms Allyson Hirst**<br>PA to Project Director | [redacted] | | [redacted] |
| | | **Ms Carol Craig**<br>Secretarial Assistant | [redacted] | | [redacted] |
| | | **Miss Gayle Boggan**<br>Secretarial Assistant | [redacted] | | [redacted] |
| | Western Infirmary | **Ms Bernadette Findlay**<br>Assistant General Manager - Diagnostics | [redacted] | [redacted] | |
| | Management Building<br>Southern General Hospital<br>1345 Govan Road<br>Glasgow<br>G51 4TF | **Mr Alex McIntyre**<br>Director of Facilities | [redacted] | | [redacted] |
| | | **Rory Farrelly**<br>Director of Women and Children's Services | [redacted] | | [redacted] |
| | | **Ms Jane Grant**<br>Chief Operating Officer | [redacted] | | [redacted] |
| | Management Annex<br>Southern General Hospital<br>1345 Govan Road<br>Glasgow<br>G51 4TF | **Mr Alan McCubbin**<br>Head of Finance - Capital and Planning | [redacted] | | [redacted] |
| | Gartnavel Royal Hospital<br>Administration Building<br>1055 Great Western | **Mr Tony Cocozza**<br>ASR Accountant - Capital and Planning | [redacted] | | [redacted] |
| | | **Andy Brennan** | [redacted] | | [redacted] |

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| | Road<br>Glasgow<br>G12 0XH | Clinical Physicist | | | - |
| | Bacteriology Department<br>Southern General<br>Hospital | **Mr Richard Shaw**<br><br>Diagnostics | [redacted] | [redacted] | [redacted] |
| | **Community Engagement Team**<br>Dalian House<br><br>350 St Vincent Street<br>Glasgow | **Niall McGrogan**<br>Head of Community Engagement and Transport<br><br>**Dan Harley**<br>Community Engagement Manager<br><br>**Kate Munro**<br>Community Engagement Manager | [redacted] | [redacted] | [redacted]<br>-<br>[redacted]<br>-<br>[redacted] |
| | Yorkhill Hospital<br>Dalnair Street<br>Yorkhill<br>Glasgow<br>G3 8SJ | **Ms Rosslyn Crocket**<br>Board Nurse Director | [redacted] | | [redacted]<br>-<br>-<br>- |
| | Westward House<br>15-17 St James Street<br>Paisley<br>PA3 2HJ | **Mr Mark Greig**<br>Infrastructure Development Consultant<br>**Mr Alasdair Finlayson**<br>Head of IT Infrastructure | [redacted] | | [redacted]<br>[redacted]<br>- |
| | Dykebar Hospital<br>Grahamston Road<br>Paisley<br>PA2 | **Marian Stewart**<br>Head of Applications | [redacted] | | [redacted]<br>-<br>-<br>- |
| | **Health Improvement and Inequalities**<br><br>Dalian House<br>Po 15329<br>350 St Vincent Street<br>Glasgow | **Ms Anna Baxendale**<br>Head of Health Improvement and Inequalities Manager<br>**Ms Jackie Sands**<br>Arts and Health Co-ordinator | [redacted] | | [redacted]<br><br>[redacted]<br>- |

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| | G3 8YZ | | | | |
| | **Press Office**<br>Dalian House<br>350 St Vincent Street<br>Glasgow | **Mr Ally McLaws**<br>Director of Communications<br>**Ms Sandra Bustillo**<br>Associate Director of Communications<br>**Mr Gordon Robertson**<br>Public Affairs Co-ordinator | [redacted] | | [redacted] |
| | **Facilities Dept**<br>Southern General Hospital | **Ronnie Clinton**<br>Site Facilities Manager | [redacted] | | [redacted] |
| | | **Sharon Hutchison**<br>Deputy Site Facilities Manager | [redacted] | | [redacted] |
| | **Estates Dept**<br>Southern General Hospital | **Jim McFadden**<br>South Sector Estates Manager | [redacted] | | [redacted] |
| | | **John McCulloch**<br>Site Manager | [redacted] | | [redacted] |
| | **Health & Safety**<br>Southern General Hospital | **Danny McInally**<br>Health and Safety Advisor | [redacted] | | [redacted] |
| **Boswell Mitchell & Johnston** | **Architects**<br>2 Central Quay<br>89 Hydepark Street<br>Glasgow<br>G3 8BW | **Main Office** | [redacted] | | [redacted] |
| | | **Mr Graham Stuart**<br>Director | [redacted] | [redacted] | [redacted] |
| | | **Mr Rajib Deb**<br>Associate Director | [redacted] | [redacted] | [redacted] |
| **Buro Happold** | **Fire Engineers** | **Mr Alistair Murray**<br>Associate | [redacted] | [redacted] | [redacted] |
| **Currie & Brown UK Ltd** | **Technical** | **David Hall** | [redacted] | [redacted] | [redacted] |

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| | 140 West Campbell Street<br>Glasgow<br>G2 4TZ | Divisional Director | | | |
| | | **Douglas Ross**<br>Director | [redacted] | [redacted] | [redacted] |
| | | **Mark Baird**<br>Divisional Director | [redacted] | [redacted] | [redacted] |
| **Ecoteric Ltd** | **Low Carbon Consultants**<br>BREEAM and Energy Consultants<br>Acanthus House<br>28 Summer Hill<br>Halesowen, West Midlands<br>B63 3BU | **Susan Logan** | [redacted] | [redacted] | [redacted] |
| **Glasgow City Council** | **Development and Regeneration Services**<br>231 George Street<br>Glasgow<br>G1 1RX | **Blair Greenock**<br>Planning Officer | [redacted] | | [redacted] |
| | | **Building Control** | [redacted] | | |
| | | **Gerry Grams**<br>City Design Advisor | [redacted] | | [redacted] |
| | | **Tony Hughes**<br>Transport Planning Manager | [redacted] | | [redacted] |
| **Shepherd & Wedderburn LLP** | **Legal**<br>155 St Vincent Street<br>Glasgow<br>G2 5NR | **Rhona Harper**<br>Partner, Projects | [redacted] | | [redacted] |
| | | **Simon Fraser**<br>Associate, Projects | [redacted] | | [redacted] |
| | | **Susan Ferguson**<br>Trainee Solicitor, Construction and Special Projects | [redacted] | | [redacted] |
| **URS** | **Labs Civil & Structural Engineer** | **Graham Annandale** | [redacted] | [redacted] | [redacted] |

Currie & Brown

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| | Kinneil House | Project Director | | | |
| | 243 West George Street | **John Cox** | [redacted] | | [redacted] |
| | Glasgow | Technical Director/Project Manager | | | |
| | G2 4QE | **Alistair Fulton** | [redacted] | | [redacted] |
| | | Senior Structural Engineer | | | |
| | | **George Gorman** | [redacted] | | [redacted] |
| | | Senior Structural Technician | | | |
| | | **Raymond Quinn** | [redacted] | [redacted] | [redacted] |
| | | Civil Project Engineer | | | |
| | | **John McLachlan** | [redacted] | | [redacted] |
| | | CDM Co-ordinator | | | |
| **Wallace Whittle** | **Building Services Engineers** | **Stewart McKechnie** | [redacted] | | [redacted] |
| | | (Project Director) | | | |
| | 8 Elmbank Gardens | **John Bushfield** | [redacted] | | [redacted] |
| | Glasgow | (Director) | | | |
| | G2 4NQ | **Raymond Kelly** | [redacted] | | [redacted] |
| | | (Associate) | | | |
| | | **Brian Rutherford** | [redacted] | | [redacted] |
| | | (Senior Mechanical Engineer) | | | |
| | | **Gary Rodger** | [redacted] | | [redacted] |
| | | (Electrical Engineer) | | | |
| **JMP Consultants Ltd** | **Transport and Planning Engineers** | **Alan De Venny** | [redacted] | | [redacted] |
| | Mecantile Chambers | Principal Engineer | | | |
| | 53 Bothwell Street | **Kelvin Clarke** | | | [redacted] |
| | Glasgow | Director | | | |
| | G2 6TS | | | | |
| **Capita Symonds** | **Project Supervisors** | **John Redmond** | [redacted] | [redacted] | [redacted] |
| | Skypark SP1 | **Willie Roxburgh** | [redacted] | [redacted] | [redacted] |

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| Fax: [redacted] | 8 Elliot Place<br>Glasgow<br>G3 8EP | **Graeme Bruce** | [redacted] | [redacted] | [redacted] |

Brookfield

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| | | **Paul Serkis**<br>Commercial Director | [redacted] | [redacted] | [redacted] |
| | | **Alan Keeley**<br>Construction Director | [redacted] | [redacted] | [redacted] |
| | | **Mike Sharples**<br>Commercial Director | [redacted] | [redacted] | [redacted] |
| | | **John Ko**<br>Design Director | [redacted] | [redacted] | [redacted] |
| | | **Chris Lovejoy**<br>MEP Director | [redacted] | [redacted] | [redacted] |
| | | **David Bower**<br>Planning Director | [redacted] | [redacted] | [redacted] |
| | | **David Jordan**<br>Project Manager: Labs | [redacted] | [redacted] | [redacted] |
| | | **Andrew Bebbington**<br>Senior Planning Manager A&C | [redacted] | [redacted] | [redacted] |

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|---|---|---|---|
| **Manny Ajuwon**<br>Senior Design Manager: Labs | [redacted] | [redacted] | [redacted] |
| **Ben Keenan**<br>General Counsel | [redacted] | [redacted] | [redacted] |
| **Tim Bicknell**<br>UK Commercial Director | [redacted] | [redacted] | [redacted] |
| **Darren Smith**<br>Senior Design Manager A&C | [redacted] | [redacted] | [redacted] |
| **Eric Napier**<br>Senior Procurement Manager | [redacted] | [redacted] | [redacted] |
| **Chris Fairhall**<br>Procurement Manager: Labs | [redacted] | [redacted] | [redacted] |
| **Nick Davidson**<br>Commercial Manager: Labs | [redacted] | [redacted] | [redacted] |
| **John Curry**<br>Frame & Envelope Manager: Labs | [redacted] | [redacted] | [redacted] |
| **John Beryl**<br>Project Engineer: Labs | [redacted] | [redacted] | [redacted] |
| **Will Gingell**<br>Site Supervisor: Labs | | [redacted] | [redacted] |
| **Adam Gingell**<br>Quantity Surveyor | | | [redacted] |
| **Sophie Rainey**<br>Project Director's P.A. | [redacted] | [redacted] | [redacted] |
| **Jane Williamson**<br>Document Controller/Admin | [redacted] | [redacted]<br>Personal Mobile | [redacted] |
| **Phil White**<br>Brookfield Services | [redacted] | [redacted] | [redacted] |
| **Rita Kopiel** | [redacted] | | [redacted] |

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| | | Admin Support | | | |
| **Acoustic Logic Consultancy (UK) Ltd** | **Acoustic Consultant**<br>42 Harcourt Terrace<br>London<br>SW10 9JR | **Matthew Palavidis**<br>Director | | [redacted] | [redacted] |
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| | | **Jim Flynn**<br>Contract Director | | [redacted] | [redacted] |
| **Doig + Smith** | **Cost Manager**<br>6 Lynedoch Place<br>Glasgow<br>G3 6AQ<br>[redacted] | **Tom Allan**<br>Partner | [redacted] | [redacted] | [redacted] |
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| | | **Fraser Dunlop**<br>Associate | | | [redacted] |
| | | **David McLeish**<br>Surveyor | | | [redacted] |
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| | | **Patrick Reel**<br>Operations Manager | [redacted] | [redacted] | [redacted] |
| | | **Nick Bryant**<br>Commercial Manager | [redacted] | [redacted] | [redacted] |
| | | **Campbell McGregor**<br>Construction Manager | [redacted] | [redacted] | [redacted] |
| | | **George Buchan** | [redacted] | [redacted] | [redacted] |

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| | | Senior Project Manager - Labs | | | |
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| | | **Iain McNicol**<br>Enabling Site Manager | [redacted] | [redacted] | [redacted] |
| | | **Alison McKenzie**<br>Administrator | [redacted]<br>(direct) | | [redacted] |
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| | | **Alastair Leighton**<br>Associate Partner | [redacted] | [redacted] | [redacted] |
| | | **Tom Barnsley**<br>Associate | [redacted] | [redacted] | [redacted] |
| | | **Valter Aires Vieira**<br>Senior Landscape Architect | [redacted] | | [redacted] |
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| **Ironside Farrar** | **Environmental Consultants**<br>111 McDonald Road<br>Edinburgh<br>EH7 4NW | **Mr James Miller**<br>Technical Director | [redacted] | | [redacted] |
| **Mercury Engineering** | **M & E Contractor**<br>Mercury House<br>Three Rock Road<br>Sandyford<br>Dublin 18 | **Edward McIntyre**<br>General Manager | [redacted] | [redacted] | [redacted] |
| | | **Dan Geelon**<br>M&E Estimator | [redacted] | | [redacted] |
| | | **Les Roche**<br>Design Engineer | [redacted] | | [redacted] |
| | | **Sean Rapple**<br>Project Manager | | | [redacted] |

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| | | **Graham Harris**<br>Senior Director - Project Director | [redacted] | [redacted] | [redacted] |
| | | **Emma White**<br>Director - Project Lead | [redacted] | [redacted] | [redacted] |
| | | **Jonathan Hendrick**<br>Clinical Design Lead - Glasgow | [redacted] | | [redacted] |
| | | **Garry Howard**<br>Studio Director - Project Director | [redacted] | [redacted] | [redacted] |
| | | **Jamie Brewster**<br>Studio Director - Masterplanning and Architecture | [redacted] | | [redacted] |
| | | **Alex Van Den Berg**<br>Design Director - 1:50 Design Lead | [redacted] | | [redacted] |
| | | **Anna Brown**<br>Senior Architect - Project Leader - Internal | [redacted] | | [redacted] |
| | | **John Wiggett**<br>Team Leader - Project Leader - External | [redacted] | | [redacted] |
| | | **Matthias Peretz**<br>Architect - Energy Centre/FM Lead | [redacted] | | [redacted] |
| **Structal UK Ltd** | **Envelope/Cladding**<br><br>Fountain House<br>Great Cornbow<br>Halesowen<br>B63 3BL | **Charles Lawton**<br>Managing Director | [redacted] | [redacted] | [redacted] |
| | | **Ian Priestley**<br>Contracts Manager | [redacted] | [redacted] | [redacted] |
| | | **John Gibbard**<br>Technical Sales Manager | [redacted] | [redacted] | [redacted] |

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| | | **Brian Seymore**<br>Drawing Office Manager | [redacted] | | [redacted] |
| | | **Dave Sheppard**<br>Project Manager | [redacted] | [redacted] | [redacted] |
| | | **Mariane DjeDje**<br>Document Controller | [redacted] | | [redacted] |
| | | **Andrea Lawton**<br>Assistant Project Manager | [redacted] | [redacted] | [redacted] |
| | | **Ian Franklin**<br>Lead Designer | [redacted] | | [redacted] |
| **Tribal** | **Healthcare Planner**<br>Tribune Court<br>2 Roman Road<br>Bearsden<br>Glasgow<br>G61 2SW<br>[redacted] (tel)<br>[redacted] (fax) | **Craig Dixon**<br>Director | [redacted] | [redacted] | [redacted] |
| | | **Paul Britton**<br>Managing Consultant | [redacted]<br>Based in London | [redacted] | [redacted] |
| | | **George Iliopoulos**<br>Health Planning Consultant (Technical) | [redacted]<br>Based in London | [redacted] | [redacted] |
| | | **Peter Lillis**<br>Health Planning Consultant (Technical) | [redacted]<br>Based in Hampshire | [redacted] | [redacted] |
| | | **Scott McCallum**<br>Expert Technical Consultant, Health | [redacted]<br>Based in Manchester | [redacted] | [redacted] |
| **WSP Group** | **Civil and Structural Engineer**<br>Centurion Business Park<br>5 Seaward Place<br>Glasgow<br>G41 1HH<br>[redacted] (tel) | **Paul Stanley**<br>(Client Executive Director) | [redacted] | [redacted] | [redacted] |
| | | **Pete Dunbar**<br>(Project Director) | [redacted] | [redacted] | [redacted] |
| | | **Neil McGarry**<br>(Structural - Childrens, Energy Centre, and External Structures) | [redacted] | [redacted] | [redacted] |
| | | **John Young** | [redacted] | [redacted] | [redacted] |

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| | | **Bill Smith**<br>(Traffic & Transportation) | [redacted] | [redacted] | [redacted] |
| | | **David Campbell**<br>(Infrastructure) | [redacted] | [redacted] | [redacted] |
| | | **Kenny Hamill**<br>(Fire) | [redacted] | [redacted] | [redacted] |
| | | **Scott Adair**<br>(Geo-Environmental) | [redacted] | [redacted] | [redacted] |
| | | **David Bownass**<br>(Sustainability) | [redacted] | [redacted] | [redacted] |
| | | **Rebecca Hyde**<br>(Sustainability) | [redacted] | [redacted] | [redacted] |
| **Zisman Bowyer & Partners LLP** | **M & E Designers**<br>1 Eton Street<br>Richmond<br>Surrey<br>TW9 1EF<br>[redacted] (tel)<br>[redacted] (fax)<br>www.zbp.co.uk | **Steve Pardy**<br>Project Partner | [redacted] | [redacted] | [redacted] |
| | | **Andrew Percival**<br>Project Associate (Mech) Childrens Leader | [redacted] | [redacted] | [redacted] |
| | | **Michael Frain**<br>Project Associate (Elec) Adult Leader | [redacted] | [redacted] | [redacted] |
| | | **Tom Davis**<br>Sustainability/Energy/Thermal Modelling Team Leader | [redacted] | | [redacted] |
| | | **Stephen Moore**<br>Incoming Utilities | [redacted] | | [redacted] |
| | | **Graham Heron**<br>Energy Centre/Site Infrastructure Team Leader | [redacted] | | [redacted] |
| | | **Tom Morris**<br>IT/CAD/Document Control | [redacted] | | [redacted] |
| | | **Stuart Brown**<br>Public Health Team Leader | [redacted] | | [redacted] |

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| | | **Ian Skinner**<br>Laboratory Liaison | [redacted] | | [redacted] |

# Appendix B – Schedule of Meetings

| Schedule of MeetingsGroup | Project Steering Group | Project Management Group | Commercial Group | Construction Interface Group | Technical Design Group | Design and Healthy Environment Strategy Group *(Sub-group of Technical Design Group)* | Joint Commissioning Group | Medical Planning Groups | IT Group | Equipment Selection Group |
|---|---|---|---|---|---|---|---|---|---|---|
| **Remit (refer to Group remits paper)** | - On a monthly basis identify key Strategic Drivers for the coming quarter.<br>- Carry out a monthly review of Project Strategic Drivers providing direction to the Project management Group as required.<br>- Carry out a monthly review of project issues (reported from sub groups via the PMG) that have not been cleared at sub group level.<br>- Provide direction to the sub groups on the resolution of issues.<br>- Monitor and identify any shortfalls in Project resources.<br>- Monitor critical path of Project Programme | - Manage change control<br>- Monitor short term design, procurement and construction programmes<br>- Monitor project administration ie diary, document control, meetings<br>-Oversee work of sub groups<br>- Monitor sign off progress of sub groups<br>- Monitor Community Benefit progress<br>- Unblock sub group issues<br>- Report key issues to Steering Group | - Manage Changes to Brief<br>- Manage Payment Process<br>- Manage valuations and costs<br>- Manage Risk Register<br>- Manage Early Warning/Compensation Event process<br>- Report key issues to Project Management Group | - Identify short term works on site particularly any that may impact upon the hospital activities<br>- Identify short term Hospital activities that may impact upon the construction works<br>- Communicate construction activities to relevant 3rd parties<br>- Monitor impact of works on surrounding area<br>- Report key issues to the Project Management Group | - Ensure that planning Applications are submitted on time<br>- Ensure that Planning Conditions are discharged on time<br>- Ensure that Building Warrant application is submitted on time and all queries closed out<br>- Monitor design compliance with the ER's and CP's.<br>- Monitor design sign off<br>- Monitor progress of key design strategies – fire, access control, acoustics etc<br>- Manage any derogations from ER's and CP's<br>- Manage any clarifications required against ER's and CP's<br>- Monitor design programme<br>- Manage Mock up and samples programme and signoff<br>- Report any key issues to the Project Management Grp | - Review how art can best be incorporated into the scheme<br>- Agree Project Art Strategy<br>- Advice the design process of opportunities for art<br>- Advise the design process and spatial and technical requirements for art<br>- Report any key issues to the Technical Design Group | - Monitor the production of a Project Commissioning Plan<br>- Monitor the production of a Project Commissioning Programme including operational commissioning<br>- Review the design for "commissionability"<br>- Manage specialist validations required ie pharmacy, CSSD, mortuary<br>- Ensure equipment installation programme co-ordinated with main commissioning programme<br>- Report any key issues to the Project Management Group | - Monitor the Medical Planning Programme and clear any blockages<br>- Monitor resource levels required to meet programme<br>- Monitor the medical planning sign off process and identify any critical delays<br>- Ensure that other sub groups ie IT and Equipment feed into the medical planning process<br>- Manage mock ups for functionality sign off<br>- Monitor production of Room Data Sheets<br>- Report changes to the Project Management Group | - Produce Project IT Strategy in sufficient time to inform the main design<br>- Ensure that IT spatial requirements are co-ordinated with the main design<br>- Ensure that IT technical requirements are incorporated into the design<br>- Ensure that Equipment IT requirements are identified sufficiently early to inform the main design<br>- Report any issues to the Technical Design group | - Monitor the inclusion of Equipment spatial and technical information on the Loaded Plans and Room Data Sheets<br>- Ensure that Equipment spatial and technical information is provided to meet the design programme<br>- Ensure that Equipment selection and procurement is carried out in time to meet the design and construction programme<br>- Manage the approval of Equipment Selection<br>- Manage change control in relation to Equipment provisions<br>- Ensure that Equipment installation and commissioning is integrated into the Joint Commissioning Group<br>- Report key issues to the Project Management Grp |
| **Member-Ship (Leads indicated in red)** | **Alan Seabourne**<br>Alan McCubbin<br>David Hall<br>Douglas Ross<br>Peter Moir<br><br>Chris Lovejoy<br>Ed McIntyre<br>Neil Murphy<br>Ross Ballingall<br>Steve Pardy<br>Tim Bicknell | **Alan Seabourne**<br>David Hall<br>Peter Moir<br>Douglas Ross<br>Mark Baird<br><br>Ross Ballingall<br>Paul Serkis<br>David Bower<br>Darren Smith<br>Ed McIntyre<br>Tom Allan | Alan McCubbin<br>Alan Seabourne<br>**Douglas Ross**<br>Peter Moir<br><br>Paul Serkis<br>Eric Napier<br>Tom Allan | Hugh McDerment<br>Sam Suddese<br>Shiona Frew<br>Estates Dept<br>Facilities Dept<br>Health & Safety Supervisor<br><br>**Alan Keeley**<br>Dave Jordan<br>Kevin Graham<br>Dave Bower<br>Norman Sutherland | Alan Seabourne<br>David Hall<br>Frances Wrath<br>Heather Griffin<br>Karen Connelly<br>Mairi Macleod<br>Peter Moir<br>Infection Control Supervisor<br><br>**Darren Smith**<br>Manny Ajuwon<br>Chris Lovejoy<br>Ed McIntyre<br>Emma White<br>Alastair Leighton | Alex McIntyre<br>**Anna Baxendale**<br>Dan Harley<br>David Hall<br>Dorothy Cafferty<br>Frances Wrath<br>Heather Griffin<br>Jackie Sands<br>Kate Munro<br>Louise Watson<br>Mairi Macleod<br>Peter Moir<br><br>Darren Smith<br>Neil Murphy<br>Liz Petrovitch<br>Tom Littlewood | **Fiona McCluskey**<br>Frances Wrath<br>Heather Griffin<br>Karen Connelly<br>Mairi Macleod<br>**Peter Moir**<br>Supervisor C&B Support<br><br>Ross Ballingall<br>Chris Lovejoy<br>Ed McIntyre<br>Dave Bower<br>Ron King | Alan Seabourne<br>David Hall<br>Fiona McCluskey<br>Frances Wrath<br>Heather Griffin<br>Mairi Macleod<br>Infection Control<br><br>**Darren Smith**<br>Emma White<br>Paul Britton<br>Dave Bower | **Alan Seabourne (tbc)**<br>Frances Wrath<br>Hugh McDerment<br>Karen Connelly<br>Mark Greig<br>Marion Stewart and/or Alisdair Finlayson C&B Support<br><br>Chris Lovejoy<br>Tony Duddy<br>Ed McIntyre<br>Steve Pardy | Frances Wrath<br>Hugh McDerment<br>Karen Connelly<br>Peter Moir<br>**Robert Stewart**<br>C&B Support<br><br>Dave Bower<br>Darren Smith<br>Manny Ajuwon<br>Chris Lovejoy<br>Steve Pardy |
| **Attendees** | To be identified as required | To be identified as required | To be identified as required | TA Advisers as required | TA Advisers as required | To be identified as required | Clinical reps/ Technical Advisers as required | To be identified as required | To be identified as required | To be identified as required |
| **Frequency of Meetings** | Monthly – Last Tuesday of each month 4pm | Every Tuesday 2pm | Every Tuesday 9am | Every Thursday 2pm | Every Thursday 9am | By Agreement | 2nd Friday of every Month 9am | Every 2nd Thursday 1pm | 3rd Friday of every month 9am | 3rd Friday of every month 1pm |
| **Reports to:** | New South Glasgow Hospitals and Labs Project Executive Board through Alan Seabourne | Project Steering Group | Project Management Group | Project Management Group | Project Management Group | Technical Design Group | Project Management Group | Project Management Group | Technical Design Group | Project Management Group |

# Appendix C - Master Programme

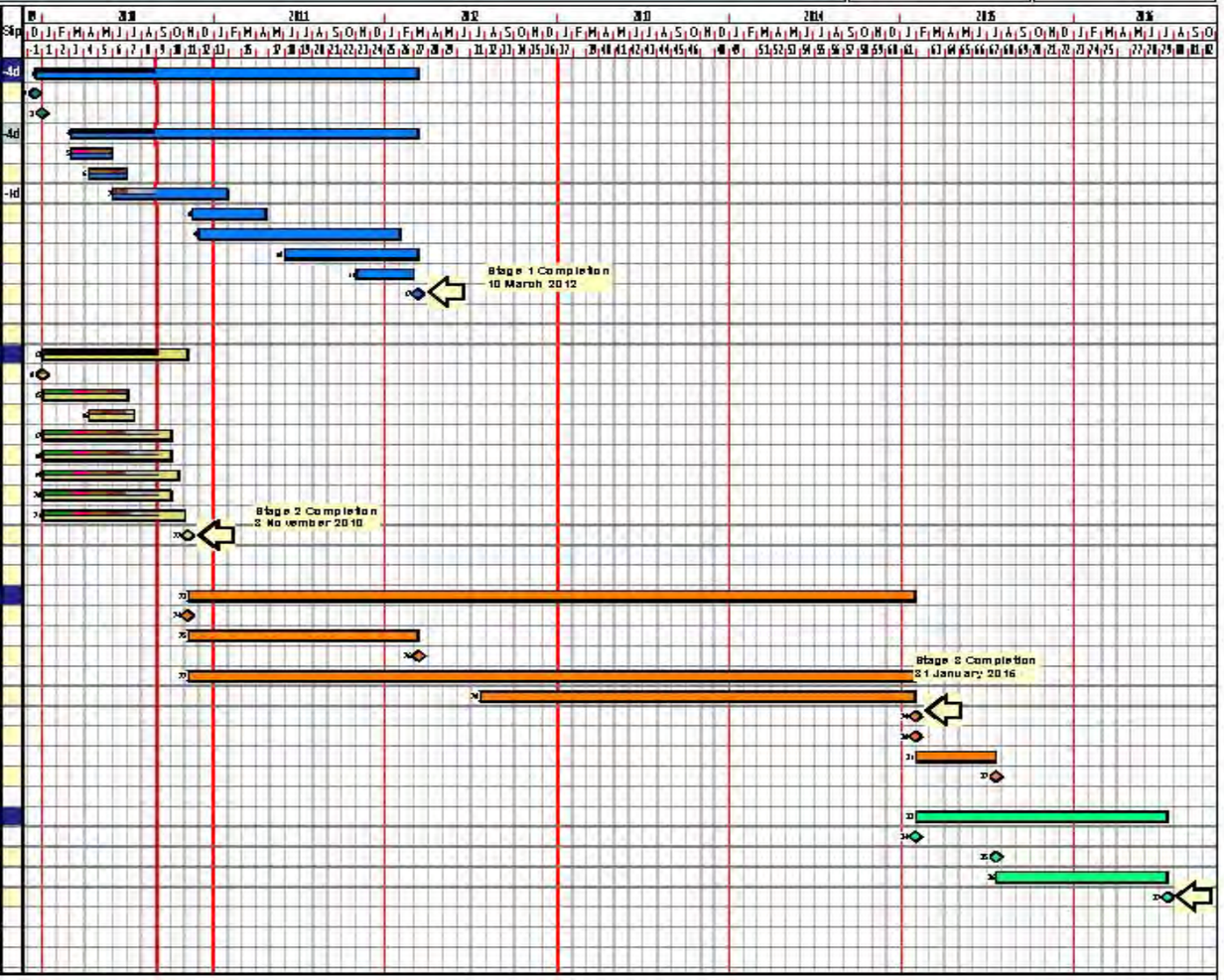
NHS Greater Glasgow and Clyde

## New South Glasgow Hospitals Project

"This programme is copyright and the property of Brookfield Construction (UK) Ltd and must not be used without written approval".

Brookfield

| Line | Activity | Start | Duration | Finish | Planned percent complete | Actual Percent complete | Slip |
|---|---|---|---|---|---|---|---|
| 1 | Stage 1 Laboratories Construction | 18/12/09 | 108w 2d | 10/03/12 | 20 | 19 | -4d |
| 2 | Award Contract | 18/12/09 | | 18/12/09 | 100 | 100 | |
| 3 | Commence Stage 1 (Design and Construction of New Laboratories) | 01/01/10 | | 01/01/10 | 100 | 100 | |
| 4 | Construction of Laboratories | 04/03/10 | 99w 3d | 10/03/12 | 20 | 19 | -4d |
| 5 | Piling | 01/03/10 | 11w 1d | 01/06/10 | 100 | 100 | |
| 6 | Foundations | 12/04/10 | 11w 1d | 01/07/10 | 100 | 100 | |
| 7 | Superstructure/ Frame | 02/06/10 | 32w 1d | 31/01/11 | 11 | 39 | -1d |
| 8 | Envelope | 18/11/10 | 20w 2d | 22/04/11 | | | |
| 9 | Fit out and finishes | 01/12/10 | 58w 1d | 01/03/12 | | | |
| 10 | Commissioning | 02/06/11 | 38w 3d | 10/03/12 | | | |
| 11 | Landscaping | 02/11/11 | 15w 2d | 01/03/12 | | | |
| 12 | Complete Stage 1 - (Construction of Laboratory Facilities) | 10/03/12 | | 10/03/12 | | | |
| 13 | Stage 2 Detailed Design Adult and Children's Hospitals to FBC | 04/01/10 | 43w 1d | 08/11/10 | 88 | 88 | |
| 14 | Commence Stage 2 (Detailed Design of Adult, Children's and Infrastructure to FBC) | 01/01/10 | | 01/01/10 | 100 | 100 | |
| 15 | 1:200 Design User Group's Adult and Children's and Sign Off | 01/01/10 | 25w 5h | 05/07/10 | 100 | 100 | |
| 16 | Exemplar Room Mock Ups for Spacial Requirements (ER's WM2M8) during stage 2 | 12/04/10 | 13w 1d | 16/07/10 | 100 | 100 | |
| 17 | 1:50 Sign-off Process | 01/01/10 | 31w 3d | 05/08/10 | 88 | 88 | |
| 18 | Planning Approval Process (Matters Specified in Planning Conditions) | 01/01/10 | 31w 1d | 01/08/10 | 89 | 89 | |
| 19 | Medical Equipment Programme | 01/01/10 | 38w 4h | 20/08/10 | 83 | 83 | |
| 20 | Design Development Programme Documents as per Appendix K | 01/01/10 | 31w 1d | 01/08/10 | 88 | 88 | |
| 21 | Full Business Case (FBC) Approval Process | 01/01/10 | 41w 2d | 02/11/10 | 80 | 80 | |
| 22 | Complete Stage 2 FBC and approval to proceed with Stage 3 | 08/11/10 | | 08/11/10 | | | |
| 23 | Stage 3 Adult and Children's Hospitals Construction | 09/11/10 | 207w 1d | 31/01/15 | | | |
| 24 | Commence Stage 3 (Construct Adult, Children's and Infrastructure) | 09/11/10 | | 09/11/10 | | | |
| 25 | Energy Centre Construction (Shell and Laboratories M&E only) | 09/11/10 | 65w 1d | 12/03/12 | | | |
| 26 | Complete Energy Centre (Building and M&E to service Laboratories only) | 12/03/12 | | 12/03/12 | | | |
| 27 | Stage 3 Construction Period Hospitals | 09/11/10 | 201w 1d | 31/01/15 | | | |
| 28 | Energy Centre M&E Installations in connection with Hospitals | 20/01/12 | 12w 2d | 31/01/15 | | | |
| 29 | Complete Stage 3 (Construction Hospitals) | 31/01/15 | | 31/01/15 | | | |
| 30 | Complete Energy Centre M&E in connection with Hospitals | 31/01/15 | | 31/01/15 | | | |
| 31 | Stage 3 Hospital Commissioning | 01/02/15 | 23w 2d | 20/01/15 | | | |
| 32 | Operational Date - Stage 3 - Hospitals | 20/01/15 | | 20/01/15 | | | |
| 33 | Stage 3A Demolition and Landscaping | 01/02/15 | 72w 3d | 19/07/16 | | | |
| 34 | Award Contract | 01/02/15 | | 01/02/15 | | | |
| 35 | Commence Stage 3A (Dem Surgical Block etc Completion Landscaping) | 20/01/15 | | 20/01/15 | | | |
| 36 | Demolition and Landscape | 21/01/15 | 19w 1d | 19/01/16 | | | |
| 37 | Stage 3A Completion | 19/01/16 | | 19/01/16 | | | |




Symbols

Milestone

Date of Issue: 23/09/2010 Drawn By:
Print Date: 30/09/2010 Page 1 of 1

Comments: Summary Master Programme Progress Mark up week 37 (5th of Sept 2010)

Programme No.: BCL-GSM-WKC-0001
Revision: Revision Date: 06/09/2010

File Path: \\Reglgsb01\projects\1 0 PLANNING\1 02 Stage 1 Lab\Programmes\Contract Programmes\Progress\Contract Programme Dec.pp

# *APPENDIX O*

# *PROJECT RACI*

## *Appendix O*

## *Project RACI Stage 1*

This RACI document has been prepared following appointment of Brookfield Construction Ltd. It is intended to assist with development and delivery of the project by identifying within a single schedule key events and actions.

Combined Labs/Hospitals
Board Team
Hospitals Group
Brookfield Team

**R - responsible**
The Individual(s) who performs an activity - responsible for action/implementation. R's can be shared

**A - accountable**
The individual who is ultimately accountable, including yes/no and power of veto. Only one A can be assigned per activity/decision

**C - consulted**
The individual(s) to be consulted prior to a final decision or action being taken. Two-way communication.

**I - informed**
The individual(s) who needs to be informed after a decision or action is taken. One-way communication.

| Milestone/Task | Executive Board | Project Steering Group | Project Management Group | Commercial Group | Project Director - Alan Seabourne | Project Manager - Peter Moir | Supervisor - Capita Symonds | Technical Advisor - Currie & Brown | Construction Interface Group | Labs Build Control Group | Technical Design Group | Design & Healthy Environment Group | Medical Planning Group | Joint Commissioning Group | IT Group | Equipment Selection Group | Labs Equipment /IT/Phone Migratiuon Group | Labs- Capital Equipment Group | Brookfield Construction Limited | Architect - BMJ Architects | Structural/Civil - URS | M/E Design - Wallace Whittle | M/E Installer - Mercury | Masterplan - Gillespies | Date for activity completion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Phase 4 Construction** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instruct move to Phase 4 | A | C | C | C | R | C | I | C | I | I | | I | | I | | | I | I | C | I | I | I | I | I | 10/11/2009 |
| Execute Contract | A | C | C | C | R | C | I | C | I | I | | I | | I | | | I | I | R | I | I | I | I | I | 18/12/2009 |
| Integrate Delivery Team | I | A | C | C | R | C | C | C | I | I | | I | | I | | | I | I | R | I | I | I | I | I | |
| Refresh Launch Workshop | | | | | | | | | | | | | | | | | | | | | | | | | |
| Risk Workshop (update register) | I | I | C | C | A | R | I | R | | | | | | | | | | | R | | | | | | |
| Assessment of procurement route | | | | | | | | | | | | | | | | | | | | | | | | | |
| Communication strategy | I | I | C | I | A | R | I | I | I | I | | I | | I | | | I | I | C | I | I | I | I | I | |
| Risk Management Approach | A | C | C | R | R | R | I | C | I | I | | I | | I | | | I | I | C | I | I | I | I | I | |
| Management Strategies | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cost - report and review (ECC Option C) | I | C | C | A | R | R | I | R | | | | | | | | | | | R | | | | | | |
| Communications (user groups etc.) | I | I | C | I | R | R | I | R | I | C | | R | | R | | | R | R | R | I | I | I | I | I | |
| Board Workforce plan | A | | | | | | | | | | | | | | | | | | | | | | | | |
| IT Strategy | A | I | I | C | C | C | I | I | I | I | | | | I | | | R | C | C | I | | C | C | | |
| Orientation Plan | A | | | | | | | | | | | | | | | | | | | | | | | | |
| Operational Policies | A | | | | | | | | | | | | | | | | | | | | | | | | |
| ECC - change, proformas, reporting | | | | | A | R | I | R | I | R | | I | | I | | | C | C | R | C | C | C | C | C | |
| EW and CE Register | | | | | A | R | C | R | I | R | | I | | I | | | C | C | R | C | C | C | C | C | |
| Update Risk Register | | | | | A | R | I | R | I | I | | | | I | | | | | R | | | | | | |
| Pre-construction Activities | | | | | | | | | | | | | | | | | | | | | | | | | |
| Implement PEP | | I | I | I | A | C | C | R | I | I | | I | | I | | | I | I | I | I | I | I | I | I | |
| Establish approval procedures | A | I | I | I | R | R | I | I | I | I | | I | | I | | | I | I | | | | | | | |

| | Executive Board | Project Steering Group | Project Management Group | Commercial Group | Project Director - Alan Seabourne | Project Manager - Peter Moir | Supervisor - Capita Symonds | Technical Advisor - Currie & Brown | Construction Interface Group | Labs Build Control Group | Technical Design Group | Design & Healthy Environment Group | Medical Planning Group | Joint Commissioning Group | IT Group | Equipment Selection Group | Labs Equipment /IT/Phone Migratiuon Group | Labs- Capital Equipment Group | Brookfield Construction Limited | Architect - BMJ Architects | Structural/Civil - URS | M/E Design - Wallace Whittle | M/E Installer - Mercury | Masterplan - Gillespies | Date for activity completion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **R - responsible** | | | | | | | | | | | | | | | | | | | | | | | | | |
| The Individual(s) who performs an activity - responsible for action/implementation. R's can be shared | | | | | | | | | | | | | | | | | | | | | | | | | |
| **A - accountable** | | | | | | | | | | | | | | | | | | | | | | | | | |
| The individual who is ultimately accountable, including yes/no and power of veto. Only one A can be assigned per activity/decision | | | | | | | | | | | | | | | | | | | | | | | | | |
| **C - consulted** | | | | | | | | | | | | | | | | | | | | | | | | | |
| The individual(s) to be consulted prior to a final decision or action being taken. Two-way communication. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **I - informed** | | | | | | | | | | | | | | | | | | | | | | | | | |
| The individual(s) who needs to be informed after a decision or action is taken. One-way communication. | | | | | | | | | | | | | | | | | | | | | | | | | |
| Establish delegated levels and authority | A | I | I | I | R | R | I | I | | | | | | | | | | | | | | | | | |
| Update H&S plan | I | I | I | I | A | C | I | R | C | C | | I | | I | | | I | I | C | C | C | C | C | C | |
| Performance Management | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ensure KPI reports to milestone | | | | | | | | | | | | | | | | | | | | | | | | | |
| Audit accuracy of figures | | | | | | | | | | | | | | | | | | | | | | | | | |
| IA Performance monitoring | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operational Issues | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ensure ECC reporting requirements | | | | | A | R | | C | | | | | | | | | | | | | | | | | |
| Acceptances | | | | | | | | | | | | | | | | | | | | | | | | | |
| Progress reports | I | A | R | R | R | R | R | R | R | R | | R | | R | | | R | R | R | R | R | R | R | R | |
| F10 and CDM compliance | | | | | A | C | I | R | I | I | | I | | I | | | I | I | R | R | R | R | R | R | |
| Completion | | | | | | | | | | | | | | | | | | | | | | | | | |
| Review Quality Audits | I | | | | A | R | | R | | | | | | | | | | | | | | | | | |
| Manage Defects | I | | | | | | R | C | | | | | | | | | | | | | | | | | |
| Manage Handover | I | | | | | R | | C | | | | | | R | | | | | | | | | | | |
| Agree commissioning programme | I | | | | | | R | C | | | | | | R | | | | | | | | | | | |
| Notify clinical manager of occupation date | | | | | A | | | | | | | | | | | | | | | | | | | | |
| Receive O&M manuals and H&S File | | | | | | | R | C | | | | | | | | | | | | | | | | | |
| Initial Pain/Gain forecast | | | | | | | | R | | | | | | | | | | | | | | | | | |
| Migration/Occupation | | | | | | | | | | | | | | | | | | | | | | | | | |
| User Familiarisation | | | | | | | | | | | | | | R | | | | | | | | | | | |
| Training | | | | | | | | | | | | | | R | | | | | | | | | | | |
| **Gateway 4 - Readiness for service** | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Operation** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Defects Management | | | | | | | | | | | | | | | | | | | | | | | | | |
| Agree priority and timescale | | | | | | | | | | | | | | | | | | | | | | | | | |
| Structure for communicating | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contacts list | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sign off procedure | | | | | | | | | | | | | | | | | | | | | | | | | |
| Feedback and Lessons learnt | | | | | | | | | | | | | | | | | | | | | | | | | |
| Commercial Management | | | | | | | | | | | | | | | | | | | | | | | | | |
| Finalise value of works and changes | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Pain/Gain assessment | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operational Review | | | | | | | | | | | | | | | | | | | | | | | | | |
| Evaluate Whole Life Cycle Costs | | | | | | | | | | | | | | | | | | | | | | | | | |
| Benefits realisation | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | Executive Board | Project Steering Group | Project Management Group | Commercial Group | Project Director - Alan Seabourne | Project Manager - Peter Moir | Supervisor - Capita Symonds | Technical Advisor - Currie & Brown | Construction Interface Group | Labs Build Control Group | Technical Design Group | Design & Healthy Environment Group | Medical Planning Group | Joint Commissioning Group | IT Group | Equipment Selection Group | Labs Equipment /IT/Phone Migratiuon Group | Labs- Capital Equipment Group | Brookfield Construction Limited | Architect - BMJ Architects | Structural/Civil - URS | M/E Design - Wallace Whittle | M/E Installer - Mercury | Masterplan - Gillespies | Date for activity completion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
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| **C - consulted** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | The individual(s) to be consulted prior to a final decision or action being taken. Two-way communication. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **I - informed** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | The individual(s) who needs to be informed after a decision or action is taken. One-way communication. | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Post Project review | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Operational efficiency | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Gateway 5 - Operations review and** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Benefits realisation | | | | | | | | | | | | | | | | | | | | | | | | | |
| Close project | | | | | | | | | | | | | | | | | | | | | | | | | | |
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## *Appendix O (cont)*

## *Project RACI Stage 2*

This RACI document has been prepared following appointment of Brookfield Construction Ltd. It is intended to assist with development and delivery of the project by identifying within a single schedule key events and actions.

Combined Labs/Hospitals
Board Team
Hospitals Group
Brookfield Team

**R - responsible**
The Individual(s) who performs an activity - responsible for action/implementation. R's can be shared

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The individual(s) to be consulted prior to a final decision or action being taken. Two-way communication.

**I - informed**
The individual(s) who needs to be informed after a decision or action is taken. One-way communication.

| **Milestone/Task** | Executive Board | Project Steering Group | Project Management Group | Commercial Group | Project Director - Alan Seabourne | Project Manager - Peter Moir | Supervisor - Capita Symonds | Cost Advisor - Currie & Brown | Construction Interface Group | Technical Design Group | Design & Healthy Environment Group | Medical Planning Group | Joint Commissioning Group | IT Group | Equipment Selection Group | Brookfield Construction Limited | Architect - Nightingale Associates | Masterplan - Gillespies | Health Care Planner - Tribal | Structural/Civil - WSP | M/E Design - ZBP | M/E Installer - Mercury | Structure - Dunnes | Date for activity completion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Phase 3 FBC** | | | | | | | | | | | | | | | | | | | | | | | | |
| Develop FBC | | | | | | | | | | | | | | | | | | | | | | | | |
| Sign Appendix B to FOA | | | | | | | | | | | | | | | | | | | | | | | | |
| Compile Execution Plans | I | I | I | I | A | C | I | R | I | I | I | I | I | I | I | C | I | I | I | I | I | I | I | |
| Equipment Procurement Strategy | I | I | I | I | A | C | I | C | | I | | I | I | I | R | C | I | I | I | I | I | I | I | |
| Develop Lifecycle Strategy | C | I | I | R | A | C | | R | | I | I | | I | I | I | R | I | I | I | I | I | I | I | |
| Information Management Strategy | A | I | I | I | C | C | I | C | | I | | I | I | R | I | C | I | | I | | C | C | | |
| Develop to Final Design | | | | | | | | | | | | | | | | | | | | | | | | |
| Local Authority Planning Approval | I | I | C | C | A | C | I | C | C | R | R | I | I | I | I | R | R | R | C | C | R | C | C | 10/10/2010 |
| Finalise Building Performance Objectives | | | | | | | | | | | | | | | | | | | | | | | | |
| Confirm Project Affordability | A | C | C | R | R | C | I | R | | C | | | I | R | R | R | C | C | C | C | C | C | C | |
| VE and Ongoing Cost Strategy | C | C | C | R | A | R | I | R | | | | | | | | R | | | | | | | | |
| Update risk register | | C | C | R | A | C | I | R | C | C | | | | | | R | | | | | | | | |
| Freeze Scheme | | | | | | | | | | | | | | | | | | | | | | | | |
| Complete Final Consultations | | | | | A | R | | C | | R | C | R | I | R | R | R | R | R | R | C | C | C | | |
| Freeze Brief | A | | | | R | R | | C | | C | C | C | C | C | C | I | I | I | I | I | I | I | | |
| Stakeholder sign-off | | | | | A | R | | R | | R | R | R | | R | R | R | R | I | R | I | C | I | | |
| Produce FBC Documentation | | | | | | | | | | | | | | | | | | | | | | | | |
| RDS and outline specifications | I | C | C | I | A | R | I | R | | R | I | R | I | R | R | R | R | | R | | R | C | | |
| PSCP PEP incl. Risk Register | I | C | C | R | C | C | I | C | I | | I | | | | | R | C | C | C | C | C | C | C | |
| Finalise Scope of Works | I | C | C | C | A | R | I | R | I | R | I | R | I | R | R | R | | | | | | | | |

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| | Develop Scheme Design (RIBA Stage E+) | I | C | C | C | A | R | I | R | I | C | C | C | I | C | C | R | R | R | R | R | R | R | R | |
| | Develop Cost Report to GMP | I | C | C | R | A | R | | R | | | | | | | | R | | | | | | | | |
| | Develop Design and Construction Programme | I | I | C | C | A | C | C | C | C | C | C | C | C | C | C | R | C | C | C | C | C | C | C | |
| | Liaise with Building Control | I | I | C | I | C | C | I | C | I | C | I | I | I | I | I | A | R | R | I | R | R | C | C | |
| | Obtain Planning Consent | I | I | C | I | C | C | I | C | I | C | C | I | I | I | I | A | R | R | I | R | C | C | C | |
| | Whole Life costing and VE studies | I | I | C | A | C | C | I | R | | C | | | I | C | C | R | R | R | C | R | R | C | C | |
| | Public information and consultation | A | I | I | I | R | R | I | C | I | I | C | I | I | I | I | R | I | I | I | I | I | I | I | |
| Submit final version for approval | | | | | | | | | | | | | | | | | | | | | | | | | |
| Approve FBC | | A | | | | | | | | | | | | | | | | | | | | | | | |
| Agreement to progress and resource to next stage | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Gateway 3 - Investment decision** | | | | | | | | | | | | | | | | | | | | | | | | | |
| | (may also be earlier in P21 depending stage | | | | | | | | | | | | | | | | | | | | | | | | |
| | PSCP appointed) | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Phase 4 Construction** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instruct move to Phase 4 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sign Appendix C to FOA | | | | | | | | | | | | | | | | | | | | | | | | | |
| Integrate Delivery Team | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Refresh Launch Workshop | | | | | | | | | | | | | | | | | | | | | | | | |
| | Risk Workshop (update register) | | | | | | | | | | | | | | | | | | | | | | | | |
| Assessment of procurement route | | | | | | | | | | | | | | | | | | | | | | | | | |
| Communication strategy | | | | | | | | | | | | | | | | | | | | | | | | | |
| Risk Management Approach | | | | | | | | | | | | | | | | | | | | | | | | | |
| Management Strategies | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Cost - report and review (ECC Option C) | | | | | | | | | | | | | | | | | | | | | | | | |
| | Communications (user groups etc.) | | | | | | | | | | | | | | | | | | | | | | | | |
| | Trust Workforce plan | | | | | | | | | | | | | | | | | | | | | | | | |
| | IT Strategy | | | | | | | | | | | | | | | | | | | | | | | | |
| | Orientation Plan | | | | | | | | | | | | | | | | | | | | | | | | |
| | Operational Policies | | | | | | | | | | | | | | | | | | | | | | | | |
| | ECC - change, proformas, reporting | | | | | | | | | | | | | | | | | | | | | | | | |
| | EW and CE Register | | | | | | | | | | | | | | | | | | | | | | | | |
| | Update Risk Register | | | | | | | | | | | | | | | | | | | | | | | | |
| Pre-construction Activities | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Implement PEP | | | | | | | | | | | | | | | | | | | | | | | | |
| | Establish approval procedures | | | | | | | | | | | | | | | | | | | | | | | | |
| | Establish delegated levels and authority | | | | | | | | | | | | | | | | | | | | | | | | |
| | Update H&S plan | | | | | | | | | | | | | | | | | | | | | | | | |
| Performance Management | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Ensure KPI reports to milestone | | | | | | | | | | | | | | | | | | | | | | | | |
| | Audit accuracy of figures | | | | | | | | | | | | | | | | | | | | | | | | |
| | IA Performance monitoring | | | | | | | | | | | | | | | | | | | | | | | | |
| Operational Issues | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Ensure ECC reporting requirements | | | | | | | | | | | | | | | | | | | | | | | | |
| | Acceptances | | | | | | | | | | | | | | | | | | | | | | | | |
| | Progress reports | | | | | | | | | | | | | | | | | | | | | | | | |
| | F10 and CDM compliance | | | | | | | | | | | | | | | | | | | | | | | | |
| Completion | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Review Quality Audits | | | | | | | | | | | | | | | | | | | | | | | | |
| | Manage Defects | | | | | | | | | | | | | | | | | | | | | | | | |
| | Manage Handover | | | | | | | | | | | | | | | | | | | | | | | | |
| | Agree commissioning programme | | | | | | | | | | | | | | | | | | | | | | | | |

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| | Notify clinical manager of occupation date | | | | | | | | | | | | | | | | | | | | | | | | |
| | Receive O&M manuals and H&S File | | | | | | | | | | | | | | | | | | | | | | | | |
| | Initial Pain/Gain forecast | | | | | | | | | | | | | | | | | | | | | | | | |
| Migration/Occupation | | | | | | | | | | | | | | | | | | | | | | | | | |
| | User Familiarisation | | | | | | | | | | | | | | | | | | | | | | | | |
| | Training | | | | | | | | | | | | | | | | | | | | | | | | |
| **Gateway 4 - Readiness for service** | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Operation** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Defects Management | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Agree priority and timescale | | | | | | | | | | | | | | | | | | | | | | | | |
| | Structure for communicating | | | | | | | | | | | | | | | | | | | | | | | | |
| | Contacts list | | | | | | | | | | | | | | | | | | | | | | | | |
| | Sign off procedure | | | | | | | | | | | | | | | | | | | | | | | | |
| | Feedback and Lessons learnt | | | | | | | | | | | | | | | | | | | | | | | | |
| Commercial Management | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Finalise value of works and changes | | | | | | | | | | | | | | | | | | | | | | | | |
| | Final Pain/Gain assessment | | | | | | | | | | | | | | | | | | | | | | | | |
| Operational Review | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Evaluate Whole Life Cycle Costs | | | | | | | | | | | | | | | | | | | | | | | | |
| | Benefits realisation | | | | | | | | | | | | | | | | | | | | | | | | |
| | Post Project review | | | | | | | | | | | | | | | | | | | | | | | | |
| | Operational efficiency | | | | | | | | | | | | | | | | | | | | | | | | |
| **Gateway 5 - Operations review and** | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Benefits realisation | | | | | | | | | | | | | | | | | | | | | | | | |
| Close project | | | | | | | | | | | | | | | | | | | | | | | | | |

SCOTTISH EXECUTIVE

Health Department
Directorate of Finance

Dear Colleague

**A POLICY ON DESIGN QUALITY FOR NHSSCOTLAND**

**Summary**

1. This letter provides colleagues with a statement of the Department's Policy on Design Quality for NHSScotland (Annex A). Associated with the policy is an Annex of policy guidance (Annex B) which should be reflected in the Design Action Plans and related operational policies of NHSScotland Bodies.

2. The policy requires that each NHSScotland Body appoints a Design Champion at Board level and a supporting Project Officer. Colleagues will already be aware of the requirement to appoint a Design Champion and supporting Project Officer through prior written notification from the SEHD Head of Property and Capital Planning which included a 'person specification' for the role.

**Background**

3. The attached policy statement reflects consultation with colleagues in the Scottish Executive, NHSScotland and Architecture and Design Scotland. It provides a concise definition of policy along with details of mandatory requirements which must be complied with by NHSScotland Bodies, although the Department recognises that these requirements may not be directly applicable to the day-to-day operations of those Special Health Boards which are not actively engaged in the procurement of new healthcare premises and refurbishments to existing healthcare premises.

23 October 2006

**Addresses**

For action
Chief Executives, NHS Boards.
Chief Executives, Special Health Boards.
Directors of Facilities, NHS Boards.
Directors of Estates, NHS Boards.

For information
Chief Executive, National Services Scotland.
Director, Health Facilities Scotland
Scottish Executive Architecture Policy Unit.
Chief Executive, Architecture and Design Scotland.
Chief Executive, Scottish Building Standards Agency.

**Enquiries to:**

Ian Grieve
Property & Capital Planning Division
Property Branch
St Andrew's House
EDINBURGH EH1 3DG

Tel: [redacted]
Fax: [redacted]

4. The fundamental principle opon which this new policy is founded is that all NHSScotland Bodies, as an integral part of the commitment to deliver the highest quality of environment for patient care, ensure that design quality is fully integrated into the healthcare building procurement process and is apportioned appropriate emphasis throughout all stages of this process.

5. Colleagues are advised that although the initial issue of this letter and attached policy statement will be in the traditional 'hard copy' format, the electronic version available from the Publications section of Scottish Health on the Web takes precedence [ www.show.scot.nhs.uk/ ]. This will ensure that colleagues have access to the embedded hyperlinks to online policies, guidance, reference and other material.

**Implementation**

6. The implementation of this policy by NHSScotland Bodies must be supportive of and consistent with all other Scottish Executive policies and associated guidance which impacts upon and, has relevance to, the procurement and management of NHSScotland healthcare facilities.

7. In order to assist the initial implementation of this policy, the Scottish Executive Health Department (SEHD) has entered into a three year Framework Agreement with Architecture and Design Scotland (A+DS), the Scottish Executive's champion for good architecture, design and planning in the built environment to deliver a broad range of services to support NHSScotland to facilitate the design of modern, patient focused health care facilities that create community responsive environments.

8. A+DS will work with SEHD to:

    - raise the level of ambition for good quality design;
    - provide dedicated, hands on assistance to projects in setting the platform for delivering design quality and securing design teams that deliver that ambition; and
    - provide advice on the design quality of proposed healthcare facilities.

9. In broad terms A+DS plans to work with SEHD over the three year period to meet the challenges established in national policy. It plans to use a team of built environment experts to deliver a range of programmes to satisfy Ministers' expectations in relation to healthcare and broader community objectives through:

    - "enabling" projects;
    - establishing and facilitating a Design Champions network amongst NHSScotland Health Boards; and
    - interacting and advising on the design merits of proposals undertaking the Gateway Review process and the Key Stage Review process.



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10. In order to enable A+DS to carry out its function, SEHD will:

    - ensure each NHSScotland Board appoints a Design Champion at Board level and supporting Project Officer;
    - refer suitable projects to both the Enabling and Design Assessment strands;
    - provide regular updates of relevant issued policy documents, events and other background information; and
    - arrange a formal review meeting between appropriate staff at SEHD and A+DS following the issue of each annual report and the final report.

11. Awareness and training will be required by NHSScotland on a number of issues in relation to the implementation of this Policy. This will be facilitated in the first instance through the Framework Agreement between SEHD and A+DS whereby appointed NHSScotland Design Champions will be provided with training and support appropriate to their role. It is envisaged that further support will be provided, as appropriate, by Health Facilities Scotland (HFS) through the provision of operational guidance and training via the HFS Continuous Professional Development programme.

**Action**

12. Adressees should ensure that a copy of this letter is cascaded to all appropriate staff withing their area of responsibility.

13. The new Policy on Design Quality for NHSScotland and associated mandatory requirements take immediate effect.

Yours sincerely

[redacted]

**ALEX SMITH**
**Interim Director of Finance**



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SCOTTISH EXECUTIVE

Health Department

# A Policy on Design Quality for NHSScotland

Scottish Executive Health Department
Directorate of Finance
Property and Capital Planning
Property Branch

2006

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SCOTTISH EXECUTIVE

Health Department

**ANNEX A**

# A POLICY ON DESIGN QUALITY FOR NHSSCOTLAND

## Purpose

The purpose of this document is to provide NHSScotland Bodies[1] with a clear statement of policy on design quality. It also provides guidance on how NHSScotland Bodies can ensure that design quality is embedded within the healthcare building procurement process.

## Context

In recent years the value of good design has been increasingly recognised and a wealth of evidence based findings has demonstrated that good design adds value, not only from an economic perspective but also in terms of a range of social and environmental benefits. This capacity to add value is particularly important for healthcare environments, where the physical and psychological well-being of patients, staff and visitors is of paramount consideration.

At a UK level, the Prime Minister established the 'Better Public Buildings' initiative in October 2000 to achieve a step change in the design quality of publicly procured buildings. Following this, in 2001, the Scottish Executive (SE) launched its 'Policy on Architecture for Scotland' which contained an objective "to promote a culture of quality in the procurement of publicly-funded buildings that embraces good design as a means of achieving value for money and sustainable development". Its policy on architecture promotes and encourages investment in well designed buildings in both the public and private sectors.

As one of the early steps in the implementation of its policy, the Executive reinforced the Prime Minister's initiative by taking forward design quality issues within the education sector. The present document now responds to the quality objectives of the Policy on Architecture for Scotland within guidance and initiatives particular to NHSScotland.

As stated in the foreword to the Scottish Executive document 'A Policy on Architecture for Scotland', "*buildings form a fundamental part of our physical environment and the quality of our buildings - of our architecture - has a vital role to play in bringing about the improvements we seek*". This is especially poignant in the context of healthcare building, where well-designed health buildings can help patients recover their spirits and their health and have a positive effect on staff performance and retention, as well as improving the efficiency of operational relationships and providing better value for money in the context of whole-life costs. The Scottish Executive therefore recognises the importance of good building design as the physical means of delivery for a range of wider policy objectives

The Scottish Executive's Architecture Policy Unit (APU), which was established to implement policy commitments, can offer advice on design and acts as the sponsor body for Architecture and Design Scotland, a Non Departmental Public Body established as the national champion for good architecture, design and planning in the built environment.

[1] NHSScotland Bodies in the context of this document means all Health Boards, Special Health Boards and the Common Services Agency performing functions on behalf of Scottish Ministers.

'Designing Places: A Policy Statement for Scotland', launched in 2001, is an Executive campaign to drive up the standard of design in Scotland's towns and cities and sets out the Scottish Executive's aspirations for design and the role of the planning system in delivering these. It aims to demystify urban design and to demonstrate how the value of design can contribute to the quality of all our lives.

'Designing Places' sits alongside the Policy on Architecture. They share an overall aim to improve the life of the people of Scotland through improving the quality of our built environment. Achieving this depends on recognising the value of good design at all scales of development. Individually, buildings accommodate our activities, but collectively they define and shape our towns and cities and have the potential irrevocably to alter the character of our rural areas. A drive for quality cannot, therefore, focus solely on individual buildings - but must be concerned with the way that buildings, new and old, work together, and create places which affect our quality of life.

Health buildings can often be the places in which we may feel at our most vulnerable, whether as a patient, relative or friend. The quality of the building environment that we experience can provide us with calming reassurance or, conversely, it can accentuate our feeling of stress and unease.

Many factors can contribute to engendering a sense of ease, for instance:- the degree of natural light, brightness and airiness, colour and texture, an easily understood layout with clearly defined focal points, uncluttered signage and a clear distinction between the realms of public and private space, maintaining patient dignity.

In many health buildings, external public spaces are vitally important in that they can also provide the opportunity for positive respite in periods of stress. Sensitive landscaping and well-defined public space in a healthcare environment can provide far more than simply an attractive setting. Through careful design social or intimate, tranquil spaces can be created, providing an environment where people might want to sit or meet, and which further contribute to the healing process.

The creation of a new or refurbished facility can also bring with it the opportunity to show a positive civic presence, and the development of a high quality public building can do much to help the regeneration of communities. It is thus also a matter of considerable importance that health buildings respond to the urban or rural contexts in which they sit. This includes considerations such as how they fit within historic contexts, how the approach and entrance act to welcome concerned families and friends, and how they contribute to the quality of their neighbourhoods, both in terms of the buildings themselves and the places they create around them.

Healthcare buildings play a significant part in the environment and, increasingly, patients are becoming "empowered" to demand better environments in which they receive healthcare. It is appropriate that we embrace such matters and introduce appropriate policies and initiatives in Scotland.

At the heart of this policy is the recognition that strong client commitment is required to deliver facilities that provide the high quality caring environments we desire. We are now looking to NHSScotland bodies to develop their individual visions for the kind of places in which patients and staff would wish care to be provided.

**The term 'good design' is not merely a question of style or taste but describes what arises from the intelligent and creative synthesis of many interrelated factors such as: strategic planning of healthcare provision; social and physical regeneration; the local urban (or rural) context and forms; links to infrastructure and transport; sustainability agendas; the building's sense of welcome; intelligibility of layout; security; unobtrusive supervision; ease of use and maintenance; efficiency; and, promotion of human dignity. It covers the way in which buildings sit within and, contribute to, their community as well as how they work and look. Successful healthcare design resolves a wide range of functional requirements efficiently whilst, at the same time, exploring the opportunities to provide an uplifting environment for patients, visitors and staff.**

Design should not be though of as an "add-on extra" in health buildings or, indeed any building. Irrespective of questions of quality, the process of design must in any case take place, as it is an inevitable activity arising from the decision to build. But good design need not cost more and the difference between achieving good or poor quality outcomes is more often the result of having the right knowledge or advice, understanding, care and commitment.

Many aspects of good design are not subjective. A design can be evaluated objectively through the use of appropriate tools such a Design Quality Indicators (DQIs) to assess whether the building will function efficiently and effectively; whether there is clear evidence of thoughtful, imaginative and even inspirational proposals that will not only work, but work better; whether the building integrates with its surroundings in an appropriate manner and creates a sense of place and; whether the materials, construction methods and the proposed layout will enhance long-term value for money.

The physical form of a development can enhance or detract from the qualities of a place and can support or undermine the intended uses. In every part of a city, town or village where there is scope for change there will be a wealth of opportunities for achieving good design. **In order to achieve value for money (VFM), good design has to combine fitness for purpose and flexibility with whole-life costs which is a fundamental requirement of public sector procurement policy.** By integrating a high standard of design quality early in the procurement and design process, cost savings associated with the whole-life revenue costs of a facility can be reduced for a comparatively small additional investment to the capital. In addition to long term operational savings, such well directed initial investment in a high quality healthcare environment helps boost staff morale and improves working conditions, recruitment and retention.

Design evaluation, in particular Post Project Evaluation, can contribute to the emerging field of "evidence-based design" which is proving a valuable tool in the design process towards both reducing costs and improving outcomes. Research has shown that evidence-based design methods, introduced early in the process of facility programming and design can improve the experience of patients who will be treated within the healthcare facility and assist in health recovery which results in improving medical outcomes, shorter bed stays, greater throughput and a reduction in patient and staff stress.

The Commission for Architecture and the Built Environment (CABE), through its work on healthcare buildings, has established key elements of good healthcare design which include the following:

**Good urban design** allowing the building to contribute positively to the urban environment and providing a clear, easy approach that is integrated with public transport.

**Good public open space** where pedestrians are prioritised over cars so that the building is not dominated by landscaping requirements. Well landscaped external space benefits staff,

patients and visitors, offering an alternative environment to rest and relax away from the stresses inherent in healthcare environments.

**A clear plan** with a natural progression from public to treatment rooms. Ideally visitors should be able to see their destination from their starting point.

**A single reception point** makes for a clear expression of the entrance on the outside, an early welcome once inside and assists in orientation when travelling around the building. Security and privacy issues can be resolved in the detail design of the reception area.

**Circulation and waiting areas** that are pleasant and calming places in their own right, designed with human dignity in mind. Where waiting and circulation are combined, this should be achieved to the benefit of each.

**Robust and attractive materials, finishes and furnishings** – structure and detail should all correspond to a clear approach to design, benefiting whole life costs by reduced maintenance and replacement.

**Generous amounts of natural light and ventilation** contributes to good, energy efficient environmental conditions throughout. In addition to providing a comfortable and Therapeutic environment, such provision improves the external feel of the building, provides views out and aids navigation within. The provision of views and positive distraction and the ability to control one's environment have been shown to be instrumental in patient recovery and in staff health and satisfaction.

**Capacity to adapt to future changes** is key to the long-term utility of the building and therefore its sustainability and VFM. Aspects such as sizing rooms generously and arranging them thoughtfully can allow flexibility. Viewing space as a resource, not a territory, helps patterns of use to evolve over time.

## The Way Forward

The recent Scottish Executive Health Department report "Building a Health Service: Fit for the Future" (the Kerr Report) is particularly apt in the context of design quality of healthcare building. The report recognises that the NHS in Scotland needs to change, not because it is in crisis but because Scotland's Healthcare needs are changing rapidly and we need to act now to ensure that we are ready to meet the future challenge. In looking ahead over the next 20 years the report identifies a number of key messages:

- that NHSScotland delivers sustainable and safe local services;
- that we redesign where possible to meet local needs but specialise where required having regard to clinical benefit and access;
- the NHS as a service to be delivered primarily in local communities rather than in hospitals;
- a focus on preventative anticipatory care rather than reactive management.

The report highlights that the new models of care being introduced will have an impact on the services that NHSScotland provides. With public expectations changing regardless of where care is delivered it is paramount that we deliver the highest quality environment for healthcare. Implementing the recommendations will go a long way to ensuring that buildings of a quality which the people of Scotland expect are delivered.

It is critical that design issues are addressed regardless of the procurement method used to deliver healthcare buildings and, that the outcomes specified for these buildings in terms of the care environment are reflected in their design. However, the implementation of design quality and the procurement route used have a particular relationship and therefore the procurement method used can have a significant bearing on the development of design quality during the process. Although it can be argued that good design is independent of cost, it's relationship with design management and procurement in practice needs careful examination. The recently published National Audit Office report "Improving Public Services Through Better Construction" (March 2005) supports this view and advocates that all key stakeholders should be involved and all proposals subjected to independent challenge before key design decisions are made and that design and decision-making be based on "whole-life value".

The concept of 'evidence-based design' has already been mentioned in the context of Post Project Evaluations. There has been a historical assumption that each healthcare building has to be unique in order to fulfil the vision and aspirations of the brief which can, unfortunately, result in the repetition of mistakes, albeit perhaps unintentionally. The starting point for any new healthcare building should, logically, be the successes of one or a number of existing buildings based on a careful analysis of what constitutes the 'good' and what constitutes the 'bad'.

Also of importance is the emerging field of 'supportive healthcare design'[A]. Traditionally, there has been an assumption that the main requirement placed upon a healthcare facility should be the mitigation of infection or the risk of exposure to disease. Additionally, through decades of advances in medical science and technology, many healthcare designers and technicians have been conditioned to create buildings that are successful delivery platforms for new technology. By concentrating on the need for functional efficiency and the pathogenic concept of disease and health, healthcare facilities have been procured which contain environments which can be considered stark, institutional, stressful to their occupants and thus detrimental to the quality of care they are intended to provide. In spite of evidence of the major stress caused by illness and the subsequent traumatic experience of hospitalisation, there has, historically, been comparatively little emphasis on the creation of surroundings which can calm patients, reinforce their ability to cope in such environments and generally address their social and psychological needs.

The process of 'supportive design' begins by eliminating the environmental characteristics which are known to contribute to stress or can have negative impacts on outcomes and, importantly, continues by emphasising the inclusion of characteristics in the healthcare environment which research has indicated have the ability to calm patients, reduce stress and strengthen their ability to cope and promote healthy, healing processes.

(Ref [A]: Ulrich R S, 2000 - 'Effects of Healthcare Environmental Design on Medical Outcomes'
Ulrich R S, 2000 - 'Evidence based environmental design for improving medical outcomes. Proceedings of the conference: *Healing By Design: Building for Healthcare in the 21st Century*', McGill University Health Centre, Montreal)

Due to the length of time that healthcare buildings may be in use there is potential to constrain changes in delivery practices. It is therefore vitally important that design processes are an integral part of a robust procurement mechanism in order to ensure that buildings are not only functional when constructed but are flexible and adaptable over their entire lifetime.

SEHD will continue to play its part in supporting and implementing wider Scottish Executive procurement strategies and policies by setting these within a healthcare-specific context.

## Policy Aims

- The purpose of this policy is to articulate the Scottish Executive Health Department's ambition for NHSScotland's estate and to embed the need for well designed healthcare environments as an integral part of service delivery. It also provides guiding principles which a NHSScotland Body's Design Action Plan should address (Annex B) and two further annexes providing reference to relevant Scottish Executive Health Department property-related policies and supporting guidance (Annex C) and, useful references and web links (Annex D).

- The Scottish Parliament has articulated the desire that Scotland becomes *"the best small country in the world"* and has further asserted that the quality of our built environment is a key factor in achieving this, not only to benefit the country's residents but, to influence the international perception of Scotland. The Scottish Executive Health Department believes that improving the quality of our caring environments is crucial to delivering the confident, compassionate Scotland that is aspired to.

- Therefore this policy statement requires that all NHSScotland Bodies, as an integral part of the commitment to deliver the highest quality of environment for patient care, ensure that design quality is fully integrated into the healthcare building procurement process and is apportioned appropriate emphasis throughout all stages of this process.

## Scope

This policy must be considered alongside other Departmental policies bearing upon property including those for fire safety, property transactions, construction procurement, property management and environmental management. Such policy statements are intended to inform the formulation and updating of operational policies and guidance. Such operational policies and property strategies are important corporate expressions of a NHSScotland Body's intensions and as such should be a manifestation of integrated service planning and the appropriate involvement of all relevant interests.

The policy must also be supportive of other relevant Health Department, Scottish Executive and Government policies and commitments.

## Policy Statements

| | |
|---|---|
| **Statement 1** | All NHSScotland Bodies, as clients, must commit to the integration of design quality in the procurement of healthcare building throughout all stages of the process, regardless of procurement route used. |
| **Statement 2** | All NHSScotland Bodies must have a policy on design quality – a Design Action Plan - consistent with and supportive of the Department's property-related policy and supporting guidance (listed at Annex C) and, with the policy guidance contained within Annex B of this document. |
| **Statement 3** | The SEHD must provide guidance on compliance with those aspects of statutory and mandatory requirements which are particular to the procurement, design and delivery of healthcare buildings and guidance on best practice. This will be effected through the publication of appropriate operational guidance by Health Facilities Scotland. |

## Mandatory Requirements

**1.** Each NHSScotland Board must have a clear, articulated policy on design quality – a Design Action Plan – consistent with the Department's policy.

**2.** Each NHSScotland Board must appoint a member of the NHS Board to act as Design Champion at a strategic level and, where not impractical, also a Senior Officer to act as supporting Design Champion at a technical level.

**3.** All NHSScotland Bodies engaged in the procurement of both new build and refurbishment of healthcare buildings must do so in compliance with EU, UK and Scottish Executive procurement policy and guidance.

**4.** All NHSScotland Bodies, as clients, must ensure the development of a clear project brief which should not only describe the physical requirements of the building but should also articulate the Board's vision and aspiration.

**5.** All NHSScotland Bodies engaged in the procurement of both new-build and refurbishment of healthcare buildings must use and properly utilise the English Department of Health's Activity DataBase (ADB) as an appropriate tool for briefing, design and commissioning. If deemed inappropriate for a particular project and an alternative tool or approach is used, the responsibility is placed upon the NHSScotland Body to demonstrate that the alternative is of equal quality and value in its application.

**6.** All NHSScotland Bodies must use Design Quality Indicator (DQI) tools as appropriate to manage their design requirements through the life of a project. The English Department of Health's Achieving Excellence in Design Evaluation Toolkit (AEDET) and associated supplementary tools such as ASPECT are recognised as the exemplars towards achieving the appropriate level of project design management.

## Monitoring

**7.** All NHSScotland Bodies engaged in the procurement of both new-build and refurbishment of healthcare buildings must conduct thorough and, independent, Post Project Evaluations and Post-Occupancy Evaluations and make available to SEHD any resulting evaluation data which will be used in the formulation of generic reports to inform future policy and disseminate nationally the lessons learned.

## Training

**8.** Awareness and training will be required by NHSScotland on a number of issues in relation to the implementation of this Policy. This will be facilitated in the first instance through the Framework Agreement between SEHD and Architecture and Design Scotland whereby appointed NHSScotland Design Champions will be provided with training and support appropriate to their role and, additionally, through ad-hoc support as deemed appropriate from Health Facilities Scotland.

## Policy Guidance

A NHSScotland Body's **Design Action Plan** should be consistent with and supportive of the guidance contained within this Annex and the policy and guidance documents listed at Annex C.

[The following guidance aligns in part with the Scottish Executive "*Construction Procurement Manual: Section 6 – Design quality in building procurement*" but with appropriate additions and amendments in order to apply to the healthcare context.]

## Contents:

**Design quality in building procurement**

**Role of the client**
**Project brief**
- Activity DataBase (ADB)

**The Client Design Adviser**
**Design Quality Group**
**The Design Team**
- Design Team selection
- Quality Based Designer Selection (QBS)
- Design competitions
- Procedure for appointing the Design Team
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**Design quality**
- Evaluating design quality
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- Role of Architecture and Design Scotland (A+DS)
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  - Design Assessment
- Role of Health Facilities Scotland
- Maintaining design quality on site

**Public space**
**Use of the arts in healthcare**

## Design quality in building procurement

### Key issues

- Good design is not an alternative to value for money (VFM), but is integral to its achievement. A good building project must also contribute to the environment in which it is located, deliver a wider range of social and economic benefits and be adaptable to accommodate the needs of future users. An enhanced built environment which incorporates principles of good design can improve the quality of life of those who use and work in public buildings. Throughout the life of a building, design excellence can improve the standard of public service delivery, make it more efficient and contribute to staff recruitment and retention. Good design can ensure that capital costs are competitive and that savings can be achieved on running costs through reduced maintenance, energy and operating costs without compromising the attractiveness and quality of the building. **Therefore investing in good design can make the most beneficial and effective use of resources, can add value and represents a sound investment in the future. High quality building design is therefore a key mechanism in providing VFM in the provision of healthcare services.**

- **Good design is not merely a question of visual style or personal perception but arises from the careful synthesis of many interrelated factors including architectural vision, functionality and efficiency, structural integrity and build quality, accessibility, security, sustainability, lifetime costing, flexibility in use and a sense of space in the community.**

- Clients must be clear about the level of funds available for a project from the outset and ensure that their aspirations for quality are underpinned by realistic and affordable assumptions.

- Clients must carefully assess and define their priorities before appointing design consultants.

- The process must allow for effective consultation with all stakeholders to establish a clear, well-defined brief.

- Sufficient time and resources should be allocated towards establishing the client's design quality aspirations.

- The Client's Design Advisers must be retained throughout the construction process in order to monitor the quality of design and finishes.

- Post Project Evaluations of building programmes are mandatory for major projects and any lessons learned must be shared with the Scottish Executive and other NHSScotland bodies.

- Quality Based Selection (QBS) is a structured procedure for selecting a design team and professional advisers. Design competitions are a means to primarily select specific design ideas or outline design ideas for a project, rather than the design team personnel.

- All public sector appointments, irrespective of the client's preferred nature of competition or reference to any other guidance on design competitions, must be consistent with EU procurement rules in terms of process and outcome. Public sector clients must ensure that design team appointments follow the procedures described in *Section 3 Annex A* of the works procurement guidance part of the Construction Procurement Manual. Detailed

guidance on the appointment of consultants, conditions of contract and contract guidance in a NHSScotland context is contained within 'PROCODE: Property Procurement Guidance for NHSScotland', published by Health Facilities Scotland. Quality aspects cannot be considered in isolation but must be assessed as part of the VFM evaluation which also takes account of fee proposals.

- The role of an informed client is vital in ensuring the successful delivery of the project within the agreed timescale and budget and to the required standards and requirements of all users.

## Achieving good design

From the outset, clients must be clear about the level of funds available for a project and ensure that their aspirations for quality are underpinned by realistic and affordable assumptions through establishing the right budget. These quality matters and functional requirements must then be set out in a clear and thorough project brief. In order to monitor and control the procurement, design and construction processes, procedures and responsibilities should be clearly defined (and assigned). Ideally, designers should engage in challenging and constructive dialogue with the client, building users and those involved in supplying and manufacturing materials, goods and services. All concerned should work to a realistic and robust timetable, which gives the design team enough time to develop and achieve a good solution.

An informed, demanding and committed client is vital in ensuring that aspirations for quality are maintained throughout the procurement, design and construction processes.

By nature of their complexity, healthcare buildings can be expensive to manage and maintain due the imposition of build cost constraints during the procurement process in order to adhere to a short-term financial hurdle. **It is therefore imperative that the process recognises the need to address the whole-life cycle of the building and the integral part that good design can play in mitigating potential future financial penalties imposed by the adoption of such a short-term vision. Whole-life costing must be the standard for investment decisions. Those involved in the making of such decisions will be ultimately judged on the lifetime VFM of their decisions rather than whether they managed to get a project past the initial financial hurdle.**

Healthcare facilities and the associated equipment used therein must be designed to support all the people who are likely to use them in order to operate effectively. It is therefore vital that all potential users of a proposed facility – staff, public and patients – are involved early in the design process and throughout its progress. Additionally, stakeholders such as regulators, professional bodies, community bodies, etc, should also be engaged throughout the process as this has the potential to provide a valuable source regarding the projected use of the facility, the processes which will be undertaken therein and how the facility's users will work or interact with it. Early user involvement in the design process can help ensure that a planned facility will support the people who are to use it.

The standardisation of systems and processes to be carried out within a proposed facility, layouts, room orientation, human interfaces, wayfinding and even storage can provide many benefits for patients, staff and visitors. Standardisation can help reduce mental workload and thus reduce errors, can make errors and departures from normal working easier to detect and can allow the transfer of skills and staff between departments with reduced training needs. Thus standardisation in conjunction with a wider engagement with users and stakeholders can also enhance safety.

**The Scottish Executive Health Department requires that NHS Boards appoint Design Champions at Board and Senior Officer level to consolidate a commitment to the championing of good design.**

## Fire safety

Fire safety legislation and standards generally state that all people should be evacuated from a building in the event of fire. In terms of healthcare premises, this is not the case due to certain circumstances. Fire in a hospital or other healthcare building can be especially serious because of the difficulties and dangers associated with the emergency evacuation of patients, many of whom will be highly dependent. Therefore in such buildings the concept of progressive horizontal evacuation is the norm and is cited as so within the Technical Handbooks to the Building (Scotland) Regulations 2004. However, because of other special requirements particular to fire safety in healthcare buildings, guidance and recommendations contained in NHSScotland Fire Safety Management guidance, including NHSScotland Firecode, which is additional to the mandatory requirements set out in the Technical Handbooks to the Building (Scotland) Regulations 2004, must be adhered to. This additional guidance is ratified by the Scottish Executive Health Department's Fire Safety Policy. The requirements of NHSScotland Firecode must be considered throughout the design process in addition to the requirements of the Building (Scotland) Regulations 2004. NHSScotland Firecode is published by Health facilities Scotland.

## Designing for equality

NHSScotland, as a provider of services, is subject to equality legislation which requires the provision of services which are accessible to everyone. In a healthcare environment it is important to recognise the complexity and the number of difficulties with which patients, staff and visitors may have to cope on a day-today basis. Sensory impairments, perceptual problems, reduced mobility, chronic pain, communication barriers, are but a few. Informed planning and design plays an important role in enabling people of all abilities access to services and facilities. It is therefore essential that the concept of "access and egress for all" is incorporated early in the design process and throughout its progress and that best practice guidelines are followed. By considering equality issues early in the design process, costs associated with addressing equality issues can be minimised which would inevitably prove more onerous if addressed retrospectively.

Egress for all in the case of an emergency must also be considered during the design process. Everyone rightly expects that if they are in a public building when an emergency occurs they should be subject to evacuation procedures which come into force to ensure their safety. However, in healthcare buildings there may be many persons who, by nature of their presence there or otherwise, may be particularly vulnerable. In particular, in larger healthcare buildings such as hospitals it will not be possible to ascertain the number of people who may have an impairment, let alone the type of impairment or, the number of people who may have cognitive or communication or language difficulties. Addressing the needs of all in the context of emergency egress early and throughout the design process will have significant benefit towards the procurement of a facility which ensures the safety of patients, staff and the general public.

## Evaluating good design

Design evaluation can be structured around a number of key design issues. To support the continual improvement of the construction and procurement process, Post Project Evaluations (PPEs) of building programmes are mandatory for major projects with a cost in excess of the delegated limits and are an integral requirement of the Scottish Capital Investment Manual (currently under review). However, it is recognised that all projects would

benefit from such evaluation and any lessons learned should be shared with the Scottish Executive and other NHSScotland bodies in order to inform best practice and future policies. Independent PPEs should be carried out before the break up of the design team to review the success of the project against its original objectives, its performance in terms of time, cost and quality outcomes and whether it has delivered value for money.

Guidance on Post Project Evaluations can be found within the Scottish Capital Investment Manual.

Post-Occupancy Evaluations (POEs) also have a significant role. The key advantage of POEs is the opportunity to achieve improvements in the ways future buildings will support operational objectives. Participants often identify areas where design improvements could be made and ways in which buildings and equipment could be used more cost effectively. These may only be minor, but they could produce significant benefits to future designs. The process of evaluation can provide important feedback on whether resources are being targeted at the most important areas. This can also enable poorly functioning or seldom used features to be eliminated from future designs and the repetition of mistakes to be avoided.

The nature of PPE and POE reports must be set out and agreed at the start, and project sponsors must ensure that provision is made for the independent preparation of both when setting budgets and timetables.

PPEs and POEs can be valuable in the formulation of “evidence based design” methodology. As has been stated in the preambles to this policy document, the field of “evidence-based design” is proving a valuable tool in the design process towards both reducing costs and improving outcomes. Research has shown that evidence-based supportive design methods, introduced early in the process of facility programming and design can have significant impact on the design of physical environments which can affect patient medical outcomes and care quality. An important impetus for the growing international awareness of healthcare facility design has been mounting scientific evidence that certain environmental design strategies can promote improved outcomes whereas other approaches can worsen patient health.

## The business case

The business case process must include statements of expectation for design quality. The preparation of the Outline Business Case should be the starting point for embedding design quality issues into the procurement process and, ideally this should be initiated during Phase II of the Business Case process at the point from which service objectives are established, as defined within the SEHD Scottish Capital Investment Manual (currently under review). Discussions with professional advisers at the earliest stage can assist in determining and defining design priorities and setting project objectives. Consideration of the design issues must continue throughout the entire process.

For projects which are to be provided under the Private Finance Initiative (PFI) the guidance contained within the Department of Health publication ‘Design Development Protocol for PFI Schemes: Revision 1’ (August 2004) should be followed, in so far as it is applicable in Scotland, for the preparation of Business Cases.

## Role of the Client

The key role of the client is to develop a clear, well defined brief. At the beginning of the project, the client will need to establish the nature and scale of what is required. Clients should establish the views and aspirations of all stakeholders, and their aims will become the

reference point throughout the design and construction stages and can be used to test the overall success of the project over the long term. As with any building project, the initial stages are vital and, a period when the most value can be added. Providing sufficient time and resources for strategic thinking will produce dividends in the long run. An informed and motivated client is critical to the success of a project.

As part of their responsibilities, the client must:

- fully develop a client strategy which has identified the need for the building whilst setting and securing a budget for the project. Understand that the budget cannot be finally established until the brief is settled;
- set a realistic and achievable timetable allowing sufficient time for consultation, brief development and for design;
- involve their Design Champion throughout the briefing and project delivery and listen to their comments;
- allocate sufficient time and resources to establish the client's design quality aspirations and set out clear benchmarks which the client must reinforce through all stages of the process;
- consider the skills and experience required of individual client team members, assess in-house skills and, where necessary, engage external consultants;
- appoint a Client Design Adviser to aid in the preparation of the brief and the assessment of the schemes that come forward through any competitive design process;
- consult with stakeholders to establish a clear, well-defined brief;
- be informed and demanding about operational requirements and quality objectives to get the best possible outcome from the procurement process;
- articulate the Board's requirements not only through the use of DQIs but in a clearly expressed brief that establishes and communicates their vision for the development;
- show commitment to achieving a well-designed and constructed project by giving design quality a high percentage in the assessment of bids and publishing that ratio. Make sure that bidders understand that poor or mediocre developments are not acceptable;
- establish clear and effective routes for communication between the Client Team and the bidding Design Teams during the bidding process so that the Board's needs and aspirations can be more fully discussed and incorporated into the designs that are brought forward. Establish a Design Quality Group to work with the bidders throughout the ITN process, commenting on and directing the solutions that are brought forward;
- choose a Delivery/Design Team which is committed to achieving the best quality possible within the agreed budget and timetable; allow sufficient fee budgets for the work that the designers must do;
- not allow design time to be squeezed in order to recover time lost in the programme for other reasons – good design takes time;

- carry out Post project Evaluations (PPEs) and Post Occupancy Evaluations (POEs) and ensure that the reports from these are available to SEHD for formulation of generic reports which can properly feed back into future procurement processes.

## Project Brief

A vital factor in achieving high quality design is that clients have a firm and well developed view of what they want, before appointing design consultants, and that this is clearly stated in project briefs. A well-developed brief, with common consensus on operational and quality priorities, is essential for the provision of better design. A rigorous approach to this stage of work will significantly improve the client's capacity to deliver a quality project.

On the other hand, proceeding with sketchy and under-investigated assumptions can be detrimental to the outcome of the project. Statements that set out the client's aspirations on design in terms of matters such as character and durability should be incorporated into briefs.

Detailed guidance on the development of the Project Brief is available to NHSScotland Bodies from within PROCODE: Property Procurement Guidance for NHSScotland, published by Health Facilities Scotland.

Of particular importance in the context of healthcare buildings is the need for the Project Brief to incorporate policy, guidance and best practice in relation to reducing Healthcare Associated Infections (HAI). Guidance to ensure that prevention and control of infection issues are identified, analysed and planned for at the earliest stage of the provision of new or refurbished healthcare facilities Is contained within Scottish Health Facilities Note 30 (SHFN 30): 'Infection Control in the Built Environment: Design and Planning', published by Health Facilities Scotland. Additionally, Health facilities Scotland has developed a system which aims to assess and manage the risk of infection in the built healthcare environment called HAI-SCRIBE, an acronym for Healthcare Associated Infection System for Controlling Risk in the Built Environment. HAI-SCRIBE has been designed as an effective tool for the identification and assessment of potential hazards in the built environment and the management of these risks. The tool should be applied from the design and planning stages of a project through to the occupation and operation of the facility.

The project brief should also contain statements on the client's desired approach to sustainability. Integral to the design and procurement process, a commitment to sustainable design can bring real benefits in terms of reduced running costs and quality of environment for users. Further guidance on achieving sustainability in construction procurement is set out in the SEHD Environmental Management Policy for NHSScotland and in Section 7 of the Scottish Executive Construction Procurement Manual.

To assist NHSScotland Bodies in delivering sustainable solutions and embedding energy efficiency into healthcare building projects, Health Facilities Scotland has developed an exemplar Environmental Management System, GREENCODE, through which NHSScotland Bodies can continually aim to improve the environmental performance of their property and, exemplar energy efficiency guidance, En$CO_2$de, which aims to ensure that everyone involved in procuring, managing and using healthcare buildings and equipment thinks about the implications of energy use.

## Activity DataBase (ADB)

Activity DataBase (ADB) is the briefing, design & commissioning tool for both new-build and refurbishment of healthcare buildings. It is a briefing and design package with an integrated

textual and graphical database, an interface with AutoCAD and an extensive graphical library - the complete tool for briefing and design of the healthcare environment.

ADB is produced by the Department of Health in England and is endorsed for use in Scotland by the Scottish Executive Health Department as the preferred briefing and design system for NHSScotland. It has been developed to assist in the construction, briefing development, design and alteration of healthcare facilities.

In 2005, the Scottish Executive Health Department, in association with the NHSScotland Property and Environment Forum (now Health Facilities Scotland) launched an initiative to support NHS Boards in the implementation of ADB throughout NHSScotland by way of a national agreement in which SEHD would fund the first year's licence subscription to ADB and Health Facilities Scotland would provide ongoing training and user-network support. This is now in place and NHS Boards, having recognised the merits and cost-effectiveness of the system, are expected to continue to subscribe annually on their own behalf.

Spaces designed using ADB data automatically comply with English planning guidance (such as Health Building Notes (HBNs) and Health Technical memoranda (HTMs) as ADB forms an integral part of the English guidance publication process. Whilst Scottish users can create their own project-specific briefs and designs using ADB's extensive library of integrated graphics and text which includes room data sheets, room layouts and departmental room schedules, extreme care should be taken to ensure that such data generated by the package are consistent and compliant with Scottish-specific guidance such as Scottish Health Planning Notes, Scottish Hospital Planning Notes (SHPNs) and Scottish Health Technical Memoranda (SHTMs) as published by Health Facilities Scotland.

## The Client Design Adviser

The first few decisions at the start of a project can have a very significant impact on the quality of the design. The challenge is to break the mould of 'fixed thinking' which too often leads to projects which are not the best solution possible. By employing a Client Design Adviser (CDA) early in a project, clients can become empowered to question fundamental issues. The interface between the project team and the users can be effectively smoothed by the CDA – healthcare officials are in the main not trained to read design plans which often results in buildings being 'signed off' which fail to reach their potential. The appointment of a CDA is, naturally, an additional cost but good preparation is vital to the creation of a good project.

The CDA is appointed by the Client as a consultant to the Client Team and operates in the sole interest of the client to achieve best value outcomes through design. However, healthcare buildings often constitute complex engineering systems, the design and maintenance of which must be addressed at the design stage. Also, many of the key issues surrounding healthcare building design are irrevocably connected with sustainability. It is vitally important, therefore, that the CDA is capable of understanding the range of issues and has the ability to provide the necessary breadth of input.

The CDA acts from the inception of a project through to its completion, performing a range of tasks to help ensure that the healthcare buildings delivered are of the highest quality including:

- contributing to the understanding and knowledge of design;
- reviewing user needs and assisting in the preparation of the outline brief;
- drafting documentation;

- judging the quality of ideas and suggestions;
- suggesting and evaluating delivery team members;
- asking searching questions of all those involved in supply; and
- facilitating consultation with stakeholders.

## Design Quality Group

The Client needs to ensure that all schemes designed in the competitive process up to Invitation To Negotiate are acceptable. In order to ensure this, it is advisable to set up a Design Quality Group to review the designs alongside the user consultation process. The group should be kept small and will normally be made up of the Project Director, Building Project Director, Client Design Adviser and some input from the A+DS Enabler, if appointed.

A typical format for a Design Quality Group review would be:

- bidders submit designs beforehand and Group members review them privately;
- the Design Quality Group meet to discuss the designs and formulate any questions to clarify, in order;
- the Group meet with the bidders and hold a brief Q & A session;
- Group members then collate and agree on comments which are subsequently fed back to bidders, normally on the same day.

This entire process can be carried out in a matter of a couple of hours per bidder, and ideally would be done at 3 points during the ITN process. The three meetings would follow a similar format, but have slightly different objectives:

- the first is arguably the most important, being carried out before the design becomes fixed in peoples' minds;
- the second is useful to see how the bidders have listened to and, taken account of, the group's comments; giving an indication of their partnering abilities;
- the third meeting, just before the designs are fixed, is a good time to test the bidder's grasp of costing issues and whether there is duplication or superfluous space in the design.

It is important that bidders are aware beforehand that it is the fundamental issues which will be considered – they shouldn't appear at review meetings with 'completed' designs! Bidders should view the review as an opportunity to learn about the client's reaction to their proposals rather than using the time to justify their design as it stands.

## The Design Team

### Design Team selection

There are several methods of selecting the appropriate design team for a project, including Quality Based Designer Selection (QBS) which is a structured procedure for selecting a

design team, and design competitions, which primarily select specific design ideas or outline designs for a project, rather than the design team personnel.

The Scottish Executive's Construction Works Procurement Guidance: Section 3 – Procurement Strategies and the Appointment of Consultants and Contractors provides information on some of the different procurement strategies available and the consultancy roles and professional advice that may be required at the various projects stages. Further advice is contained in the Guide to the Appointment of Consultants and Contractors published by the Office of Government Commerce.

**Detailed guidance on the appointment of consultants, conditions of contract and contract guidance in a NHSScotland context is contained within PROCODE: Property Procurement Guidance for NHSScotland, published by Health Facilities Scotland.**

Regardless of the procurement strategy adopted, the appointment of a design team, consultants, professional advisers, etc, should be based upon the principles adhered to in Quality Based Selection methodology, outlined below. The Royal Institute of British Architects (RIBA), together with the Construction Industry Council, has published a booklet of Guidance for Clients to Quality Based Selection.

## Quality Based Designer Selection (QBS)

QBS looks for an appropriate balance of design skills, experience, innovation, and an ability to perform on schedule to the required standards and within budget. A client, or client committee, selects a team based upon a weighted scoring of a list of relevant factors, including technical capacity, resources, previous experience of similar projects, deliverability of the design and partnering arrangements, aimed at determining which design team is most able to handle the project successfully.

Throughout a building project, designs will be developed through constant dialogue with the design team, so it's essential that a key selection consideration is inter-personal skills; the client must feel that it has the ability to work with the designers.

It is essential to know that a design team's claimed expertise is actually currently available. The question of whether a design team has completed major quality projects within the past five years may give a more fair comparison between long established and new design teams. It is important to ensure that the principal designer responsible for successful past projects is present for the interview, and such individuals should be named in the contract if that design team is successful.

## Design competitions

A competition to select an outline design, rather than the design team members, requires the client to have a well developed brief for the project. Design competitions may be appropriate where there is either a unique problem that will benefit from a wide range of design approaches being explored (along with likely considerable public interest - which may be the case on a major new public building) or where the competition promoter wishes to encourage the development of new talent.

## Procedure for appointing the Design Team

All public sector appointments, irrespective of the client's preferred nature of competition or reference to any other guidance on design competitions, must be consistent with EU procurement rules in terms of process and outcome.

The appointment or competition must therefore:

- strike the correct balance between quality and price to achieve whole-life VFM;
- evaluate the quality and price aspects against clear, unambiguous and pre-determined criteria;
- assess the technical and financial capacity of the design team (including design partnership arrangements) to deliver the project on time and within budget, as well as to the required standards of quality; and
- maintain a full and transparent record of all aspects of the competitive process from start to conclusion, including the evaluation of the pre-qualification questionnaires as well as the selection and award stages.

NHSScotland Bodies must follow the guidance on the appointment of consultants contained within Section 2 of PROCODE: Property Procurement Guidance for NHSScotland. Also, as Public Sector clients, NHS Bodies must ensure that design team appointments follow the procedures described in *Section 3 Annex A* of the works procurement guidance part of the Scottish Executive Construction Procurement Manual which sets out appropriate criteria to use at both the selection (short listing) and award (bidding) stages of the appointment process, as well as indicative quality: price evaluation ratios for different types of project.

## Design Team selection criteria

Selection criteria should include design ability, aspiration, financial status, insurance provisions and technical capacity; the last of these enables consideration to be given to resources, technical suitability and past performance. This stage also aids production of an objective and transparent short list of the most suitable organisations, from all those that expressed interest in providing design services.

## Selection criteria at the bidding stage

The award criteria enables a further qualitative assessment to be made of the specific proposals for the project - not just technical merit of the design proposals but also other aspects of successful delivery such as proposed team-working, management arrangements, and project team organisation.

Where design partnerships are proposed - perhaps to combine the innovative skills of a new or small design practice with the experience and resources of a longer-established designer - the award criteria enables the client to assess the ability of both parties to fulfil their responsibilities and to evaluate the compatibility of working cultures and practices. Visits to the design offices of all candidates, including those forming partnerships, should follow a consistent approach and involve the same personnel.

NHSScotland Bodies, as clients, should consider the benefits to be accrued from requesting an Interim Bid Submission from bidders, particularly in a PPP or joint venture (such as “hub”) initiative context. This should be based upon clearly specified requirements within the Invitation To Negotiate (ITN) documentation and should be undertaken at an approximate mid-point stage through the period from release of OJEU to the return of ITN documentation with clear expectations on outputs from bidders that are measured but, not too cumbersome, perhaps structured by means of the use of the AEDET Evolution design evaluation tool.

### Relation of selection criteria to budget considerations

The qualitative criteria adopted at the selection and award stages should be appropriate for the individual project and weighted to suit the circumstances. It is important that these aspects aren't considered in isolation but should be assessed as part of the VFM evaluation which takes account of fee proposals. Section 3 Annex B of the Scottish Executive Construction Procurement Manual describes other aspects of appointing consultants, including the various ways of paying for professional services. In circumstances where *ad valorem* (usually percentage) fee structures are appropriate, consideration must always be given to the application of an abatement or capping mechanism in order to contain fee costs at a fair and appropriate level.

Criteria used during selection and award stages must be applied consistently by all of those involved in that stage of the procurement procedure. In other words, once selection and award criteria are established, individual members of a sift or tender evaluation panel must not apply different criteria. Furthermore, once selection criteria are established, they should be made available to candidates. Award criteria must be set out in either the OJEU contract notice or the contract documents.

## Design Quality

### Evaluating design quality

#### General

There are, inevitably, some aspects of what constitutes 'good design' that can be subjective, but these are primarily issues of style. However, many other design issues can be assessed objectively - whether a building will function efficiently and effectively; whether there is clear evidence of thoughtful, imaginative and even inspirational proposals that will not only work, but work better; whether it responds positively to its surroundings; whether it provides well-defined and meaningful public spaces for patients and the community; and whether the materials, construction methods and the proposed layout will enhance long-term value for money. The Scottish Executive Construction Procurement Manual: Section 6 – Design quality in building procurement lists a number of key issues to be considered in evaluating a design.

General guidance on achieving value for money (VFM) in works procurement, based on seeking to achieve an optimum combination of whole life cost and quality, is set out in Section 2 of the Scottish Executive Construction Procurement Manual. Evaluating and achieving consensus on quality can be facilitated through the use of formal techniques and there are a number of tools which can help. The Construction Industry Council (CIC), for example, has developed its Design Quality Indicator (DQI) to evaluate the design quality of buildings throughout the development and life cycle of a project.

#### Achieving Excellence Design Evaluation Toolkit (AEDET)

However, healthcare building design frequently involves complex concepts which are more difficult to measure and evaluate. In order to address these specifics in a DQI context the Department of Health (England) Estates and Facilities Directorate has developed the **Achieving Excellence Design Evaluation Toolkit (AEDET)**, the latest version of which is AEDET Evolution and is a tool specifically directed towards achieving excellence in design rather than ensuring compliance with legislation, regulation and guidance. High scores in AEDET do not therefore necessarily guarantee compliance with statute.

The AEDET Evolution toolkit assists NHS Bodies in managing their design requirements from initial proposals through to post-project evaluation. It is a benchmarking tool and forms part of the guidance for PFI, joint ventures including 'hub' and, conventionally funded schemes. AEDET Evolution contains evaluation criteria which ensure that design takes place within a common, industry wide framework. The toolkit enables the user to evaluate a healthcare building design in a non-technical way that covers the three key areas of **impact**, **build quality** and **functionality**.

AEDET Evolution uses ten key criteria that have evolved from sources including the Commission for Architecture and the Built Environment (CABE) and the Construction Industry Council (CIC) to establish an industry-wide framework for assessing design. The ten key criteria are:

**Uses**
Service philosophy, functional requirements and relationships, workflow, logistics, layout, human dignity, flexibility, adaptability and security.

**Access**
Vehicles, parking, pedestrians, disabled people, wayfinding, fire and security.

**Spaces**
Space standards, guidance and efficient floor layouts.

**Character and innovation**
Excellence, vision, stimulation, innovation, quality and value.

**Citizen satisfaction**
External materials, colour, texture, composition, scale, proportion, harmony and, aesthetic qualities.

**Internal environment**
Patient environment, light, views, social spaces, internal layout and wayfinding.

**Urban and social integration**
Sense of place, siting, neighbourliness, town planning, community integration and landscaping.

**Performance**
Daylight, heating, ventilation, air conditioning, acoustics, passive thermal comfort.

**Engineering**
Emergency systems, fire safety, engineering standardisation and prefabrication.

**Construction**
Maintenance, robustness, integration, standardisation, prefabrication, health and safety.

## Using AEDET Evolution

AEDET Evolution is a tool for evaluating the quality of design in healthcare buildings. It delivers a profile that indicates the strengths and weaknesses of a design or an existing building. It is not meant to produce a simplistic single overall score. Because of the nature of design, which inevitably involves trade-offs, it may not be possible to produce a building which would have the maximum score for all the sections. Indeed it may quite often be the case that a high score for one statement reflects a design which inevitably may be scored

low on another statement. A single overall score would thus be misleading and uninformative.

AEDET Evolution can either be used by individuals or in workshops by groups. In the latter case it is probably desirable that an experienced user of AEDET Evolution should facilitate the group to avoid excessively lengthy debate. AEDET Evolution can be a helpful tool in enabling a group to come to a common understanding with the help of a facilitator who can moderate group discussions.

AEDET Evolution can be used at different 'scales' in evaluating the design of a healthcare building, e.g. at a building scale, a department scale or a complete site scale. The level of detailed information available may dictate the scale of the evaluation.

AEDET Evolution is designed to be used by those involved in the commissioning, production and use of healthcare buildings. In particular public and private sector commissioning clients, developers, design teams, project managers, estates/facilities managers and design champions may find AEDET Evolution a helpful and useful tool. User clients such as patient representatives and members of the general public should also be able to use AEDET albeit within a workshop environment alongside other more experienced professionals.

## When to use AEDET Evolution

AEDET Evolution can be used to evaluate existing buildings in order to compare them or understand their strengths and weaknesses.

AEDET Evolution can be used on the plans for new buildings in order to evaluate and compare designs.

AEDET Evolution can be used on "imaginary" buildings in order to set standards for preparation of a brief.

AEDET can be used at various stages during the design of healthcare buildings – as the level of detail of the information available increases it should be possible to respond to more of the statements in the tool. AEDET Evolution can also be used in the preparation of Interim Bid Submissions (see " Selection criteria at the bidding stage" above).

## A Staff and Patient Environment Calibration Tool (ASPECT)

To complement AEDET Evolution, the Department of Health (England) Estates and Facilities Directorate has developed the ASPECT toolkit. ASPECT stands for A Staff and Patient Environment Calibration Tool and is based on a database of over 600 pieces of research. That research deals with the way the healthcare environment can impact on the levels of satisfaction shown by staff and patients and on the health outcomes of patients and the performance of staff.

This research and the ASPECT toolkit itself are set out under 8 headings. ASPECT can be used as a stand alone tool, or it can be used to support AEDET Evolution to provide a more comprehensive evaluation of the design of healthcare environments.

When used to support AEDET Evolution it enables the user to score the Staff and Patient Environment Heading of AEDET Evolution in a more detailed, accurate way.

The toolkit has 3 layers which allow users to create a design evaluation profile:

- the SCORING layer on which you score;

- the GUIDANCE layer that gives more detailed help;
- the EVIDENCE layer that points to available research evidence.

## Role of Architecture and Design Scotland (A+DS)

Architecture and Design Scotland has been established by Scottish Ministers as the National Champion for Good Architecture, Design and Planning in the built environment. Its aim is to operate within the Executive's policy framework on architecture and design, as well as in partnership with a range of bodies in the private and public sector to help turn the aspirations of policy into reality.

The aim is to raise the quality of new development, so that high standards of layout and design are the rule, not the exception. Overall, the development of well designed and attractive cities, towns and villages will support Ministers' determination to make Scotland a better place to live, work and visit.

A+DS has taken over the independent Design Review and Advisory roles of the Royal Fine Art Commission for Scotland and has a wider and more proactive role in advocating the benefits of good design through Enabling, Advocacy, Research and Communications activities.

Projects of strategic significance, making a significant impact on the local environment, or particularly sensitive sites or setting new standards for the future will be considered within the A+DS independent Design Review process through meetings with a Design Review Panel.

The role of A+DS is to be proactive in promoting the qualities and benefits of good design by:

- inspiring excellence in all kinds of development from housing estates to major cultural buildings.
- encouraging high quality public buildings (e.g. schools and hospitals) and public places.
- stimulating and supporting a demand for better design by clients and the public for improved quality from investors, developers and the design professions.
- working in partnership with local authorities, government agencies, professional bodies, non-government organisations and where appropriate local communities to develop effective design policies, frameworks and guidance.
- improving skills and design in the built environment through training, by working with universities and professional bodies.
- communicating and disseminating key messages, in a clear and accessible form, on architecture and design to a wide audience, including the media.
- building up evidence which demonstrates the value of investment in good design.
- considering new thinking on how the built environment needs to respond to drivers such as climate change, the sustainable development agenda, technological advances and demographic changes.

SEHD and A+DS have developed a range of initiatives to assist NHSScotland in addressing design quality issues in the procurement of healthcare building projects. These initiatives include:

- training and advocacy to support the introduction of Design Champions within every NHSScotland Board;
- enabling by providing "hands-on" assistance to projects; and
- carrying out assessments of the design merits of significant projects to advise and inform the Gateway Review and Key Stage Review processes.

## NHSScotland Design Champions

The Scottish Executive Health Department requires that NHS Board Chairs are responsible for nominating a member of the NHS Board and a Senior Officer to take on the roles of Design Champions for the Board. The Senior Officer should have knowledge and experience in capital investment procedures and expertise in technical matters. Both must be in a position to influence the overarching policies, procedures and ethos of the organisation, albeit in their own manner.

A Design Champion should be:

- well respected and an excellent communicator who is able to promote the need for good design to a wide variety of audiences, both within the Health Board and externally. Both appointees should be able to persuade colleagues and the wider community of the benefits of well designed healthcare buildings;
- a consensus builder, able to bring together the various stakeholders both within the local authority and the wider community; and
- able to see the 'bigger picture' and help develop a 'vision'.

The Design Champions, ideally, are in a position to influence the work undertaken by the Health Board but it is important that the roles are not created for status but, for action.

The role of the Design Champion is not project specific but is to advocate design quality and to ensure that mechanisms are in place within the NHS Board to deliver the design agenda. NHS Design Champions will be supported initially by Architecture and Design Scotland through a Framework Agreement with the Scottish Executive Health Department which requires A+DS to:

- establish and facilitate an NHS Scotland Design Champions Network;
- provide an induction pack for use by the NHS Scotland Design Champions Network's members to assist them in undertaking their duties as design champions;
- hold at least two NHS Scotland Design Champions Network events per year.

Design Champions will be expected to work with all the necessary disciplines. The role of the Design Champion is expected to include a responsibility to ensure that:

- the building promotes civic pride;
- patients and staff are consulted and their views addressed;

- the building fits into the local surroundings and settings;
- the building is fit for purpose;
- the building takes on board modern technology;
- the design considers sustainability issues;
- quality is questioned throughout the process;
- there is support for resisting change which reduces quality and VFM.

The Design Champion should ensure that:

- aspirations for design quality underpin all projects undertaken across the NHS Board;
- a Board Design Action Plan is produced and delivered;
- a design vision is established in order for the Board to produce clear briefs within which these aspirations are clearly stated;
- all procedures encourage the achievement of high quality design;
- an assessment is made of the current environment for patients, staff and visitors;
- the Achieving Design Excellence Evaluation Toolkit (AEDET) is used throughout a project where appropriate;
- the evaluation of tenders is based on VFM and not lowest cost;
- budgets and timetables are realistic;
- the Board has the correct skill mix to deliver the design agenda;
- the scheme includes the full involvement of the local community and the support of clinical and other staff.

The Design Champion will raise the profile of design excellence by:

- encouraging the selection of designers with a proven track record of good design or design awards;
- promoting awareness of national and international best practice in healthcare design;
- encouraging schemes, either refurbishments or new build, to be put forward for local and national competitions and awards;
- maintaining a forum for regular review and feedback to the Board;
- recognising the support, guidance and initiatives available.

It is important that NHS Boards acknowledge the fact that the role of Design Champion is one that requires a considerable amount of time. Design Champions are required to

understand what constitutes good design across a range of different and, sometimes very technical, disciplines and the amount of time required to do so can easily be underestimated.

## Enabling

Enabling seeks to provide dedicated hands-on assistance to those charged with delivering a project or establishing the policy framework for the delivery of other projects. At its very basic level enabling seeks to influence that project's particular outcome so that the chances of achieving design quality are enhanced. However, the enabling process seeks to work at a much deeper and broader level by imparting the skills, capacity and confidence to the client team so that design quality can be raised in each successive project.

Architecture and Design Scotland provides enabling advice which is delivered by A+DS staff and by leading professionals working as consultants for A+DS. The enabler's involvement is generally at the outset of the design and briefing process, before the appointment of a design team or a developer.

The A+DS enabling work supports commissioning organisations in their aspirations for design quality, championing the highest standards in urban design, landscape, architecture and regeneration - with the aim of achieving better- designed spaces and places. It assists public building programmes to secure good value for money by providing direct advice on critical areas that impact on the final design of the project. These are issues such as project vision, client resources, briefing, and competitive selection of design and developer teams.

The enabling service also contributes to the overall understanding of procurement processes and best practice in built environment and public space projects.

SEHD will work with A+DS to identify a number of key projects to enable and this work will be funded through the initiative. Thos NHS Boards which are embarking on the first major project for some time or, a project that presents particularly difficult design issues, may also wish to consider approaching A+DS to assist in:

- embedding the qualities of good design in the procurement process;
- providing early hands-on advice;
- the development of the brief;
- exploring key design issues.

## Design assessment

Currently, project approval mechanisms focus on how a building is procured with less emphasis on the merit of what is to be procured. Design Assessment is intended to balance this so that 'why' we build and 'what' we build can be seen alongside 'how, in making the decision to build.

Design Assessments will be carried out at 3 key points during selected projects to look at the merits of what is proposed. The information that may be assessed will depend on the project stage and procurement route but is likely to include a number of the following aspects:

- the quality and content of the briefing information prepared;
- the impact of the chosen procurement procedures (timetables, submission requirements etc.) on the development of design quality;

- the site options and appraisals that have been carried out;
- any Public Sector Comparator design that has been developed;
- the proposals to be submitted for Outline Planning Consent;
- proposals brought forward as part of the bidding process for Design & Build and PPP/PFI schemes;
- early proposals under development by appointed Design Teams.

Design Assessments will be carried out by a team established by A+DS. A representative of the assessment team and a report detailing the Assessment Team's conclusions will be available to Gateway Review Teams and to PartnershipsUK to aid their evaluation of the project.

## Role of Health Facilities Scotland

Health Facilities Scotland (HFS) is a division of National Services Scotland and provides operational guidance to NHSScotland Bodies on non-clinical topics such as:

- estates engineering;
- building and architecture;
- procurement;
- fire safety;
- environment;
- energy;
- property management;
- clinical waste management;
- sterilisation;
- legionella and other estates related pathogenics;
- hazards and safety action notices.

This assists the NHSScotland meet the Government's policy and strategic aims and to establish professional/technical standards and best practices, including the promotion of new initiatives in the field of healthcare practice and management. Clearly HFS can have a pivotal role to play in the implementation and support for this Policy, both through the provision of supporting guidance and through their Continuous Professional Development (CPD) programme which provides essential training to NHSScotland personnel on operational issues as impacted by national policies and objectives.

## Maintaining design quality on site

There is a risk that, once a project moves on to site, the client may underestimate the effort which will continue to be required to maintain design quality. Any shortcuts taken at this stage can put the overall design quality of the project at risk. The client's design advisers must be retained throughout the construction process in order to monitor the quality of design and finishes.

These advisers should also ensure that design aims are not sacrificed in the management of change during the running of the project. If design standards and quality thresholds are clearly defined, then the review process throughout the delivery stage should provide sufficient safeguards against quality dilution. A structured process of quality checks during construction is important to ensure that what has been agreed is actually being provided. All partners should be involved in these checks as the risks of unsupervised changes on site can affect a wide range of matters, such as the provision of resource areas necessary for facilities management and the quality of finishes, which in turn may affect both cleaning and maintenance.

## Public Space

A statement setting out the Executive's aspirations for design and the role of the planning system in delivering public spaces is described in the published document Designing Places: A Policy Statement for Scotland.

It is important that public space is not considered as an afterthought. New public buildings need to be responsive to their contexts, both in terms of their scale and form, and in the materials they use. It is not enough to simply respond to the appearance of surrounding buildings; it is important to also think in terms of the integrity of surrounding public spaces. In the creation of new public buildings, it is important that the design team is perceptive of the buildings' relationships to the maintenance or improvement of existing public spaces or the potential for new public spaces.

The creation of public buildings can also give something positive to the public realm rather than simply create residual areas around them, and clients may wish to consider whether the location of a building is sufficiently sensitive to merit the inclusion of an urban design specialist on the team. An approach is required which gives due consideration to the way in which the spaces created by buildings will be used, and to the needs of users in terms of accessibility, safety, lighting, shading, shelter, orientation, views, surfaces, seating, planting, and maintenance.

## Use of the arts in healthcare

There may be scope for the involvement of artists or craftsmen in a project. When successfully implemented, artworks can help to create more distinctive and attractive buildings and urban spaces and enhance the public's experience of an architectural space. In a healthcare perspective, artwork can have an even more positive effect. NHSScotland can benefit in many ways from the adoption of the arts in healthcare programmes including better patient environments and an improvement in staff morale. It is recognised that art in healthcare can benefit the NHS through the promotion of user and staff involvement in the design of the healthcare environment and can subsequently have an impact on health outcomes. There is growing evidence that patient recovery rates and stress levels are improved by the adoption of appropriately selected art in healthcare programmes. The integration of art can also assist in improving the communication of health information and the redesign of services. The involvement of staff, patients, artists and local communities at

the earliest stages of the design process for new buildings and refurbishments can result in innovative, creative solutions.

The use of art in a healthcare setting need not be restricted to the visual arts. Other arts activities which involve music, performing arts, storytelling and patient workshops can have therapeutic benefits and can have great value in certain healthcare environments. Art-related therapy, e.g. dance, music, drama or art creation, is recognised as an integral psychological and creative tool for the improvement of physical and mental well-being.

Some NHS Boards retain the services of “artists in residence”. However, Boards may also wish to seek specialist advice from public art agencies with regard to including artwork within a project.

Boards may wish to consider allocating a specific budget for the inclusion of artwork as an integral element of a project. However, care should be taken to ensure that any resulting expenditure is proportionate to the benefits and is appropriate to the building's status and function, in order to avoiding subsequent criticism of the project for inappropriate use of public funds.

## Scottish Executive Health Department property-related policies

Fire Safety Policy [NHS HDL(2005)53]
Scottish Executive Health Department
http://www.show.scot.nhs.uk/sehd/mels/hdl2005_53.pdf

NHSScotland Property Transactions [NHS HDL(2001)15]
Scottish Executive Health Department
http://www.show.scot.nhs.uk/sehd/mels/HDL2001_15.htm

Construction Procurement Policy [NHS HDL(2001)47]
Scottish Executive Health Department
http://www.show.scot.nhs.uk/sehd/mels/HDL2001_47.htm

Property Management Policy and Other Related Matters [NHS HDL(1999)44]
Scottish Executive Health Department
http://www.show.scot.nhs.uk/sehd/mels/1999_44.pdf

Environmental Management Policy for NHSScotland [NHS HDL(2006)21
Scottish Executive Health Department
http://www.show.scot.nhs.uk/sehd/mels/hdl2006_21.pdf

Revised Interim Capital Guidance [NHS HDL(2002)87]
Scottish Executive Health Department
http://www.show.scot.nhs.uk/sehd/mels/hdl2002_87.pdf

## Supporting guidance

Scottish Capital Investment Manual
Scottish Executive Health Department

Private Finance and Capital Unit website
Scottish Executive Health Department

The Design Development Protocol for PFI schemes: Revision 1, August 2004
Focuses on the information that must be finalised between a NHS Trust (England) and bidders at each stage of the PFI process up until Financial Close. Although written for the NHS in England, NHSScotland users should ensure that the guidance is adopted in so far as it is applicable to Scotland.
http://www.show.scot.nhs.uk/pfcu/PDFs/DDP_rev1_letter.pdf

NHSScotland Fire Safety Management / NHSScotland Firecode
Health Facilities Scotland

NHSScotland Property Transactions Handbook
Scottish Executive Health Department

PROCODE: Property Procurement Guidance for NHSScotland
Health Facilities Scotland

NHSScotland Property Management System
Health Facilities Scotland

GREENCODE
Health Facilities Scotland

En$CO_2$de
Health Facilities Scotland

Scottish Health Facilities Note 30: Infection Control in the Built Environment: Design and Planning
Health Facilities Scotland

HAI-SCRIBE: HAI System for the Control of Risk of Infection in the Built Environment
Health Facilities Scotland

## Useful references and web links

### General

[Health Facilities Scotland]
Provides operational guidance to NHSScotland healthcare bodies on non-clinical topics including: building and architecture, procurement, property management, estates engineering, energy & environment.
http://www.hfs.scot.nhs.uk/

[Architecture and Design Scotland]
The Scottish national champion for good architecture, design and planning in the built environment.
http://www.ads.org.uk/

[Centre for Architecture and the Built Environment]
The UK government's advisor on architecture, urban design and public space.
http://www.cabe.org.uk/

[Construction Industry Council]
The representative forum for the professional bodies, research organisations and specialist business associations in the construction industry.
http://www.cic.org.uk/

[Art in Healthcare]
A new forward-looking arts-in-health organisation formed from Paintings in Hospitals Scotland and the Friends of Paintings in Hospitals Scotland.
http://www.artinhealthcare.org.uk/newpages/

[Scottisharchitecture.com]
Provides a network of digital resources relating to architecture and the built environment
http://www.scottisharchitecture.com/

[The Lighthouse]
Scotland's centre for architecture, design and the city
http://www.thelighthouse.co.uk/

[SUST. – The Lighthouse on Sustainability]
Aims to raise awareness of the importance of a sustainable approach to design in the built environment by providing increased access to guidance, tools and techniques for clients, design teams and community-based groups.
http://www.sust.org/

### Scottish Executive links

[Scottish Executive Architectural Policy Unit]
Promoting and encouraging better architecture.
http://www.scotland.gov.uk/Topics/Arts-Culture/arch/intro

[Scottish Executive Construction Procurement Manual]
Provides the Executive's Departments, Associated Departments, Executive Agencies and most sponsored bodies (as well as the Scottish Parliament Corporate Body and the Forestry Commission in Scotland) with mandatory policy and procedures for understanding construction works projects.
http://www.scotland.gov.uk/Publications/2005/11/28100404/04066

[Scottish Executive Planning and Building]
The provision of planning guidance and advice, construction procurement guidance and technical advice for government departments and other bodies.
http://www.scotland.gov.uk/Topics/Planning

[Scottish Building Standards Agency]
An executive agency of the Scottish Executive to undertake the national functions related to the building standards system.
http://www.sbsa.gov.uk/

## Scottish Executive Sustainable Development
The Scottish Executive's contribution to the UK strategic framework for sustainable development.
http://www.scotland.gov.uk/Topics/SustainableDevelopment

## Sustainable Development Policy into Practice – New Buildings
This report describes progress in work by Scottish Executive agencies and divisions to further the sustainable development of new buildings, both domestic and non-domestic.
http://www.sbsa.gov.uk/current_standards/Sustainability.htm

## Scottish Executive Private Finance and Capital Unit
Policy and guidance on planning NHS capital developments including those developed through public private partnerships.
http://www.show.scot.nhs.uk/pfcu/

## GP Web
Information for practices and others involved in GP & Primary Care premises issues to enable users to seek out best practice solutions to accommodation problems within their premises as well as the procurement routes available for new or extended facilities.
http://www.show.scot.nhs.uk/gpweb

### Department of Health (England) links and publications

## OnDesign
OnDesign is a visually-led repository of information that aims to assist the creative and functional design process in healthcare design, and to encourage networking and the sharing of knowledge and best practice between healthcare design schemes.
http://www.design.dh.gov.uk/content/introduction/home.asp

## IDEAS
A design tool to aid NHS clients and their architects and design consultants to develop their briefs and design ideas.
http://design.dh.gov.uk/ideas/

## Achieving Excellence in Design Evaluation Toolkit (AEDET)
The AEDET Evolution toolkit evaluates a design by posing a series of clear, non-technical statements, encompassing the three key area of Impact, Build Quality and Functionality.
http://www.design.dh.gov.uk/content/connections/aedet_evolution.asp

## A Staff and Patient Environment Calibration Tool (ASPECT)
ASPECT is a tool for evaluating the quality of staff and patient environments in healthcare buildings and can be used as a stand-alone tool or in conjunction with AEDET to provide a more comprehensive design evaluation of healthcare environments.
http://www.design.dh.gov.uk/content/connections/aspect.asp#toolkit

## Activity Database
The briefing, design & commissioning tool for both new-build and refurbishment of healthcare buildings.
http://adb.dh.gov.uk/

## The architectural healthcare environment and its effect on patient health outcomes
A research project funded by the Department of Health and led by Professor Bryan Lawson and Dr Michael Phiri of the University of Sheffield School of Architecture, in collaboration with John Wells-Thorpe. The document is available for purchase from The Stationery Office, ISBN 011322480X.
http://www.tsoshop.co.uk/bookstore.asp?Action=Book&ProductId=011322480X

## The Healing Environment
Part of the English Department of Health's Improving the Patient Experience initiative, this site looks at the components of a healing environment.
http://patientexperience.nhsestates.gov.uk/healing_environment/he_content/home/home.asp

Primary and Social Care Premises
Identifies the key considerations and actions for those involved in the planning, briefing and design of primary and social care premises, and gives some guidelines on funding, procurement and design.
*(Note: English-specific guidance only – use with caution)*
http://www.primarycare.nhsestates.gov.uk/secure/content.asp

Other references

OGC Procurement Guide 09: Design Quality
Office of Government Commerce 2004
Part of the OGC Achieving Excellence Procurement Guides
http://www.ogc.gov.uk/assets/images/cp0069.pdf

A guide to quality based selection of consultants: a key to design quality
Published 1998, £15.00 ISBN 1 898671 14 1
Construction Industry Council recommends this Guide as an inclusive guide and method for delivering construction clients with the consultants services they require and to realise the real economies and benefits to be had from good design.
http://www.cic.org.uk/services/publicationsCIC.shtml

Effects of Healthcare Environmental Design on Medical Outcomes
Ulrich R S, 2000
http://www.designandhealth.com/edu_res/Roger%20S.%20Ulrich%20p49.pdf

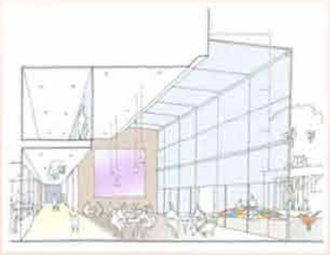
Visual landscapes and psychological well-being, Landscape Research, Vol. 4, No. 1
R S Ulrich, 1979
http://www.tandf.co.uk/journals/carfax/01426397.html

Human responses to vegetation and landscapes, Landscape and Urban Planning, Vol. 1
R S Ulrich, 1986
http://www.sciencedirect.com/science

Stress recovery during exposure to natural and urban environments Journal of Environmental Psychology Vol. 11
R S Ulrich, R F Simons, B D Losito, E Fiorito, M A Miles, M Zelson
http://www.elsevier.com/locate/issn/0272-4944

# NEW SOUTH GLASGOW HOSPITALS
# GLASGOW

## Design Solution Report July 2007



NHS
Greater Glasgow and Clyde

A49342285

New South Glasgow Hospitals

Design Solution Report

1.0 Introduction (E1 PITN)

1.1 Overview of Design Solution Report
1.2 Nature and Purpose of Design Solution
1.3 Strategic Context
1.4 The Scope of the Design Solution and Summary Conclusions

2.0 Design Analysis (E2 PITN)

2.1 Appreciation of the Design Brief and Model of Care
2.2 Appreciation of Site Constraints and Site Analysis

3.0 Design Proposals 1 – Hospital Organisation (E4, E5, E7 part, E8, E9, E10 PITN)

3.1 PSC as a response to Health Care Planning
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3.3 Site Planning Strategy and assumptions
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**7.2 Health and Safety and CDM**
**7.3 Demolition and Managing Waste**
7.4 Phasing
7.5 Prefabrication in Design
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Appendices

- Appendix A- Architectural Drawings
- Appendix B- Mechanical & Electrical Drawings
- Appendix C- NEAT Assessment
- Appendix D- Civil & Structural Drawings
- Appendix E- PSC Area Summary vs. SoA

This design report was produced on behalf of the NHS Greater Glasgow Trust by The Trust Advisory Team. Architectural input by Avanti Architects Limited. Structural input by SKM. Services input by Max Fordham. Life cycle and Cost input by Davis Langdon. Health Planners Directions Consultancy.

Section 1 - Introduction

1.1 Overview of Design Solution Report

This Design Solution Report supports the Stage 1 Public Sector Comparator (PSC) for the New South Glasgow Hospitals Project. The New South Glasgow Hospitals comprise a new Adult Acute Facility which forms part of the rationalisation of secondary healthcare provision resulting from the pan Glasgow "Acute Services Review" (ASR), and separate replacement facilities for the Royal Hospital for Sick Children which currently operates from the Yorkhill site on the north side of the river. The New South Glasgow Hospitals will occupy the site currently occupied by the existing Southern General Hospital (SGH).

Work carried out by the Board has identified buildings that must be retained in the medium and long term to operate alongside the new facilities. In particular the existing Maternity and Neurosciences blocks must be retained for the foreseeable future and linked physically to the new Hospitals. The existing Hospital buildings on the site must continue to operate while the new facilities are being constructed. Phasing studies have therefore been undertaken to plan the demolition and construction programme for the PSC design. These phasing arrangements are included in the design solution report.

The Design Solution Report and Accompanying Redevelopment Options Appraisal Report, together with the Design Brief and other support documentation and the Outline Planning Application, aim to provide future development partners with a comprehensive introduction to the project.

1.2 Nature and Purpose of Design Solution

The Design Solution Report describes the Design Exemplar [1] development process including the selection of the preferred redevelopment design option [2] and the production of the OBC stage PSC. It describes how the PSC responds to the briefs developed for both hospitals[3].

The Exemplar Design was commissioned by the Greater Glasgow and Clyde Health Board and managed by the New South Glasgow Hospitals Project Team. With the assistance of the Project Team, the Design Solution presented in this report was prepared by the New South Glasgow Technical Advisors (TA) Team which includes:

| | |
|---|---|
| Davis Langdon | Project Managers and Lead Consultant |
| Avanti Architects | Architectural Consultants |
| Directions Consultancy | Health Planners |
| SKM Anthony Hunts | Civil and Structural Engineers |
| Max Fordham | Mechanical and Electrical Engineers |
| Davis Langdon | H&S and Planning Supervisor |
| Davis Langdon | Cost Consultants |

The TA team have also been supported by Keppie Planning, JMP and Ironside Farrar concerning aspects of the project linked to the separate Outline Planning Application (see below).

It is recognised that the specific design solution represented by the PSC is only one possible design solution that could be adopted in response to the site and the brief. It is the Board's intention, however, that the design is one that is both robust and logical and will therefore provide bidders with a good foundation on which to build their own proposals. In particular it is intended that the strategic planning of the site master plan will stand the test of time because many of the principles of this plan have been included in the outline planning application.

In describing the reasons behind the specific design decisions taken by the Board, reference is made to instances where choices were made between differing objectives and where, because of conflicting requirements, some objectives could not be fully realised. A typical example of such conflict might be the desire to include more space in the design against the desire not to exceed a given financial budget. The intention in identifying these conflicts or potential deficiencies in the PSC, is to assist bidders in understanding the Board's broader priorities so that their own design teams can bring a better understanding to the development of their own proposals. The Board will encourage bidders to bring new and innovative ideas to the ongoing design process to make it possible to realise their overall ambitions for the project more fully.

Every effort has been made by the Board and its advisors to ensure that the information included in this report is accurate and compliant with the brief, statutory requirements and current good practice, but they cannot accept responsibility for any errors, oversights or inconsistencies that may have escaped their attention. Bidders are therefore required to check the accuracy and suitability of any ideas or information taken from the report for use in their own proposals.

A commentary is also provided in Section 4.4 which assesses parity between the proposals forming the PSC and the Indicative Design included in the Outline Planning Application (OPA)[4].

1.3 Strategic Context

The New South Glasgow Hospitals form Phase 2 of the Board's Acute Services Review (ASR)[5]. The ASR addresses a number of challenges that Glasgow faces in modernising its acute services, these include:

Outdated buildings, unsuitable and unfit for modern healthcare - 21st century healthcare in 19th century buildings.
Inpatient sites which are unable to provide the one stop / rapid diagnosis and treatment models for the large volumes of patients treated in Glasgow hospitals;
Fragmentation of care as patients are required to move around sites and different buildings.
Unsuitable diagnostic and imaging facilities
Increasing sub-specialisation in medicine
Glasgow's role in teaching and research and the links with the universities
Too many inpatient sites requiring emergency on call rotas on each site
Changes in doctors' training

The final configuration of acute services will be as follows:

Three adult inpatient acute sites at Glasgow Royal Infirmary, new South Glasgow site and Gartnavel General Hospital
Two A&E/ Trauma units at Glasgow Royal Infirmary and New South Glasgow Hospital
An Acute Receiving Unit for GP referrals at Gartnavel General Hospital
Five Minor Injuries Units at Glasgow Royal Infirmary. New South Glasgow Hospital, the New Stobhill and Victoria Hospitals
Two new hospitals at the Stobhill and Victoria Infirmary sites providing ambulatory care
Two maternity units at the Southern General site and Glasgow Royal Infirmary
A new Children's Hospital co-located with a maternity unit on the New South Glasgow site

The New South Glasgow developments are therefore a critical component in delivering the necessary improvements to clinical facilities to deliver a new Model of Care for Glasgow as a whole. The co location of children, adults and maternity on one site, the "Triple Gold Standard", presents a unique opportunity to deliver a fully integrated, inclusive environment which contributes positively to staff and patient well being in clean and modern surroundings. The Board wish to deliver a landmark development that will contribute positively to the local context and be viewed with pride by the people of Glasgow. It will meet the aspirations of patients and staff and provide an attractive, functional and quality environment to support the development of clinical excellence.

1.4 The Scope of the Design Solution and Summary Conclusions

The Board appointed a team of suitably experienced advisors to form their Stage 1 TA Team following an OJEU advert in 2005. During the Stage 1 pre-Outline Business Case (OBC) phase the TA Team assisted the Board in the preparing their draft Brief and carried out a series of redevelopment option studies[6]. After consultation with various user groups a preferred configuration was selected in October 2006. This was developed further to form the Stage 1 PSC illustrated in this Design Solution report.

The Design Solution therefore illustrates the proposal that has developed since the selection of the preferred option. The Design Solution compromises:

Written descriptions
Diagrams
Site plans including site circulation and landscape strategy
Adjacency plans
Selection of 1:200 plans of key departmental areas
Services strategy including example layouts
Structural strategy including example layouts
3 dimensional massing studies

[1] The Design Solution and Design Exemplar are interchangeable terms which are equivalent to the Public Sector Comparator Design (PSC) and Design Exemplar Solution as defined in The Design Brief Framework for PFI Public Sector Comparators at OBC Stage and The Design Development Protocol for PFI Schemes respectively, published by the DoH.
[2] Refer to separate Avanti Architects Redevelopment Design Options Appraisal Report Nov 2006.
[3] Refer to NHSGG&C Design Brief
[4] Refer to OPA documents April 2007
[5] For further details on the 2002 ASR visit Greater Glasgow and Clyde website.
[6] Refer to separate Avanti Architects Redevelopment Design Options Appraisal Report Nov 2006.

A NEAT assessment has been prepared and is included in Appendix C.

Updated Capital and Lifecycle costs have been produced together with an accompanying commentary.

The PSC has been tested to assess its functional, technical and financial viability. The Design Solution Report aims to identify where deficiencies are known to exist or difficult issues that have been identified.

The PSC Design Exemplar as described in this report, together with the Site Redevelopment Options Appraisal that preceded it, has been the result of a considerable amount of work on the part of the Board and the TA Team. The result sets out a strategy that provides good clinical adjacencies and supports the new Model of Care within the constraints set by the site and the retained buildings.

The Design solution is not intended to be prescriptive but seeks to identify for future partners the design issues, balances and compromises that have been considered when preparing the OBC.

Section 2 – Design Analysis

2.1 Appreciation of Design Brief and Model of Care

The clinical brief for the New South Glasgow Hospitals has been framed in the context of the Pan Glasgow ASR. The adult acute development on the SGH site does not just represent upgrading of existing facilities. It also sees the transfer of acute activities from the Victoria Infirmary and Western Infirmary. The New South Glasgow will be home to one of the two acute Emergency Departments planned for the City.

The Pan-Glasgow strategy will see more non-acute day activity being carried out in the two ACADS at the Victoria and Stobhill sites. This accounts for the relatively low proportion of adult Outpatient services in the New South Glasgow development.

The Pan-Glasgow strategy involves the centralisation of other support services including, Laboratories, Pharmacy, CSSD, Stores, Production Catering and Laundry Services. All of these centralised services, with the exception of Laboratories, will not be located on the South Glasgow Site.

The PSC and OPA have made some very broad allowance for the Laboratories (inc. new City Morgue) which it is understood will be integrated in the new build, although subject to its own OBC. Further briefing work and design testing will be required during the next stage to explore the relationship of this with the site and the PSC proposals.

The brief for Pharmacy and other Facilities Management (FM) also requires further clarification and testing. At this stage the PSC has made assumptions in respect of these services that have yet to be confirmed.

2.2 Appreciation of Site Constraints

Redevelopment of the existing site is complicated by the presence of existing buildings, many of which have to be retained in use during the construction of the new hospitals until such time as the replacement accommodation is fully commissioned or, as is the case of Maternity and Neurosciences, have to be retained and integrated clinically in the final scheme. Such considerations are not unusual in many other hospital redevelopments but the positioning of these two retained facilities on opposite sides of the site presents an immediate challenge.

2.2.1 Identifying Sites for Future Development

Much of the strategic thinking to create the new development site was undertaken by the Board at the time of the original ASR and, in the case of the Children's Hospital was subject to the Calder Group's subsequent Report in 2006[7]. Central to the strategy for both hospitals was the identification of a combined development site on the area of land in the centre of the existing Southern General site that is currently either vacant or occupied by ancillary buildings suitable for early decanting.

The Board have committed to the new Children's Hospital being delivered as quickly as possible. This results from the loss at Yorkhill of the direct link to a maternity unit when the existing Queen Mother's Hospital closes. The need to re-establish the Children's link with a maternity unit underpins Yorkhill's relocation to this new site and the urgency surrounding its programme.

The Board's plan is to prepare the central area on the existing Southern General site to enable the New Children's, Adult Acute and Laboratory facilities to be built in a single continuous operation. In the case of the Children's Hospital and Laboratory block, the Board expect these to be handed over before completion of the Adult Acute facility. As such, both Children's and Labs must be designed to allow their independent operation from the point of handover.

These requirements underpin the Board's strategy to locate the new Children's Hospital immediately adjacent to the Maternity Building. The link between the two would be formed around the new Neo Natal unit that is being constructed under a separate contract associated with other upgrading and improvement work to the Maternity block itself.

The new development site is underlain by a number of existing services. However, the SGH facilities team have put in place a plan to decentralise the existing services to ensure the new development site is unencumbered prior to the start of the build phase. This includes the rerouting of the Linthouse Burn culvert passing north south through the site to run under the line of the retained (albeit modified) road. Further details are provided in the phasing and services sections below.

[7] Refer to Greater Glasgow and Clyde Website for details of ASR and Calder Group Report.

2.2.2 Boundaries and Access

The present SGH site provides limited opportunity to open up new road access points. The Victorian Hospital was originally accessed from the east, with gates set in line with the existing listed clock tower building. This section of Moss Road was turned into a dual carriage way when the Govan Tunnel approach was created in the early 1960s. The main vehicle site access then moved anticlockwise to the north to open off Govan Road.

Options to enter the site from the east are therefore limited to pedestrian and cycle points. The TA team considered whether the eastern end of Langland's Road, currently blocked off, could be reopened for emergency access. Preliminary discussions with the Roads Authority indicated that a left turn may be possible but the presence of the existing underpass would make this difficult to achieve. A right turn would not be permitted.

Subsequent work questioned the value of reopening this entrance as most ambulances coming from the south are understood to enter from the existing Hardgate Road entrance to the west. In the case of ambulances coming in off the motorway, a back route is available (and frequently used) from junction 25 along the Fifty Pitches Road which avoids any congestion on the tunnel approach. In this case a new left turn off the approach seemed to offer little benefit.

The southern boundaries adjoin the existing residential areas and no new access from this end can be formed without acquiring property outside the site.

The western end of Langland's Road forms the junction with Hardgate Road, adjacent to the existing Maternity Building. The main route through the site links this entrance with the main Govan Road entrance.

The PSC proposes two further new entrances:

The first entrance already exists off Govan Road but is rarely used. This leads to an unmade track running behind the existing outpatient and therapy areas hard against the boundary with the water treatment works.

The PSC proposes that this be opened up to provide an early site works access and in the longer term a dedicated route in and out for delivery and service vehicles. This route can also be used by undertakers' vehicles to allow discrete access to and from the site avoiding public areas.

The existing track would be constructed properly and during the first stage passing places would be provided. Once the new hospital opens and the existing buildings along this edge are removed a second track can be formed to provide clear in and out routes either side of the existing tree line. This allows the existing tree screen to be maintained in the long term.

The second new entrance will open further north off Hardgate Road. The intention is that this would link with the existing Govan Road entrance to provide the main public entrance and exits from the site. Public Transport services described below would follow this new route.

The remaining Hardgate Road entrance would be retained to serve Maternity and the buildings at the south end of the site. A route is still retained from north to south along the line of the current road between Neuroscience and the new adult hospital but through traffic will be discouraged by the use of shared surfaces and other traffic controlling measures. Historically speed bumps have not been used on site because of the presence of Spinal Injuries. Any new proposal must therefore ensure that a level flat ambulance route to Spinal Injuries is maintained along Langland's Road.

The existing road route will, in any event, suffer future head height restrictions resulting from the proposed link to Neuroscience. The existing first floor in Neuroscience houses the theatres and critical care areas. The new hospital therefore requires to link directly with this floor. Unfortunately, the first floor of Neuroscience is not level with the first floor of Maternity. The PSC has set the first floor of the new buildings to run through with Maternity and the new Neo Natal extension, both of which provide the higher of the two possible datum's. The option to run the new first floor level with Neuroscience and rise up to maternity was rejected as it would result in an inadequate floor to floor dimension between ground and first in the new Hospitals. Even so, the clear head height under the link will still only be approximately 3.6m.

The intention is to run across level to the new circular feature in front of Neuroscience. This will accommodate a potential staff rest area together with a short flight of steps and two bed platform lifts to drop down level with Neuroscience first floor.

Plans showing proposed vehicle, pedestrian and cycle routes and access points are shown below in Figures 3 and 4.

Section 3 – Design Proposals 1 – Hospital Organisation

3.1 PSC as a response to Health Care Planning

The New Adult Acute Hospital presents an unusual challenge in the large volume of inpatient accommodation compared with that for outpatients. This demands a greater degree of centralisation with the significant proportion of the overall footprint dedicated to integrated intensive acute facilities.

The Children's hospital provides a more conventional balance between Inpatient and Outpatient activity. The Royal Hospital for Sick Children has an international reputation for the quality of service it provides and will continue to operate as a hospital in its own right with its own clinical staff and management. It is therefore a requirement of the brief for the Children's hospital not only that there should be an appropriate degree of clinical and patient separation between the two hospitals but also that the distinct identity of the Children's hospital shall be maintained both externally and within the patient and public areas.

It is acknowledged, nonetheless, that there are a number of potential synergies that can be exploited through the co location of the adult and Children's hospitals and a great deal of consideration has been given to identifying these in the brief and in the design of the two hospitals.

The Option appraisal exercise associated with OBC considered separate buildings for the Children's and Adult's facilities but this was viewed as more costly and provided less future flexibility should one or the other have to expand or contract in the future. The land-take for two separate buildings would also be greater. The PSC therefore proposes a single overall footprint subdivided into the adult and Children's facilities, effectively creating two "semi-detached" hospitals.

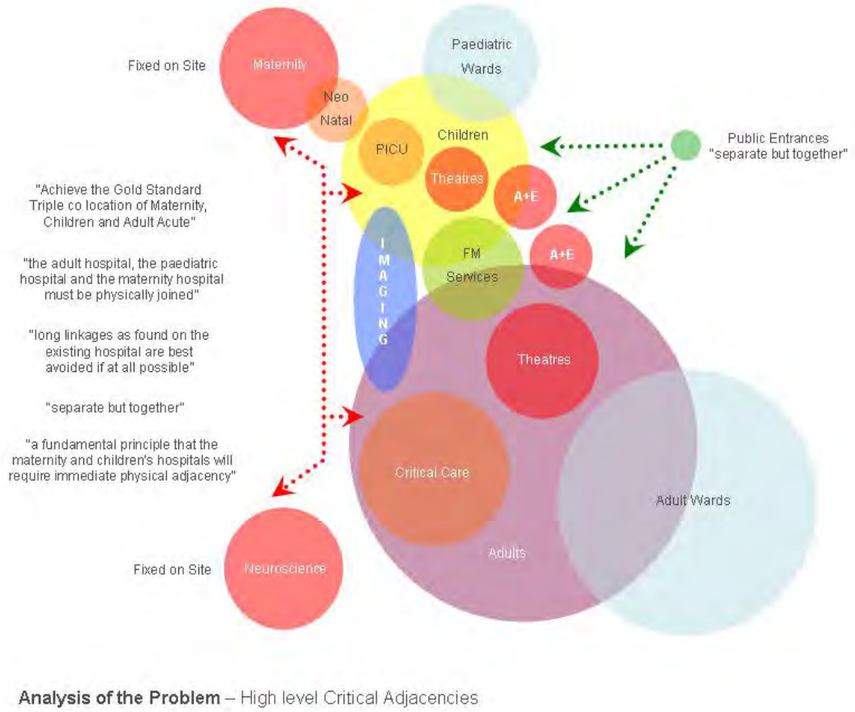
A managed "hot route" is provided that links both the adult and Children's hospitals to the Neurosciences and Maternity Blocks. In this respect the PSC responds to the requirement in the brief to separate "hot" routes from "cold" routes and to some extent the FM routes. Hot describes intensive clinical areas used essentially by staff for the treatment and movement of inpatients. Cold describes areas where members of the public will be self presenting such as Emergency Department (ED) walk in entrances, Outpatients and visitor access areas. FM routes are those routes that are reserved for support FM services within the hospital.

A development of this size will require careful management of access, security and infection control. The separation of these routes throughout both hospitals will serve to enable staff to move about safely and securely and will avoid vulnerable inpatients coming into casual contact with visitors moving through the building. However, to achieve this, the PSC requires a higher proportion of communication space than would be found in more traditional health care facilities where a greater degree of sharing is tolerated.

One area in which there is an important synergy between the adult and the Children's hospital is in the provision of shared FM services. Both hospitals are provided with dedicated FM lifts which connect to a common FM services compound via a basement service route. There are, therefore, both limited clinical and integrated FM links connecting the two hospitals but there will be no public connection between the two hospitals within the buildings themselves.

The size and scale of the new facilities has led users to consider breaking down a number of departments into smaller more manageable areas. Radiology is a particular case in point where both the Children's and Adult's departments have been disaggregated in the PSC to place specific services closer to the activities they support and to provide better separation between inpatients and outpatients. This is discussed in more detail under Building Organisation below.

3.2 The Design Concept




**Analysis of the Problem** – High level Critical Adjacencies

Figure 1 illustrates the core PSC departmental adjacencies across both hospitals.

The new Children's Hospital provides an immediate physical adjacency to the Maternity Building linking via the new Neo Natal Unit. It is this Neo Natal linkage between Maternity and Children which will be lost when the Queen Mother's closes and, as noted above, the need to re-establish this key relationship has been the principal reason for the relocation of Yorkhill to the South Glasgow site. Here is an example of where a relatively small department has had a significant impact on the overall PSC strategy.

The Neo Natal linkage will be at first floor level and will link through directly to the Paediatric Intensive Care Unit (PICU) and Children's theatres. This in turn determines the location of the Children's ED department on the ground floor immediately below to provide short vertical links to both theatres and PICU.

Significant discussion has taken place with clinicians to consider the relationship of the separate Children's and Adult's ED departments and a variety of different options were considered examining this one point alone[8]. To date an overarching concern has been legibility for users and the potential confusion that could arise from two public ED entrances on one site. Concern was raised that emergency public entrances separated by any distance could lead to adults mis-presenting in an emergency at Children's or visa versa with limited opportunity for simple redirection. The PSC solution proposed here places these entrances close to one another and although separated, the opportunity exists to pass patients quickly between their respective reception areas.

This relationship governs the position of the adult ED and in turn the adult theatres and critical care adjacencies immediately above. A link at first floor level across to Neurosciences must be provided to link the existing specialist Neuroscience theatres and critical care, also at first floor, to both the new adult acute and Children's hospitals.

The PSC proposes the location of the new core facilities, together with the limited outpatient areas, in a 2 to 3 storey "plateau" arranged to sit between the existing Neurosciences and Maternity blocks. The inpatient ward accommodation for both hospitals is then arranged vertically above the plateau in two separate elements, one for adults and one for children, which are completely unconnected at the upper floor levels. Both of the ward elements have a different and smaller footprint to the plateau below in order to maximise their perimeters and provide all inpatient rooms with views out and natural daylight. Particular care has been taken in the design of wards to take advantage of the fine views that can be gained from upper storeys on the site and to avoid views into fully enclosed courtyards. The size and layout of the two ward elements are very different, reflecting the different requirements for adults and children. The detailed adjacencies and PSC ward arrangements are discussed in more detail below.

The plateau, which is cut through by courtyards, provides a compact plan with good multiple adjacencies suited to an integrated acute facility. This is the opposite of the existing SGH model which relies on independent linked buildings. Users wish to avoid a new development of linked buildings, in favour of an integrated build, where at all possible.

3.3 Site Planning Strategy and Assumptions

The strategic positioning of the PSC's new built elements is largely determined by the land available for a single phase continuous build in the centre of the site. However, the PSC makes a virtue of this necessity by bringing together the acute activities into the site's core and providing the link between Maternity and Neurosciences. It also allows the new buildings to concentrate their increased height and massing away from the immediate site boundaries.

This strategy allows both new hospitals to be constructed whist the existing SGH continues to operate – see phasing section below. Once the new hospitals are complete and operating, the existing hospital buildings not scheduled for retention in the longer term can be removed to allow either space for future acute expansion, landscaped open space or other associated Health development - see Figure2.

The Campus Plan and Design Statement submitted with the Outline Planning Application explain the broader site strategy and landscape design in more detail and should be referred to here[9].

During the Option Appraisal stage alternative site layouts were tested. The preferred option was assessed as achieving the best balance of the different requirements for accessibility & way finding, separation of adults and children and quality of external environment.

Summarising these as follows:

Accessibility and external way finding: Given the boundary constraints and the limited opportunity for creation of new access points a strategy that assumes approach via either Govan Road or Hardgate Road was maintained. The PSC assumes the creation of the second access point off Hardgate Road to link through with the main Govan Road access. These two entrances would be signed as the main site entrances for the adult and Children's hospitals and would also be the main entry and exit points for public transport services to assist way finding. The creation of this link road allows the remaining site roads, and particularly that running north south between Neurosciences and the new adult hospital, to be "de-stressed" in traffic terms to improve the wider site environment.

Public Transport stops would be provided on the new link road and a separate dedicated route for the future FASTLINK service is run close to the new buildings. This service, if it is implemented, will run at 6 minute intervals and will therefore have a more limited impact in terms of noise etc. The link road carrying general traffic is positioned away from the new hospitals to protect the immediate environment around the building entrances.

Two main multi-storey car parks are proposed adjacent to the separate adult and Children's entrances to reduce walking distances from parking spaces to the main entrances. Extensive surface car parking was rejected at an earlier stage when the enormous land take required was assessed. It was felt that such an arrangement would be far too deleterious to the quality of the external environment on the site.

Vehicle, pedestrian, cycle and emergency ambulance access are shown on Figures 3 & 4 Projected Car Parking numbers around the site are shown on Figure 5.

[8] Refer to separate Avanti Architects Redevelopment Design Options Appraisal Report Nov 2006.

[9] Refer to New South Glasgow Hospital Campus Plan, Design Statement and other Outline Planning Application documents April 2007.

Separation: A key consideration when developing the PSC has been the need to balance clear site way finding for all against the need to provide a degree of separation to both hospitals. In particular, the Board wishes to achieve some separation of the approaches to each hospital in order and to allow each hospital to have its own external space around the main entrance.

The PSC proposes placing the main adult and Children's entrances at opposite ends of the combined buildings' north faces. From here they are both clearly visible from the new road linking between Govan and Hardgate Roads and from the public transport stops. A new public open space is created in front of the Hospital which both entrances overlook. Although this forms one open area, the space would be landscaped to provide discrete areas associated with the different entrances. A welcoming play area sits in front of the Children's entrance whilst the adult entrance enjoys a more formal setting. Both can lead out into the central area which accommodates balancing ponds and habitat areas. This new space will form the public heart of the redeveloped site and a new urban space with which the frontage of both new hospitals will be identified.

The bulk of future FM deliveries would come and go via a separate route off Govan Road. This would follow the line of the existing unmade lane running behind the existing SGH outpatient's block. As noted before, this route would be widened and split into two lanes either side of the existing mature trees running parallel to the boundary. From this area deliveries can be stored and taken into the building via the new basement route under the open space – see Figure 6 and 05017-GA - -01 , or alternatively broken down and moved at surface level to the existing buildings that are not physically linked to the new build.

Emergency Ambulance access to the new hospitals is via an ambulance entrance on the south face off the existing Langlands Road. This route is already established as the one that currently provides ambulance access to Maternity and serves to bring together the blue light access for both New Hospitals and Maternity. This arrangement prevents the ambulance activity disrupting the main entrances, and visa versa, and ensures that the drop off is screened from main public view. The separation of the public walk in ED entrances and the Ambulance entrance has been subject of much discussion with the client. This is described under the Building Organisation and department headings below.

External Environment: The Board have set out their strong desire to improve the overall site environment as part of the redevelopment process. Consultation with user groups and the public have reinforced the need to enhance and develop the landscape qualities of the site.

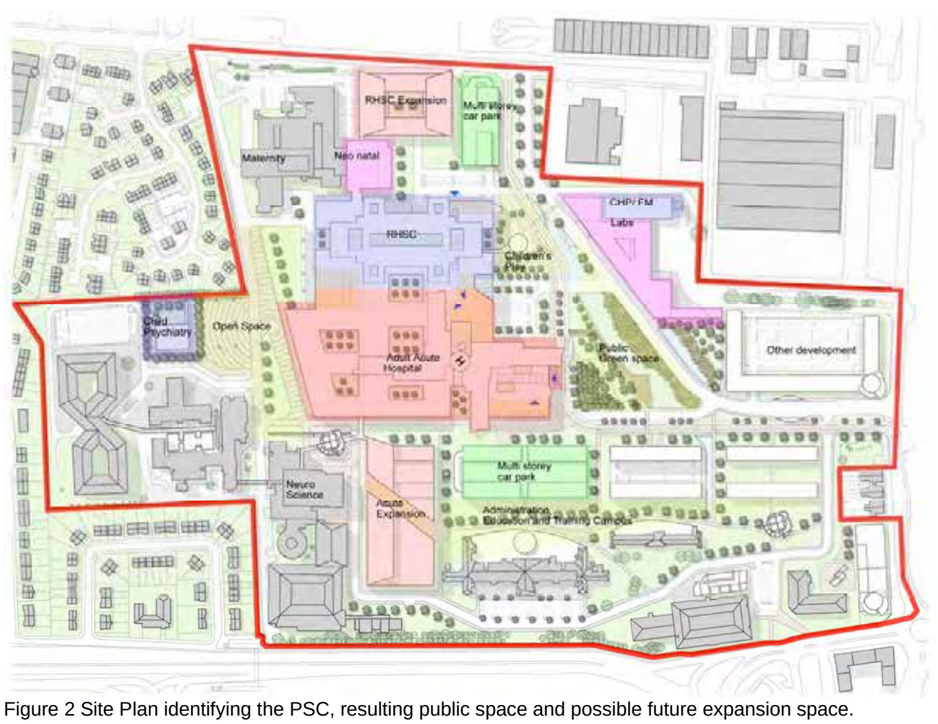
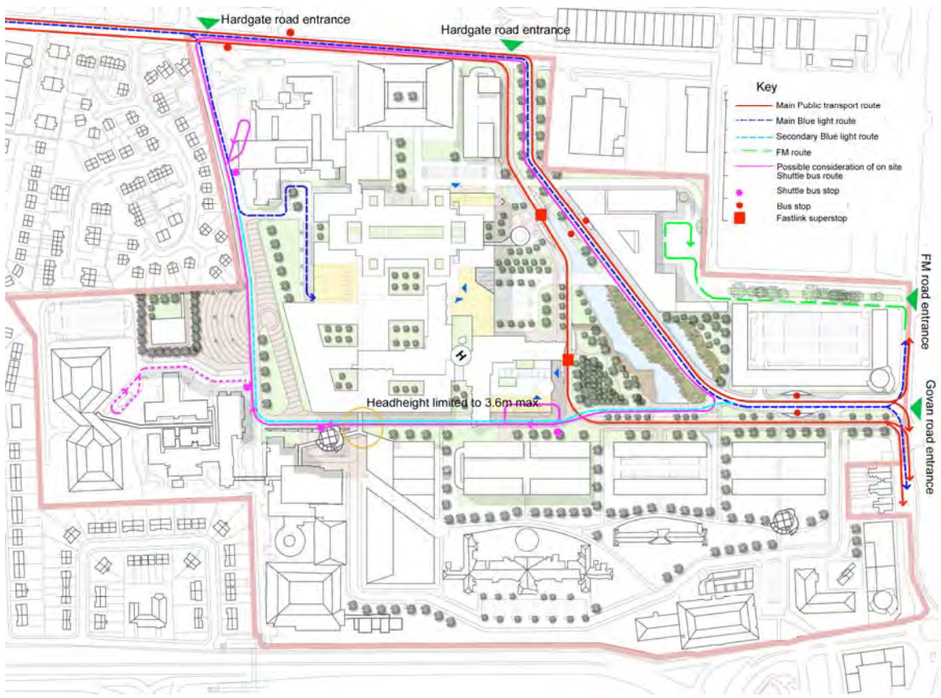



Figure 2 Site Plan identifying the PSC, resulting public space and possible future expansion space.



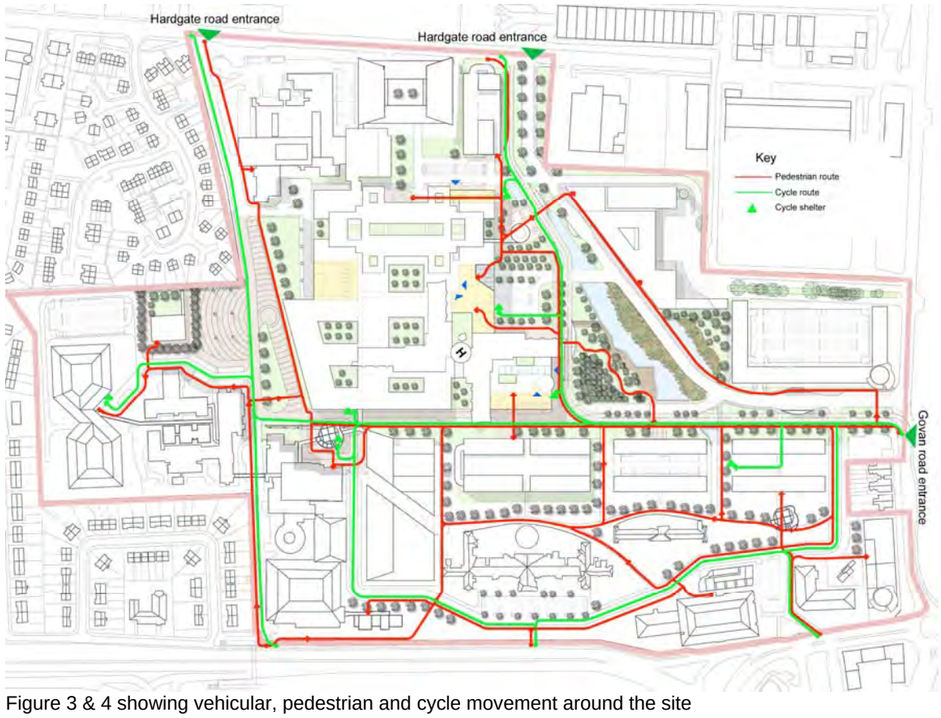




Figure 3 & 4 showing vehicular, pedestrian and cycle movement around the site

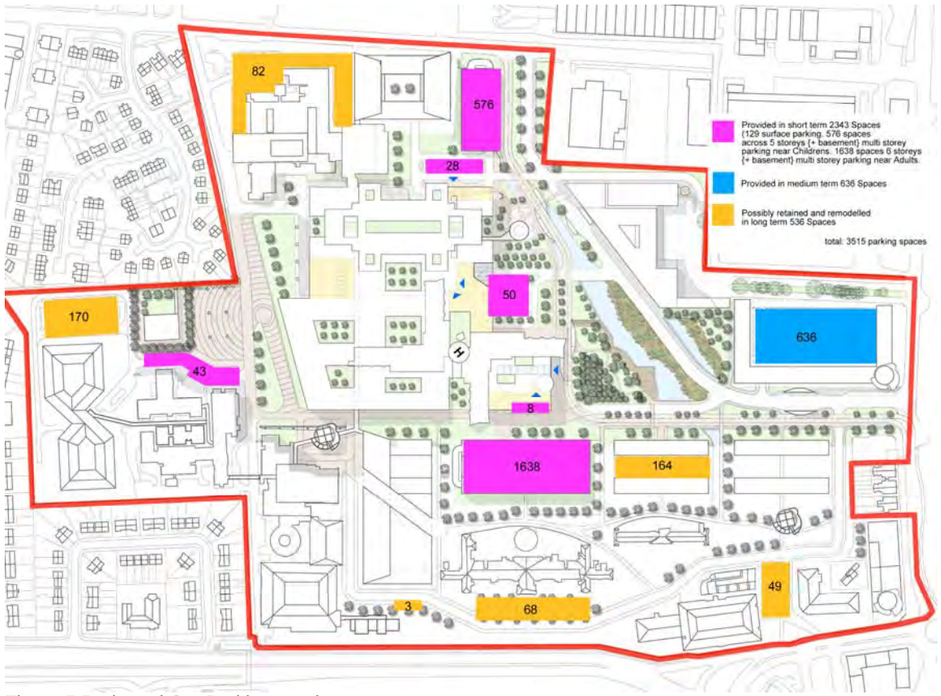



Figure 5 Projected Car Parking numbers

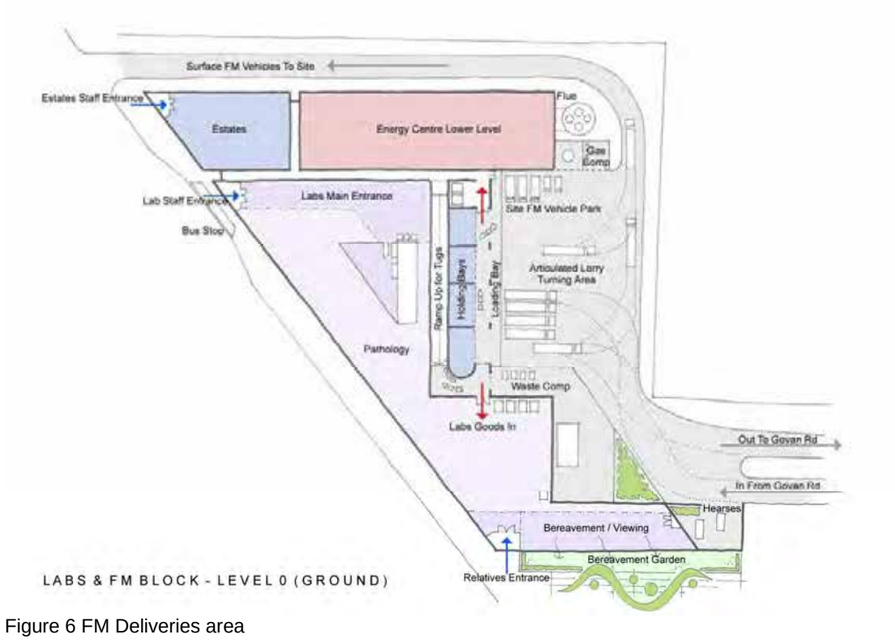



Figure 6 FM Deliveries area

The PSC development strategy recognises that the volume of development on the site lends itself to a more urban approach to place-making with the site arranged into block forms with tree lined routes and spaces between[10]. The new Hospitals in the centre of the site will form the central “armature” around which the Campus Plan can develop as the original buildings are removed and peripheral sites are redeveloped in the future.

Away from the new public open space in front of the new hospitals, other spaces are proposed. These are linked through the network of routes between and through the new buildings. In particular, the PSC proposes the formation of the new Administration and Teaching zone to the east of the new development. The buildings in this area would be developed outside the main project and, along with the retained and refurbished listed buildings, will provide clinical support and teaching accommodation around a discrete landscaped area.

Consideration has also been given at the southern end of the new Hospitals to provide an enhanced landscaped setting for the existing buildings on this part of the site. The Geometry of the new building has been inflected inward to open up views through from Hardgate Road and the existing Maternity building entrance. By setting the edge of the new building back in from the existing road line, the PSC seeks to provide sufficient space to maintain the setting of the buildings at the south end and reduce the impact on the residential properties bordering this edge of the site.

The PSC site strategy has been based on a number of assumptions which require further investigation and clarification in the next stage. Some of these are dependent upon external bodies with which the Board continue to liaise at the time of this report. The key issues that will require further study in stage 2 are:

Planning: The indicative proposals submitted with the OPA broadly follow the PSC contained in this report. Although, these proposals were discussed with Glasgow City Council (GCC) and a number of their consultees in advance of an OPA submission, at the time of this report approval has not been given.

Transport: The Transport Assessment (TA) submitted with the OPA contains detailed proposals for enhanced transport links to the new Hospitals[11]. The site planning strategy has been prepared in tandem with the TA Team and supports the Assessment’s conclusions, including levels of proposed parking provision – see Figure 5.

GCC’s approval for the TA’s proposals is awaited. In particular, the Greater Glasgow Health Board and their technical advisers have promoted routing the new FASTLINK service through the centre of the site in the PSC design to pass just to the north of the new Hospitals’ entrances. Although there is understood to be support for this within the City Council who are co-ordinating FASTLINK, a final decision has not been made.

Helipad: The existing SGH helipad will be lost to provide the site for the two new hospitals. Due to the limited free land available during the build phase, the Board will make off-site provision for helicopters during this period. The Board are exploring possible options for this.

Preliminary studies have then been carried out to test how viable it would be to relocate a new helipad back at ground level on the redeveloped site. Guidance issued suggests that it would be very difficult to achieve this and to maintain compliant approach angles at the recommended orientation. The PSC has therefore adopted a rooftop helipad that is technically capable of handing both Eurocopter and SeaKing/Sikorsky sized craft[12].

Whilst this provides direct internal access via lift to clinical areas (including Children’s Hospital and Neurosciences) without requiring ambulance transfer, the feasibility of this proposal has yet to be fully worked through with the Planning Authorities, Scottish Air Ambulance Service, Civil Aviation Authority, Ministry of Defence and the Emergency Department Clinicians. It is understood that the Board have set up a working group to take this forward.

Tree Protection Orders: Many of the existing trees on the site are covered by Tree Protection Orders (TPO). The PSC assumes that permission can be obtained for removing a small number of these trees in the central site area. The loss of these could be mitigated through an increase in planting in the landscaped areas. This assumption would be subject to a future application for tree removal to GCC.

[10] Refer to OPA Design Statement
[11] Refer to JMP’s Transport Assessment April 2007
[12] Refer to Max Fordham’s Helipad Report for New South Glasgow Hospitals

3.4 Building Organisation

The functionality of the PSC arrangement has been discussed in some depth with clinical users during the Stage 1 design process. In particular the size of the adult acute facilities has lead to the analysis of alternative approaches to clinical organisation to test relationships between different departments and anticipated journey times. The adoption of separate hot and cold routes identified above has been pursued as rigorously as possible throughout the design and extends to the separation of both vertical and horizontal routes at all floor levels. Figure 7 illustrates these routes in axonometric and the adjacency plans [13] indicate how hot, cold and FM (red, blue and green) lifts and corridors extend throughout the building.

3.4.1 Ground Floors Level 0: See Appendix A: 05017-GA-000-A

Both hospitals have their ED Emergency Departments (ED) placed in the centre of the ground floor, coming together at both the public and ambulance entrances. As noted above, the arrangement of the entrances to the ED was the subject of some debate during the option appraisal exercise with different views being expressed as to the most appropriate arrangement.[14] In terms of their operation, the adult and the Children's Emergency Departments operate independently and staff and patients will not mix. The co-location of the ambulance entrances is perceived to be of benefit in a major emergency and also concentrates this activity in one part of the site. The conclusion reached at that time settled on the "separate but together" approach which places them near but slightly separate.

The detail design of the entrances will be a key consideration in any future proposal.

The Assessment Beds which function closely with the ED are also located at ground floor level and are accessed via hot routes for staff and patient transfer. Cold routes to the assessment areas are also provided from the main public circulation so that relatives can reach assessment without going through the Emergency Departments' clinical areas.

Emergency and Outpatient radiology areas are located on the ground floor between the Emergency Departments and the Outpatients' areas. One of the original clinical models proposed placing the adult's and Children's radiology back-to-back in the centre at ground floor level. However, the decision regarding the planning of the two EDs inevitably displaced radiology from the centre and in the intervening period work with to examine the detailed planning has split radiology further onto different floors. In so doing, different modalities can be located adjacent to the clinical departments with which they are most closely associated. The detailed layouts for both Children's and Adult's radiology are described below.

The main public entrances to both hospitals lead into ground floor concourses arranged between their respective outpatient and radiology areas. Opening off these concourses are the reception, café, retail and other public areas associated with the main entrances. The visitor stairs and lifts to wards also accessed from the concourses together with routes to first and second floor outpatient and other day services.

The ground floor plan arrangements for both hospitals place the outpatient service and ED minor areas to the front of the plan off the main public entrances. The rear of the plan is then occupied by the ED major's areas and Assessment Beds. This provides a solution whereby short term self presenting patients penetrate less into the building plan than the more seriously ill.

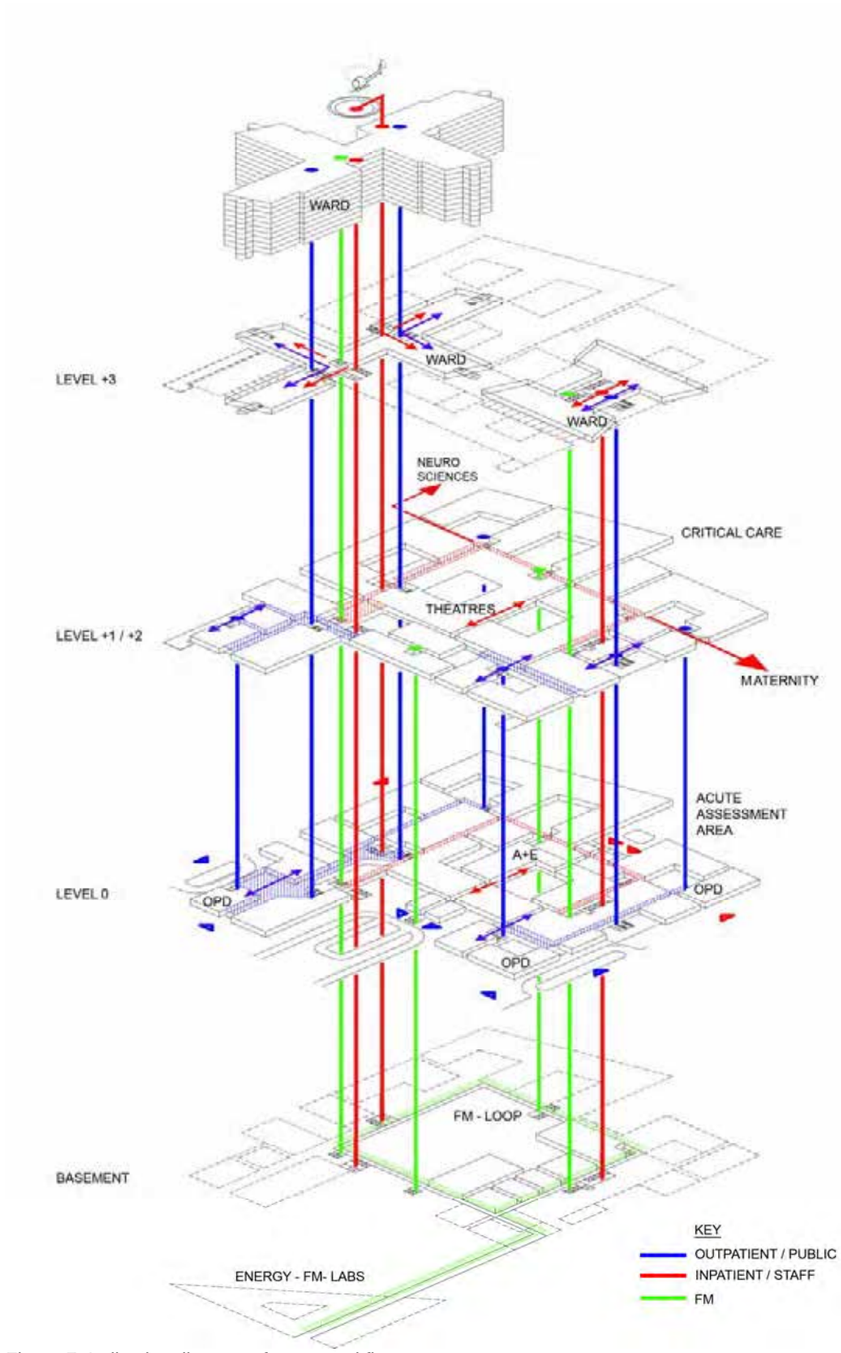



Figure 7. Indicative diagram of separated flows.

[13] Appendix A dwgs 05017-GA-000-A to 05017-GA-005.
[14] Refer to separate Avanti Architects Redevelopment Design Options Appraisal Report Nov 2006.

3.4.2 First Floors Level 1: See Appendix A: 05017-GA-001-B

The first floor in both hospitals provides the primary “hot floor” housing theatres, critical care and inpatient radiology areas. As noted above, links are formed at first floor level to Neurosciences and the new Neo Natal Unit being built as part of the Maternity block upgrade. The northern end of the first floor still accommodates some outpatient facilities and the shared Dining area which will be accessible to the public. The public will access these areas from the adult and the Children’s atria. The Dining facility and kitchen will serve both adult’s and Children’s hospitals and therefore it sits between the two to provide dual access. Views from first floor Dining area overlooking the new landscaped space are provided. It is anticipated that the Dining area would be split to avoid members of the public passing between the two hospitals.

Nuclear medicine is another area where a back-to-back service between Adult’s and Children’s is proposed. This is located where it can be accessed from outpatient and inpatient routes through both hospitals without cross-overs.

The adjacency between Paediatric Intensive Care Unit (PICU) and the Neo Natal department has been identified in the brief as important. Although these facilities will be provided in two separate building projects, a link which is as seamless as possible is required. This is discussed further in the detailed layouts below.

Like the horizontal routes, the vertical circulation is separate for inpatients and outpatients. On the inpatient system there are dedicated bed lifts rising up from the inpatient diagnostic and treatment areas housed in the plateau to serve the wards. In addition dedicated emergency lifts are provided to link the ground floor ED to theatre and critical care areas above. Visitor routes from the ground floor concourse to both the wards and the critical care areas are provided without crossing the busy hot routes to theatres and radiology. These cores will not open to a floor they pass through where no public access is required.

Outpatient and other day services on the first and second floors are reached from gallery spaces overlooking the ground floor entrances. This aims to provide both the scale and spatial interest associated with an important public building. Visibility and linkages between floors provide look back to the main entrance to assist with way finding.

3.4.3 Second Floors Level 2: See Appendix A :05017-GA-002-A

At second floor level the two hospitals begin to separate into two distinct masses. The second floor of adults largely duplicates the first floor, although radiology is not present and the detailed internal functions of the critical care and theatre areas differ from Level 1.

At this point it is important to highlight the discussions that have taken place with regard to splitting adult theatres and critical care onto two floors. From the outset the clinical brief assumed the 20 new adult theatres would be split onto two floors: one “clean” and one “dirty”. As with a department like adult radiology which on one floor would be the size of a Premiership Football pitch, it can be argued that the Theatre suite would simply be too large if built in one area and that travel distances within the department from perimeter access points would be overly long.

The Stage 1 adult PSC therefore adopts the two floor split for both theatres and critical care. The detailed layout for adult critical care in section 3.10.3 illustrates the current split. However, during discussion with the users, and in particular Critical Care users, doubts have been raised regarding any split arrangement. Figure 8 shows a possible alternative first and second floor plans that place the whole of critical care on one floor. In the time available for the completion of the stage 1 design it has not been possible to carry out a full consultation on these options to help conclude the debate regarding the pros and cons of a split arrangement. A decision was therefore taken to develop the option shown in 3.10.3 but to include the alternative for further consideration and testing in the next stage. During any future review, users from ED, Theatres, Radiology and Critical Care will have to be brought together to examine the benefits or otherwise of the alternatives. For example, whilst this option would place all of theatres and all of critical care on their own floors, it would dislocate Interventional Radiology from Theatre recovery.

The Children’s second floor plan sees the start of the reduced ward footprint. Children’s cardiology is located at this level immediately above PICU. Users would prefer to see the Cardiology beds located on the first floor beside PICU. However, the PSC reflects a compromise in this respect. Future design development should test if the preferred arrangement can be achieved.

The Schiehallion ward providing Children’s Oncology services is located on the opposite side to the cardiology ward. This provides both day and Inpatient services and can be reached via the separate hot and cold routes. Adjacent to this sits the Aseptic Suite to supply directly into Oncology. Although this service is scheduled within the adult hospital much of the Aseptic Suite’s output will go into Schiehallion making a direct link desirable. Aseptic preparations to the adult hospital will leave via the managed back-of-house FM lifts and travel across to the adult hospital at first floor level avoiding any cross over with public routes.

The Children’s support accommodation at second floor level will serve all inpatient areas, providing family welfare and patient classroom facilities. The remaining area is taken up with plant serving the lower floors and in particular theatre plant sitting directly above the first floor Children’s theatres. The plant room configuration is such that it supports the larger ward footprint on the floor above and removes the need for plant enclosures over the roof areas which cardiology and oncology beds look out on. The PSC proposes planting all these low level roofs with a sedum type green extensive roof with some limited intensive areas to provide outdoor activity space associated with the wards. Planting will extend to both main roofs and plant enclosure roofs to maintain a green outlook when viewed from floors above.

3.4.4 Third Floors: Level 3: See Appendix A :05017-GA-003-A

At third floor level the adult hospital’s general ward footprint starts for two of the wards. The northern most of these would be dermatology which then sits directly above dermatology outpatients on level 2, linking the department.

To the rear of the wards are the extensive enclosed roof plant areas associated with the acute plateau and the base of the wards. It should be noted that the ward plans generally avoid patient rooms looking back at these plant areas.

Level 3 of the Children’s hospital shows the ward floor containing the 96 generic beds. This is discussed in more detail below.

3.4.5 Fourth Floor: Level 4: See Appendix A :05017-GA-004-A

This level sees the start of the full adult ward template containing 4No wards on each floor arranged around the central support area set out in the clinical brief. It should be noted that the two wards at level 3 leave 32 of the 34 wards required to be provided from level 4 up. This allows 8 floors with 4 wards on each floor as drawing 05017-GA-004-A. The detailed adult ward plan is described below.

Level 4 of Children’s is taken up by enclosed roof plant. Again, the PSC proposes that all low level roofs will have a sedum type extensive green finish. This includes the roofing over the children’s roof plant enclosures so that when looking down from the adult wards, the visual impression will be of a combined green roof-scape.

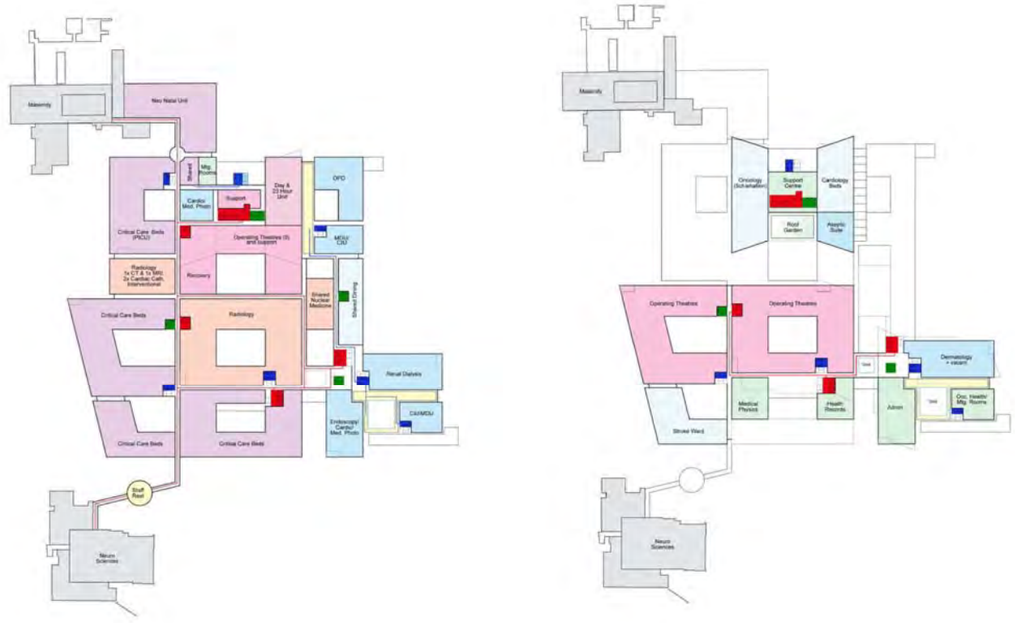


Figure 8. Alternative Option for configuration of Adult Critical Care all on one floor. To be reviewed in next stage with users.

3.4.6 Fifth Floor to Eleventh Floor: Levels 5 to 11

These floors complete the full adult ward template started on Level 4. At this stage wards have not been assigned to particular specialities. The clinical brief has called for standardisation where possible across wards to allow future flexibility. For example, a surgical ward could become a medical ward and vice-versa with minimal modification depending upon future flexing of service need. All wards enjoy the same links to the central core and roughly the same travel times to the acute plateau to provide this flexibility.

3.4.7 Twelfth Floor: Level 12

This floor is occupied by enclosed roof plant associated with the Wards below. In the centre and raised above the surrounding roofs sits the proposed helipad. A short section of ramp leads to two of the bed lifts, taken up to this level to allow direct transfer from the helipad. Two lifts are taken up to provide resilience in the event of a breakdown and would be managed such that when a chopper is coming in one of the lifts would be held at level 12 to provide rapid transit to the acute plateau below.

3.5 Vertical and horizontal Organisation:

The vertical organisation has largely been described above. Figures 7 and 9 show diagrammatically the 3 dimensional stacking arrangements of both hospitals. Analysis was also carried out at an early stage to examine journey times in horizontal and vertical models. This analysis is shown on Figures 10, 11 and 12 comparing the footprint arranged horizontally, double staked and more vertically stacked. What this analysis illustrates is that even if low rise solutions were possible on the site, horizontal journey times would be excessive. The waiting times associated with lifts arise even in a two storey option. The journey time analysis shows that once lifts are introduced, increased vertical travel distance has a negligible impact on overall lift journey times but dramatically reduces the overall travel time between departments when compared to horizontal journeys. The PSC lift strategy has been developed in light of users' valid concerns that lifts can breakdown and cause inconvenience. Lift provision has therefore been calculated on the basis of maintaining a good service even at times when individual lifts are out of action[15]. Further detailed studies of journey times for different options were carried out at the time of the options appraisal.[16]

One of the key concerns identified by the public focus groups was the potential walking distances for visitors and outpatients encountered on the existing SGH site. Long horizontal journey times increase visitor fatigue and downtime for staff. Despite the significant increase in overall accommodation the PSC has endeavoured to mitigate this by concentrating day activity to the front of the plan near the main entrances, close to vehicle drop-off and transport stops. Visitor cores going up to inpatient ward areas open off these concourses and lead directly up to ward entrances on the floors above. Walking distances for visitors on upper floors are therefore very short. The other benefit for elderly and disabled users is in allowing a large part of their journey to be supported by mechanical means (i.e. lift). Voice directions in lifts can then help with way finding for the visually impaired and those with reading difficulties.

Other discussion took place regarding the configuration of the circulation systems. Two different approaches were identified. These were described as the "matrix" and "tree" – see Figure 13. The matrix, such as one might find in the street plan of a town or city, allows multiple connections and adjacencies to be formed. The potential disadvantages of the matrix are that it takes time to become familiar with the pattern and can disorientate new visitors. It is also difficult to control the movement of visitors within the system which can give rise to security problems. Frequent authorised users such as staff learn the matrix plan and quickly develop their knowledge of the shortest routes.

The tree arrangement provides fewer multiple connections but is easier to negotiate and lends itself to a clear way finding strategy and better security. For example this model is used for the management of passenger flows in airports. This structure is therefore better suited to areas of the building that are to be used by outpatients and visitors.

Whereas in a traditional hospital both staff and visitors use the same circulation system, the requirement to separate hot inpatient and cold outpatient areas has provided the opportunity not only to create separate movement systems, but to apply a different spatial structure to each of these. The hot staff and managed inpatient transfer routes form a matrix allowing easy access and freedom of movement from all points in the system to other acute departments. The cold visitor and outpatient routes start from the main entrance and follow the tree, with horizontal and vertical branches to clinics, outpatient imaging and wards. The same route is then retraced ensuring that visitors do not gain free access to other parts of the hospital and leave by the same entrance.

Although the PSC has adopted a vertical ward arrangement for the reasons given, a more horizontal solution should not automatically be discounted. However, an alternative approach would be assessed against the same criteria to test if separation, way finding, security and journey times are equivalent.

Bed lifts are provided to allow flexible movement of inpatients around the building. Bed lifts travelling to all ward floors pass down through the plateau to allow patients to be moved up from ground floor ED and assessment areas. Similarly inpatients can be taken down to level 1 and 2 theatre and radiology areas. Transfer of patients between general wards and ICU, HDU and CCU beds in critical care also follow this route.

Dedicated emergency cores are provided within the plateau to transfer patients between the ED and the theatre and critical care areas. This system is duplicated in the adult and Children's hospitals such that adults and children never meet.

Two of the adult ward bed lifts travel up to the rooftop helipad. As noted above, one of these can be locked off when the helicopter lands to allow rapid transfer from the roof to the hot floor or Ground ED level. Patients can be transferred internally to both new hospitals and the linked Neuroscience and Maternity facilities if required.

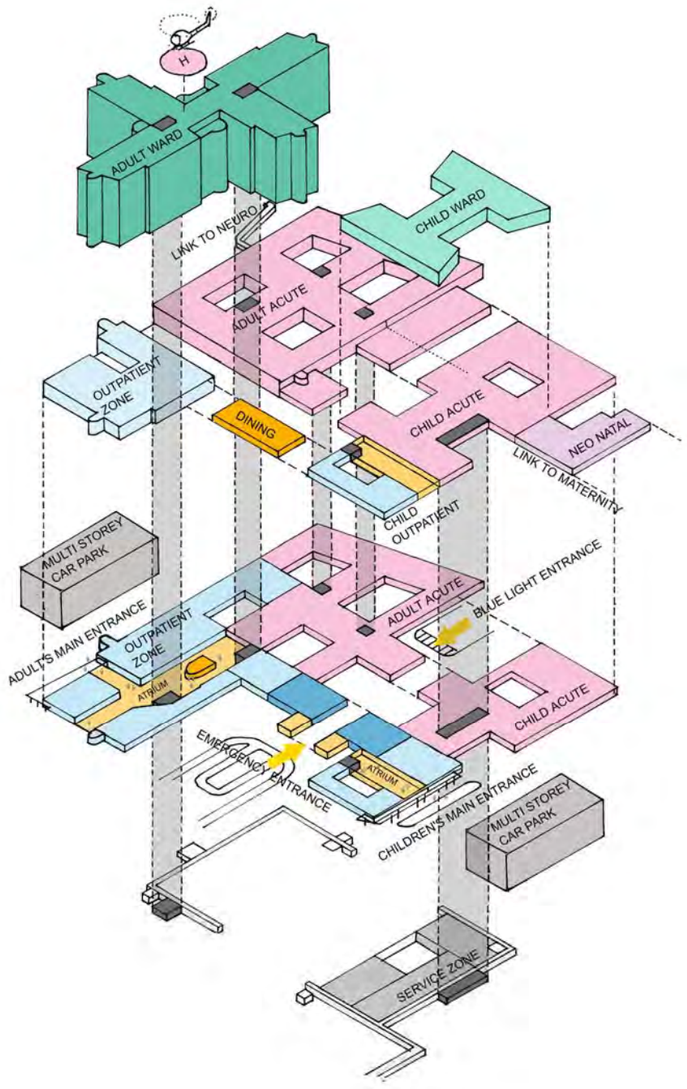
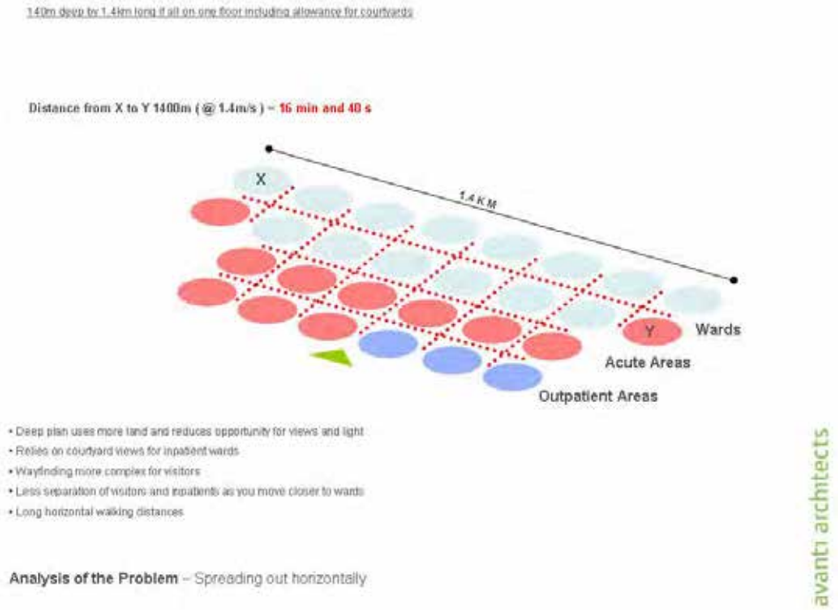
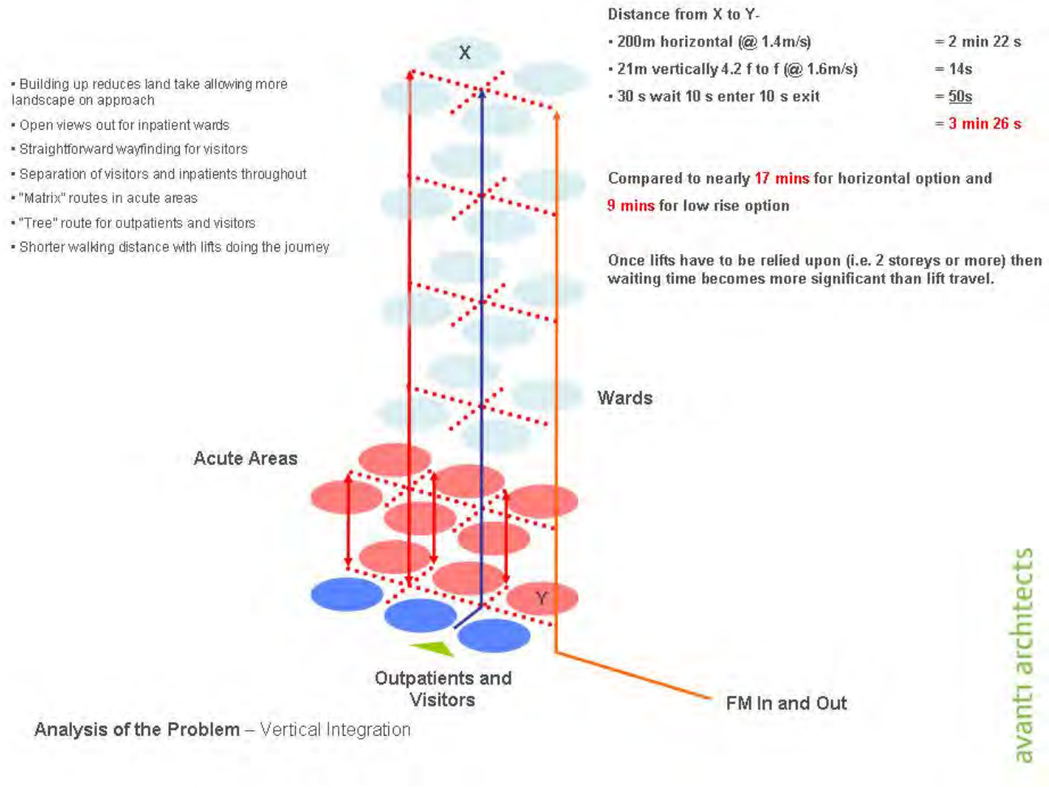



Figure 9. Diagrammatic axonometric showing stacking of both Hospitals.

[15] Refer to Max Fordham's Lift Strategy Report
[16] Refer to separate Redevelopment Options Appraisal Report



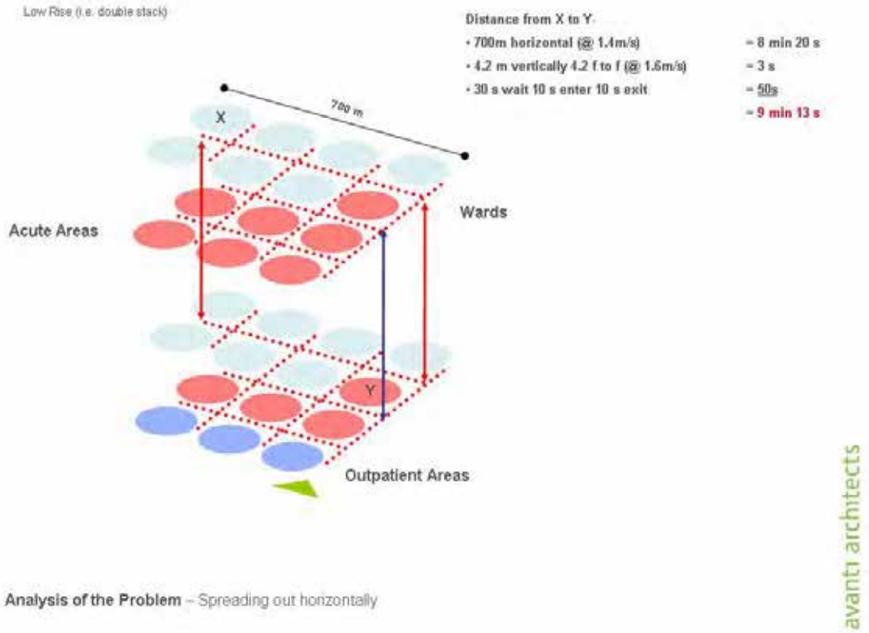




Figure 10, 11 and 12 Stacking diagram options

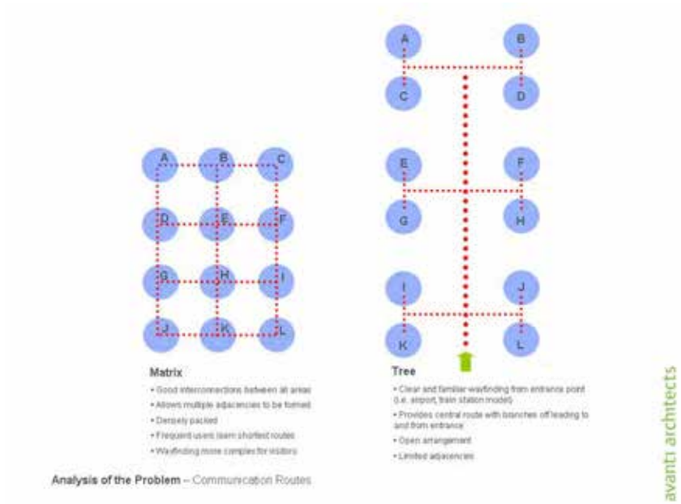



Figure 13 “Matrix and Tree” configurations

3.6 Flexibility and Expansion

The site constraints have a large impact on both the organisation and allowance for future expansion. During the options appraisal studies, users expressed reservations about plans that provided limited hard expansion space. It was also made clear that the “semi-detached” hospitals must be capable of expanding in both directions. Therefore separate expansion land has been allocated for both children and adults.

Figure 14

Figure 14 shows how this hard expansion is achieved. In the case of the Children’s hospital this will involve future relocation of the Ambulance Service Workshops and the building currently leased to the National Radiological Protection Board (NRPB). For the adult hospital expansion if would require the relocation of the mental health facilities that currently occupy this area of the site. Following the demolition of the existing hospital there will be a number of potential development sites within the hospital estate, however the location of most of these will preclude the provision of direct links back to the hospitals. These sites are therefore better suited to non-acute activity whereas the hard expansion zones shown to the east and west of the new buildings provide flexibility in that they can be utilised for both acute and non-acute activities. It is therefore important that in the master plan for the development of the site as a whole, the expansion areas identified are reserved to provide for this flexibility and change.

The clinical brief has allocated much of the administration accommodation to the refurbished listed buildings outside the main new development. This decision was largely driven by considerations of cost, but the location of admin space outside the new build has removed the opportunity to create more soft expansion space within the hospital. Although, departments contain a measure of soft expansion space within their area allocation, the opportunities for soft expansion within the PSC are more limited. However, where opportunities do arise these have been exploited. For example, medical records have been located adjacent to adult theatres on level 2 and immediately above radiology. This soft activity could in the future be moved and the shell refitted to provide say additional interventional radiology with links to radiology, theatres and critical care.

As the design develops further thought should be given to areas that are likely to expand and how planning can accommodate this.

3.7 FM Organisation

As noted above, the FM strategy for the project as a whole requires further testing in the next stage as output specifications are developed. The PSC has adopted the basement distribution strategy which allows goods to be brought across from the FM delivery, holding and distribution areas north of the new buildings. In this location the new laboratories provide both a public face to the new open space while helping to screen the delivery area and energy centre to the rear. The energy centre itself will be double stacked and placed to the rear close to the boundary with the water treatment works. Offices associated with FM activities will sit alongside – see Figures 6 and15.

The long frontage to the delivery yard allows vehicles to deliver into holding areas in advance of goods being moved across using basement link – see Figure 16. The basement distribution system from a separate FM facility is similar to the approach at the new Trondheim Hospital in Norway. The basement loop links into all the FM lift cores allowing vertical distribution up to clinical areas. It is anticipated that lifts would be dedicated for clean and dirty purposes.

The separate basement horizontal distribution system could potentially accommodate a robotic or automated distribution system. Fujitsu are one company investigating these systems. It would be beneficial in the next phase to explore the implications of robotics to ensure that opportunities for future-proofing the building are included.

Because of the cost of creating basement space on a site that has a high water table and poor ground conditions, the temptation to make more use of the basement level has been resisted and the basement is therefore relatively under utilised in the PSC. The use of the basement is therefore an area that may present some flexibility for the development of the FM brief during the development of the design. The other relationship that requires further consideration in the next stage is the link between the basement kitchen and the level 1 servery. The reduced courtyard shown on the plan is also provided in the PSC to allow natural light down to the basement working areas.

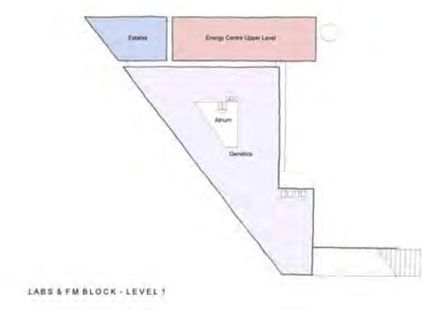



Figure 15 . Labs/FM Level One

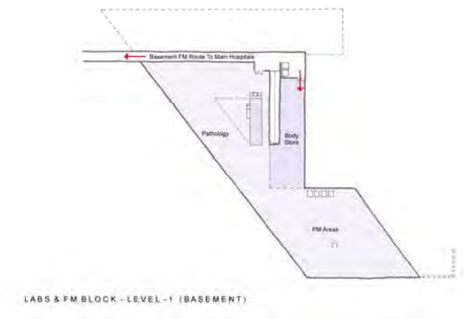



Fig 16. Labs/ FM Basement.

3.8 The Public Realm and Way finding

The PSC recognises that in addition to resolving the clinical brief and the functional challenges of a modern hospital, the building must ensure that members of the public are neither intimidated nor confused when entering the new Hospitals. In the case of the Children’s hospital particular consideration has been given to the need to reassure children and their families at a potentially stressful time.

For example, particular attention has been given in the development of the PSC to the provision of opportunities for day lighting and views as the public routes pass through the building. Further consideration will need to be given to the integration of art into public areas to further enhance the quality and sense of welcome in the two hospitals.

The broad way finding strategy has been outlined above and detailed proposals for the main entrances to both hospitals are described below.

3.9 Security and Control

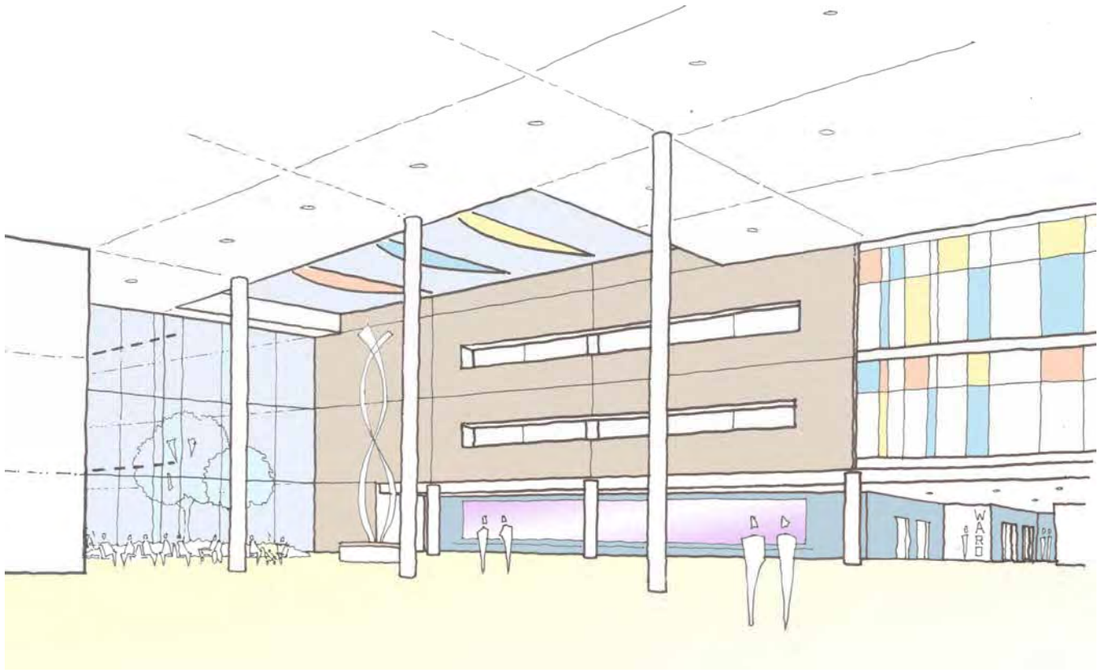
Management of the new development and the safety and security of staff and patients is a key issue for the Board. The PSC sets out to greatly reduce the number of public entrances to the Hospitals compared to the existing SGH site.

The public will enter the hospitals through their separate main entrances, both of which are controlled by main reception, meet and greet points. There are two other public walk in entrances to the separate Emergency Departments. A security base is positioned to overlook these as described in departmental sections below.

The two 24hr entrances will provide controlled access for use by staff and out of hours by relatives called in for an inpatient emergency. In such an arrangement a porters/staff base at the 24hr entrance would control access and allow relatives to be escorted. Patients being transferred or discharged by ambulance will also leave this way.

The existing entrances to Neurosciences and Maternity will be retained but only staff and escorted inpatients will be able to move between these buildings and the new hospitals. The remaining independent buildings on the site including Westmarc, Podiatry etc. will continue to operate as before.

The separate hot and cold, staff and public circulation systems within the new development will significantly improve security in clinical areas and staff safety. Further details on the CCTV and other security installations are described below.




3.10 Key Departmental Layouts

The Board asked their PSC architectural advisors to develop a series of departments at 1:200 scale to test scheduling and planning assumptions. Preliminary Schedules of Accommodation were prepared for each department and meetings were set up to look at the first pass layouts. The comments from those meetings were then incorporated and the layouts amended accordingly. The layouts included in this report illustrate the amended versions. In the next stage, second pass meetings with the user groups will be required to review these alterations. It is likely that further iterations will have to be prepared in stage 2 of the design development before all the users concerns are fully resolved and the plans can finally be signed off.

3.10.1 Adult's Emergency Department: See Appendix A: 05017-GA-ED-001 A

The Adult's Hospital Emergency Department sits in the centre of the ground floor plan. The blue light ambulance entrance at the southern end leads directly to the resus and majors areas. The Public walk in entrance to the north links directly to the main reception and waiting area, which looks into a planted courtyard. A security base is strategically placed to allow access to all ED areas and particularly links to reception and waiting areas. A window from this base overlooking the adult reception is also provided.

From the waiting area patients can be taken to three Minor Injuries assessment and treatment rooms. Minor patients will be treated and discharged from these areas. A route is provided directly from these assessment rooms into the major's areas should this be required. A separate route from waiting to majors is also provided without going through the MIU rooms for those patients assessed as majors who have self presented.

The major's area is located in the centre of the department with bays arranged around a central staff & support base. The resus bays are co located with majors and adjacent to the blue light ambulance entrance. Concern has been expressed that the resus bays are removed from the main public entrance in the event that a self presenting patient requires immediate transfer to resus.

In order to solve this, the PSC provides a route which bypasses minors and majors areas to allow a patient to be moved quickly from the public entrance to resus in such an emergency. The travel time to achieve this is less than 60 seconds which has been deemed acceptable. However, if an arrangement can be developed that maintains the benefits of the current plan but reduces this separation further, this would be preferred. This route also allows relatives or friends arriving in the ambulance to be directed to the main waiting and reception area without passing through the clinical areas.

The Emergency Department has good links with ground floor Radiology as shown. The acute Assessment Beds are co located beside the Emergency Department to enable more joined operation.

3.10.2 Children's Emergency Department: See Appendix A: 05017-GA-ED-002 B

The Children's Hospital Emergency Department also sits in the centre of the ground floor plan. The issue surrounding the relationship of this department with adults has already been discussed above.

The blue light ambulance entrance is at the southern end and the walk in public entrance is at the northern end. A combined Adult and Children's entrance leading to separate waiting areas was considered but rejected at the Option Appraisal stage[17]. The PSC therefore reflects the agreed "separate but together" arrangement. The detailed design of the walk in entrances requires further consideration in the next stage.

The Children's main waiting area is reached from this entrance. The receptions in both the adults and the Children's departments are placed to overlook the entrances, the waiting areas and the controlled link between the two. This has been provide in case a patient enters the wrong department and needs to be moved across quickly between the two receptions.

The clinical areas are zoned into minors, majors and resus. Resus is located near to the ambulance entrance and, as with adults, a direct link is provided from the public entrance. Again if the design could develop to reduce the length of this whilst retaining the benefits of separation, this would be preferred.

Children's Emergency Department is co located with Children's ground floor Radiology and Assessment Beds.

3.10.3 Adult's Critical Care: See Appendix A: 05017-GA-CCU-001-A

The discussion concerning whether or not to split Critical Care across two floors has already been mentioned above. The 1:200 layouts contained in this report reflect the current split option which concentrates all the ICU and HDU beds on level 1 with only CCU (Coronary Care) beds and staff support areas on level 2. The layout arranges the patient rooms in clusters

[17] Refer to separate Avanti Architects Redevelopment Design Options Appraisal Report Nov 2006.

around central staff bases. Visitors arrive from ground floor entrance area via a core which leads into the department past visitor waiting and support areas. Inpatients going to and from the department leave through separate routes.

The layout seeks to position most of the beds with direct access to natural daylight. Evidence exists that ICU departments with good natural lighting promote faster recovery. In developing the design, more consideration must be given to exploring how opportunities for daylight are maximised further. The wider question of whether this department needs to be all on one floor will also require resolution.

Critical Care and Theatres requires direct links with the ED. A dedicated emergency core is provided to link these activities. This core is unencumbered by other inpatient movements. Unlike the main ward bed core, the dedicated emergency core does not extend above plateau level.

Patients being transferred from ICU and HDU beds to general wards would be moved via the main ward bed core.

The ICU and HDU beds are also placed on the level 1 hot floor link. This location provides opportunities for direct links to Neurosciences and Maternity. The PSC recognises the importance of linking the current standalone Maternity into the adult acute hospital. This follows the conclusions of the Northwick Park report. The link provided allows Critical Care Staff to move rapidly to the obstetric areas, in the event that a mother requires urgent care. Once stabilized, the mother can be transferred via the same link back across to an ICU or HDU bed in the acute facility for ongoing care.

3.10.4 Children's Critical Care: See Appendix A: 05017-GA-PICU-001 A

The PSC places Children's Critical care or PICU at first floor level with direct links to Theatres, Radiology (CT) and the ED. The latter would be via the dedicated emergency lift core operating between ground and first floor level.

PICU is situated close to the new Neo Natal Unit in Maternity and further work is required to define the relationship between these areas and the links to other departments, such as Neo Natal surgery to Children's theatres.

Visitors arrive from ground floor public area via a public core which leads to waiting and support areas, managed from the large central staff base.

Bed areas are arranged to ensure most bed positions have natural daylight. 16 of the beds are arranged in groups of 4. This provides the flexibility to operate these as either single rooms or as 4 bed bays. Users supported this flexible approach.

In addition to the central staff base, 2 further staff bases are located within the two main bed clusters. The 6 isolation rooms are separated from the other clusters. The central staff base overlooks the isolation rooms.

Administration accommodation located within the department provides scope for soft expansion, in the event that more bed spaces are required in the future.

Where room areas do not have direct access to an external window, roof lights have been provided.

3.10.5 Adult's Radiology: See Appendix A: 05017-GA-RAD-003A & 004A

This report has already touched on the discussions that have taken place with users to consider how Radiology is configured in the new building. Different models have been tested including models that centralised all of Radiology in one area on the ground floor.

The disadvantage with a centralised solution is that it leads to the separation of the Emergency Departments, the disadvantages of which have been described above. The scale of the new department would also lead to it being potentially unmanageable if constructed in one very large area. The ground floor location would also require inpatients from the wards above to have to travel further to reach Radiology. In particular ICU patients requiring urgent CT would have to be brought down from first floor, rather than easily moved across a corridor.

The result of these discussions is demonstrated in the 1:200 layouts included in this report. Adults is split into two main areas. Outpatient and Emergency Radiology is located on ground floor with Inpatient Radiology on first floor. A third area for Nuclear medicine is also located at first floor level at the front of the plan. It is envisaged that Nuclear Medicine will operate very closely in a back-to-back arrangement with Children's. In this location four separate routes are provided to avoid cross-overs: adult outpatients: adult inpatients: Children's outpatients and Children's inpatients.

Ground Floor Outpatient and Emergency: Radiology in this area is placed to be easily accessible from both sides by outpatients from the public areas and emergency patients from the ED. In the case of the ED very short routes are provided from majors, minors and resus areas. In the event that it is necessary, inpatients can be brought down from the floors above and taken into ground floor radiology without travelling through public areas.

Ground floor radiology in the PSC allows areas to be locked off at night whilst retaining ED access 24hrs a day. X ray and CT are positioned to allow potential future conversion of plain film rooms into more CT rooms. Patients can be taken to the various modalities without passing through other modalities.

The potential disadvantage in this arrangement comes from the limited opportunity for radiology expansion linked to the ground floor department. Being surrounded on all sides also limits availability of windows, although this is mitigated to some extent through the extensive use of roof lights to introduce natural daylight. The main waiting area can be open to the public space. This will provide views across into the adjacent courtyard.

The technical issues related to the positioning of MRI scanners will require much more detailed study. The Board's brief assumes 3 Teslar scanners which impose additional problems in terms of both RF and Magnetic field screening. Although discussions with scanner manufacturers indicate that RF and Gauss line screening can permit a more embedded solution, the impact of large metal objects moving outside the room may be harder to counteract. A full technical study will be required to assess the viability before any design is finalised. The study will also have to assess the best route for magnet replacement. The current PSC assumes that this will either be directly through a demountable section of external wall, or off one of the wider communication routes passing through the building.

First Floor Inpatient Radiology: Radiology in this area is placed to be easily accessible from ICU and HDU beds on the same level. Close links to first floor theatres are provided, including a link between Interventional radiology and shared Theatre recovery as required in the brief.

First floor Radiology is linked to ground floor Radiology via the main stair and lift core sitting on plan between the two areas. Inpatients can be brought in from the main bed lift core and moved to different modalities without passing through other modalities.

First floor Radiology provides greater opportunity for future expansion than the ground floor. Administration areas within the department provide soft expansion space and hard expansion would be possible on the dedicated expansion land to the east by linking across the road at first floor level.

3.10.6 Children's Radiology: See Appendix A: 05017-GA-RAD-001 A & 002 A

Children's Radiology adopts a similar Ground and First floor split to adults, although in the case of Children, the first floor area would also have to accommodate some outpatient activity. It has been established that such patients would have to be escorted from the ground floor public areas to reach the first floor department.

Ground Floor Outpatient and Emergency: As with adults, the area of Children's Radiology sits between the Children's ED and Outpatients and is easily accessed by both. Routes from Children's ED are very short with links from majors, minors and resus areas. Inpatients can also be brought down to this department via the bed lifts, without having to pass through any public areas.

As with adults, this area of radiology is surrounded on all sides which limit expansion and opportunity for daylight. However, the main waiting area is located off the public concourse with views into this space and the café and play garden. This is illustrated by drawings showing the children's public concourse included below.

First Floor Radiology: Radiology in this area is positioned to be close to PICU. Close links to shared Theatre recovery are also available for interventional procedures. Small children often have to be sedated before being scanned increasing the need for induction and recovery areas and potential links to day and 23hr beds.

Discussion with users identified a strong preference to arrange the first floor Radiology around a central control base or bases. Ideally users would wish to see all the control rooms joined together as one but it is likely that technical issues will require some separation. The layout included in this report endeavours to provide this but further technical work is required to examine relationships between specific control areas.

The MRI scanner locations would also have to be subject to the same technical study recommended for adults.

The relationship between Children's and Adult's Radiology was discussed at some length whilst the brief and PSC design was developing. Although both Adult's and Children's hospital are to a very high degree clinically autonomous, the co location on one site of both radiology departments potentially offers some synergies. For example, MRI downtime in Children's during the evening could be taken up by extended adult clinics. Similarly, in the event of equipment failure the opportunity exists to take children across to make use of adult facilities.

The PSC strategy allows this through the connecting back-of-house communication routes. As noted above, these are not public access routes and any patients moved across would be escorted through a managed system. As a result, the building can be managed so that in the event of a patient transfer, children and adults never come into contact with one another, preserving the “separate but together” ethos.

3.10.7 Adults Generic Ward: See Appendix A: 05017-GA-WARDS-002

The preferred option proposes 4 wards on each of the upper floors above plateau level. The clinical brief calls for all four wards at each level to link back into a central shared support core housing seminar rooms, office and FM areas.

Standard ward arrangements in which wards are arranged in a line off a hospital street tend to result in the end wards being separated from the central support area. The alternative arrangement of standard L shaped wards in a doughnut arrangement in which all four link up around the central support area could be viewed as acceptable in a 3 storey low rise scheme. However the large number of adult wards in the proposed new development would create unacceptably high internal courtyards. Moreover, views into enclosed courtyards provide limited stimuli, as opposed to views out across the city.

A pinwheel plan with the four wards arranged equally around the support care appeared to provide a more uniform relationship between the 4 wards and their shared support area. This was therefore developed for the PSC. This pinwheel ward arrangement with the wards’ inpatient rooms arranged along the extended perimeter also affords all the inpatient rooms open views out from the building. The elevated ward location also adds value of this arrangement providing interesting long distance views beyond the immediate site. The presence of such open views from the inpatient rooms mitigates the temporal and spatial dislocation often experienced in hospital where it is easy to lose touch with time and the world outside.

To achieve this plan, a dual corridor has been adopted within each ward. This serves to provide alternative horizontal escape from the far end of the ward – see section 6.1 below. Support areas remaining within the individual wards are located in the centre between the two corridors. Cut-throughs are provided to reduce staff travel distance.

Users were unhappy with plan arrangements that placed the ensuite between the room and the corridor. Layouts that placed the ensuite on the outside wall were also rejected on the basis that they significantly compromised views out and the patient environment. Users preferred the arrangement shown with ensuites between the rooms, despite the fact this further increases demand on perimeter. This was to maximise patient visibility from the corridor while maintaining maximum opportunities for patient views out. The slim plan form incorporating glazing in both external and corridor walls helps improve the working environment in the ward linking corridors and central areas with borrowed light and views out.

It is however noted that circulation must increase above the target figure given in the SoA to support this configuration[18].

Further work needs to be undertaken by users to establish if this is their optimal room / ensuite arrangement and to assess the impact on patient privacy from such an open arrangement. Approval bodies would also have to be satisfied that means of escape requirements are satisfied and fire brigade access can be achieved.

3.10.8 Children’s Generic Ward: See Appendix A: 05017-GA-WARDS-003

Children’s overall bed numbers and their distribution across the building were still under discussion at the point when the PSC layout was produced. The clinical model considering the relationship between 24 bed wards and 8 bed clusters also remained to be developed.

The TA architectural team were therefore asked to look at the generic ward floor that proposed 96 beds arranged into 4 wards, each split into 3 clusters of 8.

The plans developed propose three clusters in each ward, all of which can be accessed without having to pass through an adjacent cluster. The inpatient rooms are arranged around the perimeter and again, like the adult hospital, these rooms have open views out. The end clusters in each ward link up providing the opportunity to operate more flexibly.

The single rooms adopt the arrangements shown in HBN 23 with the ensuites placed between rooms. As with the adult hospital, this provides good visibility from the corridor. This is very important in the Children’s hospital.

Again, this ensuite arrangement and the clustering increase the circulation above the figure given in the target SoA, although it is noted that the target SoA figure is less than the figure in HBN23 for Paediatric Inpatient accommodation.

[18] Refer to HBN 04 Part 1.

The recreation and dining areas sit in the middle of the plan with the potential to access secure outdoor play areas / courtyards. Young Children’s recreational and dining areas are separated from those for adolescents. The need for this was highlighted through the Children’s Hospital patient focus group.

3.10.9 Adult’s Entrance: See Appendix A: 05017-GA-ATR-001

The PSC assumes a larger area for the adult entrance atria than is given in the target SoA. However, the plan shown is consistent with the scale of the new public building it serves and is consistent with the approach adopted by other exemplar hospitals in the UK and abroad. The Board place great emphasis on the public experience of the new hospital and key to this is a generous and welcoming front door.

The Board representatives are enthusiastic about the proposals illustrated in this report and these set a standard for any future design through *inter alia* the incorporation of: interesting volumes: art: natural light: links and orientation with the outside: improved way finding on upper floor areas by virtue of double and triple height spaces linking back to ground floor routes.

The placing of the main retail accommodation at the front door allows this facility to operate on the site outside of the day entrance opening hours. Café and waiting areas link to the entrance concourse at a number of levels to stimulate activity, enhance their outlook and improve way finding. The atria itself will require further consideration when developing the fire strategy.

3.10.10 Children’s Entrance: See Appendix A: 05017-GA-ATR-002 A

The same points relating to the Adult’s entrance also apply with a few additional considerations.

The Children’s entrance concourse is on a smaller scale than that for the Adult’s hospital. The emphasis must be placed on providing an environment suitable for children of all ages. It must be remembered that the New Children’s hospital will deal with very small children up to adolescents.

The PSC allows for the inclusion of internal play areas for small children and suggests opportunities for interactive health displays and internet links for older children. Innovative way finding strategies should also be explored. The PSC suggests the use of “Flybots” moving at high level along prescribed routes to stair cores and waiting areas, leading children and their carers from the entrance.

High quality seating, signage and other fittings must be used to support the high quality environment the PSC proposes.

The Children’s shop would not operate out of normal hours and therefore does not require direct access from outside.

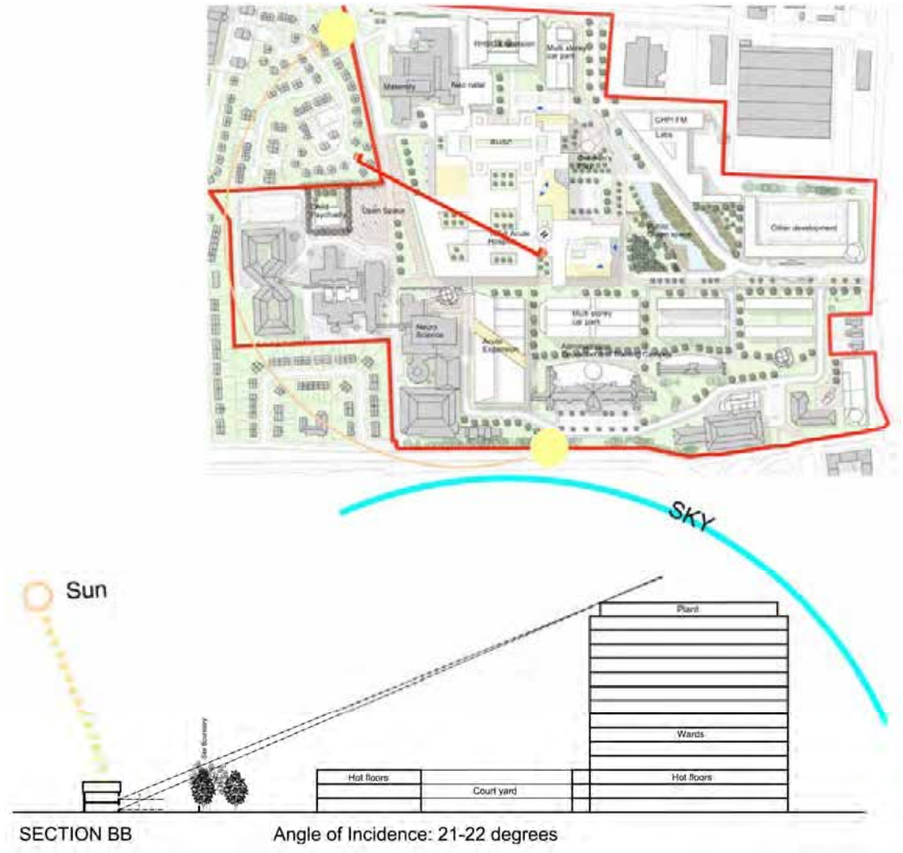



Figure 17. Vertical Sky component analysis.

4.1 Massing and Urban Integration

Studies examining scale and massing were undertaken as alternative options were developed[19]. The Board are sensitive to the presence of neighbouring properties and in particular the impact on the residential communities immediately south of the site. Each option therefore tested the impact on sunlight and daylight and skyline when seen from this edge. Overshadowing will not be an issue as the new main new buildings sit to the north of the residential areas.[20]

In each scenario tested the vertical sky component was found to be below 25 degrees when measured to the nearest point on the face of a residential building. Interestingly, the lower rise options which require accommodation to be more spread out had the effect of raising the southern edge of the new building closer to the residential boundary. They also created a less open and more monolithic skyline when viewed from the south. The current PSC option is illustrated here in Appendix B[21].

The PSC massing approach is therefore to establish a general top edge plateau building line equivalent to 3, 4 and 5 storeys across the site. This line will accommodate the built form of the lower clinical areas of the main hospitals and will be compatible with the existing building lines and new labs block. It also defines the proposed building line on the future development plots and ensures that new buildings forming the admin and training zone are sympathetic in scale with their neighbouring listed buildings.

In the centre of the campus away from the southern boundaries, the new ward elements break though this horizontal building line to provide a more prominent vertical emphasis clearly visible from outside the site. The vertical element sits as a 90 degree fulcrum on the entrance approach off Govan Road and the new entrance off Hardgate Road. This feature would serve as a landmark across the City.

The impact of the new building when viewed behind the two listed buildings was also considered. Even the lower rise options were such that they broke the sky line of the listed buildings when viewed from the Clyde Tunnel Approach. Consideration of this sort of issue is largely subjective but it was felt that a form which clearly differed from the existing site profile could be sustained in this location. The taller ward element was therefore submitted for consideration as part of the OPA.

As part of the Design Statement submitted with the OPA, drawings were provided to illustrate how the Campus Plan and emerging PSC design could form part of a wider master plan for the regeneration of Shieldhall[22]. The design for the new Hospitals must be configured in such a way that allows extension of the master planning strategy beyond the immediate site edge and into the developing area.

4.2 Materials and Elevations

The PSC composition naturally lends itself to different means of articulating the lower horizontal elements and the taller vertical elements. The PSC suggests the use of panels of robust more solid material at the lower levels referenced to the original stone buildings on the site. This could be through the use of elements of stone cladding, or more likely reconstituted or precast elements allowing punched hole windows as well as strips and screens of glazing.

The adult wards would be clad in a high quality curtain walling system made up of clear and opaque glass panels. Glass at this height will not be vulnerable to damage and its inert surface ensures the whole façade can be cleaned easily and will not loose its appearance over time. Windows of clear glazing can be more sensitively integrated into the whole to suppress the repetitive effect of hundreds of individual windows required to let light into each small room. The insulated opaque glass panels can be back sprayed in subtle colour shades such that when viewed as a whole the vertical elements provide both uniformity and variety responding to changes in light throughout the day.

4.3 Landscape Design

In many health buildings, external public spaces are vitally important in that they can also provide the opportunity for positive respite in periods of stress. Sensitive landscaping and well-defined public space in a healthcare environment can provide far more than simply an attractive setting. Through careful design social or intimate, tranquil spaces can be created, providing an environment where people might want to sit or meet, and which further contribute to the healing process.

The relationship between the PSC's built form and open space will be consistent with what one would expect to find in a city. The open space will take the form of small parks, squares and boulevards defined by buildings and routes (i.e. as nearby Elder Park) rather than an open landscape with buildings set in a free space.[23] Spaces between buildings will be designed appropriate to the activity surrounding them. Spaces that form a central public focus for entrances and drop off will be treated differently to those predominantly providing an outlook such as an internal courtyard. The hierarchy of buildings on the site will mean that different scales of building will be required and the space adjoining different buildings will be designed accordingly.

Geometry will be bold and simple and used to provide structure for planting and surfaces appropriate to the activity. There will be a requirement to remove some of the protected trees on the site to ensure effective clinical planning. However, wherever possible existing trees will be retained and new trees will be planted.

When successfully integrated, art can help to create more distinctive and attractive buildings and urban spaces, and enhance the public's experience of an architectural space; therefore opportunities to incorporate public art both inside and outside the building will be explored. Distinctive pieces of sculpture can act as markers on a route assisting way finding and orientation.

The PSC landscape design incorporates a Sustainable Urban Drainage Scheme (SUDS). A network of connecting balancing ponds, rills and swales will provide opportunities for attenuation as well as attractive landscape features. Planting, ponds and other water features will support biodiversity allowing staff, visitors and patients' safe access to green space and contact with nature.

[19] See Redevelopment Options Appraisal Report dated Nov 2006
[20] See Figure 17.
[21] See also Max Fordham Engineers separate Sunlight and Day lighting Studies

[22] See Campus Plan and Design Statement April 2007
[23] See Figure 18

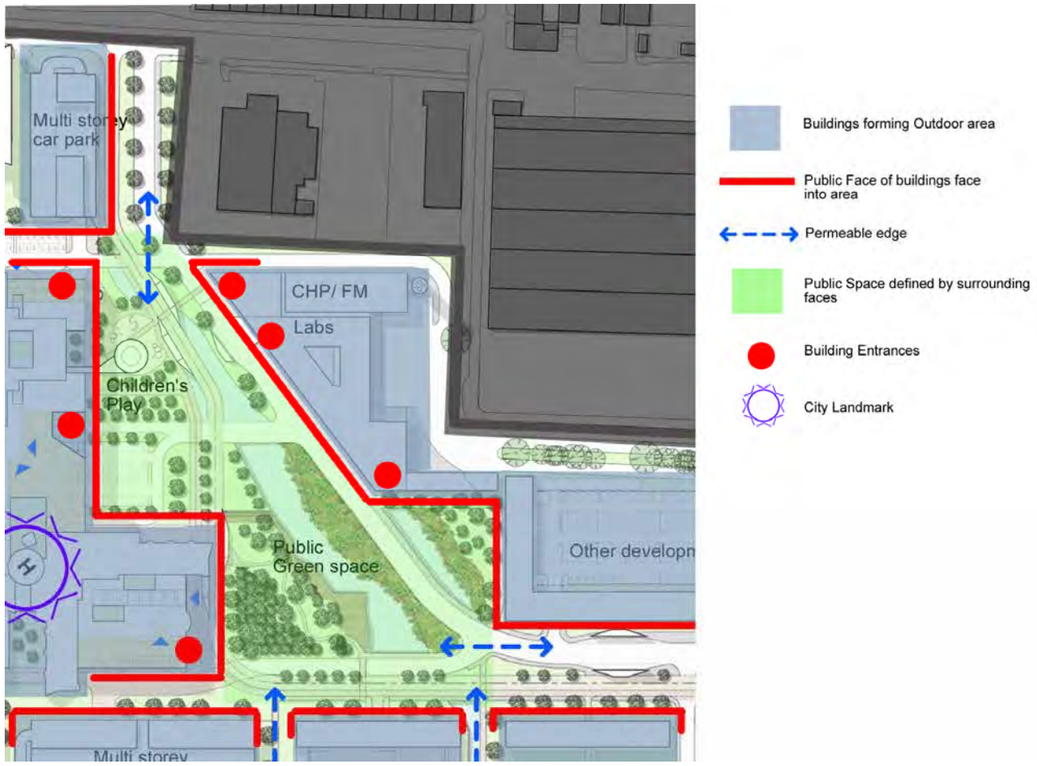



Figure 18. Analysis diagram of urban space

4.4 PSC fit with Outline Planning Application (OPA)

Due to the constraints set by the programme, the OPA was submitted in advance of the completion of the stage 1 PSC.. However, the PSC design was sufficiently advanced for it to accompany the formal OPA to illustrate an Indicative Design for the site.

Although the OPA does not seek approval for a specific design solution, the developing PSC was marked indicative and included in the Design Statement to illustrate one possible approach and to help communicate the size and scale of the redevelopment.

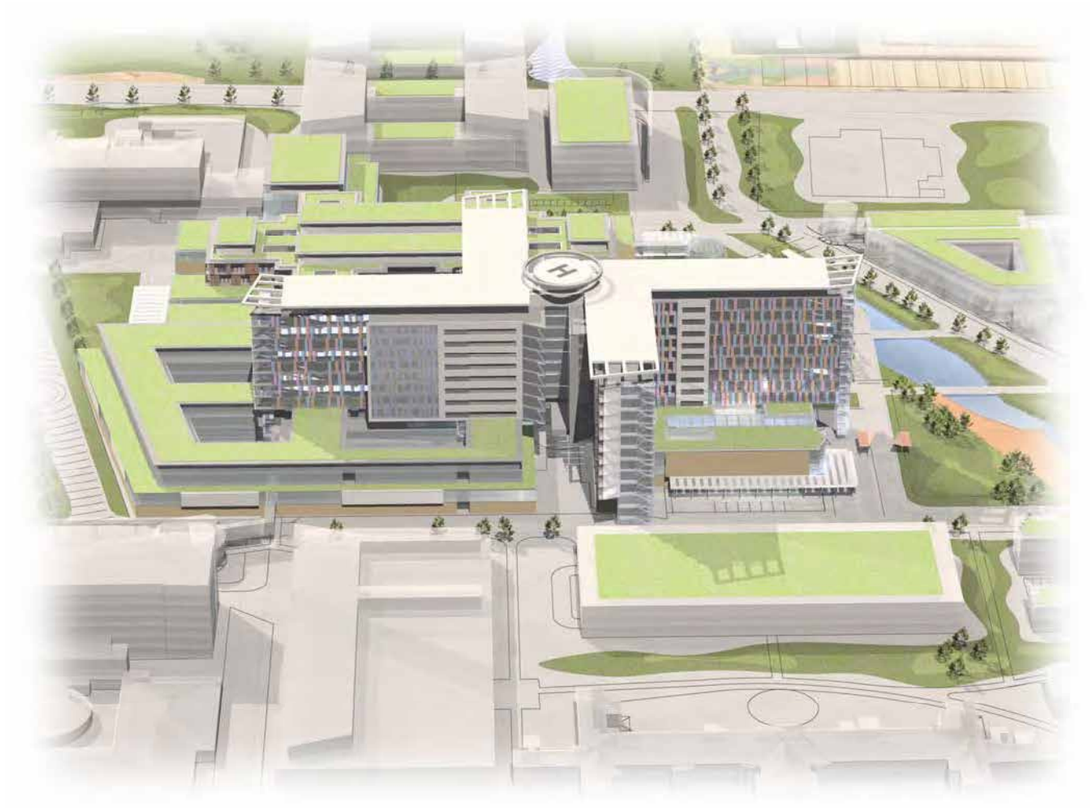
At the point when the OPA was submitted, the PSC assumed a maximum height of 15 storeys above ground. Since then the PSC has reduced to 13 storeys above ground with a further basement floor. It was felt that the OPA should highlight the potential need to increase the general height of building on the site to ensure a flexible planning principle is agreed at the outset.

The current PSC differs from the Indicative OPA scheme in respect of the precise outline of the adult and Children's ward footprints. These were amended during the subsequent 1:200 exercise. However, the differences are considered minor in relation to the level of detail required for approval at OPA stage.

At the time of writing this report the OPA has not been determined. A second design review with Architecture and Design Scotland is also likely to take place. Pre-consultation discussions with GCC indicated that Transport and Accessibility would be the main issues that the OPA had to resolve. Urban Planning issues would also be carefully scrutinised with the New Hospital forming one of the major development milestones along the South Side of the River.

An Environmental Impact Assessment (EIA) was included as part of the OPA submission[24]. The scope of this was agreed with GCC and the EIA set out under the agreed headings. The EIA used the Indicative Design for OPA to assess a number of impacts. It is envisaged that an addendum to the EIA will be required once the final design is established and an application can be submitted for Full Planning Approval. It is likely that a future bidder's design will form the basis of the Full Application.

The EIA will also require a future addendum to incorporate the detailed issues supporting the Lab block Development. Although the OPA identifies this in the April 2007 application, the scope of this was not sufficiently developed at the point of the OPA submission to assess its specific environmental impacts.



[24] Refer to Ironside Farrar's Environmental Impact Assessment April 2007

Section 5 – Design Proposals 3 – The Hospital as a Human Environment

5.1 Character and Innovation

The Board and the City believe the new Hospitals must provide a landmark development that represents the scale and importance of these new public buildings. The Hospitals will be significant additions to the contemporary architecture of Scotland and must meet the aspiration set by the Scottish Parliament to provide the highest design quality in all new public commissions.

The PSC aims to deliver a striking design representing state-of-the-art modern healthcare in clean, high quality external and internal environments. The PSC design aims to provide a piece of high quality urban design that enhances the public realm and that will provide the backbone for longer term development of both the wider SGH site and regeneration of the wider urban area.

The clinical brief is innovative in nature, bringing together many acute specialities to ensure patients receive the right care at the right time from the right experts. The design aims to empower more joined up working across specialities in a design configured to separate flows and provide clarity in planning.

5.2 Patient Comfort

The brief and PSC design provides for a much higher ratio of single ensuite rooms to improve patient choice and quality of care. The design adopts contemporary space standards that ensure wider bed spacing and a maximum of 4 beds in any multiple bay.

The PSC design has adopted enhanced environmental measures to ensure patient and staff access areas are buffered against uncomfortable temperature changes, odour and pollution from outside and unpleasant smells internally. The latest acoustic standards will be employed to control reverberation time and reduce sound transmission to enhance privacy and patient rest.

The PSC has given a great deal of consideration to ensuring patient rooms and other areas have access to natural daylight and where possible views; the adult ward arrangement being an example of this. Further design work should be undertaken to ensure access to daylight is provided wherever possible and desirable.

The adoption of segregated routes and the greater degree of control this offers will improve patient security and safety. The moving of inpatients along routes not open to visitors etc. will also reduce the potential infection control risk and greatly enhance patient dignity.

Retail facilities are provided in safe secure settings at the main entrances. The PSC seeks to reduce the outpatient and visitor journey from the new car parks and public transport stops. All external routes on the site will be well lit and overlooked.

Enhanced visitor parking is provided in the new multi-storey car parks, placed a short distance from building entrances. This ensures more spaces are provided closer to the building entrances.

5.3 Staff Environment

The PSC aims to provide staff with a clean modern and spacious working environment within the limits established by the brief. The separation of routes through the building will help staff move quickly and safely from area to area using managed communication routes closed to the public.

Natural daylight and views out are introduced wherever possible to promote a greater sense of well being and contact with the outside.

The brief has determined that a large part of the staff office and administration accommodation will be provided outside the main new build in either refurbished or new standalone buildings elsewhere on the site. This includes use of the two retained listed buildings. Further work must be undertaken in the next stage to consider users concerns regarding the potential degree of separation. However, at this stage the PSC attempts to suggest how routes to, from and between these buildings can be landscaped attractively.

The concentration of health provision and clinical staff on the site will bring with it enhanced education and training facilities, although these will not form part of main PSC development. The Campus plan has suggested potential sites for these activities which will improve training opportunities for staff and the environment in which they take place.

Good retail and café facilities will be provided and enhanced landscaped areas will improve opportunities for staff rest.

5.4 Public and Private Space

The report has already discussed the separation strategy operating throughout both hospitals. This goes a long way in maintaining the clear distinction between public and private space in the buildings.

Externally, the Adult's and Children's hospitals enjoy separate approaches off the main public space with dedicated parking and drop off close to their respective main entrances.

Emergency entrances are entirely separate from public entrances to reduce anxiety and stress and reduce the risk of accidents. FM coming into the site employs an entirely separate route in off the main road network to ensure the quality of the public realm is maintained. Hearses entering and leaving the site use the same discrete route, again reducing patient stress and avoiding potential distress for visitors.

5.5 Relationship to wider environment

The New Hospitals development will be a significant catalyst in the regeneration of the wider Govan and Shieldhall areas. The developing PSC has been shown to a number of groups including Clyde Waterfront, the strategic partnership of the Scottish Executive, Scottish Enterprise, Glasgow City Council, Renfrewshire Council, West Dumbartonshire Council and Communities Scotland[25]. The proposal to generate a new high quality "Health Quarter" in this part of Glasgow, linked to the other River developments either underway or in planning, has been viewed with great interest.

The Campus Plan and PSC have sought to demonstrate how it would be possible spatially and visually to extend a master planning strategy out from the site to the west and north to meet the river. This includes a proposal to bring the public route along the riverside, inland and through the hospital to bypass the Shieldhall Water Treatment works, which currently sterilises a section of the river frontage – see Figures 19 to 22.

The PSC and the Campus Plan responds to the wider opportunities arising through the potential of FASTLINK and other transport initiatives. The design must continue to develop in a way which makes it possible for these activities to be integrated on site and the ongoing dialogue with the external bodies must continue as proposals develop in more detail.

5.6 Design Quality

The landmark nature of the new development will require that high quality materials be used both on the building and in the landscape. The hospital enjoys a prominent location in the city and will be visible from all sides, including the river and the motorway.

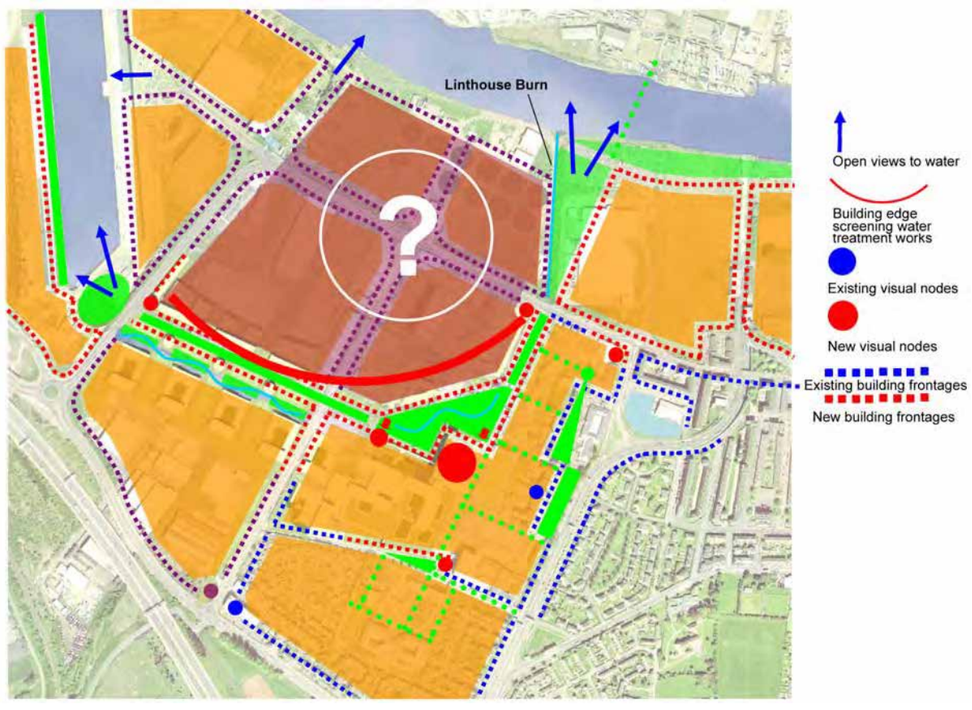
The new green space which forms an integral part of the wider site strategy will incorporate landscape design and materials of the highest quality, with extensive use of semi mature trees in formal areas. Site furniture and artwork will be attractive, imaginative and robust.

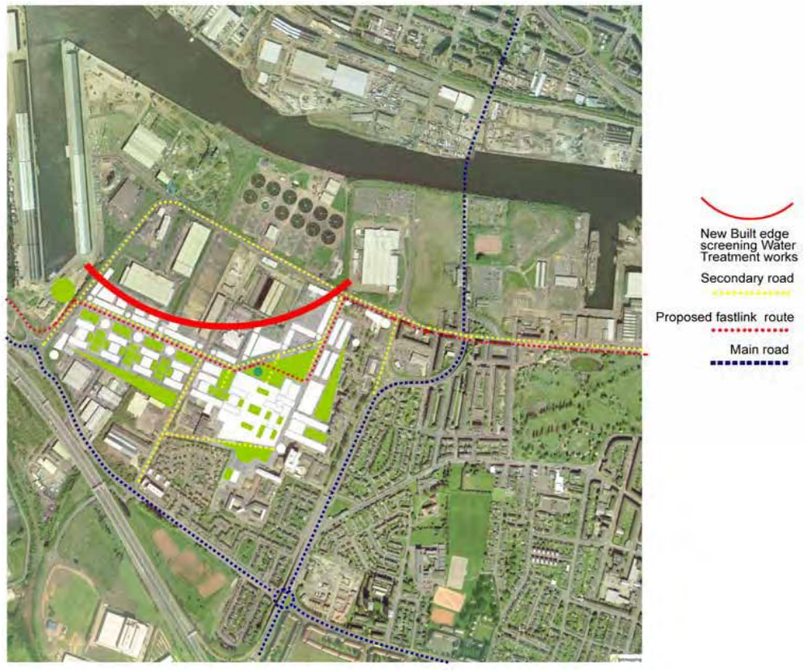
The entrances to the new buildings will be the first experience patients and visitors will have of the new hospitals. The sections above describe the PSC's approach in this respect. The highest civic quality materials will be used in the design and opportunities for incorporation of art will be provided.

Natural daylight and views both out and into landscaped courtyards are provided along public and staff routes to link with the outside and assist with way finding and orientation.

In stage 2 the Output Specifications will be developed to set out in more detail the design quality that must be achieved and the performance standards that must be met.

[25] See www.clydewaterfront.com





Figures 19-22 Possibilities to address the wider environmental context

5.6.1 Daylight and Outlook

Good daylight is commonly considered to be the most important issue in the design of buildings. If occupants can be encouraged to work by daylight with the artificial lights switched off, significant energy and maintenance cost savings can be realised. It is a significant contributor to providing a bright uplifting space for users which leads to greater satisfaction with the building and better user performance and possibly patient recovery.

Most schemes fail to achieve the lights off condition because they rely on vertical glazing on one side of the building. This results in a very bright area near the window and much lower light levels away from the windows. The contrast is uncomfortable with the result that the blinds are lowered and the lights are switched on. Diffuse roof lighting has the ability to provide a more even distribution of daylight resulting in less contrast. This is only really feasible on the top floor or by using light pipes.

Of course not all accommodation needs daylight. Operating theatres, stores, examination rooms etc. generally do not need to be day lit so they can be on a lower floor.

Plant areas do not normally need daylight yet typically require between 5 and 10% of the building floor plan. It is therefore possible to create a great deal of normally day lit space with further accommodation on lower floors which do not normally need daylight.

Daylight (with an overcast sky) normally exceeds 5,000 Lux therefore a daylight factor of 5% will provide at least 250 Lux for most of the year. During about 90% of daylight hours daylight will provide sufficient illumination to satisfy most general admin and ward use (300 Lux).

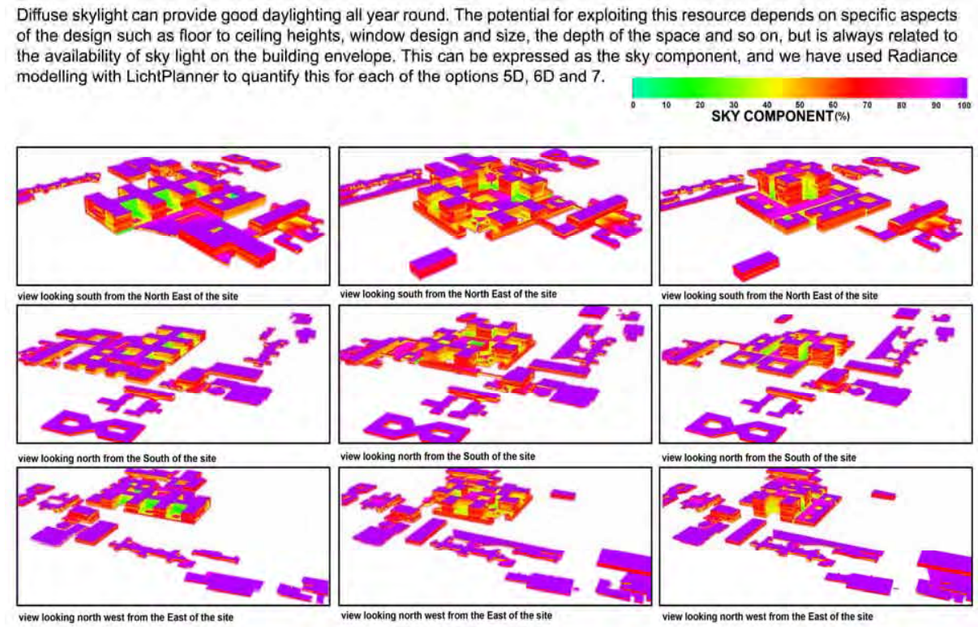



Figure 22 Analysis of the availability of daylight to different areas for differing massing options

5.6.2 Free heating and lighting

An average daylight factor of 5% equates to good day lighting for hospital wards (ref CIBSE lighting codes)

Ensuring shallow window reveals and windows which run close up to the ceiling maximises the benefits of natural light.
Well insulated and leak proof windows allow maximise light penetration and passive solar heating will help meet energy targets.

With helicopter, motorway and construction noise on the NSGH site, the glass must be sufficient thick and well sealed to offer good acoustic insulation. (Rm 30dB +).

Our studies suggest that at least 40% of the wards' external elevations should be glazed and the glazing is more effective located higher in the wall.

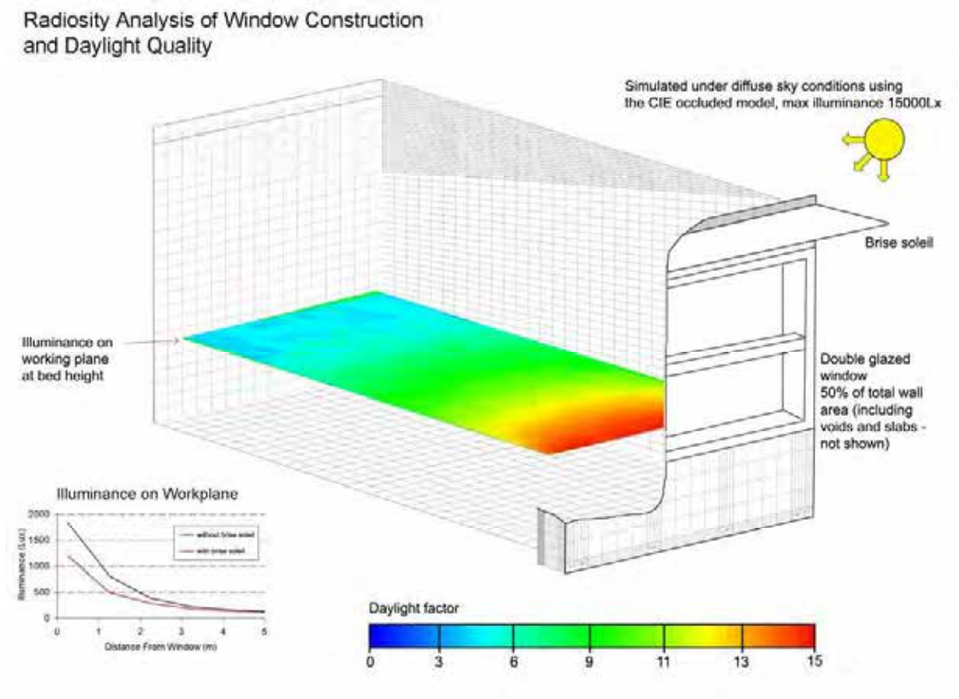



Figure 23 Studies to size window area and geometry

5.6.3 Preventing thermal discomfort and glare

All windows will require devices to control the amount of light entering the room; glare control, protection from the direct sun, dim out for relaxing, black out for sleeping.

In order to meet energy targets the potential for passive solar heating must be maximised whilst minimising fabric losses and leakage.

In the summer wards facing south, south east and south west elevations will require solar control to prevent excessive heat gains.

The method used for solar control will need to be investigated further but could comprise measures such as brises soleil sized to allow winter sun in but prevent high altitude summer sun penetrating the wards or external blinds under user control. The advantage of adaptable solar protection is just that; it can be moved according to season, weather, time of day and need within the space. In summer very good solar heat protection can be provided giving excellent thermal performance/avoidance of overheating, minimisation of any mechanical cooling and good temperature control between spaces. Solar control can be manual or automated.

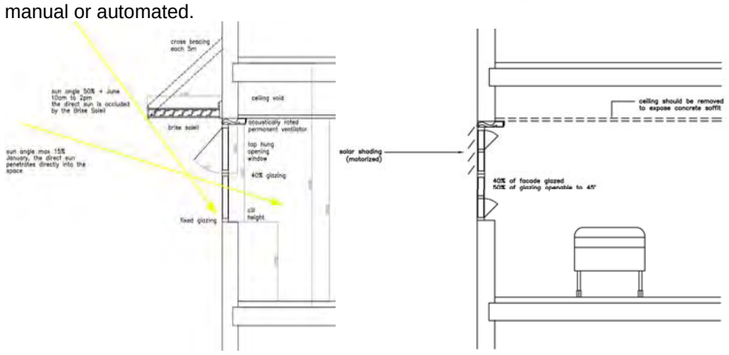



Figure 24 Options for solar control

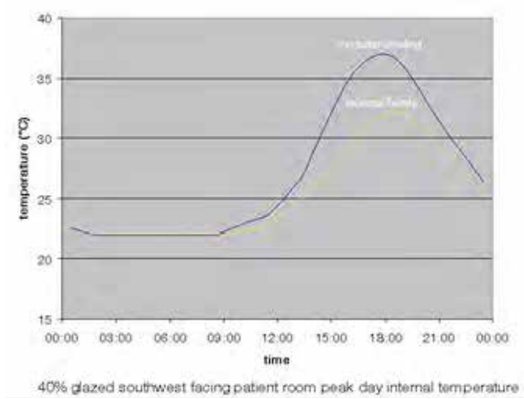



Figure 25 Thermal study of the effect of the external blinds & natural ventilation

The design solution includes motorised external or mid pane solar control blinds with automatic solar gain control and manual override for users. A shading factor better than 0.27 is to be achieved.

5.6.4 Ensuring access to daylight and sunlight for neighbouring properties

The development must not compromise neighbouring properties access to daylight, sunlight and privacy.

The effect of the proposals on daylight and sunlight for the surrounding residential properties can be assessed against the BRE Report; Site Layout Planning for Sunlight and Daylight (1991).

The analysis considers the availability of skylight for the properties to the south west of the site using EcoTect to calculate the Vertical Sky Component and Orientation.

The analysis then considers the availability of sunlight for the properties to the north west of the site using the geometric method from BS8206.

The results before and after the new buildings are contrasted to establish that there is no significant reduction in daylight and sunlight to the surrounding dwellings.

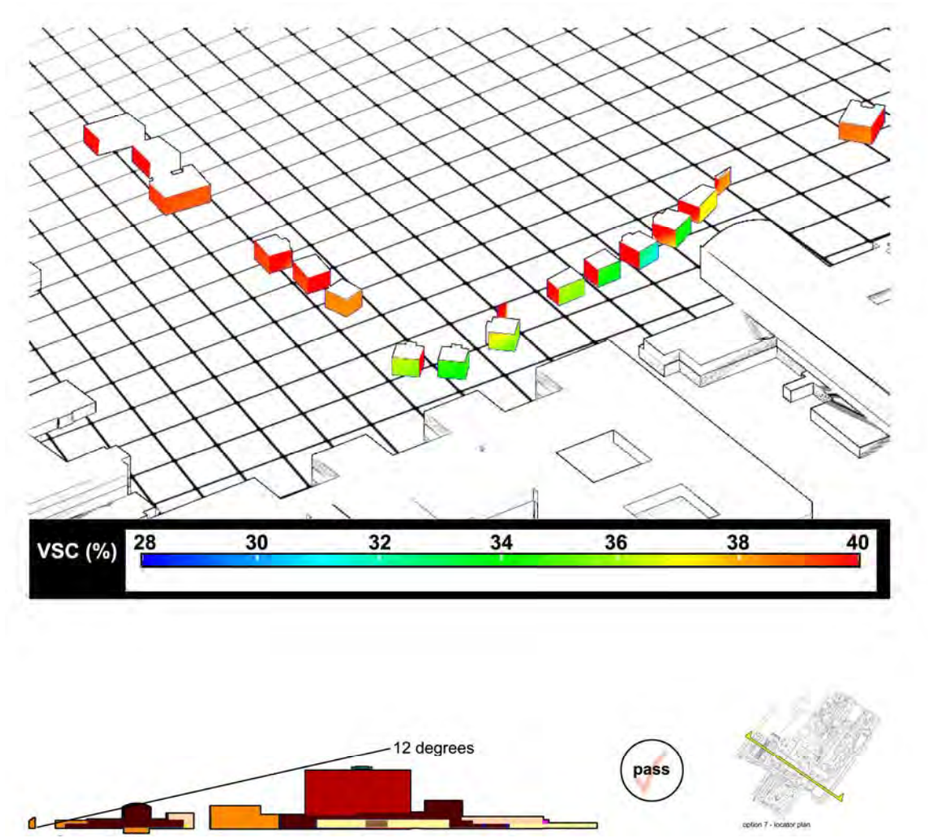



Figure 26 Analysis of affect on neighbours as BRE guidance Orientation

The site, phasing and building planning leads to a building massing solution and proposed orientation.

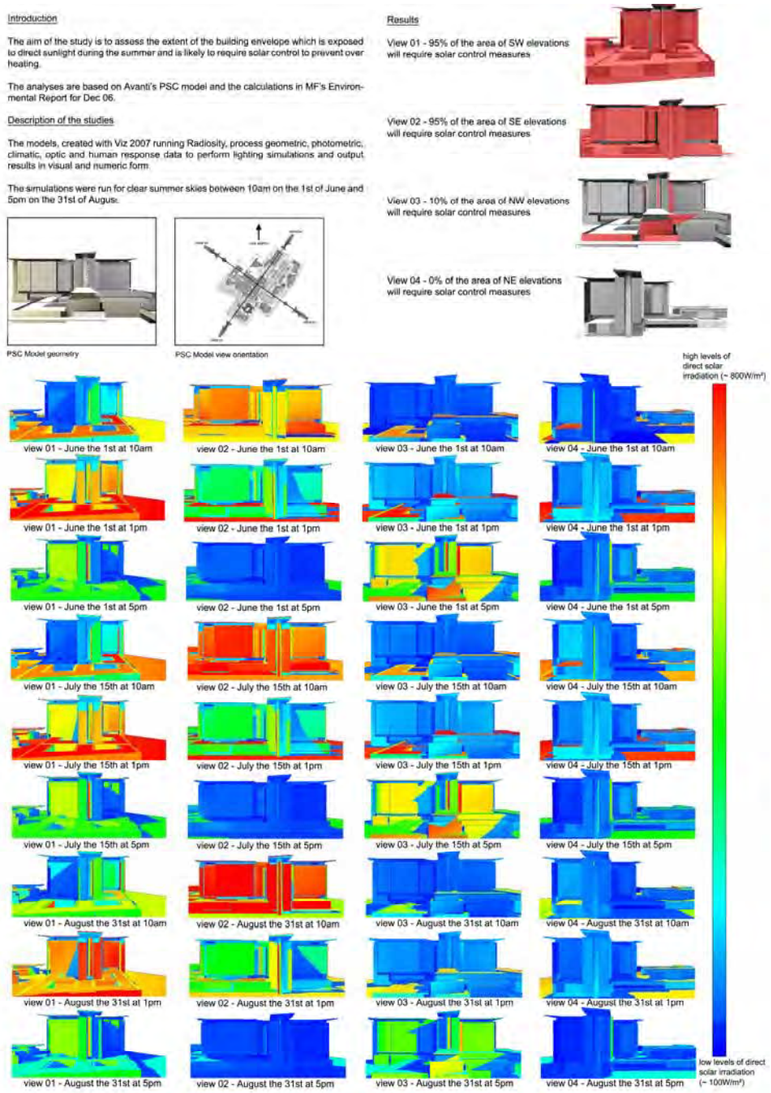


Figure 27 Solar Study

5.6.5 Analysis of extent of shading required

All the facades need good access to daylight and direct sun with adequate glazing areas. The maximum glazing area and solar treatment of the building facades needs to take account of the orientation to provide acceptable summer heat gains.

5.6.6 Air Quality

Shieldhall Waste Water Treatment Works

The works are situated approximately 400 meters from the proposed development (see Figure 28). The works are the largest Waste Water Treatment Works in Scotland, serving 800,000 people (this is very large).

Conversation with Scottish Water have revealed that there are issues with five storm tanks each of which hold 1,000,000 gallons of storm water. In adverse weather, all water and raw sewage is diverted here. It then needs to be processed but the tanks are too large for odour to be contained and a lot of odour is created and released. This generates a large volume of complaints, especially in the summer. They have attempted to empty the tanks at night but are often compelled to empty them more frequently to allow for more storm water.

All normal sewage inlet channels are covered but money for more comprehensive odour control such as containment of the storm water tanks requires significant capital investment. There are plans to upscale a project injecting an enzyme into the sludge which is claimed to dramatically reduce odour. Scottish Water is looking at options for containment on the site or even relocation but there is no certainty with respect to either scope or program for this at present.

HAI-SCRIBE (Healthcare Associated Infection System for Controlling Risk In the Built Environment):
Odour does not present a direct infection risk, but may force windows and ventilation intakes closed, and this in turn may increase the risk of HAI in the healthcare facility. Clinical areas require good rates of ventilation to provide dilution of pathogens generated within the hospital and to control odours within the hospital.

Odour is unpleasant to patients and visitors. Staff are more likely to become tolerant to the smell as they are continuously exposed to it.

The improvement of air quality in healthcare settings is a constituent of modern airborne hygiene procedures. The vast majority of microbes are associated with particles and air filtration is a solution to preventing spread of infection. The air quality requirements in healthcare settings vary from department to department and, often, even from room to room. Some areas require high-efficiency filtration of airborne micro-organisms to protect patients, staff and visitors (e.g. in operation suites, ICUs, TB isolation rooms), whereas other areas require the filtration of gaseous contaminants, chemicals and odours to provide a safer and more pleasant working environment (e.g. in laboratories, autopsy rooms, dental surgeries and pharmacies). It is thus essential that only very-high-quality filters are installed in these environments.

Increasingly stringent national and European environmental legislation on air quality has resulted in the development of new filters to remove and reduce odours and chemical fumes from the workplace. These filters combine a blend of high-grade carbon and alumina/ potassium permanganate that destroys odours, corrosive gases and fumes such as ammonia, arsine, ethylene, formaldehyde, hydrogen sulphide, nitrogen dioxide and oxide and sulphur dioxide as well as contaminants normally treated with standard carbon products. These Air Processors run with near-silent fans, are odour-free in operation and create a healthy and productive environment for everyone's benefit.

An odour problem will be present at times on the proposed site of the New South Glasgow caused by the waste water treatment works at Shieldhall. Odour is best treated at source and measures to control odour at this site could well be implemented by the Scottish Government and Water Authority. If odour control at the hospital is deemed necessary, activated carbon filtration is the most suitable technology both in terms of effectiveness and cost. However, it would rely on a sealed building with a mechanical ventilation system throughout any odour treated areas.

It is proposed that mechanical ventilation systems are fitted with activated carbon filtration to remove odour from ventilation air. The buildings are to be made air tight to reduce the infiltration of untreated air.

Figure 28

5.6.7 Acoustics and Noise

External Strategy: Environmental and Inter-Building noise

General Considerations

The development of the existing hospital site should not have an avoidable adverse effect on the neighbouring noise-sensitive properties (particularly residential). Current planning policy guidance (e.g. PPG24) states that planning authorities should not place unjustifiable obstacles in the way of development. However, they may wish to consider the use of appropriate conditions, insofar as the development of the hospital may adversely affect future residential developments in the area. A normal condition is that the average predicted noise level from the newly-developed site is less than 10dB below the existing background noise levels at the nearest noise-sensitive façade. BS4142:1997 suggests that satisfying this condition will result in complaints being 'unlikely'.

It is recommended that a full environmental noise survey of the existing site and surroundings be undertaken to establish the existing conditions in which local residents live.

Compared to a small domestic development, a large site consisting of a number of buildings renders the term 'environmental noise' ambiguous. The environmental noise impact on the site from adjacent existing and future roads, rail, waterways and aircraft needs careful consideration. However, the impact of one building on another building also needs to be considered, as does the effect of visitors, deliveries, blue light routes and waste collection.

BAA publications and site measurements suggest commercial aircraft noise is not likely to be an issue. However the air ambulance helicopter landing location is likely to have an impact on the site internally and local residents alike. The landing location atop the Adult Hospital renders it relatively unshielded from local residences, except for the effect of the edges of the building itself. Therefore, a barrier at the perimeter of the helipad and roof is proposed to increase the shielding. The helicopter landing pad will be vibration isolated from the roof structure such that the landing impact does not propagate unreasonably into the building.

Testing and Noise Survey

For purposes of break in, suggest $L_{Aeq,30mins}$ at selected locations around the site, deemed to be representative of the local noise environment. It is a very large site and significant variations in noise level are likely to occur, so results would have to be read in this context.

For break out noise implications, we suggest taking two 24 hour surveys $L_{A90,15mins}$ at separate locations on site boundary to establish background noise levels.

Surveys to be conducted in accordance with BS 4142:1997.

Plant Noise Around the Site

- Generators
- Air handling equipment
- Fans, pumps and compressors
- Pipe work around the site
- Specialist medical equipment
- Transformers and switch rooms
- Vacuum pumps in theatres
- Ultrasonic washers
- Kitchen equipment
- Lifts

Internal Strategy: Noise Transfer and Room Noise

Motivation for Consideration
Noise in real-life operating theatres has been recorded (e.g. Boulter 2007) to exceed 70dB $L_{Aeq}$ (well above HTM2045 recommendations). A long session could potentially exceed the action levels of the Noise At Work regulations, and result in long-term effects on the hearing of staff. High noise levels (e.g. from equipment) is reported to be one of the most likely reasons for complaint by hospital staff.

Studies have also suggested that a good acoustic environment could reduce the likelihood of rehospitalisation (particularly of heart patients).
Communication (English as 2nd language, hard-of-hearing, new/complex information to process)

Privacy issues (maternity, consultation etc) are critically important. Protection of personal health information is implicit in the Human Rights Act, suggesting possible legal recourse, although not many precedents yet.

The possibility of Music Therapy?

Establishing Design Parameters

Suitable upper limits for indoor ambient noise levels from HTM2045-2.

Prediction of source noise levels (external and internal) gives structural sound insulation performance parameters. The care taken over the structure needs to be reflected in the details of doors, windows and structural junctions as well as the constructions generally. The requirement for heavy acoustic doors will be balanced with the ability of users (e.g. patients/children) to use them. Services voids can act as useful buffers between floors, in which sound can be absorbed.

High reverberation time adversely affects internal noise levels and speech intelligibility. Reverberation times can be lowered by including acoustic absorption in the spaces, but it is important to establish any areas of concern regarding cleaning of acoustic absorption, as it is usually inherently porous. Many products are cleanable and designed for use in the healthcare industry. Required reverberation times will be taken from BS8233 and HTM2045-2.

Suggested Design Parameters from HTM 2045-2

| AREA | Max unoccupied ambient noise (NR) |
|---|---|
| Lecture theatre | 35 |
| Operating theatre | 35 |
| Private office meeting and consultation room | 35 |
| Multi bed ward, waiting room | 40 |
| General office | 40 |
| Staff room, recreation room, cafeteria | 45 |
| Corridor, laboratory | 50 |
| washroom, toilet, kitchen | 50 |

with mechanical services achieving levels at least 5dB below those specified above.

| Location | Recommended Privacy Factor |
|---|---|
| Maternity, nursery, A&E | 80+ |
| Operating theatre, single bed ward, multi-bed ward private office, meeting and consultation room, lecture theatre | 80 |
| Laboratory, staff room, general office | 75 |
| Waiting room, corridor, wash room, toilet, kitchen, recreation room, cafeteria | 70 |

Reverberation time in critical spaces to be controlled to 0.6-1.0 seconds depending on room volume and activity.

Impact sound between occupied areas $L'_{nT,w}$ not to exceed 60dB on average.

Vibration criteria to be confirmed in relation to BS6472.

See the glossary for an explanation of the terms.

Significant Noise Sources

- A&E and outpatients
- Psychiatric
- Maternity and nurseries
- Boilerhouse/laundry/workshop/goods
- Any areas of construction/demolition around the site – to be managed by Contractor
- Waste disposal
- Drawers closing, footsteps, ring binders, trolleys passing over discontinuities in the floor

- Medical equipment
- Raised vocal levels due to ageing population
- Cardio-training treadmills – impact noise to below

Significant Noise- or Vibration-Sensitive Areas

- Children's
- Maternity
- MRI
- Wards generally for sleeping and recuperating
- Library

Design Considerations for Internal Strategy

Sensitive areas generally will be physically separated as far as possible from noise/vibration producing areas. Either with a physical gap, or a buffer zone e.g. corridor, other circulation area or store.

Noise transfer via corridors will be minimised with absorption and lobby doors. Noise within corridors will be reduced through use of acoustic absorption.

Noise transfer between rooms for privacy means careful planning of doors and windows as they are usually weak links.

Acoustic detailing on joints and penetrations, and cross-talk in ducts will be assessed and controlled.

Impact and airborne noise from kitchen facilities – locate kitchen on level below wards.

Advisable to centralise dishwashing and sterilization facilities for large areas and provide attenuation between them and the wards they serve.

Vibration-isolation of MRI and other super-sensitive equipment e.g. microscopes/labs to manufacturers' specifications.

Audiology (especially vestibular function test facilities) in particular will need to be isolated with care.

Testing: Internal impact and airborne noise levels and transfer measurement tests, plant noise, internal reverberation time, public address intelligibility.

Acoustics in Relation to Environmental Design

Exposing areas of structure with high admittance, as thermal mass, helps to reduce the requirement for mechanical cooling by damping out the peak temperature fluctuations in summer. To work properly the thermal mass needs both line-of-sight into the space for radiant cooling effect, and convective access to the air in the space, for convective cooling effect. There is a potential conflict with acoustic absorption which has poor thermal mass properties and is normally mounted at high level, obscuring the thermally-massive substructure. This can be mitigated in a number of ways, including: mounting the absorption at the perimeter of the ceiling; or high level on the walls; or as baffles suspended from the ceiling to allow a free air path around them; or integrating the absorption with suspended services elements such as light fittings.

The choice of predominantly mechanical ventilation is advantageous acoustically, as it affords better control over openings between inside and outside. For instance sound propagation duct routes can be attenuated with attenuators or duct lining.

Design for good daylight can result in tall spaces (with high windows) to enable daylight to penetrate further into the floor plan. This has the adverse acoustic consequence of increasing the reverberation time, as the volume of the space increases. The advantages of better daylight need to be traded off against the potential requirement for larger areas of acoustic absorption.

GLOSSARY OF ACOUSTIC TERMS

A-WEIGHTED SOUND PRESSURE LEVEL, $L_A$ (DBA)

SPL values are weighted in a way that approximates the frequency response of the human ear and allows sound levels to be expressed as a single figure value.

EQUIVALENT CONTINUOUS A-WEIGHTED SPL, $L_{AEQ,T}$ (DBA)

Energy average of the A-weighted sound pressure level over a time period, T. The level of a notional continuous sound that would deliver the same A-weighted sound energy as the actual fluctuating sound over the course of the defined time period, T.

DAILY PERSONAL NOISE EXPOSURE LEVEL, $L_{DPNE}$ (DB(A))

The measure of sound 'dose' used by the Noise at Work Regulations. The value is the sound energy equivalent a constant value for 8 hours. E.g. 90dB for 8 hours has the same value as 93dB for 4 hours.

SOUND LEVEL DIFFERENCE, D (DB)

The difference in sound pressure level between rooms on either side of a partition. D varies with sound frequency.
$D = L_{P1} – L_{P2}$

WEIGHTED STANDARDIZED LEVEL DIFFERENCE, $D_{NT,W}$ (DB)

A value calculated from the frequency dependent values of the standardized level difference, $D_{nT}$, according to a weighting method described in EN ISO 717-1. This allows the sound level difference of an element to be expressed in terms of a single value.

WEIGHTED SOUND REDUCTION INDEX, $R_W$ (DECIBELS, DB)

A value calculated from the frequency dependent values of the sound reduction index according to a weighting method described in EN ISO 717-1. This allows the sound reduction of an element to be expressed in terms of a single value.

PRIVACY FACTOR, PF (DB)

The sum of the apparent weighted sound reduction index $R'_w$ and the internal ambient noise criterion (usually NR). PF>80 is 'inaudible'; PF<70 is 'clearly audible and intelligible'

IMPACT SOUND PRESSURE LEVEL, $L_I$ (DB)

Average sound pressure level in a specific frequency band in a room below a floor, when it is excited by a standard tapping machine as defined in BS EN ISO 140-6.

WEIGHTED STANDARDIZED IMPACT SPL, $L'_{NT,W}$ (DB)

A single value calculated from the frequency dependent values of the standardized impact sound pressure level, $L'_{nT}$, according to a weighting method described in EN ISO 717-2.

ABSORPTION COEFFICIENT,

The fraction of the incident sound energy that is absorbed on contact with a surface expressed as a fraction between 0 and 1. The higher the value of the absorption coefficient, the more sound that is absorbed by the surface.

REVERBERATION TIME, RT (SECONDS)

The reverberation time of a space is a measure of the rate at which sound decays. It is the time taken for the reverberant sound energy to decay to one millionth of its original intensity (corresponding to a 60dB reduction in the SPL).

5.6.8 Thermal Comfort

General Considerations

High levels of comfort are required for all users; in particular staff and patients. This will have an effect as to how the overall building and the health care provided is perceived, affecting staff performance and patient well being.

Many clinical areas require close control of the room environmental conditions to make the spaces functional. This tends to lead to spaces with air conditioning and/or comfort cooling. Temperature, humidity and air distribution are all carefully controlled and can provide good levels of thermal comfort.

For other areas broader environmental conditions are acceptable and there is the possibility of natural ventilation and mechanical ventilation with or without comfort cooling. To achieve good thermal comfort good zoning, controls, operation and maintenance are essential.

Natural ventilation can provide good thermal comfort throughout the year. For a naturally ventilated space people tend to be more tolerant of high summertime temperatures and their comfort generally. Contact with outside and higher summer air movement improves comfort. The design of ventilation openings is critical. Good solar heat control and exposed thermal mass are pre requisites for natural ventilation to provide satisfactory thermal conditions. Openable windows are often used as part of the natural ventilation strategy, and it is necessary to ensure that other, often contradictory requirements such as restricting openings for safety reasons, are met.

For mechanically ventilated spaces there is less contact with outside and usually little or no direct user control of the summer environment. Often the comfort expectation is raised. The heat gain from fans and duct gain raises the temperature of ventilation air above ambient. In our view for mechanical ventilation systems to internal areas or areas without openable windows peak mechanical comfort cooling is required to provide adequate thermal. Missing a word at the end of the sentence?

HTM(03) places a space temperature limit of >28deg for less than 50 hours in any year as a measure of acceptable thermal comfort.

This type of measure does not recognise the adaptive nature of comfort in relation to the external climate and temperature. In our view, a better measure is of the internal temperature in relation to external air temperature. For naturally ventilated spaces the building should be designed with good solar protection, adequate thermal mass and adequate well designed openings for ventilation such that the mean internal temperature is as close to the mean external temperature as is possible and that the internal peak temperature does not exceed the peak external temperature. If this can be achieved the building will be perceived to have good levels of thermal comfort.

For air conditioned and comfort cooled spaces seasonally adjusted control temperatures should be used. The building should be designed as if it were to be naturally ventilated or so that for perimeter rooms at least it is possible at some future time to successfully naturally ventilate the space Good solar protection and adequate thermal mass reduce the cooling load substantially. The mean summer internal temperature should be at the mean external temperature and the internal peak temperature two or three degrees below the peak external temperature is required for the reasons described above (higher expectation, poor user control) for the building to be perceived to have good levels of thermal comfort.

The summer weather is variable in that some years and hotter than others. During hot years this the HTM(03) limit are difficult and expensive to achieve as they are unrelated to external air temperature. Climate change will make the achievement of these criteria more difficult over the life of the building particularly for natural ventilation solutions. For PFI contractors the HTM(03) limit present an unacceptable technical and commercial risk which leads to a mechanical ventilation solution with comfort cooling in preference to natural ventilation solutions.

5.6.9 Operability

General Considerations

Mechanical and electrical systems shall be automatically controlled. Controls shall be robust, battery backed and distributed as far as is possible so that each system or plant has it's own integral or local controls for resilience.

For clinical areas full system controls and control value presentation will be provided in a secure staff location.

For staff and patient areas, user controls are to be provided to allow trimming of the environmental conditions within the staff/patient space. These include:

temperature adjustment + or _ 3 about set point, return to set point next reset or start point
ventilation rate adjustment low, high, boost, return to set point next reset or start point
light switching and dimming for single room/bed head fittings
window shading and day light control

For patients control will be available from the bed position.

Room/space conditions will be centrally logged on a twenty minute time base to a system database. Real time display, graphing against time, database retrieval, and archiving software will be provided.

A building energy metering, monitoring, reporting and targeting SCADA data collection and management software will be provided for energy management. Metering will be divided according to zone , building function and service, eg lighting and small power will be separately metered; large equipment loads will be separately metered, zone by zone heating and cooling will be metered. This is to allow energy targeting management and monitoring to be carried out on an ongoing continuous basis.

Building Record/As Installed documentation will be centrally help in a digital format arranged, indexed and maintained to be available through a common access portal over the hospital IT infrastructure using standard software.

Operating Plant monitoring, condition management and maintenance software will look at plant and system operation, condition, operating hours and maintenance intervals to determine and program system maintenance requirements. Maintenance shall be automatically planned and logged to form system and individual items, maintenance records include life cycle costs. Maintenance tasks and records shall be communicated with WiFi communication to operator smart PDAs. O&M information shall be linked to Record System & Asset Information so together they provide an integrated and up to date record of the of the system at any time.

Boiler and chiller plant efficiency and heat output will be continuously measured and logged together with key operating parameters to allow optimisation of operation and efficiency.

Energy and space/room efficiency, availability and time within control parameters are to be collated and presented manually as a system report.

All control functions management systems and system data shall be interconnected on an Ethernet backbone and data servers so that it is available across the hospital IP backbone to PC users with correct permissions. Management software will control access, reading and editing rights in addition to recording usage.

Section 6 – Design Proposals 4 – Compliance, Build Quality and Engineering

6.1 Fire Strategy

The complexity and size of the new build is such that a detailed fire strategy will have to be developed. The TA Team have advised the Board to engage the services of a specialist Fire Consultant to comment on the proposals and work with the Team to help develop the design. This will have to be considered during the next stage.

The Stage 1 PSC has made certain assumptions in respect of both means of escape and fire fighting access but these have not been developed or tested and need further development.

As described above the adult ward arrangement adopts the dual corridor solution to provide alternative horizontal escape from the peninsular ward. The ward is then subdivided lengthwise into two long compartments with fire doors across the links. It is envisaged that these doors would be help open during normal operation with the releases linked to the fire alarm. The end stair is accessible from both compartments independently. The arrangement effectively allows continuous horizontal alternative evacuation to an adjacent compartment and from there into a further compartment and so on. The provision of corridor in each compartment would be sufficient to allow the beds from an adjacent compartment to be accommodated.

In the case of the Children's wards alternative routes are provided with wards again divided into compartments and sub-compartments.

Fire brigade access is possible to all four ground floor faces of the building. Fire fighting shafts within the building will be required. It has not been possible to determine whether dual-use lifts would be acceptable or if dedicated Fire Fighting lifts will be required. This will be subject to agreement with the approval body.

The adult ward plan assumes the end stairs are primarily for escape and fire brigade access. A fire fighting lift is indicated at each of these four locations. Given the distance rule from the fire fighting shaft to any point on an upper storey, it is assumed that one of the shafts in the central core will also have to double for fire fighting access.

The size and scale of the development will also require an engineered approach to resolve access to the base of the fire fighting shafts. It has been Avanti's experience on other projects that the distance from the ground floor entry point, to the vertical shaft can be extended subject to the route being fully protected using pressurisation and other enhanced protection. These issues will require further consideration in the next stage. For other M&E installations associated with Fire Strategy see below.

6.2 Structural Strategy

6.2.1 Introduction

In order to develop and provide all necessary supporting information to establish the Outline Business Case (OBC) for the new hospital facility, an overall civil and structural engineering strategy is required to outline the requirements for the detailed design and construction of the new hospital and associated developments for the site. This Design Substantiation Report (DSR) presents and discusses the considered engineering strategies based on the constraints and restrictions of the existing conditions at the site as far as they are known and the information available to date. The information referred to in the following report also provides relevant input of the design aspects for the public sector comparator (PSC).

6.2.2 Geotechnical, Geochemical & Environmental Considerations

Sinclair Knight Merz has reviewed geotechnical information from a number of past site investigations undertaken over the last 30 years, with the intention to assess and summarise any potential geotechnical issues, ground conditions and foundation options that will be relevant to future development proposals for the facility, and in particular the proposal to build a new high rise structure with basements and subway access. The positioning and extent of previous investigations is summarised on drawing EK02355-S-001-P1.

6.2.3 Review of Available Ground Investigation Reports

The site is situated on an alluvial floodplain approximately 500m south of the River Clyde in Glasgow. Of the nine previous ground investigations carried out at the site, approximately a third of the site's area was covered to depths proving the location of bedrock. The ground at the site consists of made ground that is underlain by alluvium, which is in turn underlain by glacial till and Carboniferous Coal Measures bedrock.

The made ground consists of a mixture of cinders, ash, sands and gravels, and brick, and ranges in thickness between 0.3m and 1.75m. The alluvium generally consist of soft to very soft clays and loose to medium dense silts and silty sands, of approximately 20m total thickness, but locally thinning to approximately 16m. The alluvium was generally found to be of high to medium compressibility. In one site investigation report it was noted that differential settlements had adversely affected existing buildings at the site.

The glacial till is described as stiff to very stiff and varies in thickness from less than a metre to approximately 15m, with an "average" thickness of approximately 6m. The upper horizon is often weathered but strength increases with depth. Compressibility of the glacial till was found to be low to very low. Bedrock was found at various depths ranging between 15.5mbgl (metres below ground level) to 25.5mbgl. Bedrock was found to consist of inter-bedded layers of sandstone, siltstone, and mudstone with occasional thin seams of coal. A thin layer of igneous rock was found at one location in association with evidence of a fault zone or discontinuity. The strength of bedrock ranged between very weak (coal), moderately weak (mudstones) to moderately strong and strong (siltstones and sandstones).

From desk-top studies undertaken as part of the previous site investigations, no evidence of shallow mining was recorded in the ground investigations and the Coal Authority confirmed that they have no knowledge of mining activities previously taking place beneath the site. However, two reports confirmed that a mine shaft was marked on historical maps within 70m of the investigated areas, but suggested that the position is not related to the existing hospital site. There is also indication of a trial mine shaft more centrally within the proposed site, but it appears only on early plans and is not referred to elsewhere or known to the Southern General Hospital's Estates Team. Further investigation into the location or existence of historical mine shafts is recommended to be carried out.

Groundwater and perched groundwater exists at the site at depths ranging between approximately 1.0 mbgl to 4.0 mbgl. However, where the drift deposits are relatively impervious, groundwater was not encountered until near-bedrock depths. Water strikes at these depths generally produced sub-artesian groundwater rises of between 6m and 10m.

6.2.4 Geotechnical Considerations

All the previous reports have concluded that the soft alluvium underlying the site has the potential to induce excessive settlements if structures were founded on spread foundations. A range of bearing capacities between 60 to 100kN/m$^2$, depending on drift geology, has been suggested. To reduce settlement some reports have recommended the use of large sized spread foundations and raft foundations for low rise buildings, but it has also been noted that settlements in excess of 25mm would still occur. All the reports concluded that structures with higher loadings, and settlement sensitive structures, should be either founded in the glacial till or socketed within bedrock by using an appropriate system of piled foundations.

The maximum bearing capacity of the bedrock was tentatively specified as 1.0MN/m$^2$ in one report. It is noted that the 1998 Arup report recommended a maximum safe working load of 480kN for 600mm diameter piles founding in 6m of glacial till and a maximum safe working load of 500kN for 220mm diameter mini-piles socketed a minimum of 3m into bedrock.

The majority of the reports recommended the use of bored cast in-situ piles such as the Continuous Flight Auger (CFA) method of emplacement. One report concluded that down-drag of piles would need to be taken into account in the pile design. Vibro-replacement ground treatment of the weak alluvial deposits was discounted due to the presence of cohesive deposits.

For deep excavations, significant basements, or below ground corridors it was generally concluded by most site investigations, that groundwater would likely be an issue but that it could be feasibly controlled by sump pumping and temporary sheet piles.

On the basis of the available information from previous site investigations, it is considered that the whole hospital site is underlain by potentially highly compressible material that would adversely affect structures if founded above or within these compressible deposits. Therefore it is considered that any structures more than two storeys high will require to be founded at either very stiff glacial till or taken down to bedrock level.

The excessive depths to bedrock and the low shear strength of cohesive deposits to significant depth is likely to require building loads to be supported on piled foundations taken down and socketed into the underlying solid deposits. This will require pile lengths in the order of 20m to 25m with adequate socket lengths to provide the required carrying capacity (typically about 3-5m but dependent upon the actual loading).

For the ITN stage and as part of the documentation, a detailed ground investigation will require to be undertaken by GG&CHB Trust to provide a general overview study of the entire site to establish the nature of the ground strata. With respect to the footprint of the proposed building, the location of the offsite mine shaft and the centrally located mine shaft as recorded in historical maps should also be investigated as part of this pre-ITN investigation.

It is expected that further detailed site investigation to suit the outline of the proposed development will be carried out by the preferred bidder prior to financial close.

The site infrastructure will be highly dependent upon any change in topography during earthworks cut-and-fill operations. Should there be any soil retention requirements then the design of such retaining walls and foundations will need great care to guard against sliding in such low strength founding materials.

Given the existing ground conditions, it may be the case that drainage runs need to be laid to steeper gradients than design minima and with regular rocker pipes to enable continued operation should the softer clays settle under the imposed weight of the site infrastructure. This effect will become more prominent if significant areas of the site are raised in level, even by a nominal amount (such as required to provide a piling mat, which in this situation is likely to be thick).

Excavations may be prone to groundwater ingress so consideration to the use of tightly interlocking sheet piles around excavations may be required for any deep excavations, with appropriate allowance for pumping from the base of such excavations.

Where basements are to be formed with service ducts the ground loading will be reduced, which may have a consequential reduction in the heave of the existing cohesive strata. The main issues will be that of water tightness both permanently and during construction. Basements will require to be formed from in-situ reinforced concrete or similar construction with a suitable water-proofing system to retain the external water table under adverse conditions.

6.2.5 Geo-chemical and Environmental Considerations

Minimal ground contamination was encountered in any of the previous site investigations. However, given the existing and previous uses of the site there may well be areas that require any undetected contamination to be addressed. The raised pH levels were established in some areas of the site, but are not such as to require special precautions in normal concrete foundation works, however this needs to be investigated further.

Historically, site investigations were commissioned on a number of occasions and SKM-AH has produced a drawing collating the various site investigations undertaken. This drawing is supported by the interpretative reports produced as part of each investigation. Testing for contaminants was undertaken as part of these investigations and revealed little in the way of contamination at those locations where testing was undertaken. However the locations available for testing were limited by existing services, buildings and other operational areas which necessarily means that large areas of the site have not been tested for contamination. It should also be noted that testing criteria for contamination has become far more stringent over recent years and for that reason the apparent lack of previously identified contamination material should not be assumed to be reflective when benchmarked against current criteria for evaluation.

A number of buildings have been demolished as the site has been developed over the last 100 years. The extent to which the sites were cleared before reconstruction with regard to infilled basements, foundations and the like, is unclear and these locations remain potential sources of contamination and may pollute normal groundwater where this comes into contact with the material.

Likely residual contaminants may include hydro-carbons, asbestos, medical waste or related materials and may be diffuse or in pockets around the site.

We understand that it is GG&CHB's intention to hand the site over to the preferred bidder as a notionally 'clean' site for all development work. It is proposed to achieve this through a series of enabling and remediation works to clear the site and also to relocate active services and discontinue services that are currently on the proposed building footprint. However it should be note that should there be significant contamination found on-site, the majority of which will be below ground and cannot be readily removed/remediated until the sub-structure works are underway. Notwithstanding the above, a comprehensive detailed site investigation with appropriate sampling and geo-chemical testing of the entire site will be required to identify the likely extent of remediation or removal.

6.2.6 Site Conditions on the Existing Hospital

Ground Engineering Characteristics

The engineering characteristics of the superficial deposits to the site are considered to be such as to economically mitigate against their use as founding layers for anything other than low-rise buildings of two storeys or less.

6.2.7 Ground Conditions Risk Summary

The risk register in support of the OBC should include provisions for the following civil engineering and geotechnical risks:

- Poor ground conditions to an average of 20m depth;
- Moderate to severe risk of ground contamination from a variety of sources given the length of time the site has been used as a hospital;
- Presence of groundwater within excavations;
- Contamination in areas of made ground including potential asbestos, hydrocarbons and heavy metals.
- The depth to sound rock-head may be greater than that currently assumed on the available information, and as such the risk register should include an allowance for this.

6.2.8 Roads Infrastructure for Hospital Site

The development of the highway infrastructure is likely to be required under conditions as part of the Planning approval and the Traffic Impact Assessment/Green Travel Plan for the scheme within the context of the wider transportation issues in Glasgow and environs. The extent of new junctions, new site accesses and all road improvement works will need to be progressed as the proposal for the existing site is developed and as planning comments are received.

At present the scheme maintains current accesses from Govan Road and Hardgate Road and details a new blue-light route from the A739 at the southern end of the site. These road junctions will require Highway Authority and Local Authority approval and should meet all statutory requirements.

Further advice and consultation has been provided by Ironside Farrar, WSP and Keppie Planning to gain Outline Planning approval.

Internal site access roads will comply with the appropriate highway standards, supporting the required design traffic flows.

6.2.9 New Buildings

The following text outlines the assumed engineering development strategies for the new hospital buildings and multi story car parks which are to be used in the outline business case and preferred option for the public sector comparator (PSC).

The multi-storey car park options (at two locations), are to meet the anticipated parking demand for the site given its location in relation to the city of Glasgow and notwithstanding the proposals to provide multi-mode transportation options for patients, staff and other site users.

6.2.10 Standards and Regulations

The new development including both hospital buildings and multi story car parks will need to be designed and constructed in accordance with the relevant Design Standards, Building Regulations, Planning Conditions, statutory and local authority standards and to the CDM2007 Regulations.

6.2.11 External Works

The generally flat/gently sloping nature of the site will generate minimal areas of cut and fill across the building footprint. However, construction levels will require to be established at the necessary design levels including basement areas, service and access ramps and to ensure functional tie-ins for connections to existing buildings that re to be retained as part of the new facility. All proposed water features, retention systems and landscaped areas will also require further areas of lower-lying ground to be excavated and profiled.

Excavated material can be retained on site and used for ground profiling / landscaping works provided that any identified contaminated material is either re-mediated or removed. Retained material will also have to be appropriately assessed in terms of engineering properties for the intended end use on site.

It is noted that although much of the site is hard-standing, there may be an opportunity to retain some topsoil stripped from existing landscaped areas within the site. In such circumstances, the topsoil should be assessed and if suitable, stockpiled for reuse.
With regard to Tree protection Orders (TPOs), it is noted that there are some protected trees within the site. These will have to be incorporated into the eventual landscaping strategy and adequately protected to the requirements of a suitable arboriculturalist's requirements during construction works.

Tie-ins for connections to the existing road network, hard-standing areas and other features will require to be fully integrated with the design levels established across the site.

6.2.12 Proposed Hospital Building Foundations

The Master Plan for the new hospital facility consists of a series of ward towers to a maximum of 13 storeys plus the ground floor, podium and roof structure. The foundations for the hospital building are likely to take the form of reinforced concrete pile foundations socketed to a minimum of 3 metres into the sandstone rock head at a depth of 20-25 metres below ground level. Preliminary assessments indicate that foundations bearing in the glacial till at shallower depths would not be suitable, due to the magnitude of the load expected and consequent short and long-term settlements. Settlement for the piled solution should be designed within acceptable limits. It should also be noted that there is likely to be some degree of underground obstructions encountered when placing these piles which are expected to be existing concrete foundations and other historic features.

If bedrock is deeper than that currently assumed from available information, then deeper piles with longer rock sockets may be required beneath the foundations to reach sound bearing bedrock.

Across the footprint of the proposed structure the existing ground is fairly level. Consequently all basement areas will be consistent across the full footprint of the site as required by operational planning criteria. Basements and tunnels will require water-tight retaining walls and to be founded either to bedrock or with a suitable arrangement of raft foundations to prevent differential settlement. These are likely to be formed of in-situ reinforced concrete construction resisting lateral earth, water and imposed loading pressures. Adequate tanking must be provided to below ground structures where permanent or localised water table levels dictate, under the most adverse conditions anticipated.

6.2.13 Proposed Hospital Building Superstructure

The superstructure of the building is the structural frame that will be responsible for the transfer of gravity, imposed and lateral loads to the ground in a manner that ensures vibration (a key issue for hospitals) and noise transfer are kept to minimum levels. Dynamic loads from the helicopter landing pad proposed on the roof of the building will also have to be taken into consideration with regard to vibration assessment.

With regard to services integration it is recognised that hospital structures need to take cognisance of current service requirements as well as some degree of flexibility for future fit outs and refurbishment during the buildings life span. Services routes will run through the hospital on both horizontal and vertical axes and the structural design of the frame should be sensitive to this requirement. Ease of access and routing of services can be achieved for example by the adoption of flat soffit slab methods of construction or open web construction including a range of proprietary systems.

A nominal structural planning grid of 7.8m x 7.8m (maximum) has been developed by the architect for this Design Substantiation Report in support of the OBC and for the PSC. A column grid of this spacing is likely to be achievable using a number of different construction materials and structural systems. This includes structural steel, in-situ concrete and pre-cast concrete solutions. Attention should be paid to the ability of the final design solution adopted such as to ensure that structural stiffness can be achieved and that the structural footprint is sufficiently flexible to allow the hospital to achieve its necessary space planning targets.

The upper floors of the hospital building cruciform tower and parts of the podium have for the purposes of the PSC, have been nominally assumed to be either a slimfloor steel solution or an in-situ reinforced concrete (RC) flat slabs without down-stands. SKM-AH Drawings NE02355-S-201 & NE02355-S-202 show indicatively how the structural make up might be achieved for the hospital building for each respective type of construction. The drawings show typical details and plans for a ward and operating theatre that will allow flexibility with horizontal services distribution and will reduce overall floor construction depths to a reasonable minimum. Structural columns are centred on the grid as referenced above and such as to reflect the geometry of the building and how the structure will transfer the loads to the foundation systems. It should be noted that in the case of the flat slab construction a slightly deeper than normal slab has been assumed at this stage in order to assist with dynamic loading issues. Detailed design assessment may be able to reduce this depth from 350mm to 300mm but this would require careful consideration of bracing locations and circulation shafts.

Although we would not rule out the possibility of using cellform construction and downstand beams we would note that a lighter form of construction than those discussed above would require extreme care in relation to dynamic response and sensitivity issues associated with vibration, particularly on tall buildings.

Ground or basement floors are envisaged as suspended slabs supported from a grillage of beams on the pile caps on socketed piles in sound bedrock.

Lateral stability of the structure could be achieved through a combination of rigid moment frames, bracing bays or the use of reinforced concrete stair and lift cores.

6.2.14 Proposed Hospital Building Fire Resistance

The structure should be designed to achieve the necessary levels of durability and appropriate periods of fire resistance in accordance with all applicable standards, current codes and best practice guidelines. This should take due consideration of the nature of the facility both in terms of the wide range of occupant types and the different physical aspects of the buildings i.e. the tower, podium and Children's facilities.

6.2.15 Proposed Hospital Building Construction Methodology

The new facility will be constructed within an operational hospital and due cognizance of this should be taken in the selection of plant, materials and the construction methodologies adopted. In addition, the new facility will be completed in phases over several years with staggered decants for different patient groups and staff. Due cognizance should be taken of this in the phasing of the construction works, access arrangements, availability of facilities and services and with suitable consideration of the needs of building occupants adjacent to ongoing construction or fit-out activities. Programmed activities should assess and manage all implications of staged completion to mitigate and minimize the affects on all stakeholders at the existing hospital which remains functional until full and complete transfer of facilities.

Both flat slab construction and slimfloor design are widely recognised forms of construction and have been used successfully for buildings of this nature in the UK. The slimfloor solution may have slight benefits in terms of speed of frame construction, but this is often counter balanced by traditional flat slab concrete frame construction that allows follow on trades to work on the lower floors whilst the structure is still being erected.

Tower cranes will be required for the construction of the building and space exists for these to be sited within the constraints of the site. No overhead restrictions are obvious, other than in the use of the existing operational helipad, based upon visual inspection of the site.

Care should be taken during excavation, in particular with reference to localised groundwater inflows, buried services and the temporary stability of excavations.

6.2.16 Proposed Multi-Storey Car Park Foundations

As with the hospital building the foundations for the MSCP building are likely to take the form of a grillage of beams on pile caps on piles socketed into sound bedrock at 20-25metres beneath the site. Findings from the existing site investigation interpretative reports indicate that foundations bearing in the glacial till at shallower depths would not be suitable due to the magnitude of the load expected and consequential long-term settlement. Settlement for the piled solutions should be within acceptable limits. It should be noted that there is also likely to be some degree of underground obstructions encountered when placing these piles which we would expect to be existing concrete foundations or other historic features.

6.2.17 Proposed Multi-Storey Car Park Superstructure

The proposed multi-storey car park structure (MSCP), is likely to consist of a maximum of 4 storeys plus the ground floor level. The superstructure of the building is the structural frame that will be responsible for the transfer of gravity, imposed and lateral loads to the ground.

A structural planning grid of 7.2 x 17.4m (maximum) has been adopted for the MSCP in support of the OBC and PSC. This grid allows 3 standard parking bays between columns and floor plates that clear span the length of 2 parking bays and the main vehicle corridor and the provision of a suitable width, segregated pedestrian walkway.

The construction of multistorey car park structures lends itself to a variety of precast and insitu forms of construction including, precast concrete, insitu concrete, long span cell form beams, etc. The merits of one form over another is expected to be a matter for detailed design resolution, but for the purposes of the PSC has been suggested as a pre-cast concrete floor supported by a structural steel frame.

Ground floors are envisaged as non suspended ground bearing structures of flexible material such as tarmacadam or asphalt. If basement areas are required then the basement floor construction would require to be reinforced concrete suspended slabs on a grillage of beams on pile caps on piles socketed in to sound bedrock.

Lateral stability of the structure could be achieved through rigid moment frames or by the adoption of reinforced concrete stair and lift cores to provide vertical cantilevers resisting the horizontal loadings to the structure or through appropriate vertical bracing.

Movement joints will need to be incorporated in accordance with good practice to effectively accommodate all thermal, differential and moisture movement. Joints should be located such as to avoid critical structural areas of the building as necessary.

6.2.18 Proposed Multi-Storey Car Park Construction Methodology

Construction will be undertaken within an operational hospital and due cognisance should be taken of this in the selection of plant and in the construction methodologies adopted.

The design proposed for the MSCP is typical of buildings currently under construction in the UK. Standard construction methods and techniques can be combined with modern technological developments within the industry to assist in delivering the proposed design solution. The site and adjacent areas potentially provides sufficient areas of storage and, other than the normal applicable statutory obligations, the site has sufficient access for construction deliveries.

Tower cranes will be required for the construction of the building and space exists for these to be sited within the constraints of the site. Other than helicopter access to and from the existing helipad, no overhead restrictions are obvious upon visual inspection of the site.

Care should be taken during excavation, in particular with reference to localised groundwater inflows, buried services and the temporary stability of excavations.

The design should address the exposure of the structure and discharge of surface water from the MSCP in order that future maintenance is minimised.

6.3 Services Strategy

SITE SERVICES & INTERGRATION WITH EXISTING SERVICES STRATERGY

6.3.1 Water

Read in conjunction with drawings 3757/S10P/000-010, inserted in appendices A. These relay the approximate routes of the existing site infrastructure

Mains water is required for domestic water supply and fire fighting.

The existing site water infrastructure is supplied from 5 no metered, mains connections; 2 from the Govan road; 2 from the A739 bypass road and one from Hardgate road. With the exception of the Hardgate road supply the current site infrastructure does allow for these to be cross connected and thus act as alternative supplies. Existing buried distribution pipework is likely to be of a material and age that now requires replacement. The current infrastructure cross connects fire mains with potable water mains.

Prior to the commencement of the PFI construction phase the buildings within the site boundary are to be demolished and existing potable water connections made redundant or removed.

It is currently proposed that the new PFI hospital buildings will be supplied from dual supplies, one from Govan road and the second from Hardgate road. This is subject to confirmation from Scottish Water (see below). These will need to be installed prior to the completion of the Children's hospital and sized to supply the Children's and Adult's hospitals simultaneously.

Following the completion of the PFI construction phase and the occupation of the new adult hospital, the redundant buildings on the site are to be demolished, with their related potable water supplies made redundant or removed.

Scottish Water have been appointed to complete a detailed survey of the existing infrastructure, including a leakage analysis and some flow and pressure tests, these are currently underway. Following this they are to complete a hydraulic model for the existing site and then adapt this to model the proposed site. The conclusion of their works will establish the off site infrastructure implications. This Scottish Water work is programmed to be complete by the end of July 2007.

The site fire mains will be identified as part of the Scottish Water survey works (see above). The new development is proposed to have new dedicated fire mains connections serving the related supplies/outlets. The existing infrastructure is to be rationalised as part of the pre and post PFI construction works, so as to ensure the remainder of the site is adequately served.

6.3.2 Power

Read in conjunction with drawings 3757/HVP/000-010, inserted in appendices A. These relay the approximate cable routes forming the existing site infrastructure

The existing site is fed from two supplies routed from the A739 road into the Pharmacy HV switch room, from where HV cables are routed around the site to more local HV/LV sub stations. A number of the existing supplies are radial feeds.

The existing hospital MV (11kV) electrical services generally emanate from the existing primary MV switchgear. The existing incoming supply capacity is understood to be about 3MVA and currently operates at about 2.6MVA. The local electrcity supply distribution network operator (DNO) – Core Utilities, (Scottish Power), have indicated that this could be increased to a maximum of 5MVA, and that the existing secondary supply could be upgraded to a dedicated, 'firm' supply rated at 5MVA.

Prior to the construction phase of the PFI project, the HV switch room is to be relocated into Pharmacy and a new maternity sub station is to be installed. The infrastructure is to be modified to suit the new HV switch location and the Surgical sub station is to be reefed from the HV circuit that also serves the new maternity sub station. These enabling works allow the buildings on the PFI site to be demolished and disconnected without any disruption to the remaining buildings. The two HV supplies that currently cross the site to the Surgical sub station become redundant and can be removed.

The new hospital buildings are of greater area and serving a greater number of patients with greater intensity/scope of service. The site requirement for power will be substantially increased and the electrical supply capacity and robustness will need to be increased.

We are currently working with Scottish Power to determine the options to increase the site electrical supply. Substantial offsite works will be required and is likely to require an on site Medium Voltage 33kV substation to be established off or on the site. The Scottish Power requirements/proposal is likely to affect the incoming HV arrangement and switch room described above.

Incoming MV Electrical Supply

A reminder of the electrical loads for the development:

- Total site load after site diversity = 15 MVA with redevelopment and "growth factor"
- RHSC = 2.5 MVA
- AAH = 6.5 MVA
- Total PFI load after building diversity with expansion and "growth factor" = 11MVA

The combined Assumed Maximum Demand for the new hospitals as initially built and currently briefed is estimated to be approximately 8.7MVA. Assuming expansion as planned for and a growth factor of approximately 20% in line with HTM-06-01, the Assumed Maximum Demand will be taken to be 11MVA. All 11kV switchgear, cable distribution and standby generation capacity should be sized on this basis.

Dual incomers from DNO rated at 15MVA at 33kV :

The design of the incoming service from the distribution network operator (DNO), and associated 11kV distribution point, has been designed to offer both resilience and flexibility of operation. Maintenance and future replacement of equipment will be possible with little or no disruption to supplies.

Negotiations with the local DNO, Core Utilities (Scottish Power), have suggested that a primary transformer substation will be required to serve the whole South Glasgow Hospital site with separate incoming MV supplies at 33kV both originating from Braehead.

Ideally, dual supplies should originate, if possible, from separate DNO substations, ideally from separate parts of the National Grid with independent cable routes to the hospital site. Where separate MV supplies from separate substations are not available, additional standby generation resilience may be necessary to improve overall resilience.

Primary Transformer Substation

The HV network is supplied from the EHV network at Primary Substations utilising transformers of standard size and phase connection. Typically, twin 12/24MVA (or 20/40MVA) 33/11kV primary transformers feed a two section 11kV busbar. The transformers are to be oil filled and naturally ventilated.

Each incoming feeder is to be connected to a different busbar section. The incoming circuits operate in parallel with the bus section circuit-breaker normally closed. The plan area required will be approximately 18m x 30m (see drawing SK-008).

The DNO has suggested that the options for the establishment of a 33kV/11kV primary substation are:

1) New DNO primary substation on the site supplied, installed and operated by Scottish Power, with the client contributing to development costs.

2) New private primary substation on the site supplied, installed and operated by the client with Scottish Power supplying electricity at 33kV.

Option (1) is preferred and negotiations with Core Utilities (Scottish Power) are underway at this time to attempt to achieve this.

Metering breakers are to be located either side of a bus section switch. This arrangement will allow the PFI development and existing site to be metered separately and for the DNO to maintain their equipment without disruption to supplies.

The establishment of a primary substation, by the local DNO, with a robust incoming supply at 33kV and delivering power to the site at 11kV has the contractual advantage that the existing site distribution can be kept separate from the MV distribution required as part of the proposed PFI development.
For the new PFI hospitals new utility electrical supplies and on site HV infrastructure will be provided. The drawings show new dual supplies coming into a new HV switch room in the energy centre, these are currently shown to serve the PFI site only. The source location of these is subject to the final proposal/agreement of Scottish Power. From the HV switch room the supplies are to feed local transformers positioned on two independent HV rings circling the new hospitals.

Electrical supplies to the PFI hospitals will be backed by on site standby generation.

Following the completion of the PFI construction phase the HV supply to the retained estate can be extended from the Surgical substation back to the new incoming HV switch room so as to provide a ring. Once the adult hospital is occupied a proportion of the retained estate becomes redundant, a new substation is to be installed to serve the remaining listed buildings (effectively replace the existing CMB substation that will be demolished). The existing supplies are to be reefed or made redundant as the related buildings are demolished

6.3.3 Fuel Natural Gas

Read in conjunction with drawings 3757/S32P/000-010, inserted in appendices A. These relay the approximate routes of the existing gas infrastructure

Natural Gas is required for space and water heating, some steam supply for humidification and potentially combined heat and power supply.

The existing site gas infrastructure is supplied from 9 no metered, mains connections; 5 from the Govan road; 2 from the A739 and 2 from Hardgate road. Existing supplies are all radial supplies and the buried distribution pipework is likely to be of a material and age that now requires replacement.

Prior to the commencement of the PFI construction phase a new boiler house is being constructed and the existing catering facility is to be moved off site. This allows for the existing boiler house to be decommissioned and the buildings within the PFI site boundary to be demolished with their existing gas supplies made redundant/removed.

It is currently proposed that the new PFI hospital buildings will be supplied from a new mains connection from Govan road. SGN have confirmed a budget price to provide this, we also understand this confirms that they have reviewed the additional load in relation to their infrastructure and have allowed for any necessary modification works within this budget price. This mains will be routed into the energy centre to feed the new heating and CHP plant (for both Children's and Adult's hospitals) and will then be routed via the underground tunnel to serve any local supplies e.g. auotclaves, humidifiers etc.

Following the completion of the PFI construction phase and the occupation of the new adult hospital, the redundant buildings on the site are to be demolished, with their related gas supplies made redundant and removed

6.3.4 Drainage (foul & surface)

Existing Drainage Networks/Strategies

The existing on-site drainage comprises of both stormwater and combined (foul) systems running generally north towards the entrance to the site to Govan Road. Both of these main drainage networks are not adopted by ScottishWater and are the responsibility of GG&CHB. Please refer to NE02355-C-800-P1 for indicative layouts.

There are a number of connections into these systems from outwith the site which contribute unknown quantities and flowrates of both foul and surface water into these systems. These connections are from the housing at the south of the site, the fast-food Dining area at Moss road and Hardgate road to the west of the site.

Existing Combined (foul) Drainage

The existing main combined (foul) drainage runs generally north-east across the Southern General site. The main pipe comprises of a 375dia vitrified clay pipe which outfalls from the site at Govan road before entering the adjacent Shieldhall treatment works. Connections of both foul and surface water enter this pipe from developments across the existing site with many (?)being required to be maintained for future use. (Missing a word?)

Existing Stormwater Drainage

The existing main stormwater drainage comprises of a 600dia pipe to the south of Langlands Drive and a 1200 x 950 brickwork egg pipe continuing from Langlands drive to the hospital perimeter. This network follows the same general route of the main combined (foul) pipe, running south to north before discharging at the adjacent to the Govan road entrance into an open channel and subsequently into the River Clyde. An existing 600dia stormwater pipe from Hardgate road forms a major branch in the stormwater network running east-west across the site.

Phase 1 Drainage Enabling Works

In order to ensure the continued operation of the existing drainage networks during the Phase 1 development works some drainage diversions are required. There are four drainage runs through the proposed site which must be maintained:

Obstetrics/Gynaecology – 150dia stormwater pipe

This pipe runs west to east and connects into the stormwater network running through the proposed Phase 1 development site. Due to lack of levels information it is not possible to definitively propose the route for this diversion. There are two options available which could ensure the satisfactory diversion of this pipe:

-Connection into an existing 225dia pipe to the south of the Maternity wards

-Diversion to the north-east across the boundary of the proposed Phase 1 development with connection into the existing 600dia pipe running from Hardgate road.

Main combined (foul) pipe - 375dia vitrified clay pipe

The diversion of this pipe is required from an existing manhole in Langlands road to the south and around the proposed facility. This will take the form of a 375dia concrete pipe with new manholes at changes of direction, connections to existing branch lines and provision for connections from the proposed facility. The layout of these proposed diversion works is shown indicatively on NE02355-C-801-P1.

Following these works the existing pipe will remain in its present configuration running west to east along the hospital access road before outfalling into the ScottishWater sewer in Govan road. Capacity assessments are currently being carried out by ScottishWater for the Shieldhall treatment works and the existing outfall will be re-used for all foul loadings from the new development and during the phased decent of facilities and personnel within the Southern General site.

Main stormwater pipe - 1200 x 950 brickwork egg pipe

As for the above combined (foul) drainage pipe diversion, the main stormwater run must also be diverted to avoid the south-east corner of the proposed new facility. The route of this diversion will typically follow the combined (foul) diversion along the existing and proposed site roads as shown indicatively on NE02355-C-801-P1. A 1200dia concrete pipe is to be used in order to match the existing capacity of the 1200 x 950 brickwork egg pipe.

Hardgate road – 600dia stormwater pipe

The diversion of this pipe is required around the northern edge of the proposed facility. Only minor diversion works involving two manholes and new 600dia concrete pipe is envisaged. Care must be taken during demolition works at the existing helipad to ensure the existing pipe is not damaged.

The diversion works for these drainage runs should also include the provision for new connection points from the proposed development works as appropriate. These are discussed further at the end of this section.

Proposed Storm and Foul Water Schemes/Strategies

The below ground drainage philosophy has been discussed with the local service provider, ScottishWater. The following section of this DSR outlines their anticipated key requirements and restrictions in order to comply with likely planning conditions and to ensure that their infrastructure can meet the needs of the new facility. The outline strategy proposals are shown indicatively on NE02355-C-802-P1.

Communications with ScottishWater have comprised both face to face meetings and written correspondence. ScottishWater is shortly due to submit to GG&CHB the findings of its assessment of the water supply and sewerage disposal implications at the site for the proposed facility. In the absence of confirmation of ScottishWater's formal findings and based upon existing knowledge of the site, the following anticipates their findings and conclusions.

Foul Water

Foul drainage from the proposed facility will utilise the diverted combined (foul) drain running across the HSGH site. As part of the diversion works connection manholes with tails into the new development should be provided at the north-east corner of the facility. Other connections into the 375dia combined (foul) pipe may be provided around the proposed facility subject to the layout design for the drainage around the building perimeter.

As the existing foul water from the site outfalls into this network, no capacity problems are envisaged. However, a reduction in the amount of stormwater entering this pipe as part of the demolition works of older buildings is expected to greatly outweigh the increase in foul discharge therefore allowing the capacity to be used for the new development. Confirmation from ScottishWater forthcoming report will however be required to confirm this assumption.

Stormwater

A site-wide strategy for managing stormwater across the entire site is required as part of the larger re-development works. At this stage the ability to incorporate this is restricted due to the space constraints imposed by adjacent operational buildings.

In order to comply with Planning regulations and the requirements of both ScottishWater and SEPA, the use of a “management train” approach to dealing with stormwater in a sustainable manner through the use of SUDS (Sustainable Drainage Systems) is required. This must be planned and designed in accordance with published best practice guidance (CIRIA C697 -The SUDS Manual). Appropriately designed, constructed and maintained SUDS are more sustainable than conventional drainage methods because they can mitigate many of the adverse effects of urban stormwater runoff on the environment.

They can achieve this through:

- Reducing runoff rates, thus reducing the risk of downstream flooding
- Reducing the additional runoff volumes and runoff frequencies that tend to be increased as a result of urbanisation, and which can exacerbate flood risk and damage receiving water quality
- Encouraging natural groundwater recharge (where appropriate) to minimise the impacts on aquifers and river baseflows in the receiving catchment
- Reducing pollutant concentrations in stormwater, thus protecting the quality of the receiving water body
- Acting as a buffer for accidental spills by preventing direct discharge of high concentrations of contaminants to the receiving water body
- Contributing to the enhanced amenity and aesthetic value of developed areas
- Providing habitats for wildlife in urban areas and opportunities for biodiversity enhancement.

To mimic natural catchment processes as closely as possible, a “management train” is required. This concept is fundamental to designing a successful SUDS scheme – with drainage techniques in series incrementally reducing pollution, flow rates and volumes of runoff. Through effective control of runoff at source, the need for large flow attenuation and flow control structures is reduced.

The variety of SUDS components and design options are wide ranging and the following should be incorporated where possible to help deal with contaminants and lower/slow the stormwater run-off:

- Source control techniques
- Rainwater harvesting systems – for roofwater re-use for toilets etc
- Filter trenches - to treat run-off from car parking areas
- Swales - to treat run-off from car parking areas
- Pervious pavements - to treat run-off from car parking areas
- Geocellular systems - for stormwater attenuation storage
- Detention basins- for stormwater treatment and attenuation storage
- Ponds- for stormwater treatment and attenuation storage
- Stormwater wetlands- for stormwater treatment and attenuation storage

The larger masterplan for the site includes the provision of a large wetland/pond which may be utilised for attenuation storage as part of the wider development. Due to the staging process of the development this will not be constructed and operational for use at this stage and therefore the use of source control (permeable pavements) and buried tank attenuation should be considered for use prior to discharge into the diverted on-site drainage network.

As the stormwater for the existing buildings and related hardstanding discharges into the existing stormwater network, this is to be reutilised for the proposed facility. The peak stormwater flows must be restricted to a worst case that matches the existing discharge rates into this network and ultimately to the River Clyde outfall. This ensures that compliance to the existing agreements with SEPA and ScottishWater for this discharge are not jeopardised. It is likely that Scottish Water and SEPA will accept that this flow into the public system will remain and no further works are required to attenuate this discharge.

It has not been established if Scottish Water/SEPA will restrict the discharge of stormwater from this part of the development to the equivalent flow generated from green-field stormwater run-off. Should this be required as part of these works then significant SUDS techniques incorporating stormwater attenuation will be required. However, there are proposals to provide a number of water features at the site and this would provide ideal attenuation facilities for this and future schemes as/if required in lieu of buried tanks located beneath external areas.

The use of suitable stormwater run-off SUDS treatment techniques may be used in car park areas in lieu of the need for a petrol interceptor. This must be agreed with SEPA. Should more conventional surfacing materials and drainage be utilised, a petrol interceptor should be incorporated to intercept hydrocarbons prior to discharging into stormwater network. This must be alarmed and connected to the facilities management system to ensure suitable maintenance is carried out.

6.3.5 Medical Gases

Read in conjunction with drawings 3757/OXP/000-010, inserted in appendices A. These relay the approximate routes of the existing site oxygen infrastructure

There is currently a centralised oxygen compound currently located behind the existing A&E building. A new compound is to be installed behind the maternity building and connected into the existing oxygen network; this allows the existing pipework that crosses the PFI to be removed prior to the construction phase commencing.

A new oxygen VIE compound is to be provided to supply the new adult and Children’s hospitals; a new ring will be installed around the new buildings.

Following the completion of the PFI construction phase and the occupation of the new adult hospital, the redundant buildings on the site are to be demolished, with their related oxygen supplies (fed from compound behind A&E) made redundant and removed. Should the retained existing buildings require oxygen supplies from the site infrastructure then an additional compound may be necessary to serve these.

Any existing requirements for Nitrous Oxides, Vacuum and Medical Air are supplied by local plant and these will be retained/removed in relation to the spaces they serve. Where these gasses are required by the new PFI project, a view will be taken on whether these are to be centralised or localised in relation to the areas served/demand.

6.3.6 IT

Read in conjunction with drawings 3757/ITP/000-010, inserted in appendices A. These relay the approximate routes of the existing site IT/data infrastructure

There are two main incoming data/telecoms rooms, one in the listed building with utility cables coming in from the A739 bypass road and the other in the Outpatients building with utility cables coming in from the Govan road.

Prior to the commencement of the PFI construction phase the buildings within the site boundary are to be demolished and existing data/telecoms connections made redundant/removed. Some cables cross the site e.g. serving maternity; these are to be rerouted using the existing ducting running towards Hardgate road.

The new PFI site is proposed to be connected back to both incoming telecoms/data rooms so that there are two separate routes back to the centralised equipment. The Children’s hospital is to be used as a location to house new equipment and in the long term this could replace that in the Outpatients building, which will be subsequently demolished post PFI construction. Alternatively the equipment in the Outpatients building will require rehousing when this building is demolished.

6.3.7 Steam/ Condensate

Read in conjunction with drawings 3757/T33/000-010, inserted in appendices B. These relay the approximate routes of the existing site steam infrastructure

The existing site is provided with a limited amount of steam (mainly for heating purposes) from the centralised boiler room. The Estates team have already made a considerable effort to decentralise the heating systems and move away from steam heating. A new steam boiler house is to be installed and connected into the existing steam and condensate mains system, this will allow the decommissioning of the existing boiler house prior to the PFI construction works commencing.

Prior to the commencement of the PFI construction phase the buildings within the site boundary are to be demolished and steam/condensate connections will be made redundant/removed.

Post PFI construction the existing steam heating system is to be reviewed in relation to which areas of the retained buildings use the steam heating. Modifications to the steam system will either then be made accordingly or new LTHW plant installed, allowing the buildings that are to be demolished to be so and their related steam/condensate pipes removed. Thi is particularly relevant to the Listed building. Needs an explanatory sentence to make explicit why it is relevant?

6.3.8 Adaptability and Capacity for Expansion

The schemes above have allowed for future expansion based on the Campus Plan submitted by the Trust for planning in the Winter 2006 and are as follows:

WATER
For the site, this can be analysed once Scottish Water have completed their demand and infrastructure modelling. It is envisaged that the later phases of demolition (post PFI connection) will release existing capacity/usage from the Govan road supplies and the A739 (Moss road) supply. These and/or a connection from the new PFI supply from Govan road could then offer some capacity to provide single feed supplies to the future expansion spaces indicated on the drawings.

The new labs building (planned for construction pre PFI) will also need consideration in relation to the above, this is to be included when Scottish water complete their analysis.

POWER

For the site, in our discussions with Scottish Power we have allowed for a future site capacity (post PFI construction and demolition) of 15kVA. However Scottish Power is considering this in relation to the site wide supply and thus the final solution when agreed with Scottish Power may to differ from the strategy outlined above and indicated on the drawings. This is therefore subject to further discussions and feedback from Scottish Power.

For the PFI hospitals, electrical power consumption is likely to rise over the PFI term as electrical equipment and IT usage increase that will result in a corresponding increase in the requirement for spot cooling. Load increases are more likely in the clinical “hot” areas rather than the ward areas. We have included +20% increase from the initial load to MD as HTM 06-01 (Table 2 “Growth Factor”) included within the 15MVA site load and 10MVA associated with the PFI Hospitals and allowed for in the design of the incoming supply switchgear and MV distribution to the hospitals to provide scope for additional supply needs without a major refit.

Greater low or zero carbon electrical and heat generation are likely over the PFI term to reduce carbon emissions from the hospital and as the cost of energy rises, alternatives such as on site generated energy may become economic, eg PV cells, additional or hydrogen based CHP. The centralised energy centre provides an adaptable infrastructure that will be able to respond to these changing needs and circumstances.

NATURAL GAS

For the site, the quotation/confirmation from SGN Connections is an additional load to that of the current existing infrastructure. The pre and post PFI building demolition will release existing capacity/usage from the existing Govan road supplies; these can then provide supplies to the future expansion spaces indicated on the drawings. The load for the new labs building has not been included in our discussions with SGN.

For the PFI hospitals we do not see gas consumption rising significantly over the PFI term. It is likely that the nature of the supplied gas will change over the PFI term as natural gas is replaced by synthetic or “biogas” and that the installations will need to be adapted at this time.

MEDICAL GASES

For the site, should the future expansion spaces require oxygen to be supplied from the centralised plant, then the existing plant located behind the existing A&E building will become redundant at that time. This, therefore, provides capacity to supply these areas and to link into the existing site network as required. This is also a strategy that may be able to serve the Labs building.

IT

The incoming data/telephone lines and centralised equipment capacity are to be reviewed and defined by the client’s specialists.

ENVIRONMENTAL STRATEGY AND APPROACH TO INTEGRATED DESIGN

The environmental strategy is based on:

- good environmental conditions are required for staff, patients and visitors
- energy use is to be minimised using systems and plant most appropriate to the hospital environment. As a starting point total energy use including small power and medical equipment loads are not to exceed 55GJ/100cm in any year (delivered energy).

  Ongoing energy reductions should at least ensure that energy use per unit volume or area do not increase with time and offset additional load as use changes/develops.
- 20% of the energy use above is to be “low or zero carbon” as defined by the Scottish Building Regulations
- Every five years, the contribution of energy reduction and low or zero carbon energy as a percentage of total consumption is to be increased by five percent.
- system and plant/component selection is to be based on lowest life cycle cost

In order to produce robust solutions the design follows the following hierarchy:

- Make the building energy use as low as possible by investing in the building fabric. This will have a good payback as the building fabric life is long and the installations are not dynamic requiring little additional maintenance over and above standard typical solutions
- select appropriate environmental strategies. Design the building so that it offers flexibility to meet changing needs and economic and social drivers with success in the future

The environmental strategy is based on a sealed building with mechanical ventilation. This follows from an appraisal of the ventilation options for Ward Areas presented to the client in March 2007 which attempted to explain and balance the competing design and operational drivers.

To accommodate the extensive vertical and horizontal services runs that will be required for the new hospital facility both in the tower and podium areas as well as to the laboratory block, the design should take due cognisance of this requirement and for the availability of services openings, corridors/routes and penetrations.

Services routes should be fully integrated with the structural design for the buildings to ensure proactive inclusion to accommodate the full extent and range of service types, services proximity, future adaptations and maintenance. This should address issues including wall and floor penetrations, floor and ceiling routing, protection and containment and to ensure that all structural load paths remain uncompromised under all circumstances.

The establishment of the requirements for the provision of dedicated services routes between different hospital buildings and within separate parts of the adults and Children’s facility should be adopted at an early stage of the design to ensure that full effectiveness and interoperability of all plant rooms, roof mounted equipment, basement plant and link corridors is achieved.

The services strategy should allow for the requirements of the facilities energy centre, electrical sub-stations, gas pressure reduction stations, gas/fire suppressant bottle stores, water tanks, HVAC equipment, helicopter servicing, fire-systems, steam and other mechanical services including all specialist services i.e. medical gases.

The structural building frame that is adopted should be selected on the basis of other site constraints to allow planned and pro-active inclusion for services routes and plant room sizing and location.

6.3.9 Ventilation

Required Conditions

It is important that the ventilation approach for the Adult and Children's hospitals fulfil the primary requirement to provide adequate:

- supplies of fresh air
- odour dilution
- removal of airborne contaminants or pathogens

Detailed quantified requirements relating to internal environmental conditions can be found in Department of Health Estates & Facilities Division publications. These publications are in the process of being rationalised. The current ventilation standard SHTM 2025 will shortly be superseded by HTM 03-01 'specialised ventilation for healthcare properties'. A draft version of this new standard has been circulated. The HVAC design is in accordance with its requirements.

Site Constraints

It is important that the ventilation approach takes into consideration the constraints of the site. These have been identified as:

*Smells from adjacent sewage treatment plant*
Scottish Water's Sheildhall Sewage Treatment Plant lies approximately 400m north of the site. Staff and patients using the existing hospital buildings on the site experience a constant low-level of odour from the plant. After heavy rain the odour becomes more pronounced and unpleasant. Although there are intentions to remedy or re-locate the sewage treatment plant, there are no concrete plans or timeframe for this work. There is a major risk, therefore, that the odour issue will not be resolved before the opening of the Hospitals. SHTN 30 'Infection Control in the Built Environment' states that although odour in itself does not present a direct risk, if it leads to ventilation being restricted it may in turn increase the risk of hospital acquired infections.

*Construction noise, dust & contamination*
The construction of the Adult and Children's Hospitals is to be staggered. This means that there will be a period when the Children's' Hospital is operating and the Adult Hospital is being built. It is important that the ventilation approach limits the intrusion of construction noise, dust and contamination while ensuring adequate ventilation.

It is important that the laboratories on the site do not contaminate ventilation air drawn into the new hospitals. A detailed site airflow assessment needs to be carried out to confirm that this will not be an issue.

Mechanical Ventilation

The Clinical Areas, Wards and the remainder of the main hospital buildings are to be mechanically ventilated throughout. This decision has been made because mechanical ventilation offers the following advantages over natural ventilation:

- smells can be eliminated from incoming air through activated carbon filtration.
- dust can be filtered from incoming air.
- external noise from site construction can be attenuated through the incoming air path
- for clinical areas robust and reliable control of environmental conditions is required for the spaces to function correctly and efficiently. The control airborne infection by room air flow control and dilution by enclosure and mechanical ventilation is essential.

Additionally mechanical ventilation provides the additional benefits of:

- helping to control airborne infection by allowing points of air intake and discharge to be carefully separated to avoid recirculation, good dilution of room contaminants/pathogens, and by allowing pressure differentials to be created to facilitate the flow of air from clean to less clean areas.
- allowing air to air ventilation heat recovery, thereby significantly reducing the running costs and carbon emissions associated with space heating and cooling of ventilation air.
- allowing incoming air to be cooled prior to being supplied to spaces to ensure good thermal conditions. This provides a system that for patient and staff areas do not exceed the draft HTM 04-01. This recommends that temperatures of 28°C are not exceeded for 50 hours a year.
-

In addition, as the heliport is to be constructed on the roof of the Adult Hospital tower, mechanical ventilation will avoid drafts through windows and help limit noise.

High building air tightness is required to exclude infiltration and odour. The buildings will be slightly pressurised.

Energy Reduction Measures

The Hospitals are to incorporate the following measures to reduce energy consumption associated with HVAC systems:

- windows in ward and office areas are to be fitted with external adjustable shading devices such as adjustable mid pane louvres or blinds. These will reduce peak solar heat gains to allow good thermal conditions within well day lit spaces and minimize the requirement for mechanical cooling in these areas. Shading Factor "SF" > 70%.
- exposed thermal mass, where practical, to limit temperature swing and reduce peak temperatures. Patient rooms are to have exposed concrete soffits.
- air to air heat recovery in all air handling units.
- variable ventilation rates by fan speed control for spaces with demand control (eg odour, ammonia)

General Plant Design & Distribution for Infection Control

Each hospital department is to contain its own dedicated air handling plant. Larger departments, such as inpatient wards, are to be zoned with separate air handling plant serving each zone. This is to ensure that in the event of mechanical failure, or during maintenance or refurbishment only a limited area is affected. Critical care units are to be served with back-up air handling plant.

Air handing plant at podium roof level are to serve the main body of the hospitals as well as the lower half of the adult hospital tower. The top half of the tower is to be served by air handling plant installed in the tower roof. Fresh air intake and discharge louvres are to be installed at these levels, carefully separated to avoid recirculation.

Supply and extract ductwork is to be distributed to the hospital departments via risers. Where possible these risers are to be located off main circulation routes to facilitate access for cleaning and maintenance. Horizontal distribution is to be in ceiling voids above corridors, wherever possible, so that access panels can be located outside clinical areas. Similarly, trimmer coils are to be installed above circulation areas wherever possible to avoid potential leaks in clinical areas, which would lead to greater disruption and potential damage to expensive equipment.

The ductwork distribution system is to be a low pressure system. Smoke dampers will be installed through all fire and smoke compartments. Access panels are to be installed in accordance with DW142 to allow adequate inspection, maintenance and cleaning. Flexible ductwork is only to be installed for final connections to grilles and diffusers.

Diffusers and grilles are to be carefully chosen to allow them to be easily removed and cleaned to limit airborne contamination.

Air handling plant is designed to comply with draft HTM 03-01 requirements, and includes, in addition to the base provision of inlet filter, heating coil and fan/attenuators the following:

- inspection, cleaning and maintenance access sections either side of all coils and dampers, upstream of all filters and downstream of all humidifiers.
- blow-through configuration of fans to ensure as much of the unit is under positive pressure as possible.

The following sections are generally to be incorporated into all air handling units:

- fog coils.
- cooling coils
- temporary pre-filters (G1/G2) to allow removal of dust while construction work is ongoing.
- steam injection humidifiers
- activated carbon filters for odour removal

Specialist Ventilation Areas

*wards*
Ventilation plant will be zoned by elevation and space type/function.

Patient rooms and multi-bed bays are to have local temperature control through the installation of heating trimmer coils on individual room branch pipework. Space humidification and cooling will be by the supply of cooled ventilation air without

individual room temperature control In individual rooms temperature and external motorized solar shading control is to be built into the bed-head controls. In multi-bed bays controls are to be installed at a central location. Temperature control is be primarily automatic with sensors in each space, however local controls are to allow limited adjustment of the set-point for a limited period after which the temperature control returns automatically to its pre-set set-point.

Patient rooms and multi-bed bays are to be kept at a lower pressure relative to their adjacent corridors, and so in addition to the air supplied directly to these spaces additional air will pulled in under doors. Air is to be extracted through ensuite shower rooms as well as additional grilles located above the ensuite shower room doors. The air change rate in these spaces is to achieve the draft HTM 03-01 requirement of six air changes per hour. However, apart from specific wards where clinical experience indicates that odours are likely to be strong and persistent, such as the geriatrics wards, the controls are to set the air change rate at four air changes per hour with local pushbuttons to allow the rate to be boosted to six air changes per hour for a limited period. Buttons are to include bypass key control to allow the air change rate to be locked at six air changes per hour if this proves desirable.

*critical and intensive care*
These are to be air conditioned spaces with full temperature and humidity control.

*operating suites*
Each conventional operating suite is to be installed with its own air handling unit. Fresh air is to be delivered in accordance with draft HTM 04-01 at 25 air changes an hour. Operating suites are to be controlled in such a way so that when vacant, ventilation plant is turned off to conserve energy. In the operating theatre air is to be supplied through the high-level terminal canopy and expelled at low-level through pressure stabilizers. Pressure stabilizers are to be installed on all four sides or in all four corners of the room, and to be visible so that they provide a visual indication that the ventilation system is running.
Ultra clean ventilation operating suites are to be delivered with the same amount of fresh air as conventional suites, however an additional recirculation air handling unit is to be installed to increase the flow through the terminal to ensure laminar flow and a count of less than 1 colony forming unit per cubic meter. A high-efficiency HEPA filter is to be installed before the canopy. The recirculation unit is to be remote, to allow inspection and maintenance to be carried out outside the theatre. The canopy is to be of the vertical flow type.

*isolation suites*

Isolation suites will be dedicated plant designed as HBN 4 Supplement 1 to provide isolation. This relies on an air tight enclosure and a lobby positively pressurised with respect to the room and corridor.

Ventilation System & Fire Strategy

In certain critical care departments it is preferable to maintain the supply ventilation in the case of a fire within the area, for example the continued supply of air to a theatre will maintain it at a positive pressure and protect the patient and staff from the effects of smoke. The ventilation plant is not designed to be automatically shut down on the operation of the fire alarm and detection system, but under the instruction of the fire-and-rescue service and controlled from panels located either at department entrances or adjacent to the main fire alarm indicator panels at the entrances to the buildings.

Fire dampers are to be installed in all ducts penetrating fire compartment and sub-compartment walls. In compartment walls fire dampers are to be actuated on the operation of the alarm and detection system in the compartments either side of the compartment walls. In sub compartment walls dampers are to be activated by thermal release devices.

All supply AHU's are to have a smoke sensor mounted in the main supply duct immediately downstream of the AHU. In the event of a fire in the AHU or smoke being drawn into the system from an outside source the supply air damper is to close and the AHU is to be shut down.

A mechanical smoke extract system is to be installed in the basement of the hospitals. (The installation of a sprinkler system in the basement allows mechanical smoke extract to be considered as an alternative to conventional smoke vents.) This system is to provide at least ten air changes per hour and be capable of handing gas temperatures up to 400°C for an hour.

6.3.10 Heating

HOSPITAL INFRASTRUCTURE
Central Boilers & distribution

The plant for both the Adult and Children's Hospital is to be centralised and located in a separate Energy Centre. The system philosophy is shown on SK021. The plant shown will provide heating for fabric, ventilation and domestic hot water needs for the two hospitals. Separate steam generation plants will be required for humidification and sterilisation.

The heating system located in the Energy Centre will be a Medium Temperature Hot Water System (140/65 °C). The boilers to be used are high efficiency, low Nox, 3 pass high water content boilers with pressurised burners that operate on alternative fuel supplies of natural gas and 35 second light oil. Burners to be digital modulating with variable speed and air damper control capacity control to achieve a high turndown ratio (10 to 1 turndown on natural gas). Low NOx (<70mg/KWhr natural gas) burner with oxygen trim control.

The boiler configuration employs an effective (N+1) redundancy at peak connected design load (effective N+2 at part load). Each boiler is to have its own discreet insulated and clad flue. The flue stack to be an independent stainless structure to allow the flue to discharge above the level of the tower with space to accommodate other services requiring high level discharge.

The MTHW will be distributed via separate highly insulated district heating mains to the Adult and Children's Hospitals run within the basement service route between the Energy Centre/Loading Bay and the Hospitals. Heat exchangers convert the MTHW to LTHW (90/70 °C) locally for room heat emitters and air trimming coils.

It is envisaged that the pipework installation will consist of a mixture of modern and traditional materials. The whole of the heating system will be chemically dosed and treated as appropriate. All pipework and fittings are to be highly insulated to minimise heat loss and heat gain to the hospital spaces. Insulation will be 50% thicker than the minimum economic thickness.

All pumping arrangements will include redundant standby pumping. The majority of the main pump sets will consist of 3 no. pumps rated at 50% duty while the smaller pump sets will consist of smaller run and standby pumps rated at 100% duty.

In order to optimise energy usage 2 port control valve technology and variable speed pumping will be employed throughout. Differential pressure control valves shall be used on all sub-circuit branches.

Gas Combined Heat and Power

At present a 1.5 MWe gas supplied spark ignition reciprocating engine combined heat and power installation has been included in the base scheme. The exact size of the CHP plant will be reviewed once detailed electrical and heat load analyses have been completed for the site and the economic case for CHP can be explored in detail with a turnkey operator. Additional CHP capacity in the future provides scope for increasing the proportion of "low carbon " energy supply.

The CHP unit is to be located in the Energy Centre. Heat will be recovered from the unit engine jacket, engine cooling system and exhaust gases via a shunt pump circuit connected to the main boiler return distribution pipework. Once the exact size of the unit is known it may be beneficial to employ a separate heat recovery boiler. The CHP unit will have its own separate flue. It is envisaged that the unit will operate whenever the heat and power can be fully utilised.

Domestic Hot and Cold Water

The domestic hot and cold water installations will be installed to potable quality standards throughout the whole of the Hospital development.

There shall be dual and separate water supplies to the Adult and Children's Hospitals. The total hot and cold water needs for each building shall be met by water storage located in each building. Each building shall have sufficient water storage to meet 24 hours requirement. The preferred option for the water storage and distribution is as follows.

- Main storage tanks located in basement, no break tanks, pumped distribution system, with duty standby pump sets and controls and generator back electrical supplies to the pumps. Trust approval for this option will be required.

The location and number of independent hot water heat stations is shown on SK023. Each heat station location is sized on a (N+1) basis. Hot water shall be delivered to individual wards and departments via a traditional two pipe circulation system.

The whole of the potable hot and cold water installation will be designed to meet all the legionella requirements. In particular the water storage tank connection arrangements allow for zero dead legs and the heat station installation allows for continual calorifier circulation with zero stratification. All pipework is to be insulated to minimise heat loss or gain as appropriate.

Particular emphasis is to be put into ensuring that there will be the minimum number of hot water returns, that there will be adequate insulation on the cold water installations to avoid temperature build up and that there will be regular flushing of cold water dead legs by means of appliances connected to the same.

The laboratory areas will be provided with similar hot and cold water installations employing separate break tanks and separate calorifiers to ensure full segregation between laboratory and domestic installations thus meeting the requirements of the Water Regulations.

Pipework installation within both hospitals will be run within individual level ceiling voids to ensure any particular ward or department can be isolated at that level only.

Room Heat Emitters

Where room are mechanically ventilated heating and ventilation rates are sufficient to provide good room air mixing/destratification, heating will be provided by air room reheat coil with 2 port water control valve and room temperature controller.

For areas with extensive glazing and/or natural ventilation, heating will be from perimeter heating; either high level radiant panel or low level convector.

6.3.11 Cooling

General Chilled Water

In order to meet the annual cooling requirements of the development and the requirements of HTM 3, chilled water installation will be required.

The preferred chilled water system configurations are shown on SK019.

- The configuration shows discreet chiller installations adjacent to the air handling units they serve. As a (N+1) redundancy philosophy has been utilised for each chiller cluster, a separate process chilled water system will be installed utilising free cooling chillers.

The chilled water equipment shall include chillers, buffer vessels and pressurisation units. Each chiller will be of the fully packaged air-cooled type complete with multiple modular screw compressors. The chiller will be rated as residentially quiet to avoid unobtrusive noise emissions. Chillers to have variable speed head pressure control with load and efficiency optimised head pressure and chilled water flow temperature control to improve seasonal efficiency.

The chilled water circuits will consist of both primary and secondary pumping. In order to optimise energy usage, 2 port control valve technology and variable speed pumping will be employed throughout. Differential pressure control valves shall be used on all sub-circuit branches.

All pumping arrangements will include redundant standby pumping. The majority of the main pump sets will consist of 3 no. pumps rated at 50% duty while the smaller pump sets will consist of smaller run and standby pumps rated at 100% duty.

Chilled water will be distributed through a conventional 2 pipe system to the various demand centres throughout the building. The installation will employ a number of traditional and modern materials. The entire chilled water system will be chemically dosed and treated as appropriate. All pipework is to be insulated to minimise gain.

ITC Cooling

Independent chilled water system as above but with free cooling roof mounted air cooled water chillers. N+2 redundancy with plant backed by the essential electrical supply.

6.3.12 Drainage

The rainwater drainage system in each hospital shall be gravity systems. The rainwater pipework in each hospital shall be housed in vertical risers and will be insulated to prevent condensation and noise transfer.

The soil and waste drainage system in each hospital shall be gravity systems. The systems generally shall be vented to atmosphere above the roof. It is envisaged that the pipework installation will consist of a mixture of modern and traditional materials. Separate chemically resistant drainage will be installed in all specialist areas.

6.3.13 Artifical Lighting

General lighting to all areas by low energy fluorescent light sources. All control gear to be high frequency, high power factor (PF>0.95), low harmonic emission light fittings equipped with electronic control gear. No switch start gear light fittings permitted.

Efficient light sources and luminaires will be used.

Lighting is a substantial user of energy in hospitals and buildings generally. Often the light level and energy use can be varied because natural light is available or because the need for light is reduced. In summer the removal of heat from light fittings is important to prevent overheating of spaces. As lamps age and fittings/lamps get dirty over their cleaning cycle, the light output will fall. Room photocells and dimming can adjust the output of the lamp down when clean, to reduce energy use and heat gain. For each space the potential for lighting controls will be examined and the appropriate lighting controls will be installed.

Lamp and lighting gear monitoring provides a cost effective solution to lamp/gear maintenance.

| | |
|---|---|
| day lit spaces | fitting dimming controls and room photocells to provide dimming and off control |
| spaces subject to intermittent occupancy | occupancy detection to switch lights off when the room is not in use |
| all spaces | fitting dimming controls and room photocells to provide lamp output control as lamps age/fittings get dirty<br>lamp and gear monitoring and alarming for lamp/gear maintenance |
| external lighting | time and light level control of all external lighting |

Design Light Levels:

as HTM/HBN & CIBSE guidance

Lighting Circuits:

Final circuit cabling shall generally consist of LSF insulated single core cables to BS7211 enclosed and protected within metal conduit. All final circuits shall be provided with full size single core circuit protective conductors.

All electrical accessories/socket outlet switch plates shall be stainless steel finish in Category 3, 4 and 5 areas. Offices and administration (non-patient areas) could be of alternative materials (i.e. plastic).

Escape light fittings throughout the building wards will be supported by the secondary power supply system with fittings distributed over at least two (Side A and Side B) interleaved circuits. In the event of a failure on Side A (final circuit, rising busbar, distribution board, main switch panel or supply transformer), then power will still be available from socket outlets connected to Side B circuits.

V40 Emergency Lighting

Generally, secondary lighting to Grade A or Grade B will be provided to all areas of the building depending on clinical risk category. All secondary lighting will be fed from the secondary power power supply (SPS) with reconnection within 15 seconds, following failure of the incoming mains supply (see drawing: V[20]-500). In accordance with HTM 06-01, all areas that require standby lighting will also be provided with emergency lighting.

Emergency escape lighting will be provided to all areas of the buildings to meet the requirements of BS5266 and HTM2011 Generally, emergency lighting will be provided in the form of self contained light fittings with their own integral battery packs to provide up to three hours autonomy in the event of complete power failure.

6.3.14 Electrical Lighting

Introduction

This section describes the electrical services solutions proposed in response to the Trust's design brief and the proposed architectural scheme.

The text descriptions should be read in conjunction with the schematic drawings scheduled in Appendix C, these together detail the full extent of the provision of the electrical power building services.

The existing switchgear and distribution is undergoing some refurbishment and renewals in preparation for the commencement of the New Hospitals development and reorganisation of the retained site electrical supplies. As part of this initial work, the capacity and resilience of the existing medium voltage (MV) networks has been assessed and found to be inadequate to support the proposed new Adult Acute and Sick Children's hospitals. These issues must be addressed within the new development and are as described below.

The new hospitals will be constructed whilst the existing hospital buildings continue to function and therefore additional capacities will be required which the existing infrastructure cannot provide. Our recommendations are that:

- the existing MV distribution is retained and reinforced to serve the existing hospital site and buildings.
- to allow phased constructions of the new hospitals, they are served by their own dedicated MV distribution systems.
- to meet the electricity supply requirements for the completed development, a new primary substation is constructed.

After successful commissioning it is envisaged that the new hospitals will be progressively brought into use by means of a phased decant from the existing accommodation on the site. Once this has been done, the existing hospital buildings can then be de-commissioned and demolished without affecting the engineering systems of the new hospital development.

Discussions have progressed with Core Utilities (Scottish Power) to provide new services connections and incoming supplies. This process is not yet complete and at the time of writing formal responses are awaited.

Electrical Load Assessment for the NSGH Site

A review of hospital electrical loads has been carried out, including site visits to recently completed PFI hospital projects at The Edinburgh Royal Infirmary and University College London Hospital. These loads are given below.

Existing South Glasgow Hospital Loads:

- Available maximum demand = 2.6MVA
- Actual maximum demand = 2.6MVA
- Site floor area = 91,500 $m^2$ approx
- Load = 28.5VA/$m^2$

Edinburgh Royal Infirmary Loads:

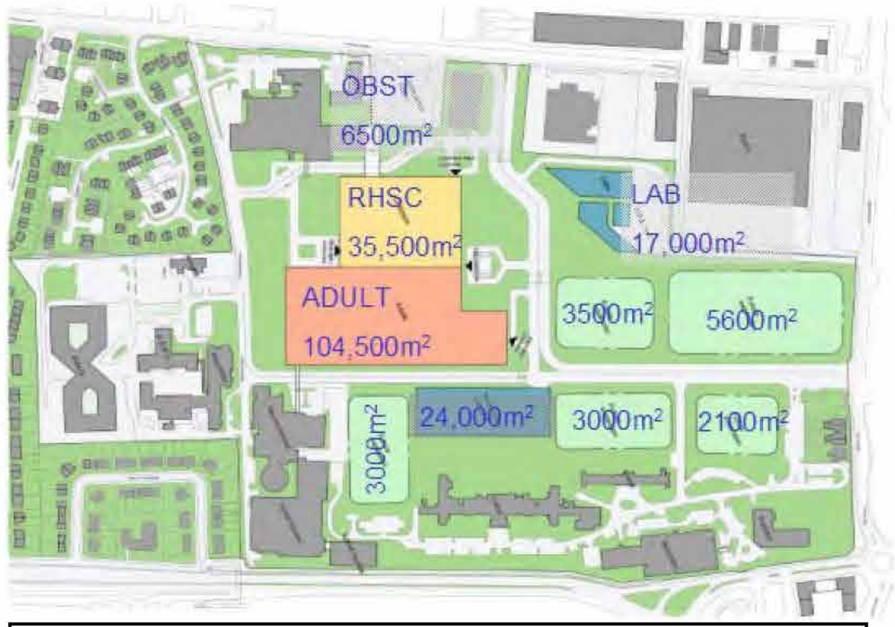
- Available maximum demand = 8MVA
- Actual maximum demand = 6MVA
- Site floor area = 125,241$m^2$
- Load = 48VA/$m^2$

UCLH – London Loads:

- Actual maximum demand = 3MVA
- Site floor area = 75,000$m^2$
- Load = 40VA/$m^2$

The proposed electrical development of the South Glasgow Hospital site assumes the provision of supplies to the following areas:

- Multi-storey car park – 24,000m2
- New laboratory – 17,000m2
- New Obstetrics Dept – 6,500m2
- Adult Acute – 104,500m2
- Sick Children's – 35,500m2
- 'Future Expansion' – 17,000m2




Assumed approximate areas showing type and area of future developments on the South Glasgow Hospital Site.

Figure 29 Assumed Approximate Areas

The following electrical loads for each development have been assumed:

- Multi-storey car park – 8.0VA/m2
- New laboratory – 60VA/m2
- New Obstetrics Dept – 50VA/m2
- Adult Acute – 50VA/m2
- RHSC – 50/VAm2
- 'Future Expansion' – 40VA/m2(Single Storey)

The table below shows the estimated electrical loads for each area with assumed maximum demands and diversities. The following maximum demands have been taken for the new hospitals:

- Royal Hospital for Sick Children (RHSC) = 2.5 MVA
- Adult Acute Hospital (AAH) = 6.5 MVA

Table 1

| Description | Estimated Bldg Available MD MVA | Assumed Building Diversity % | Building Diversified MD MVA | Approx floor area m2 | Approx Bldg diversified load VA/m2 | Available MD as VA/m2 |
|---|---|---|---|---|---|---|
| SGGH - existing | 2.6 | 95% | 2.5 | 91,451 | 27 | 28 |
| | | | | | | |
| Multi-Storey car park | 0.3 | 80% | 0.2 | 24,000 | 8 | 10 |
| With New Lab | 1.3 | 80% | 1.0 | 17,000 | 61 | 76 |
| With New Obstetrics | 0.4 | 75% | 0.3 | 6,500 | 40 | 54 |
| Acute Adult | 6.5 | 0.80 | 5.2 | 104,433 | 50 | 62 |
| RHSC | 2.2 | 0.80 | 1.8 | 35,523 | 50 | 62 |
| At PP2 | | | | | | |
| At PP3 | | | | | | |
| Future expansion residual | 1.0 | 70% | 0.7 | 17,000 | 41 | 59 |

The table below shows how the site electrical load may vary during the development of the site. From the existing site load of 2.6MVA, it reduces to 2.3MVA during initial site clearance and then rises as new buildings such as the new multi-storey car park, laboratory and Obstetrics Department are added.

Table 2

| Description | Estimated Site Available MD MVA | Assumed Site Diversity % | Site Diversified MD MVA | Approx floor area m2 | Approx Site diversified load VAm2 | Available MD as VAm2 | Utility Supply |
|---|---|---|---|---|---|---|---|
| SGGH - existing | 2.6 | 95% | 2.5 | 91,451 | 27 | 28 | Existing |
| At PP1 | 2.3 | 95% | 2.19 | 81,089 | 27 | 28 | Existing |
| Multi-Storey car park | 2.6 | 75% | 1.9 | 105,089 | 18 | 24 | Existing |
| With New Lab | 3.9 | 75% | 2.9 | 122,089 | 24 | 32 | Enhanced Existing |
| With New Obstetrics | 4.2 | 75% | 3.2 | 128,589 | 25 | 33 | Enhanced Existing |
| Acute Adult | 10.7 | 0.80 | 8.6 | 233,022 | 37 | 46 | New |
| RHSC | 12.9 | 0.80 | 10.3 | 268,545 | 38 | 48 | New |
| At PP2 | 12.6 | 75% | 9.4 | 261,045 | 36 | 48 | New |
| At PP3 | 11.9 | 75% | 8.9 | 243,971 | 36 | 49 | New |
| Future expansion residual | 12.9 | 75% | 9.6 | 260,971 | 37 | 49 | New |

Whilst these early developments can be undertaken with the existing incoming electricity supply being upgraded to 5 MVA, the new RHSC and Adult Acute hospitals cannot be supported by the existing supply. A new electricity supply with the capacity to help deliver at least 13MVA to the site in total will be required. With a growth factor of between 15-20%, a new supply of around 15MVA will be required.

A supply of this size will require a new Primary Substation to be established on or near the South Glasgow Hospital Site. This substation will take electricity at 33kV and step it down to 11kV for distribution around the site. As phased construction takes place, a growth in load will be required as shown on the Primary Load Assessment illustration.

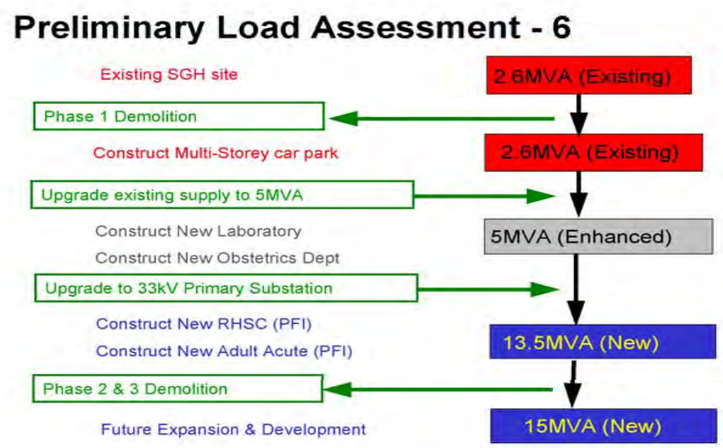



Figure 30 Preliminary Load Assessment

Electrical Services Scheme

Early work by Max Fordham LLP centred around issues of reliability, resilience and redundancy. The old Health Technical Memoranda (such as HTM 2007 and HTM 2011) offered little guidance with respect to system reliability and resilience.

HTM 06-01 'Electrical Services Supply and Distribution' published in April this year, offers clear guidance on resilient systems design and supports much of the approach already developed by Max Fordham LLP.

The principle strategy for the new RHSC and Adult Acute hospitals is for a Dual-Unified distribution system comprising of separate primary and secondary circuits collectively forming the electrical distribution of the new hospitals. The secondary supply is to be equal to the primary supply; that is, both primary and secondary circuits are fully rated to provide resilient distribution. Consequently, it is not appropriate to talk about 'essential' and 'non-essential' supplies. Instead, the alternative supplies are called 'Side A' and 'Side B'.

The intention is to place the first single point of failure as close to the final sub-circuits as practical.

Medium Voltage Distribution

Medium Voltage (MV) distribution will be at 11kV. The Distribution Network Operator (DNO) will provide electricity metering at 11kV, with separate metered supplies to the existing SGH site and the RHSC and AAH development. MV distribution at 11kV will be from new 11kV primary switchgear located adjacent to the primary substation (See drawing SK-050).

Resilience is to be achieved by having dual incoming electricity supplies from the DNO, dual distribution circuits at 11kV and a secondary power supply system (SPS) utilising standby generation diesel engines to generate electricity at 11kV in the event of failure of the DNO supply. At this time, the DNO (Core Utilities) may only be able to provide a single incoming supply at 33kV which is less resilient than the dual incoming supplies recommended by HTM-06-01. At this stage, therefore, to provide improved resilience and make up for this apparent shortfall in coming supply resilience, additional standby generation capacity is proposed.

Vacuum circuit breaker switchgear contained within two separate purpose-built architect-designed switchgear rooms with blast relief blow out panels and raised access floors are to be provided. Cable entry and exit will be from under floor and underground trenches. Circuit breakers will be of the withdrawable pattern.

To maintain resilience, a 4 hour separated blast relief wall will be required between adjacent switch rooms.

MV distribution to the RHSC and the Adult Acute hospitals is to consist of separate closed unit protected auto-switching ring mains dedicated to each hospital. Unit protection will be by pilot cables and time graded relays. This approach has some resilience advantages and enables construction of the two hospitals to be phased. A full instrumentation and protection system with multi-function meters, overcurrent and earth fault protection to the primary ring mains will be provided.

MV Cables and Containment

To provide resilience, and where possible, Side A and Side B cabling should follow separate routes. MV cable distribution to be run from the energy centre to the hospitals will be protected within the walk through basement corridor, fixed to the soffit or side walls. Side A cables will run along one side and Side B cables along the opposite side. Additional mechanical protection will be provided to protect the cables against damage.

All MV cables forming part of the MV distribution network will require a copper conductor as part of the armouring of the cable. Multi-core XLPE insulated steel wire armoured cables manufactured to BS6622 contain a braided copper tape within their construction that acts as an earth fault conductor.

Within the buildings, the MV cabling will run horizontally, concealed above false ceilings or at high level in the basement. Vertical distribution will be within dedicated risers. Generally, MV cabling will be run cleated to ladder racks. Side A and Side B supply cabling should follow independent routes which require separate risers. Risers containing MV cabling should not contain any other cabling.

Transformer Reliability & Resilience Issues

According to HTM 06-01 transformer reliability can be as high as 99.999% . This equates to being 0.0001% unreliable which could mean 5.25 minutes unavailability per year. However, the issue is more to do with the time to repair or replace a faulty transformer, which may be at least one week. It may even take up 6 or 12 weeks between placing an order and taking delivery of a new transformer. There are advantages in standardising on a limited number of transformer types and sizes and even retaining some on site as spares ready to be installed.

In accordance with HTM 06-01, the transformers serving areas of a healthcare facility with a Clinical Risk Category 4 or 5 are to be arranged in pairs and to operate at no more than 50% load. In the event of a transformer failure, or the failure of the MV supply to the transformer, the load can be transferred to the remaining healthy transformer which will then run at rated capacity (100%).

A typical Packaged Substation with the LV switch panel on the left and the cast resin transformer housed within its enclosure on the right.

It is important that paired transformers operating in this way are housed in separate rooms to prevent a problem affecting one transformer, or its associated MV switchgear, affecting the other. The drawing SK-051 indicates a transformer housed with its associated 11kV switchgear so that all MV plant and equipment is contained within the same room. This may have advantages, depending on the maintenance regime proposed, as it allows equipment to be maintained without loss of service. Alternatively, transformers could be located adjacent to the respective LV switch panel served, taking the form of a packaged substation.

Transformer Provision

From a unit cost view, there appears to be very little difference between oil filled or cast resin (dry type) transformers.

Oil filled transformers are an inherent fire risk and precautions must be taken against explosion and fire spread. Precautions must also be taken to contain oil, which may leak from the transformers, through the provision of appropriate bunding. The fire risk can be reduced slightly by using alternative fluids such as silicone or MIDEL, as these have higher flash points.

Dry type transformers pose a lower fire risk than oil filled units. They offer far more flexibility in location, and so are the unit of choice when locating them within buildings because they are:

- Self extinguishing
- Resistant to pollution and condensation
- Require reduced maintenance (no liquid dielectric)
- Easy to commission

Tranformers are to be located on roof-level plant spaces within dedicated insulated enclosures. They are to be naturally ventilated through louvres.

Cast resin transformer housed within IP31 sheet metal enclosure.

Cast Resin transformers are less of a fire risk than oil filled units.

The proposed transformer sizes are indicated in Table 3

Table 3

| Hospital | Rating (k VA) | Quantity | Dimensions L x W x H (mm) | Weight (kg) |
|---|---|---|---|---|
| RHSC | 1600 | 4 | 1820 x 1050 x 2435 | 3880 |
| Adult Acute | 2000 | 8 | 2200 x 1300 x 2850 | 5340 |

Drawing SK-051 shows a typical transformer MV switch room with associated LV switchroom space for 1.6MVA – 2.0MVA transformers.

Transformer Maintenance Access

All the transformers will be located at roof level on the Adult Acute Hospital Tower, Podium and the RHSC. It will be necessary to provide maintenance access to each transformer substation to enable plant replacement to take place " without the need to dismantle individual HV switches, circuit breakers or transformers".

The current proposal for the transformer installation and replacement strategy is by hoist in the FM lift shafts, which extend to roof-level: lift cars will need to be taken down to basement level and be of the underslung type to keep cables to the sides of the shaft. Suitable lifting beams are to be installed at the top of the shafts. During the further design development, the alternative strategies of increasing the duty of the lifts to cope with the weight of the transformers (5.5 tonnes), and of installing fixed cranes on the roof are to be explored.

Standby Generation Reliability and Resilience Issues

For a healthcare facility of this type, HTM 06-01 recommends that the resilience and redundancy to be achieved should be at least N+1. The maximum demand for the combined adult and Children's hospitals has been estimated to be 8.7MVA. Including an allowance for future growth in accordance with HTM-06-01, this suggests that a maximum demand of 10MVA with 100% standby generation would seem appropriate. This would require a minimum of 4 no. generator modules with continuous rated outputs of 2500kVA each (N=4). To provide resilience to at least N+1 to meet HTM 06-01 requirements, will require 5 no. generator modules to be installed.

For the dual unified primary and secondary distribution system proposed, standby generation capacity should be divided equally between both sides of the system. This is achieved by adding an additional generator module (see drawing: SK-050). The advantage of this is that, whilst overall generation capacity and redundancy is provided to N+2, N+1 system redundancy is maintained in the event of the failure of one module or routine maintenance being carried out at the time of supply failure by the DNO. This is particularly important since the DNO is only able to provide a dual incomer from the same source substation at Braehead.

Generator size is 2500kVA (continuous rating) 3225kVA (standby rating). The proposed generator ratings will provide in excess of 9.6MVA of standby rating sufficient to supply the facility from one side of the dual unified distribution system.

Since the DNO may not be able to provide two separate 33kV supplies from separate supplies, it appears that additional resilience to N+2 should be allowed for at this stage in the design. This enables maintenance work to be carried out on one generator module whilst still preserving N+1 resilience.

Standby diesel generation using 2500kVA continuous rating machines generating at 11kV.

There should be a review of options as to whether the prime mover should be naturally aspirated or turbo charged diesel engines. Naturally aspirated engines are likely to be larger than turbo charged units of the same power rating and are better able to accept larger load steps as a result.

Fuel storage should be provided for at least 200 hours running at full load. Fuel consumption of diesel engine generator sets is approximately 0.22 litres/kVA/hour. For 4 no. 2500kVA engines running at full load for 200 hours, this requires 440,000 litres of fuel. Add the 15% margin and storage for 500 cubic meters of diesel fuel will be required

Generators should be installed to meet the Category 2 or 3 requirements of BS5514 or ISO 3046.

Dual fuel diesel engines which can run on either natural gas or diesel fuel have been around for a number of years. Consequently, it may be possible to combine the function of one of the standby generation modules as a Combined Heat and Power (CHP) module.

The generator modules must operate with their electrical output synchronised together and should be designed to be synchronised to operate in parallel with the public electricity supply (PES) in accordance with the requirements of Energy Networks Association publication G59. This may have commercial advantages for providing embedded generation capacity during periods of high demand (i.e. 'peak lopping').

In the event of failure of the incoming PES, all the standby generators are to start and run up to speed. Generator outputs are synchronised together and then switch onto the load. The load is shared across all generators. If load and conditions permit, it may be possible to shut down redundant sets. Redundant sets are to be restarted in the event of high electrical demand.

The proposed secondary power supply system (SPS) is to be capable of 100% cover.

The time delay between loss of normal supply and connection of the standby generators to the essential load shall not exceed 15 seconds. The Building Management System (BMS) will be configured to hold off plant load temporarily to allow the generating sets to take their initial load. Allowable 'hold off times' for different services and areas of clinical risk are indicated on schedule V[20]-500.

Standby generation modules, plant and associated equipment will be located together in the 'Energy Centre' compound along with the boiler plant and CHP modules.

Standby Generation Switchgear

Each standby generation module will be provided with an impedance earthing transformer and the outputs will be connected to a withdrawable pattern 11kV switchboard. This switchboard will have two connections into the primary main intake switchboard for resilience (see drawing: SK-050). Each set will be provided with normal set protection together with a multi-function meter, earth fault and over current protection.

Combined Heat & Power

Up to two combined heat and power (CHP) modules are proposed with an electrical generation capacity of 1.5 MVA each. They will generate electricity at 11kV and will be housed along side the standby generators and boiler plant in the Energy Centre compound. The economic case for the extent of the CHP has yet to be firmly established.

The CHP units will require synchronising equipment and controls to enable them to parallel with each other and the DNO supply.

Due to the differences in capacities between the CHP modules and the standby generation sets it is not envisaged that they will operate in parallel. Consequently, in the event of a failure of the incoming DNO supply, the CHP modules will shut down. Each CHP module will be provided with normal set protection together with a multi-function meter, earth fault and over current protection. Like the standby generation modules, the CHP modules will be provided with synchronising equipment to allow parallel operation with the mains supply.

Paralleling the CHP modules with the standby generators in the event of incoming (DNO) supply failure may be possible by the appropriate selection of plant. It may then be possible to reduce the number of standby sets or increase resilience.

*Monitoring & Control*

A SCADA (Site Control And Data Acquisition) system will be required to monitor loads across the site at all times. The control system will manage the loads and carry out load shedding so that when the generators start key loads (e.g. chiller plant) stay off until the generators have accepted higher priority loads. The SCADA system will also control the standby generators.

LV Distribution

LV switchgear

All wiring systems will be of a form defined within BS 7671:2001 (Wiring Regulations 16th Edition IEE). The 17th Edition of the Wiring Regulations is currently being drafted and is expected to be released in January 2008. Expected revisions will include new requirements for Medical Locations.

A mixture of single phase and three phase will be supplied

- Form 4 Type 2 for Clinical Risk Categories 1 & 2
- Form 4 Type 6 for Clinical Risk Categories 3, 4 & 5

Main LV switchgear will comprise of metal cubicle pattern switchgear enclosures containing Air Circuit Breakers (ABC) and Moulded Case Circuit Breakers (MCCB).

For both the RHSC and the Adult Acute hospitals, most of the areas fall into Clinical Risk Categories 3,4 & 5 for the provision of robust electrical supplies serving:

- general lighting
- standby lighting
- general power
- medical power
- medical IPS power
- mechanical services plant (ventilation, medical gases, water, chilled water etc)

The new HTM-06-01 (clause 4.22) suggests that patients in Clinical Risk Category 4 locations relate to patient environment group 1 under Chapter 10 in 'IEE Guidance Note 7', which includes bedrooms. The tower of the Adult Acute hospital contains general ward areas. It has been assumed that these areas will require building services appropriate to Clinical Risk Category 3.
Due to the adjacencies, dual transformers and switch panels will be provided to form part of the dual-unified supply philosophy employed in the distribution design. Like the MV distribution, the LV distribution is to be divided into Side A and Side B circuits. Side A and Side B Main LV switch panels adjacent to transformer substations and in separate will be linked together via a *`bus-coupler-bus-tie'* cable way and two ACBS as indicated on the schematic (see drawing SK-005). This is a robust arrangement, since a fault or problem on the Side A switch panel will not affect the Side B panel and vice versa.

Main LV switch rooms will generally be located at roof level on the tower, RHSC roof and adult acute podium roof. These locations should avoid being located beneath bulk liquid storage areas. Switchrooms are to be constructed from fire and blast resisting materials.

Distribution of LV power within the tower will be by 8 no. 630A three-phase bus bar trunking with equal size phase, neutral and earth conductors. Tap off units at each floor serve distribution boards for lighting and power. Each tap off unit will contain a circuit breaker to provide fault protection. Each rising bus bar pair serves each of the 'wings' of the tower. In accordance with the dual-unified distribution, each bus bar pair comprises of separate Side A and Side B busbars rising through the building in separate risers (see drawing: SK-010).

The design solution provides good resilience and allows the distribution equipment to be maintained with the minimum of disruption to services at ward and departmental level.

Final circuit distribution boards shall be Type A or B miniature circuit breaker (MCB) boards to BS EN 60439-3 located within risers or dedicated cupboards. All distribution boards are to be lockable with sheet metal doors to prevent unauthorised access. Distribution boards with plastic enclosures must not be used as they are known to be susceptible to EMC interference.

Cables & containment

Primary LV sub-main distribution is to be generally by multi-core XLPE/SWA/LSF (low smoke & fume) cables to BS6724 carried on ladder rack (larger cables) and/or cable basket (smaller cables). Primary LV cabling and containment is to be generally concealed within dedicated risers, cable trenches and risers throughout the building.

Side A and Side B cables and containment will be segregated and run by different routes to the final outlet as far as practicable. In practice, this is likely to mean that Side A and Side B final circuit cabling will run in separate containment up to bed head trunking units.

General Lighting

Artificial lighting is to be carefully designed to ensure that a pleasant and visually effective environment is achieved for staff and patients. As well as meeting the clinical requirements of staff, attention is to be paid the lit appearances of the spaces; this is important as anecdotal evidence suggests this can affect patients' recovery.
General lighting to all areas is to be by low energy fluorescent lamps. These consume considerably less energy than traditional incandescent lamps and provide adequate colour rendering. They are to be controlled by high frequency, high power factor (PF>0.95), low harmonic emission ballasts. Lamp and lighting gear monitoring is to be provided as a cost effective solution to lamp and gear maintenance.
Lighting levels are generally to be in accordance with CIBSE Lighting Guide 2 'Hospitals and Healthcare Buildings'. Lighting is to be designed to ensure that staff and patient areas are cheerful and visually interesting. This is to be achieved by ensuring adequate illumination of walls and ceilings, and by accent lighting used, for example, in waiting areas to complement the general lighting and perhaps used to illuminate paintings or plants.
The use of wall-mounted fittings in corridors and stairs is to be considered as these areas require neither high levels of horizontal illuminance nor uniformity, and wall-mounted fittings avoid light shining into the eyes of patients being wheeled on trolleys and bright reflected patches on polished floors.
In ward and bedroom areas lighting is to be installed to enable the ability to create different conditions depending on the time of day and what it happening. Ward and bedroom lighting is, for example, to incorporate night-lighting so that nurses can check patients at night. The installation of bedhead lights with a range of adjustable illuminances is to be considered so that they can be used for patient examination.
The table below summaries the lighting control strategy:

| Space Type | Lighting Control |
|---|---|
| day lit spaces (non-ward) | dimming controls and room photocells to provide dimming and off control |
| spaces subject to intermittent occupancy | occupancy detection to switch lights off when the room is not in use |
| all spaces | fitting dimming controls and room photocells to provide lamp output control as lamps age/fittings get dirty<br>lamp and gear monitoring and alarming for lamp/gear maintenance |
| external lighting | time and light level control of all external lighting |

Lighting circuits will be wired as radial circuits protected by 10A MCBs. Final lighting circuit cabling shall generally consist of LSF insulated single stranded copper core cables to BS7211 enclosed and protected within galvanised steel metal trunking and conduit. Plastic trunking will not be used because it does not provide adequate screening to meet EMC requirements and due to the high PVC content. All final circuits shall be provided with full size single core circuit protective conductors.

To satisfy HTM 06-01 recommendations, at least two lighting circuits will be provided to each room. One circuit will be fed from a Side A distribution board. The other circuit will be fed from a Side B distribution board. In the event of failure of either side A or Side B supply (but not both) at least half of the lighting will remain on.

Standby Lighting

Standby lighting will be provided as appropriate and will derive power from the Secondary Power Supply (SPS) or UPS, with UPS systems supported by the SPS.

BS7671 GN7 and IEC 60364-7-710 require light fittings used in Group 2 locations to have power supplies which restore power to the Standby Lighting within 0.5 seconds of a power supply failure. Essentially, these areas will require standby lighting to be supported by a UPS.

Standby lighting will be provided as follows:

- Grade A – to areas of Clinical Risk Category 5 (IEE GN7 Group 1 and 2 areas) provides lighting at the same level as normal lighting, power will be supplied by a UPS.
- Grade B – to areas of Clinical Risk Category 3 provides lighting at a reduced level compared to the normal lighting and power will be supplied from the SPS.

Group 1 Locations include:

- LDRP (labour, delivery, recovery, post-partum)
- endoscopy rooms
- A&E general/minors
- haemodialysis areas
- ECG, EEG, EHG rooms
- nuclear medicine
- radiography
- diagnostic
- MRI
- urology treatment areas
- examination/treatment/therapy rooms
- ultrasound
- bedrooms

Group 2 Locations include:

- anaesthetic room
- operating theatre
- operating prep room
- operating plaster room
- operating recovery room
- heart cauterisation room
- intensive care room
- angiographic examination room
- premature baby rooms

Grade A standby lighting will be provided from Central UPS inverters and storage battery systems to provide an interruption time of less than 0.5secs (16.77) to Group 2 locations (see drawing: V[20]-500). Inverter systems will be installed with N+1 resilience and supplied with dual power supplies from Side A and Side B sources and capable of up to 3 hours autonomous operation.

These UPS systems will be either Rotary or Static UPS systems.

LV Small Power/Final Circuit distribution

Final circuit cabling shall generally consist of LSF insulated single core cables to BS7211 enclosed and protected within metal trunking and metal conduit. Plastic trunking will not be used because it does not provide adequate screening to meet EMC requirements and due to its high PVC content. All final circuits shall be provided with full size single core circuit protective conductors.

All electrical accessories such as socket outlet switchplates, shall be of stainless steel finish in Clinical Risk Category 3, 4 and 5 areas. Metal finishes are required to limit the effect of electromagnetic interference and increase mechanical protection. Offices and administration (non-patient) areas could be of alternative materials (i.e. white plastic), but metal finished outlets are more robust.

Small power to socket outlets in general ward areas to serve bed motors, cleaners sockets etc are to be segregated from other power outlets.

Small power to socket outlets in bedhead units in wards will be supported by the secondary power supply system with socket outlets distributed over at least two (Side A and Side B) interleaved circuits. In the event of a failure on Side A (final circuit, rising busbar, distribution board, main switch panel or supply transformer) then power will still be available from socket outlets connected to Side B circuits. Side A and Side B power will be available to socket outlets from the Secondary Power Supply (SPS) within 15s in accordance with HTM 06-01. Final circuit cabling will share the same containment within bed head trunking. Appropriate dividers should be used within bed head trunking to provide separation between Side A and Side B cabling.

Socket outlets connected to the SPS will be labelled ‘Side A’ or ‘Side B’. Staff will need to be trained/educated so that they understand what this means as the more traditional ‘essential’ and ‘non-essential’ terminology will not apply.

Uninterruptible Power Supplies (UPS)

The provision made for interruptible/ uninterruptible power supply (IPS/UPS) solutions to provide electrical safety in the patient environment has been based on IEC 6034 for Electrical Installations in Medical Locations, HTM-06-01 and the recommendations of Guidance Note 7 to BS7671 Wiring Regulations published by the Institution of Electrical Engineers.

UPS solutions are provide to support Grade A standby lighting in Group 1 and Group 2 locations within areas of clinical risk 4 and 5.

UPS solutions are provided to support IPS and Group 2 locations within areas of clinical risk 5 with 3 hour autonomy.

UPS solutions are to be provided for each of the principal IT server rooms with N+1 redundancy.

Automatic Controls

The whole of the mechanical and electrical services installation will be supported by an automatic building management system that will perform the following functions:

- Control the plant in a safe manner
- Control and monitor the internal environmental conditions to reflect user requirements
- Control and monitor building and system energy usage.
- Fault find
- Act as a maintenance asset

The building management system shall consist of distributed intelligent out stations connected to a head end computer with full graphical interface. Real time and database data shall be available across the Hospital IP Ethernet network.

6.3.15 Nurse Call and Critical Care Systems

A nurse call system is to be part of every bedhead service. A patient hand unit with a call button is to link to an indicator panel at the ward nurses station. The system is also to link to call buttons in other areas such as WC’s, bathrooms and quiet rooms. The exact requirements of the system are to be confirmed with the Trust, however it is assumed that the system will include the following facilities:

- over-door indicator lights
- ability to link calls between adjacent wards
- cardiac arrest or ‘crash’ call alarms taken back to a 24 hour manned point to allow the ‘crash’ team to be paged

6.3.16 Patient Entertainment Systems

Backbone broadband cabling and wireways are provided for a patient entertainment system, such a Patientline, to be installed at all bed heads in the Adult Hospital. This can provide television, radio, and telephone, game and internet services to patients as required, who can be charged on a pre-payment basis.

Since NHS licensing terms prevent service providers from charging children for television services, there is no commercial incentive for private companies to install patient entertainment systems in the Children’s Hospital. We are assuming, therefore, that entertainment systems will be provided as a capital item in the Children’s Hospital. It is likely that the system will be restricted to television, radio and games services only.

In addition to facilities at each bed head, it is assumed that in the Children’s Hospital, entertainment systems consisting of TV, DVD and games systems will be provided in the main waiting and play areas. These will require a central TV and radio reception and distribution system.

6.3.17 Fire Detection and Alarm

The Hospitals are to be fitted with automatic fire detection and alarm systems in accordance with BS 5839 and the recently published HTM 05 series of memoranda.

The systems are to be designed to BS 3829 category L1, the highest level of life protection, and are to be analogue addressable. Progressive horizontal evacuation in patient areas is to be facilitated by each fire resisting sub-compartment being on a separate alarm zone, and by the use of two stage (evacuate/ alert) alarms. To avoid unnecessary disturbance, staff elsewhere in the building who are required to perform particular tasks in the event of a fire are to be automatically alerted by pagers to avoid the sounding of the fire alarm.

In areas where patients can escape unaided and in non-patient areas the audibility of the fire alarm should be in accordance with BS 5839. However, in other areas an audible alarm may be unacceptable and the use of visual devices is to be considered in areas such as very high dependency patient areas, these include operating theatres, ITU and special care baby units.

Control panels are to be provided at the main entrances (or at the entrances to which the fire service are to attend, if different), with additional indicator panels provided throughout the building to allow staff to respond in accordance with local evacuation procedures, and to guide the fire service to the source of the alarm.

There is to be a link to the control room, from where the fire service can be summoned. If this is not to be manned on a 24 hours basis, then the fire alarm signal is to be transmitted automatically to an alarm receiving centre via a monitored line.
The fire alarm system is to contain links to all necessary ancillary services such as automatic door releases and door control systems, access control systems, ventilation systems, lifts etc..

6.3.18 Security Systems

Access Control & Intruder Alarm Systems
Access control is to be provided to all wards and departments to prevent unauthorised access. Control will be via a swipe or proximity card system. Some departmental systems may only be activated outside normal working hours if this is desirable. The system is to be networked with the central management system and linked with other systems to allow:

- the unlocking of doors along all escape routes to assist evacuation in an emergency
- possible automatic locking of doors within an area if a panic button is pressed
- activation of a security camera in a particular location when a door is opened to provide a picture of the person entering

The A&E entrance is to have an access control system for use at night time so that security staff can control entry, in accordance with the Secured by Design recommendations.

The following areas are to be fitted with local intruder alarm systems:

- pharmacies (to prevent the theft of controlled drugs)
- X-ray department areas used for storing silver chemicals
- patient record offices
- mortuary

The intruder alarm systems are to link centrally back to the control room.

6.3.19 CCTV

CCTV cameras are to be installed in the main entrances, waiting and circulation areas of both hospitals where the security and safety of hospital staff and patients is a concern but where free access for the visiting public is allowed.

The CCTV systems are also to cover:

- all exits and entrances
- pharmacy counters
- ward entrances
- Children's play areas
- ambulance entry points
- A&E departments

All CCTV cameras will be IP-based. They will be linked back to local hubs by Cat.6 cabling. Local data hubs will be connected back to a number of CCTV servers adjacent to electrical risers, which will in turn be linked to the main server room via a looped optical fibre network. CCTV servers will include input modules, processors and RAID storage. Each CCTV server will also be provided with an independent broadband connection to provide connectivity in the event of a network failure.

All cameras will be linked back to the control room.

The CCTV system will be linked to the intruder alarm and access control systems to provide specific viewing functions, such as presenting a picture on a monitor when an access card is presented to a reader, or when a movement detector activates.

Paging, Personal Attack Alarms & Panic Buttons

The Hospitals are to be installed with a radio-frequency network to facilitate the use of paging and personal attack alarms. This radio-frequency network is to include location beacons so that the location of pagers and attack alarm devices can be determined.

The radio-frequency network infrastructure is to be compatible with the Identicom personal security device, which is used widely across the NHS to provide lone-worker protection.

Panic buttons linked back to the control room, and with a loud alarm at the scene, are to be installed at reception desks and in treatment rooms.

6.3.20 Information Management and Technology

The NSGH and RHSC will be served by an N+1 server room distribution. The assumption is that these will be provided internally within the new development although there may be scope for incorporating the IT network to servers located within existing buildings on the site. The server rooms should have dedicated air conditioning, fire suppression and UPS systems to maintain resilience in the IT network.

Within these principal IT rooms, decentralised telephony servers will be provided, again to provide a level of resilience.

The initial design proposal comprises of 42 data hubs (31 for NSGH and 11 for RHSC) each to accommodate two racks allowing sufficient space for network expansion. Ideally these will be located next to electrical/data risers on each level and also placed to ensure CAT6 cable runs do not exceed 80m. The rooms should be able to accommodate hardware for CCTV, security, access and pager systems. Data risers should also be of sufficient size to accommodate network expansion or modification.

It is envisaged that the Trust will be using wireless technology for public and some staff data connections and voice over IP for telephony. However, for resilience, hard flood structured wiring points will be provided throughout all areas of the hospital as the base provision.

6.3.21 Specialist Systems (Medical Gases/ Pneumatic Tube)

Medical Gas Pipeline System

The medical gas pipeline system for the site will require a detailed design package from a specialist consultant. Co-ordination with existing gas supplies on-site throughout the phasing period could provide some economic benefits but the new developments will require new independent external plant and a complete medical gas pipeline system.

The primary gases and pipeline services are as follows:

Oxygen ($O_2$)
Medical Air (400kPa)
Surgical Air (700kPa)
Other gases ($N_2O$, $O_2/N_2O$, $HeO_2$ and $CO_2$)
Medical Vacuum Systems (VAC)
Anaesthetic Gas Scavenging (AGS)
All these systems are shown on the outline schematic, derived from HTM 02-01.

Oxygen
A ring main will surround the site (NSGH & RHSC) feeding all necessary areas. It will be supplied from primary, secondary and tertiary sources. Primary and secondary supplies will be two liquid oxygen VIE tanks on a single plinth in an external compound. It will require an 8m boundary zone for most activities around the enclosure, going up to 15m for places of assembly and flanges in flammable gas pipes. Allowance should be made for regular large vehicle access for tank refilling.

A tertiary source of supply (emergency supply) should be permanently connected to one of the main oxygen risers within the system or directly into a ring main system. This supply is to be a cylinder manifold consisting of 2 banks of 10 J type cylinders. Additional cylinder storage to feed the manifold should be provided in accordance with the results of the risk assessment. Final decisions on manifold capacity will depend on both available accommodation and potential risks to supply security.

All systems will be complete with full controls, monitoring and auto changeover equipment.

Medical Air
Provision of medical air would be best provided by a quadruplex medical air plant, comprising of 4 compressors, 4 dryers and 2 air receivers. It will be located in a plant room area with sufficient air flow for ventilation and cooling of compressors. Each compressor sized for 50% of the design flow – providing the primary and secondary supply. This ensures an N+1 operation allowing full design flow with one compressor out of service. Emergency provision should be an automatic manifold (2x10 J type cylinders) located within or close to the main building.

All supplies will conform to the European Pharmacopoeia standard for controlling air purity, all necessary filters and monitoring systems will be supplied. According to HTM 02, the efficiency of plant, expressed as the volume of air delivered to the pipeline distribution system, a minimum efficiency of 5 m3/kWh at 100% and 10% is required. The power consumption at zero flow should be less than 1% of that at 100% design flow.

Surgical Air

The size of the development warrants a dedicated surgical air supply. Surgical air will be provided by a simplex plant, 1 compressor and 1 dryer, located in a plant room area with sufficient air flow for ventilation and cooling of compressors. An emergency supply from an automatic reserve manifold (2x6 J type cylinders) will located in separate accommodation.

Manifold installations
Other gases required throughout the hospital will be supplied by an automatic manifold installation, as in the case of $N_2O$, with an emergency reserve supply connected. Gases used less frequently may be supplied by local cylinders at point of use.

Medical Vacuum Systems
The medical vacuum pipeline system provides suction for medical needs, particularly in surgical accommodation. Piped vacuum will be provided in most clinical areas by a triplex vacuum system, with 3 pumps and 2 vessels, located in a central plant room area. A third source of supply is not necessary with vacuum systems.

Anaesthetic Gas Scavenging (AGS)
Where nitrous oxide is provided for anaesthetic purposes, scavenging systems will be installed. This will be a vacuum system, independent of the main vacuum system located in a central plant room area.

Pipework
Pipework design and installation will conform to HTM 02, BS EN 737-3:2000 and ISO 7396-1:2002 standards. All piped medical gases will have three sources of supply.
Where practicable there should be 25mm spacing between each pipeline, 150mm spacing to other services (heating, steam ,water services) and if installed in the same riser, services must be accessible for inspection.

Service ducts or voids containing pipelines that include valves etc. should have adequate ventilation to prevent gas build-up in the event of any leakage. Elsewhere, where pipelines are brazed throughout their entire length (and where they will have been subjected to a pressure test), no ventilation is required.

Where pipelines in hazardous areas (plant rooms, kitchens etc.) are unavoidable, they should be enclosed in non-combustible, non-corrosive materials that have no electrolytic reaction with copper. This is to prevent the possibility of the liberation of gases into the room in the event of pipeline failure.

Accommodation

All gas supplies and plant should be located in safe, well ventilated areas in accordance with the recommendations set out in HTM 02.

Ready-to-use cylinder stores can be sited in various locations e.g. operating departments, Accident & Emergency departments, coronary care units, central delivery suites of maternity departments, special care baby units, critical care areas etc. These should be in a dedicated, easily accessible room, well ventilated and where practicable have at least one external wall for natural ventilation.

The main cylinder store should be at ground level (not basement), as close to the delivery point as possible and should have no restricted access (parking) where loading and unloading takes place.

Manifold rooms should be accessed from the open air, not from corridors or other rooms. Lorry access should be provided. Manifold rooms should not be located near high dependency wards.

Pipework will run to individual ward areas with individual valve isolation units and line pressure switches interlinked to individual ward medical gas panels.

Duplicate terminals, components and pipework systems should be provided in all areas considered to be life-support systems.

Medical gas Alarm Systems

Under HTM 02-01 guidelines, warning and alarm systems are required for all medical gas and vacuum systems. A simplified system is required for surgical air systems and for the AGS, with the warning/indication panel located in the operating room. The adoption of an integrated or combined integrated/dedicated alarm system should be considered providing it meets the requirements of HTM 02-01.

Pneumatic Tube System (PTS)

The scheme is to be provided with a complete pneumatic tube system. The initial proposal for the PTS is a 10 zone network to serve around 92 stations within the hospital, with 4 zones covering the ward tower itself. A dedicated zone between A&E and pathology is provided to maintain a high priority service, one of 3 dedicated systems between the network hub and specimen reception to maximise traffic handling capacity with automatic empty carrier return using transponder fitted carriers.

A more detailed design of the entire system can only take place when department layouts are finalised and traffic analysis can be carried out. At this stage a choice of system tube sizes can be made for each department (110mm or 160mm).

The system will be complete with all tubing, diverters, zone interchange unit, blowers, head end computer, transponder fitted carriers and all the other fittings and accessories necessary for a fully operational system. The system will be remotely accessible for diagnostics.

For a scheme of this size it is recommended that a full time on-site O&M engineer is present to ensure maximum service efficiency and provide training and auditing for the system.

6.3.22 Lift Strategy

Outline

Determining the number and size of lifts required for the NSGH and RSCH depends upon the information provided for the occupancy of the building's different areas and the rate at which they enter, move around or leave the building. The more detail that is known about movement of people (traffic) within the building, both horizontally and vertically, the more accurate the assessment will be. As the design progresses, the provision of lifts should be continually re-assessed to ensure the transportation needs of departments are met now and in the future. Lift shafts and circulation are difficult to subsequently modify during the PFI term or indeed over the life of the building and initial provision should take this into account. Future trending and a sensitivity analysis to change in use pattern should be carried out at the detail planning stage.

Modelling of lift systems has been carried out with methods defined in both CIBSE Guide D 'Transportation systems in Buildings' and HTM 2024 'Design considerations: Lifts'. Further design and traffic studies should be carried out with input from a specialist lift supplier.

Design Assumptions

Avanti Architects have sited the lift cores in order to keep patient/staff and visitor flows separated. Also the busiest areas of the hospital are on the first two floors to aid traffic flow and this reduces the need for multi-storey lifts which can increase both congestion and energy use.

Directions Consultancy provided preliminary details of staff, patient and visitor populations and movement predicted for both NSGH and the Children's hospital. (Peter Dunleavy 16/10/2006)

| Department | | Radiology | CCU | Theatres Endo | Emergency &Acute assessment | &OPD, Rehab, CIU, Cardio | Therapy, Renal, Wards |
|---|---|---|---|---|---|---|---|
| Patients | MORNING | 160 | 71 | 49 | 91 | 510 | 990 |
| Staff | | 75 | 70 | 125 | 30 | 110 | 440 |
| Escort | | 64 | 28 | 20 | 73 | 302 | 50 |
| FM | | 10 | 10 | 10 | 10 | 10 | 80 |
| | | | | | | | |
| Patients | AFTERNOON | 160 | 71 | 49 | 91 | 510 | 990 |
| Staff | | 75 | 70 | 125 | 30 | 110 | 440 |
| Escort | | 64 | 28 | 20 | 73 | 306 | 198 |
| FM | | 10 | 10 | 10 | 10 | 10 | 80 |
| | | | | | | | |
| Patients | NIGHT | 64 | 71 | 10 | 91 | 97 | 990 |
| Staff | | 37 | 70 | 40 | 30 | 35 | 440 |
| Escort | | 26 | 28 | 4 | 73 | 58 | 792 |
| FM | | 5 | 10 | 5 | 10 | 5 | 80 |

*Table1. NSGH populations for lift assessment*

| Department | | Radiology | CCU | Theatres | Emergency Acute assessment | &OP, Physio, Pharmacy, Day Unit, Cardio | Wards |
|---|---|---|---|---|---|---|---|
| Patients | MORNING | 69 | 60 | 49 | 69 | 333 | 168 |
| Staff | | 32 | 41 | 70 | 24 | 60 | 89 |
| Escort | | 69 | 60 | 20 | 90 | 500 | 168 |
| FM | | 5 | 5 | 5 | 5 | 10 | 20 |
| | | | | | | | |
| Patients | AFTERNOON | 69 | 31 | 49 | 69 | 385 | 168 |
| Staff | | 32 | 41 | 70 | 24 | 60 | 89 |
| Escort | | 69 | 31 | 20 | 90 | 578 | 168 |
| FM | | 5 | 5 | 5 | 5 | 10 | 20 |
| | | | | | | | |
| Patients | NIGHT | 28 | 31 | 10 | 69 | 42 | 168 |
| Staff | | 16 | 41 | 23 | 24 | 35 | 89 |
| Escort | | 28 | 31 | 4 | 90 | 63 | 168 |
| FM | | 5 | 5 | 5 | 5 | 10 | 20 |

*Table 2. RHSC populations for lift assessment*

Some of the values in the above tables were taken directly from the details provided by Directions whilst others were estimated from the available information. It should be made clear that in many departments the population is variable and often in transition from one department to another. The figures should be revised and adjusted as and when more detailed population and traffic flow figures become available.

Lift Cores

The cores are divided into three types: Bed, patients and staff, Public – Escorts/Visitors and FM – Facilities management staff. If the populations of the individual departments are known, from the layouts it can be estimated which lift cores are likely to be used, although there will always be some crossover e.g. staff using public lifts.

Traffic is due to people entering or leaving the building and also their movement within the building. The assumptions put forward by Directions have provided the basis of the model for example; staff arrival times, trips to theatre of ward patients per day, trips to radiology of ward patients per day, escort to patient percentages etc. Movement patterns throughout the day were divided into morning (7am – 12pm), afternoon (1pm – 5pm) and night (6pm – late). If a department covered more than one floor the population was divided roughly according to the floor areas shown on the layouts.

To determine what activity is present in a particular lift core a percentage of vertical traffic movement is given for each department and each time period. For example bed traffic to wards at night would be minimal with some admissions from A&E, therefore vertical movement for patients in wards is given to be 5% of the ward population.

Another consideration that has been incorporated into the model is the amount of crossover between cores, that is, staff using public lifts ~~or visitors using bed lifts etc~~. This factor can be different for different departments depending on the likelihood of crossover. As the busiest areas are located on the ground, first and second floor there is a factor for stair use. This is applied to the 1st floor (25%) and the 2nd floor (15%), after which it is assumed the lifts will be used, these factors are only applied to the able population e.g. staff, visitors or patients in outpatients.

Lift performance

The cores are then assigned to particular departments depending on their location. Core population can then be used to model the optimum number and size of lifts required taking into account lift core footprint, redundancy provision and quality of service.

The amount of population arriving or leaving the building within 15 minutes is used as the basis for determining the arrival rate at a particular lift. For example, HTM 2024 states that 'in an emergency situation, it should be possible to clear all visitors from the hospital in 15 minutes. The handling capacity of the lift system should meet this criterion'. Therefore the arrival rate at a public lift is based on 100% of core population leaving in 15 minutes. Guidelines for staff /patient handling capacity is given as an arrival rate of 8-11% for Hospitals in CIBSE guide D, which coincides with the core population arriving/leaving in 45 minutes i.e. 33% in 15 minutes.

Performance factor of a lift relates to the mechanical operation of the lift, such as time taken to start or stop moving, door opening times and lift speed. Lift characteristics have been taken from CIBSE guide D and HTM 2024 but detailed design will need specific manufacturers details for the chosen lift configuration including acceleration ($m/s^2$), jerk ($m/s^3$), advanced opening (s) and single floor flight time (s).

| Lift type | Location | Capacity | Rated speed (m/s) | Door open (s) | Door close (s) |
|---|---|---|---|---|---|
| Bed lift | Adult podium | 33 | 1 | 2.3 | 3.3 |
| | Adult tower | 33 | 2.5 | 2.3 | 3.3 |
| | Children's | 33 | 1 | 2.3 | 3.3 |
| Public lift | Adult podium | 10 | 1 | 1.9 | 2.8 |
| | Adult tower | 26 | 2.5 | 2.3 | 3.3 |
| | Children's | 10 | 1 | 1.9 | 2.8 |
| FM lift | Adult podium | 33 | 1 | 2.3 | 3.3 |
| | Adult tower | 33 | 2.5 | 2.3 | 3.3 |
| | Children's | 33 | 1 | 2.3 | 3.3 |

*Table 3. General lift specs for bed, public and FM lift cores*

The lift systems were assessed using the CIBSE D guidelines for offices as a basis for performance while meeting the requirements of HTM 2024 for visitor evacuation. Redundancy for maintenance or breakdowns was included in all lift cores to ensure there was an N+1 service of an acceptable standard.

The bed lifts accommodate both staff and patients, however patients in beds have different movement patterns and more space requirements. A CCU bed can take up approximately $3m^2$ while a standard bed around $2m^2$. The modelling revealed that bed lift provision should be in accordance with bed traffic, not staff traffic. Therefore the results were based on every lift journey during the peak interval carrying one bed with one or two accompanying staff.

Escape Lifts

All bed lifts are to be designed to function as escape lifts.

Although the Department of Health's Fire code does not deem the provision of escape lifts necessary, it does state that to better facilitate evacuation, consideration should be given to the provision of such lifts.
The Scottish Executive's recent Fire Safety Policy for NHS Scotland (HDL 2005 53) states that the development of fire strategies must take account of requirements of the DDA. As such it states that 'the use of escape bed lifts may need to be given a higher priority to ensure that people who are only able to access the premises via a lift can also evacuate in the same manner'.
The installation of escape lifts will provide the following benefits:

- ensure compliance with the DDA and assist the evacuation of patients unable to use stairs,
- make full use of all egress capacity and thereby complete the evacuation process more quickly,
- help make stairways more available to fire-fighters,
- avoid burdensome descents using stairs from the upper stories, especially from the Adult Hospital ward tower.

The electrical supplies, communications and lift-care control systems for the fire-fighting lifts are to be installed in accordance with BS5588-5 and HTM 05-2.

Fire-Fighting Lifts

The two sets of public/escort lifts that serve the Adult Hospital ward tower are to function as fire-fighting lifts in the event of a fire. HTM 05-02 requires fire-fighting lifts in hospitals with five or more storeys, and states that a minimum of two should be installed.

The lifts are to be installed in accordance with BS5588-5.

In the next design development stage, the installation of escape and fire-fighting lifts will be reviewed as part of the fire strategy with the Fire Engineer, Trust's Fire Safety Adviser and the local fire and rescue services.

6.3.23 Helicopter Landing Sites (HLS)

The New South Glasgow Hospital will require a helicopter landing site to receive emergency patients from a wide area of Scotland. The existing ground level landing site will have to be relocated during and after construction of the hospital. To overcome site restrictions to flight paths and helicopter approach, the provision of a rooftop heliport has been put forward as the preferred solution.

The elevated heliport must be able to accommodate both light utility helicopters e.g. Eurocopter EC135 and heavier support helicopters; for design purposes, we have based our assumptions on the Sikorsky S61 Seaking used in the UK for Search And Rescue (SAR).

Rooftop based heliports

The only existing hospital based rooftop helipads in the UK are on the Royal London, Whitechapel and LGI, Leeds both of which are for class 1 helicopters only.

The UK Civil Aviation Authority (CAA) knows of no UK rooftop pad that would accommodate a Seaking or similar SAR helicopter. Any rooftop HLS designed would have to be in accordance with standards set by the CAA and the International Civil Aviation Organisation (ICAO) following published guidelines including 'The Heliport Manual' doc 9261 and CAP 437 'Offshore Helicopter landing areas'

STRUCTURAL REQUIREMENTS

The ICAO 'Heliport Manual' guidelines state that for elevated heliports the structure must be able to support the largest or heaviest type of helicopter anticipated for use. The dynamic load due to impact on touchdown for normal and emergency landings is as follows:

For an S61N (Class 2) helicopter:

Dynamic load due to touchdown 23,157 kg

For an EC135 (Class 1) helicopter:

Dynamic load due to touchdown 7,246 kg

Guidelines are given by the ICAO 'Heliport Manual' for other all structural loading requirements including sympathetic response factor, superimposed load, lateral load, dead load, wind loads and punching shear check.

LANDING AREAS

The minimum areas required for a helicopter landing site, rooftop or ground level, capable of accommodating Sikorsky S61N

Seaking and Eurocopter EC135 helicopters would be as follows:

For an S61N (Class 2) helicopter :
Overall diameter including Flight Approach & Take Off area and safety area 39m

For an EC135 (Class 1) helicopter :
Overall diameter including Flight Approach & Take Off area and safety area 21.3m

Items such as air vents or lift housings present a hazard to the helicopter and also cause turbulence, therefore these should be located below the level of the FATO. Elevated heliports on hospitals for emergency use should have an access ramp from the safety area to the lift, for transporting patients.

LIGHTING

A hospital based HLS would require lighting as per the 'Heliport Manual' although it does not specify whether this should be fed from the mains, emergency or other power supply. The design of markings and lighting aids are specified in the 'Heliport manual'

FIRE FIGHTING & DRAINAGE

In the case of an elevated heliport, no specific response time is recommended as it is considered that the fire fighting and rescue service will be available or in the immediate vicinity of the heliport while helicopter operations are taking place.
Guidance is given in the 'Heliport Manual' on the supply and equipment that needs to be provided on an elevated heliport. The water requirement can be supplied either by tank storage or pressurised water main.
The drainage requirements of the helipad will need to be designed to cope with rainwater and the emergency drainage of fire fighting water, foam and any fuel spillage from the helicopter.

For an S61N (Class 2) helicopter the quantities and estimated flows are as follows:

Minimum usable amount of water 5000 litres

Discharge rate of foam solution 500 litres/minute (over 10 minutes)

Estimated max flow of emergency drainage required over 10 min period 10.92 litres/second

For an EC135 (Class 1) helicopter the quantities and estimated flows are as follows:

Minimum usable amount of water 2500 litres

Discharge rate of foam solution 250 litres/minute (over 10 minutes)

Estimated max flow of emergency drainage required over 10 min period 5.33 litres/second

Additional flow would occur from rainwater and all drainage would require treatment / separation systems to account for possible aviation fuel and fire fighting foam solutions.

RE-FUELLING

Although, on offshore sites, re-fuelling capabilities are standard, it is much less common for onshore sites, especially rooftop HLS. The Royal London HLS has no fuel storage as it was deemed an unnecessary risk to the building and it's inhabitants. The HCA advised that it would be unlikely that the Southern General Hospital site in Glasgow would require refuelling facilities either ground or rooftop mounted. The lighter Eurocopters used by the Scottish Air Ambulance currently have their main base with refuelling facilities at the SECC (4 miles) and the Search and Rescue helicopters used by the Royal Navy are based next to Prestwick Airport (31 miles) but have the option of refuelling at Glasgow Airport (5 miles) if required.

6.3.24 Sprinklers/ Fire Mains

SPRINKLERS/FIRE MAINS

Sprinklers are to be installed throughout the very high dependency patient access areas of the hospitals (Critical Care & Operating Theatres) and adjacent areas below and/or above where there is a fire risk other than low. This is part of the life safety strategy to minimise the probability and maximise the time available prior to the evacuation of very high dependency patients in the event of a fire or fire alarm.

Sprinklers installed in patient access areas of the hospitals are to have quick-response heads. To reduce the risk of false sprinkler discharge in patient treatment and bed areas where venerable patients may be affected or distressed by such an occurrence, the sprinklers heads are to be controlled as part of a “double knock” reaction system. The dry section to be pressurised with air or nitrogen with water control valves interlinked and controlled by the automatic fire detection system.

The general hazard classification of the Hospital is to be Ordinary Hazard OH1 to BS EN 12845. However, areas of higher risk such as kitchens and storage rooms with a high combustible load are to be Ordinary Hazard class OH3.

Each sprinkler system in the Children and Adult Hospitals is to be served by two independent storage tanks/fire pump sets located within the basement of the Children’s Hospital, each tank fed from two independent water supplies. The capacity of the tanks and pump arrangements are to be in accordance with BS EN 12845.

Every part of every storey is no more than 60m from a fire outlet connection, measured along a route that is suitable for laying hose. On the lower floors all hospital streets are to have wet rising mains located at department entrances. On ward floors wet risers are to be located in protected stairways. Fire mains are to be designed and installed in accordance with BS 9990:2006.

Basement storage and commercial areas are likely to require sprinkler protection as part of the smoke control strategies.

Further Work at the next Work Stage

The need for sprinkler protection to Wards generally or some or individual Wards to provide protection to dependant patients needs to be investigated with the client by risk assessment.
This work needs to be integrated into the overall building emergency and fire safety strategy and evacuation management assessment to be developed with the client.
The cost benefit of providing sprinkler throughout the hospital needs to be established

6.3.25 Future Adaptability, Flexibility and Expansion

Energy Supply

It is likely that the source of fuel for space and water heating will change during the PFI period or within the life of the building. Biogas, synthetic natural gas or bio diesel are future possibilities as is hydrogen gas.

Solid palletised biomass is probably less suitable as the delivery, space and cost of bulk fuel handling on site make it difficult to achieve for a city centre site where space is at a premium and transport is difficult. The river does, however, provide a future opportunity. It is likely that liquid bio fuel will be used predominately as a transport fuel rather than building fuel as it’s high energy density (volume and mass) can achieve the high premium required for this application.

On site generation of electricity by burning fuel and turbine/engine/fuel cell technology may become more important particularly if the hospital can be interconnected to the remainder of the site or other buildings with good year round heat loads adjacent to the site, eg residential, swimming pool/leisure centre or an industrial process. Fuel cell technology involves few moving parts and so is likely to be robust and resilient.

Community heat supply is likely to become available to the site as community heat and power schemes are developed based on waste recycling and the like. The hospital will be an attractive load with it’s good year round load.

A central energy centre with centralised boilers and electrical supply provides a distribution infrastructure which is adaptable to these future technologies and opportunities. The fuel source can be changed relatively easily as new technology becomes resilient and economic.

On site renewables may be applied driven either by better commercial cost or by regulation. The building roof areas and facades are available for retrofitting with PV electric generation.

Changing Demand on Building Infrastructure

The clinical areas of the hospital are likely to change more quickly and more radically as models of care are developed and technology development advances treatment methods and scope.

Electrical supply, cooling capacity and ventilation needs are the servicing infrastructure that is most likely to need to respond to these changes.

For the clinical areas the main distribution system between central plant/supply points to local connection points should be designed with +100% overcapacity to allow for loads to be relocated over the floor plate and additional load added.

For non clinical areas +20% should be used.

Central plant and supply space planning and system planning should anticipate up to +20% additional capacity being added over the life of the system.

Changing Spatial Requirements

The hospital services infrastructure is to be distributed in a well structured way, based on risers in vertical transport areas, adjacent to lift and stair cores. This should minimise any disruption due to the internal reconfiguration of hospital departments.

SUSTAINABILITY

Technical and engineering performance requirements for the structural elements of the building will limit the range of options available with regard to sustainability criteria, but in the selection of the system adopted, consideration should be given to material sourcing, use of recycled materials, waste minimisation, off-site prefabrication such as to maximize available sustainability elements. Design activities should be such as to minimize unnecessary standardisation where this adversely or significantly influences component sizes or introduces excessive redundancy. All design elements and systems should be optimised at the design phase as this can provide major sustainability benefits.

For the proposed building elements of the facility comprising podium, tower and lab block, the structural framing alternatives are structural steel, in-situ reinforced concrete and pre-cast concrete, supported on reinforced concrete or steel piles to bed-rock. A detailed comparison should be made to compare the embodied energy and equivalent $CO_2$ emissions for the system adopted versus the advantages of thermal mass with consequent benefits and overall energy use over an agreed period. This will require to be undertaken within the context of other site constraints as well as technical, cost and programme parameters.

Foundation systems, comprising piles into rock-head, pile caps and ground beams can be formed from reinforced in-situ or pre-cast concrete or from structural steel pile sections. A detailed assessment should be undertaken of relative embodied energy requirements or CO2 emissions with regard to sustainability. However it is considered likely that technical, durability and logistical constraints will dictate the form of the foundation system. The disruptive affects of the installation of these should be due consideration given the ongoing activity at the Southern General Hospital.

Structural floors can be formed in a number of ways to meet required load capacity, serviceability and dynamic response requirements for all the varied requirements of the hospital. This will include wards, theatres, plant rooms, radiography etc. Alternatives that should be considered include solid in-situ slabs, pre-cast units, shallow–floor construction and a range of other proprietary floor systems. A detailed comparison should be made to compare the embodied energy and equivalent $CO_2$ emissions for the system adopted versus the benefits of thermal mass properties on the services strategy over a 60 year period. This will require to be undertaken within the context of other site constraints as well as technical, cost and programme parameters.
Options Considered

The economic case for sustainable low energy solutions will change over time driven by global availability of fuel and tightening governmental legislation and social responsibility to reduce pollution and climate change. There will be an increase in the use of renewable energy in preference to expensive fossil fuels.

The technology and understanding to realise significant reductions in carbon emissions, such as the 60% target reduction by 2050 as proposed by the UK Government, is progressing. Many of the measures required to meet such targets will need to be introduced into the building and PFI contract over the life of the PFI and subsequently the building.

We have taken the view that the Design Solution should at least meet the current NHS and Building Regulation standards with regard to energy use current at the time the buildings are built or that are economically and technically viable to include. The emphasis should be on investment in the highest quality building fabric and envelope design to reduce the demand for energy to the lowest economically possible level as these have in general the lowest technical risk associated with them and are often

the least easy to substantially change over the building life. The energy systems within the buildings have a much shorter life, are easier to adapt and will be regularly replaced and upgraded over time based o there own life cycle and the changing technical, economic, regulatory and social pressures at the time of replacement. The building infrastructure does however need to facilitate as far as is possible the likely changes that will be made.

We include the results of the PFI hospitals energy strategy review held in March 2007

6.3.26 Energy Targets

NHS GUIDELINES

Energy use should be within range of 35-55GJpa per 100cm
For this Acute Hospital we propose a target of 55GJpa per 100cm

SCOTTISH BUILDING REGULATIONS

Draft Section 6 for implementation May 2007
23% to 28% improvement on current Building Regulations measured as carbon emissions

- Currently no requirement for on site renewable energy but may come through the Glasgow planning system as London & Edinburgh.
- Often energy in use exceeds the design targets.

EXPERIENCE FROM COMPLETED BUILDINGS

3 Key Areas for a Strategy

- Good Building Design to provide
  Good thermal insulation, air tightness and solar protection
  Exposed Thermal mass where appropriate
  Good quality ventilation control and efficiency window design is critical
  Use Of Natural Daylight
  Use of Natural Ventilation where appropriate
  Smarter system controls intuitive use and system monitoring
  Avoiding Over Complex Solutions
- Good Building Services Commissioning
- Good Building Services User Understanding and User Operation

PFI puts responsibility for these with a single party
The incentives and penalties for the PFI to deliver or better energy targets must be strong enough

NSGH PROPOSED ENERGY STRATEGY

- INVEST IN BEST BUILDING FABRIC

  Robust
  Best value and lowest lifecycle cost
  Creates a Good building environment
- ENERGY EFFICIENCY & RENEWABLES
  Based on financial merits but minimum to meet energy & $CO_2$ emission reduction guidelines and renewables obligations (if any)
- ADAPTABLE
  Engineering services need to adaptable to new technologies and a changing fuel supply and economic circumstances/regulations

BASE SCHEME;

- Mechanical or natural ventilation to perimeter wards & day lit office/staff/public accommodation
- Mechanical Ventilation with peak summer cooling to clinical and core areas
- Air conditioning to critical care clinical areas

- Gas Fired MTHW boiler plant with light oil standby within an energy centre
- Mains HV electrical supply with HV/LV distribution and LV diesel standby generation

DESIGN ENHANCEMENTS THAT HAVE A GOOD LIFECYCLE COST AND INCLUDED AT ADDITIONAL CAPITAL COST WITHIN THE DESIGN SOLUTION

| | |
|---|---|
| Building Fabric | thermal performance:<br><br>20% improvement on current Scottish Building Regulations<br>air tight construction better than 5cm/hr at 50Pa |
| Mechanical Ventilation | heat recovery ventilation on fresh air plant; effic > 70% annual<br>variable demand fan speed control by vvvf inverter |
| Boiler Plant | Flue gas economisers on lead natural gas boilers<br>MTHW distribution variable flow arranged for low return water temperatures<br>Digital variable load pressure jet burners with oxygen trim control and excess air control/shut off when boiler off line<br>Boiler firing optimisation. |

DESIGN ENHANCEMENTS THAT HAVE A GOOD LIFECYCLE COST

| | |
|---|---|
| Heating Distribution | Variable demand pump speed control by vvvf inverter and 2 port valve control |
| H&V Control Zoning | Heating control compensator zoning with local room control, zoning between day & 24hour areas |
| Hot Water | Combined Heat & Power (CHP) plant to provide base hot water load |
| Water | Leak detection monitoring<br>Water use reduction technologies (dual flush WC, PIR tap control) |
| Cooling Plant | Variable demand condenser fan speed control and flow & head temperature optimisation<br>Variable demand pump speed control by vvvf inverter and 2 port valve control<br>Use of free cooling roof mounted chillers for ITC equipment cooling |

DESIGN ENHANCEMENTS THAT HAVE A GOOD LIFE CYCLE COST

| | |
|---|---|
| Lighting | High frequency dimmable ballasts with occupancy and daylight linking where appropriate; lamp light output control and lamp monitoring.<br>Appropriate and adjustable artificial lighting levels |
| Lifts | Traction lifts with lift management group controls and regenerative breaking |
| Energy Management | Sub metering and logging to allow system by system and area by areas energy monitoring and energy targeting (heat, coolth, water, gas, power) |
| Load Topping | Ability to run standby generation plant in parallel to the electrical supply grid to allow load to topping according to tariff. Economic case not proven at this stage |

ONSITE LOW OR ZERO CARBON TECHNOLOGIES

| | |
|---|---|
| CHP | Generating heat & power on site is energy efficient in that the heat that would otherwise be thrown away at a thermal power station can be used to heat hot water for the hospital.<br>This has a good economic case and should be included. Initial estimates indicate a cost neutral payback of between 8 to 10 years.<br>Extent of provision, subject to detailed economic assessment |
| Ground Coupling | The ground temperature is a constant 12ºC throughout the year. If peak summer comfort cooling is required to areas of the building it can be a low cost and energy efficient system as an alternative to central chilling (eg Ward Ventilation precooling, public area comfort cooling).<br>There is the opportunity to store heat within the ground between winter and summer to heat and cool the building. To will need to be investigated |

ONSITE LOW OR ZERO CARBON TECHNOLOGIES considered but not adopted at this time

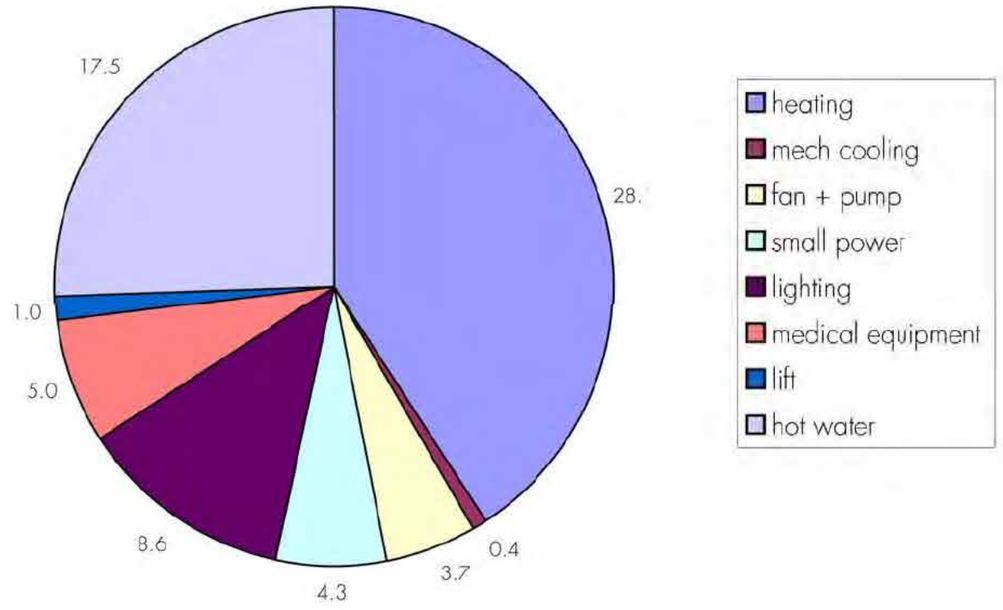
| | |
|---|---|
| Absorption Chilling | The use of heat from CHP to provide base load cooling has been discounted as the technology relies on heat rejection through roof mounted cooling towers which are seen to pose an unacceptable risk to the PFI and NHS in terms of maintenance/operation. |
| Wind Energy | The site is not suitable for large wind turbines commensurate with the scale of the hospital development. Wind turbines are best placed where it is windy but this needs to be balanced against the cost and inefficiency of energy transmission over long distances. The Clyde river bank offers a potentially suitable site close to the hospital, away from noise and flicker sensitive areas and with good wind availability. We have prepared an outline of a possible scheme to explore the possibilities for the realisation of such a proposal (outside the PF remit) |

ONSITE LOW OR ZERO CARBON TECHNOLOGIES

| | |
|---|---|
| Solar Thermal | Economic and technically feasible but competes with CHP and therefore not included. |
| Solar Electrical | Currently not economically feasible. Capital is best used elsewhere on alternative measures or technologies such as energy demand reduction and is therefore not included. |
| Bio Fuels | We do not believe the on site burning of wood or wood based waste is sufficiently robust for a city centre building of this size and complexity. These fuel sources have a low volumetric density and storage and handling of the fuel are expensive and complex. A Bio fuel and diesel blended fuel may be efficient and emission free at some time in the future and it would be possible to select boiler and flue plant so that it is possible to convert boiler plant to burn a bio fuel. |

ENERGY MODEL RESULTS work in progress

| | |
|---|---|
| Target | 55GJ/100cm pa |
| Model Scheme with CHP (c1.5MWe) | 52GJ/100cm pa but with design enhancements which have a good economic case as described |
| Base scheme without CHP | 66GJ/100cm pa but with design enhancements which have a good economic case as described |



POSSIBLE COMMUNITY LOW OR ZERO CARBON TECHNOLOGIES
Not adopted but may be suitable in time

| | |
|---|---|
| Community Wind Turbines | Possible but obtaining land and planning may be difficult |
| Community CHP | Mixed connected building types provide a better yearly heat & power balance than the hospital alone.<br>Potential for Community Nat Gas Fuel Cell or Turbine technology to deliver a combined heat and power scheme covering the hospital and new residential buildings. |
| Hydrogen Fuel Cell | Potential for Community Hydrogen Fuel Cell technology to deliver a combined heat and power scheme covering the hospital and new residential buildings. Mixed connected building types provide a better yearly heat & power balance than the hospital alone.<br>Opportunity to demonstrate hydrogen use for transport eg fuel cell technology bus fast link, ambulances and pool cars |

POSSIBLE COMMUNITY LOW OR ZERO CARBON TECHNOLOGIES

| | |
|---|---|
| Energy from Waste | Potential for Community Waster Recycling and Energy from waste plant to deliver a combined heat and power scheme covering the hospital and new residential buildings. Mixed connected building types provide a better yearly heat & power balance than the hospital alone. Possible but planning may be difficult.<br><br>The Scottish Water Waste Water Plant could provide a source of waste for fuel/methane gas. |

FURTHER LOW OR ZERO CARBON TECHNOLOGIES

Biomass

Biomass fuel from wood coppice, wood chips, straw, corn, hay, wood pellets, seed crops, animal waste and industrial waste can be burnt in specially designed boilers to provide heat to cover the base heating load throughout the year. Poor responsiveness to meet fluctuating loads means that it is preferable to use biomass boilers as part of a hybrid multiple boiler installation with gas boilers to take up the rest of the load.

Key Points

- A typical installation includes a storage area for the fuel, a hopper to deliver the fuel from the store to the boiler, a boiler.
- Separate flue to discharge the waste gas.
- Fuel is delivered weekly or fortnightly.
- 0.5-5% ash content by mass after burning to be disposed of by owner/manager.
- Price of fuel often dependent on local supply chain, price often subject to fluctuations.
- High maintenance costs, approximately 1% of initial capital outlay (including store).

Biomass is a very effective way to reduce carbon emissions but the client must be aware of and committed to the extra work required in the daily and yearly running of the plant. Biomass is as yet a relatively untried technology in commercial buildings and requires a large amount of maintenance and management. The supply chain is difficult to control and subject to change over the life of the installation, this is key to the operation and success of the scheme and is likely to require significant time and effort. The difficulties in setting up the supply chain could prove prohibitive to a biomass scheme. The excess space required for the plant and to store the fuel can end up being a significant extra cost pushing up the initial outlay and lengthening the payback time.

Photovoltaics

Photovoltaics (PVs) generate electrical energy from sunlight. There are three main types of photovoltaic system available and some hybrid systems:

Monocrystalline Silicon Cells

- These are formed from shards of electronically pure silicon.
- They have high costs but also have a high efficiency (14-15%).
- These perform badly under part load and very badly if any part of the array becomes shaded.
- Cost approximately £600 - £700/$m^2$.

Polycrystalline Cells

- These are formed from shards of silicon cells.
- They are still highly efficiency but are cheaper than monocrystalline cells (12-13%).
- These perform badly under part load and the output from the whole array is greatly reduced if any part of the array becomes shaded.
- Cost approximately £500/$m^2$.

Thin Film/Amorphous Cell

- These are formed by an amorphous layer of silicon being deposited on a substrate. This allows for the production of flexible/semi transparent cells (solar transmittance is approximately 10%).
- Their efficiency is the worst of the silicon PV cell types and is typically in the region of 5%.
- Although their peak efficiencies are lower than the other two, the part load efficiency is good and shading only reduces the output on the part that is shaded.
- The yearly output is often the same as for the other two types depending on the site.
- Can be used as shades to stop glare and overheating in place of brise soleil or expensive high performance glazing.
- Cost approximately £300/$m^2$.

Inverters and protection devices are required to connect the PV panels to the building electrical distribution system. Any excess power may be transferred to the grid to generate extra income, however, it is not worth over sizing the system with this in mind as the price paid for exported power is considerably lower than the cost of imported power.

The advantages of PV cells include:

- Production of clean energy.
- Highly visible, therefore excellent educational and PR value.
- Low maintenance requirements.
- Architecturally pleasing.
- May offset the cost of roof cladding.

Disadvantages include:

- May require planning permission in conservation areas.
- Long payback period.
- Risk of future overshadowing.
- PV's cell produce DC electricity which must be converted to AC.
- Low voltage output may be difficult to transmit.

Solar Thermal

Solar thermal panels, also known as solar collectors are a well established technology, generally, there are two types of panel, evacuated tube and flat panel. Both harness clean free radiant heat from the sun. Evacuated tube panels are usually more expensive but suffer less from heat loss as the panels get hotter, they are more efficient.

The advantages of solar thermal include:

- Production of clean energy.
- Highly visible, therefore excellent educational and PR value.
- Low maintenance requirements.
- Unobtrusive plumbing
- Low running costs

Disadvantages include:

- Low grade heat is produced
- Water may require softening
- Risk of future overshadowing.
- Requires an electrical pump
- Storage is required as solar source does not often match hot water requirement.

Ground Source Heat Pumps

Ground source heat pumps take advantage of the refrigeration cycle, heat stored in the ground is transferred from the ground into the building. The ground's temperature at around 2m deep remains at a steady 11ºC. In the winter this relatively high temperature can be taken advantage of. In summer, the ground may be used as a heat sink in order to prevent free cooling.

The energy stored in the ground is transferred to the building by pumping a water glycol mix around a closed pipe loop buried in the ground, where the length of the pipe depends on the buildings energy requirements. In smaller systems the pipes may be buried in trenches, for larger systems it may be necessary to place the pipes in bore holes.

Heat pumps are very efficient, a typical COP of 3, means that for every kW of electricity used in the heat pump 3kW of heat will be transferred from the ground to the building. Best efficiencies for heat pumps are achieved when the difference in temperature between the heated water and the ground are lowest. Therefore heat pump technology is especially suited to low temperature heating systems such as under floor heating

The payback on heat pumps is long because the pumps required to circulate the water are powered by electricity and the price of electricity is set to rise over the life of the installation.

Wind Turbines

A wind turbine converts wind energy into electricity, currently wind energy is one of the most cost effective methods of generating renewable power. It is possible to install small scale turbines that can operate economically in modest wind speeds. It will usually be favourable to install small scale turbines in urban areas. All modern turbines use lift as the wind blows across the blades to generate a turning force, the rotation of the axel drives a generator either directly or via a gear box to produce electricity. The renewables toolkit suggests that in order for a turbine to be economically viable an average site wind speed of 4 m/s is required. Average wind speed increases with height from the ground, also interference from ground obstructions is reduced with height. The topography in cities causes the turbulent flow of wind, which reduces the annual output of the turbines, this increases the size or number of turbines required than if the turbine was mounted offshore or in an open location.

The advantages of wind turbines include:

- Production of clean energy.
- Highly visible, therefore excellent educational and PR value.
- Good payback

Disadvantages include:

- Planning permission is required
- Noise output
- Visual impact
- Negotiation required with wildlife groups

Rainwater Recycling

A rainwater recycling system consists of collection, filtration, floatation and settlement within storage tanks and pumping either to a header tank or direct to outlets. Storage tanks should be cool and dark, usually underground and usually with a mains top up. Rain water recycling would be used for WC flushing, if this is the case than no special water cleaning will be required.

Roof area and water demand patterns affect storage tank size and economics.

Choosing Sustainable Materials

The PSC will assess the sustainability of both source and manufacture when selecting materials. Reused and recycled materials will be given preference where performance requirements are equal to less sustainable alternatives.

Materials used will be assessed to test if their embodied energy is higher than other alternatives and heavy materials will be sourced from local sources wherever possible to reduce energy lost through transportation.

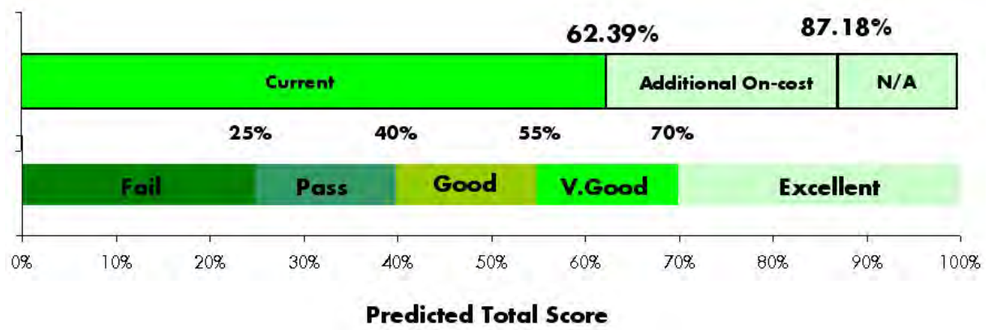
Selection of more environmentally sound materials requires to be balanced against other economic issues. However, if sustainability is to be a real consideration rather than an attractive "bolt on", funding bodies and other key decision makers will have to show a real commitment to the design decisions being made to help balance short term capital cost issues against longer term environmental advantages.

Providing Sustainable Solutions

As the design develops the studies already undertaken to consider sustainable alternatives will be developed further to test the decisions that have been made. Work with other bodies including energy suppliers and expert Governmental Advisory bodies should be undertaken to assess the viability of alternative solutions. A flagship public project of this scale provides an opportunity to test and develop more lateral ideas but this can only be achieved with the support and agreement of funding authorities. Engaging the decision makers at the earliest stage in understanding the issues and problems associated with low Carbon development is essential if real solutions, rather than "Green Washing", are to be delivered.

Neat Pre Assessment

An estimate of the score which the current proposals would achieve under the NEAT scheme has been made. It is estimated that the current proposals would achieve a score of 62.39%, which lies comfortably within the "Very Good" Rating band. The proposals would enable an additional 24.79% of credits to be achieved at an on-cost, which would bring the total score to 87.18%. This lies comfortably within the "Excellent" banding. The credits assumed within the "Current" proposals and the additional "On-cost" credits are listed in Appendix D




Future Directions of NEAT

The NEAT scheme is due to be updated in 2008, to bring it in line with the other BREEAM schemes, although the Department of Health is expected to retain ownership of the scheme. The current benchmarks are significantly out of date. Significant changes are expected to the scheme. As this is still under consultation, we have no advance information on these changes. Where possible we have allowed for this in our estimate and measured performance for the current credit set against current benchmarks in order to future-proof our estimate.

6.3.27 Energy Assessment

Energy & Part L2

The design of the hospitals has been carried out to reduce their energy consumption, and associated carbon emissions.

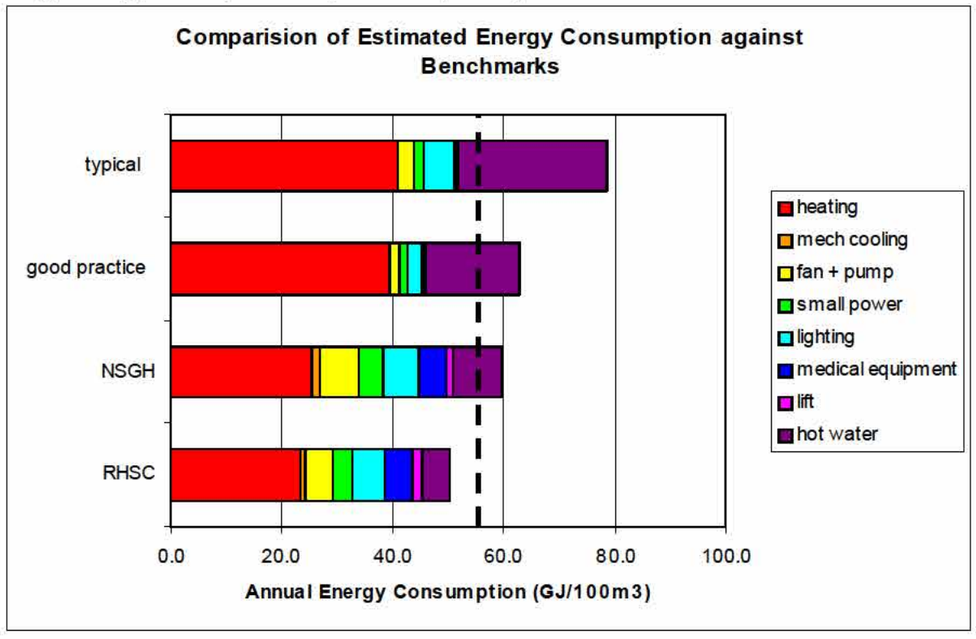
The hospitals must achieve the following energy targets:

NHS target of 55GJ/100m$^3$ of heated space,
the requirements of the Scottish Building Regulations, Section 6.0 'energy'.

Our preliminary energy model of the buildings in appendix E shows that the NHS target can be achieved by the following means:

- 20% improvement on the Building Regulations minimum u-values
- heat recovery on the ventilation systems
- variable speed pumps and fans with demand controls
- combined heat and power (CHP) generation to meet base electrical and heat loads
- good daylight and artificial lighting controls
- good small power and equipment controls
- high quality design, construction, quality control, testing, commissioning, operation and maintenance of the building
- building energy management

The chart below compares the estimated performance of the hospitals against typical and best practice figures from Action Energy's 'Energy Consumption in Hospitals Guide' (ECG 72).




Please note the bold dashed line at the NHS target level of 55GJ/100m$^3$ pa. Although the consumption figure for the Adult Hospital exceeds this level, it should be noted that the hot water production for the two hospitals will be from the combined heat and power plant; it is essentially a free by-product of electricity generation and so should not be taken into account when comparing against the target level.
The estimated annual energy consumed by fans and pumps in the new hospitals is greater per heated volume than the typical and good practice levels. This is because the hospitals are to be mechanically ventilated throughout. However, the ability to reclaim heat in a mechanically ventilated system mean that heating energy is significantly lower than good practice

The revised energy section of the Scottish Building Regulations came into effect in May 2007. Section 6.0 is now similar to Part L in England and Wales, and adopts a 'whole building' approach requiring an assessment of $CO_2$ emissions. For buildings with mechanical ventilation or air conditioning a 28% reduction in $CO_2$ emissions over a 'notional building' of the same size and shape as the actual building and built to the previous regulation standards (2002) is required.
Compliance with Section 6.0 requires detailed modelling of the building using dedicated software incorporating the Simplified Building Energy Model (SBEM). As the building is not fully developed, it is not possible to carry out detailed modelling. However, we have modified our preliminary energy model to indicate whether the requirements of the Building Regulations are likely to be met. (Please note that as the SBEM algorithms have not yet been released by the Building Research Establishment it is not possible to compare our model with them).
Our preliminary model compares the annual carbon consumption of a 'notional' hospital against the 'actual' hospital. To comply with the Building Regulations the 'actual' hospital must emit at least 28% less carbon dioxide than the 'notional' hospital.
The table below lists the key parameters of the 'notional' buildings, and of the assumed 'actual' buildings:

| | 'notional' building | 'actual' building |
|---|---|---|
| building regulations u-values | National Calculation Method (NCM) figures | 20% improvement on NCM figures |
| glazing as a percentage of facade | 40% | 30% |
| heat exchange | no heat exchange | heat exchange with 50% efficiency |
| chiller COP | 2.25 | 3.0 |
| general lighting efficacy | 5.2W/100lux | 3W/100lux |
| pumps & fans | fixed speed | variable speed |

Preliminary calculations indicate that the carbon emissions of the 'actual' buildings are lower than the 'notional' buildings by greater than 28%, and so comply with Section 6.0 of the Scottish Building Regulations.

Potential Renewable Obligations

Currently neither Section 6 of the Scottish Building Regulations or Glasgow Planning Guidance require low or zero carbon (LZC) systems to be included with the building design.

It is likely that Glasgow Planning Guidance will require up to 20% LZC energy systems to be included within the scheme before the hospitals are built; although whether it would be on an energy (kWh) or carbon dioxide ($CO_2$) basis is unclear at this point. Generally it is more difficult to meet an carbon based target because it takes into account the inefficiencies of mains supplied electricity, raising the overall $CO_2$ consumption relative to energy used.
The proposed, or an enhanced, CHP scheme can provide this proportion of LZC energy which is classified as "renewable" under the Building Regulations and the London Plan developed for planning guidance within London, and frequently by other local authorities.

It is not clear at this time whether building integrated renewable energy systems such as solar PV or wind turbines will provide a cost effective and viable source of additional renewable energy. Scotland already has a high proportion of renewable electrical energy supply (hydro and wind ) which it is planning to expand. For Scotland this may prove a more effective approach.

It is clear that passively reducing the energy demand from a building to as low as possible is currently more economic than many active building renewable energy systems, and in the short term, can make a bigger contribution to the reduction in energy consumption and carbon dioxide emissions.

Annual Consumption
The 2005-06 returns for the hospitals in the Glasgow area indicate the proportion of energy used by electricity to that of fossil fuels, primarily natural gas.

| | Total | Fossil | Electric | | |
|---|---|---|---|---|---|
| | GJ | GJ | GJ | % fossil | % electric |
| SOUTHERN GENERAL HOSPITAL | 179,580 | 126,886 | 52,694 | 71% | 29% |
| ROYAL HOSPITAL FOR SICK CHILDREN YORKHILL | 80,056 | 53,504 | 26,552 | 67% | 33% |
| VICTORIA INFIRMARY | 75,905 | 59,307 | 16,598 | 78% | 22% |
| WESTERN INFIRMARY | 142,467 | 105,055 | 37,412 | 74% | 26% |
| Average | | | | 72% | 28% |

As an indicator this data and the energy target of 55GJ/100m$^3$/annum for NSGH can be used to estimate the figures for electricity and fossil fuels consumption in terms of energy and $CO_2$.

| NSGH Energy use per annum | Fossil (boilers) | Electric (grid) | Total |
|---|---|---|---|
| GJ | 164,720 | 62,980 | 227,700 |
| MWh | 45,755 | 17,495 | 63,250 |
| 10% MWh | | | 6,325 |
| 20% MWh | | | 12,650 |

| NSGH Carbon emissions per annum | Fossil (boilers) | Electric (grid) | Total |
|---|---|---|---|
| Tonnes CO2 | 8,694 | 7,523 | 16,216 |
| 10% Tonnes CO2 | | | 1,622 |
| 20% Tonnes CO2 | | | 3,243 |

Note that it is likely that for the new hospitals the traditional 70:30 split between fossil fuel and electricity consumption may be nearer 60:40. The reasons for this are that better levels of insulation, air-tightness and greater use of heat recovery will generally reduce fossil fuel consumption, whereas increased density and power of specialist medical equipment will increase electrical consumption.
A change in this split would marginally raise overall carbon emissions and savings targets.

Biomass
This is generally seen as the most straightforward option to meet renewable energy requirements. However there are issues with quantities of supply, transport and storage of woodchip or other fuels. Developers may not take this into account as they will generally provide complete backup with gas supply, and current regulations do not actually require the running of biomass plant, thereby potentially negating the carbon savings. The Scottish Forestry Commission along with the Scottish Executive have developed a 'Biomass Action Plan' with a view to establishing biomass supply chains within Scotland to respond to the growing demand for biomass technologies .
One option is for straightforward biomass boilers to provide thermal energy. They could be run continuously to meet base load or provide peak load heating alongside a gas fired CHP unit

| Biomass Boiler | |
|---|---|
| Typical installation | 2 x 500kW |
| Size | 2.5m x 3m each |
| Feed | Wood chip or pellet |
| Cost | £98000 |
| Storage (7 days fuel) | 60m3 |
| Delivery capacity (40ft container) | 26,500kg or approx 5 days fuel |

The emissions from the biomass boilers would not adversely affect the stack height required for NSGH. There may be issues with dust from wood chip storage or deliveries.

BIOMASS CHP
Wood fired CHP schemes are more common in Europe but are still relatively new technology. Larger units in the 0.5 – 2.5MW range can operate using thermal oil or steam to operate an electricity generating turbine. A steam turbine CHP could be combined to provide the process steam requirements of the hospital. ESCO's could be set up to cover the supply and operation of such plant with Scottish government support likely to be favourable for this biomass based technology. Another option may be to run a standard CHP that could also run on biogas (see section on anaerobic digestion) with backup boilers running on wood chip.

Fuel Cells
Fuel cells have a number of applications from small to large scale, with a number of different technologies – some requiring pure hydrogen while others can run on a number of fuels from methanol, natural gas or biogas. A site of this size would be suitable for a large scale stationary application with the added possibility of a combined fuel cell transport infrastructure for hospital vehicles.
Large scale fuel cells are currently in use in many sectors across the world with established technology that is improving constantly. It is not cost competitive compared to traditional CHP, but funding is available through DTI demonstration schemes and there are organisations willing to finance and run an installation on an ESCO basis.
An outline of stationary fuel cells is shown below:

| Supplier | Electrical output | Thermal output | Combined unit size | Technology | Efficiency | Comments |
|---|---|---|---|---|---|---|
| Rolls Royce | 1 MWe | - | 1 MWe | Solid Oxide | ~60% e | No heat output |
| Fuel Cell Energy | 250 - 300kWe | 210-270 kWth | 1 MWe | Molten Carbonate | ~38% e | Steam heating, not load following |
| UTC Power | 200kWe | 250 kWth | 600 kWe | Phosphoric Acid | ~37% e | Low grade heat, load following |

CO2 emissions can be reduced significantly (~30%) using these technologies, while all other emissions are reduced to virtually zero. They are often run as CHP units producing either high or low grade heat depending on the technology or the application. Reliability is generally improved with less moving parts, for this reason can be used as uninterruptible power supplies.
Currently typical costs for the supply, installation and commissioning of the 200 – 300kW MCFC or PAFC units listed above are in the region of £850 – 950k.

DTI DEMONSTRATION PROGRAMME

According to the DTI 'The overall aim of the scheme is to reduce barriers to the introduction of cost-effective, low carbon fuel cell, hydrogen and carbon abatement technologies by demonstrating these technologies in real applications'. This translates to £15M in funding over a 4 year period commencing April 2007 for 25% of the eligible costs, additional funding of up to 10% is available for projects meeting certain criteria. The first £5M has been allocated already from an application call in October 2006. The remaining £10M allocated by a second application call for later in early 2008 and possibly a third call at a later date. The application process for call 1 was in two stages consisting of an online prequalification questionnaire and then a detailed technical and economic proposal with a presentation in front of the DTI independent assessment panel.

ESCO PROVIDER

This method of energy provision is quite often used for large scale PFI developments whereby the client will buy their energy from an outside contractor known as an Energy Service Company or ESCO. The ESCO performs the auditing, design, installation and monitoring of the installation. The ESCO also assumes financial risk for the success of the installation. Companies exist to provide this service for stationary fuel cells and can work in conjunction with other ESCO's on site if need be. This approach could allow a reduction in carbon emissions while aiding the development of new technologies.

FUEL CELL & TRANSPORT APPLICATIONS

There have been a number of pilot schemes across Europe with hydrogen fuelled buses or similar transport. These rely on hydrogen filling stations to be set up for purpose. A scheme of this kind could work well in the large hospital environment, particularly with the infrastructure in place for the delivery and storage of medical gases. The filling station could feasibly serve a number of hospital based vehicles such as shuttle buses, a fleet of pool cars or even patient transport. The only direct emission from fuel cell vehicles is water vapour, providing a cleaner local environment while also developing the hydrogen economy within the UK.

Hydrogen is predominantly produced from fossil fuels by steam reformation or electrolysis – both very energy intensive processes. Some trials have taken place in the US for Wal-Mart whereby the stationary solid oxide fuel cell has been oversized to around 3MWe and 6-7MWth producing excess hydrogen by reforming natural gas within the fuel cell. This is a more efficient method of hydrogen production providing there is a use for the heat output of the fuel cell. In the trials, the hydrogen was used to power warehouse vehicles via on-board fuel cells, usually powered by lead acid batteries. A similar approach could be applied to hospital vehicles such as in the laundry/equipment loading areas or shuttle buses, however significant support would be required from private and government funding to realise the initiative.

Anaerobic digestion and waste treatment

Currently there is a large waste water treatment works around 400m from the hospital site. The odour problem to be addressed is another issue, but if the treatment plant was updated to include sealed tanks for the anaerobic digestion of waste, a possible source of renewable energy could arise. Anaerobic digestion is the process of breaking down waste in the absence of oxygen with the by-products being liquid, sludge and biogas. The biogas produced can provide a significant amount of energy when burnt either in a traditional CHP unit or even within a stationary fuel cell for practically zero emissions.

*Source: DEFRA New technologies for landfill diversion*

Investment will have to be made by Scottish Water to address the odour issues from the site which could present the

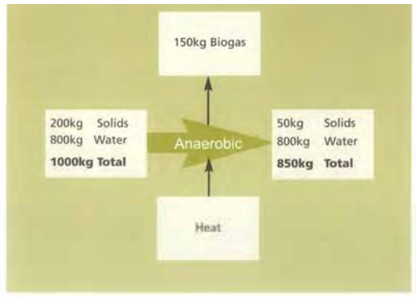



Figure 31 Typical Anaerobic Digestion

opportunity for a linked scheme between the NSGH and Shieldhall treatment works to provide energy from waste while cutting the carbon emissions in the area.

Food and paper waste can also be recycled by means of anaerobic digestion. An AD system for NSGH could also source waste from other hospitals in the area, producing energy from biogas but with the added advantage of selling the liquid and sludge products as fertiliser for use in surrounding agriculture. Some study would need to be made on waste flows and transport options from the hospitals to assess the suitability of such a scheme. However, this holistic approach to waste recycling is becoming an increasingly attractive option to local authorities with the ever increasing taxes and restrictions on waste entering landfill sites.

Underground Thermal Energy Storage

This technology known as UTES involves using separate boreholes as energy stores with one providing heat and the other cooling alternately over the seasons. This is different from ground source heat pumps which rely on the relatively constant temperature of the ground or aquifer at ~10°C . UTES actually raises or lowers the temperature of the aquifers by a relatively small degree over time to create a massive thermal energy store. At the end of each season, the aquifer temperature change is not altered significantly, meeting environmental definitions of sustainability.

An optimal UTES system would have balanced heating and cooling demands, cooling being a key factor in terms of payback times. Preliminary load calculations show that although there is a reasonable cooling demand, the choice of an all mechanical ventilation system with high air change rates could reduce the cooling input required. It will be necessary to make sure the HVAC system generally matches the output profile of the UTES system before a proper assessment can be made.

Initial contact with Deerns and IF technologies suggest that the geology in the Glasgow area is carboniferous limestone and could be suitable for the application of UTES. Initial investigations by these specialists could assess the likely costs and benefits of such a scheme before proceeding with a test borehole to confirm the suitability of the site. It is a staged process whereby the design, specification and EA licensing issues can be co-ordinated to ensure the test borehole can be incorporated into the finished system if the results are favourable. It would be important to begin investigation at an early stage due to the nature of the technology and the groundwork involved.

6.3.28 Impact from Climate Change

It appears likely that both the mean and peak summer temperatures are likely to rise over the coming century.

The Design Solution anticipates that the peak summer temperature will increase by up to two degrees Celsius over the anticipated twenty year life span of the mechanical and electrical plant, after which time, plant of additional capacity can be installed as required. Cooling and ventilation plant has been sized to anticipate this two degrees temperature increase.

Higher peak summertime temperatures make buildings prone to overheating more uncomfortable. Naturally ventilated buildings correctly designed and specified with good solar control, control of summer electrical gains from lighting and small power and with adequate thermal mass can still be adequately designed to be comfortable with rising temperatures. This assumes that internal temperatures will rise no more than ambient external temperatures and that the adaptive nature of comfort will be such that the buildings are still perceived to be comfortable.

Pressure to reduce carbon dioxide emissions from the burning of fossil fuels is likely to increase with legislation requiring further investment in LZC technologies.

The predicted impact to the site from climate change to 2050 for the NSGH site includes increased incidences of high/torrential rainfall with consequent impact on hard-surface run-off, catchment run-off, river and estuary/sea levels and ground water levels; increased wind loading and winter storm frequency as well as hotter and drier summers.

The civil and structural implications of these scenarios should be addressed in the design of the foundations and structural system for the new facility by ensuring that all designs recognise the implications of the implications in the UK of climate change.

For foundations systems this would include an allowance for raised water table, increased risk of wash-out of loose material and the long-term saturation of the piles with increased mobility of ground water and greater tidal influence and reach. Hotter and drier summer conditions may potentially give risk to ground shrinkage due to it drying out. This may lead to ground shrinkage and potential movement or loss of support. All foundations should make full allowance for this to accommodate all consequential loads and anticipated ground behaviour.

The building structure would be required to resist more frequent extreme wind loading events with potential higher loads from short–term gust duration. The ground level effects of the podium and tower should be assessed to ensure that appropriate wind and tunnelling effects are constrained as well as vibration or oscillation effects with regard to noise or vibration consequences.

Flooding consequences have been addressed in separate studies and do not have direct impact on the site itself but will have an impact on access and egress to the site from the north, via the Clyde tunnel and also from other directions to a lesser extent in the immediate locality.

Section 7 – Compliance and Implementation

7.1 Managed Construction Phase

Considered Construction

The Board and its advisors envisage that the Construction team will be given an unencumbered site as described in section 7.4 below.

They will however be required to perform while taking due consideration of working adjacent to an operating Hospital and within the cartilage of the existing hospital campus.

The existing Southern General Hospital will be operational at all times during the construction process. The construction team will ensure that they set in place a liaison process with the Board and its advisors to minimise the effect of the construction process on the operation of the hospital, this will include but not be limited to:

Provision of controlled and separate ingress & egress to the site

Vehicular Access

The staff, agents and contractors of the Construction team shall use only the designated entry points to gain vehicular access to and egress from the Site. The Construction team shall agree with the Board the designated entry prior to commencement of the works such that the works may regularly proceed in accordance with the Contract.

Security provisions

The Construction team shall provide security arrangements for the Works and where this impacts on the Board's existing security arrangements provision shall be made to co-ordinate these security provisions. All arrangements including costs associated with such events shall be dealt with in accordance with the Contract.

Interaction with standard blue light operation

The Construction team shall ensure that a plan is produced and implemented to ensure that ambulances and other blue light vehicles are not hindered by the construction process.

Site Establishment

The Construction team will be responsible for the provision of site accommodation. None of the existing board facilities will be made available for this purpose.

Water / Electricity / Gas

Temporary utility services for all construction and Technical Commissioning operations shall be provided by the Construction team at its sole cost.

Telephones

Temporary telephone services for its own usage shall be provided by the Construction team at its sole cost.

Signs

The Construction team shall provide effective and comprehensive sign posting both for construction traffic and for any alterations to existing access and egress arrangements for Boards staff, patients and visitors.

Fire precautions

The Construction team shall provide a comprehensive fire precautions policy and procedures to the reasonable satisfaction of the Board, the Board's Fire Officer and the Local Fire Authority. This shall include 'no smoking' rules, notification and monitoring of staff, risk assessment obviating measures and approvals from fire authorities and from the Board's Works Adviser where appropriate.

Regarding existing accommodation, risk assessments and fire precautions shall be established before any work is undertaken and maintained thereafter. Where appropriate, this shall be subject to Local Fire Authority approval. Where such risk extends to currently used patient areas and evacuation procedures the Board's Works Advisers approval, not to be unreasonably withheld or delayed to alternative measures shall be specifically obtained.

Use of Board Equipment

Use of existing Board equipment, without the prior written consent of the Board, for construction purposes is not acceptable.

Site cleanliness

Damping down

The Construction team shall take all reasonable precautions to procure that dust and other airborne debris are kept to a minimum. All such reasonable precautions shall be taken to prevent dust and dirt from being transferred to areas of the Hospital not affected by the Works.

Wheel Washing

The Construction team shall ensure that adequate wheel washing and other facilities are available so as to prevent the escape of mud and other detritus on to the Hospital and the public highway.

Noisy plant

The Construction team shall use reasonable endeavours to limit the impact of noisy and/or vibrating plant, particularly continuously operated plant such as internal combustion engine driven hoists or concrete mixers.

Site delivery procedures

The Construction team shall use reasonable endeavours to limit the disruption created by the delivery of construction materials to the site.

Disruption Of and Inconvenience to Existing Buildings

The following procedure shall not apply in the case of emergencies which shall be dealt with immediately by the Construction team.

Advance notice (as much as reasonably practicable depending upon the nature of the relevant work) of potentially inconveniencing and/or disruptive activity in relation to engineering services to the existing buildings is to be given to the Board.

Communications

The impact of the construction Works on staff, patients, visitors and other contractors, psychological or otherwise, shall be mitigated so far as reasonably possible by the operation of a good communications strategy. The Construction team shall make provision for information leaflets, programmes etc. as appropriate.

Environmental Strategy

The Construction team shall discuss with the board the provision of a comprehensive environmental strategy for the works. This shall include, but shall not be limited to consideration of:

Prudent environmental management;
Consumption of raw material;
Minimising consumption of energy;

Environmentally friendly design;
Recycling;
Minimising of waste streaming;
Computer based monitoring and control.

The Construction team shall make provision for the environmental strategy, its development, implementation, evaluation and on-going monitoring to be fully documented.

Design Development Procedure

The Building Contractor Design Development Procedure shall be as set out in a separate schedule.

Conduct of site operatives

The conduct of the Building Contractor's staff, agents and contractors toward staff, patients, visitors and other contractors shall be courteous, respectful and shall seek to assist them as they go about their business.

Complaints procedure

The Building Contractor shall ensure that measures are in place for dealing with complaints from the public quickly and effectively with a view to trying to resolve complaints to the satisfaction of the complainants.

7.2 Health and Safety and CDM

CDM REGULATIONS & THE DESIGN PROCESS

The designers will be required to give an appropriate level of consideration to health and safety during the design stages and be in regular communication regarding CDM matters to ensure the principles of the CDM Regulations have been followed, namely:

Eliminate hazards wherever reasonable practicable to do so.
Introduce alternatives that reduce the risk presented by the hazards.
Determine whether there are suitable means by which the potential for residual hazards to cause harm may be controlled during the installation of the works and future use of the structure.

The design team will be asked to consider the Health & Safety/CDM issues and this will be achieved by
Prioritising the health and safety objectives of the designers
Coordinating the design process
Identifying the residual hazards in the form of Risk Assessments for inclusion into the Health & Safety Plan to be incorporated with the tender documents.

Factors influencing the design are:-

Location
Concept
Size, height and bulk of the buildings(s)
Proximity of adjacent buildings
Future use of the remaining parts of the site
Local infrastructure including location and capacity of services
Planning matters (proposed future development)
Proposed positioning site access
Ground conditions
Site topography
Local issues

The key Health & Safety/CDM issues to consider during the design stages are: -
Avoidance of the requirement of working at height
Avoidance of the use of heavy materials and products to minimise manual handling
Avoidance of using hazardous materials or processes
Avoidance of use of service risers
Avoidance of the need for working under or over other trades and operations
Avoid the use of heavy/eccentrically balanced items
Avoidance of the need for drilling and chasing concrete and masonry to minimise hand-arm vibration syndrome (HAVS)
Minimise the generation of noise, dust and fumes
Consideration of the requirement for and design of temporary works
Consideration of the location and access requirements of the Mechanical and Electrical installations
Consideration of maintenance requirements (means of access, equipment etc)
Consideration of the use of prefabricated components to reduce the number of site based activities
Provide suitable and safe means of access for maintenance and cleaning operations
Provide sufficient space and facilities to safely carry out the construction works (site accommodation and welfare, site roads, storage, etc)
Provide sufficient space and facilities for lifting operations
Programming to reduce use of temporary works (e.g. early installation of roof parapets, staircases etc)
The subsequent demolition of the building(s)

The key Health & Safety/CDM issues relating to the environment surrounding this project are: -

Working within an existing hospital site
Working adjacent to other construction activities
Working on extremely large projects
Working on a tall building

Hazard Elimination Schedule

Hazards and risks will be identified during each stage of the design process. These risks will be recorded on a Hazard Elimination Schedule which will be developed and maintained by the CDM Coordinator.

The schedule will identify the measures taken to eliminate or reduce the risks and therefore provides an auditable trail of the health and safety issues addressed during the design stage process.

The schedule also communicates the information relating to the residual risks to the other designers.

The Hazard Elimination Schedule will be reviewed during each of the design team project review meetings. Residual hazards in the form of Risk Assessments will be incorporated into the Health & Safety Plan that will be part of the tender documents.

CDM REGULATIONS & THE CONSTRUCTION PROCESS

The Principal Contractor will be required to give an appropriate level of consideration to health and safety during the construction stages and be in regular communication regarding CDM matters to ensure the principles of the CDM Regulations have been followed, namely:

Plan, manage and monitor construction phase in liaison with contractors;
Prepare, develop and implement a written plan and site rules. (Initial plan completed before the construction phase begins.)
Give contractors relevant parts of the plan
Make sure suitable welfare facilities are provided from the start and maintained throughout the construction phase.
Check competence of all their appointees
Ensure all workers have site inductions and any further information and training needed for the work
Consult with the workers
Liase with CDM co-ordinator re ongoing design and design changes
Provide a safe and secure site
Provide any information needed for the health and safety file
Inform CDM co-ordinator of any incidents, near-misses, non-reportable and reportable accidents, diseases and dangerous occurrences
Set health and safety initiatives and targets with proactive monitoring and rewards
Establish site safety training programme

The Principal Contractor will be required to actively review the construction activities to minimise risks.

The key Health & Safety/CDM issues to consider during the construction stages are:

Avoidance of using hazardous materials or processes
Avoidance of one activity occurring under or over other trades and operations
Avoidance of the need for drilling and chasing concrete and masonry to minimise hand-arm vibration syndrome (HAVS)
Minimise the generation of noise, dust and fumes
Consideration of the requirement for and design of temporary works
Consideration of the use of prefabricated components to reduce the number of site based activities
Provide sufficient space and facilities to safely carry out the construction works (site accommodation and welfare, site roads, storage, etc)
Provide sufficient space and facilities for lifting operations
Segregate and protect persons from moving vehicles and plant
Programming to reduce use of temporary works (e.g. early installation of roof parapets, handrails, staircases etc)

7.3 Demolition and Managing Waste

Surplus excavated material and general building rubbish shall be disposed of to a Local Authority licensed tip and shall comply fully with the requirements of all current legislation governing the control of tipping of refuse. No such materials shall be disposed of on Site by any means.

All materials arising from demolition of the existing buildings shall be recycled wherever reasonably practicable.

7.4 Construction Phasing – see Appendix A and B

In conjunction with the Board's management team at the SGH, the TA team have developed a phasing strategy which aims to provide a clear unencumbered site for the new Adult Acute Hospital, Children's Hospital and Laboratories building. This includes advanced site clearance, remediation if required, demolition of all structures within the proposed PSC footprint and the decentralisation of site services. The latter will avoid as far as possible the need for enabling works to be included as part of the main new build programme.

The sequence of architectural phasing drawings contained in Appendix A show the PSC phasing strategy for the decanting and demolition of buildings leading up to the start of the new build. The PSC site access and set up areas area are shown, with a build sequence running anticlockwise starting with the Labs, Energy Centre and FM areas: leading to the Children's Hospital and followed by the completion of the adult build.

The PSC proposes that whilst the programme for substructures and super structures run in parallel for all areas, the fit out and commissioning of the smaller Children's hospital can be completed in advance of adults allowing an earlier handover. The positioning of the FM areas allows this end of the basement service access system to be brought into operation before the Adult's part is complete. Whilst the development proposed is a single phase build, a phased handover is therefore possible.

The architectural phasing plans are accompanied in Appendix B by matching M&E and drainage plans that show the service modification sequence.

It has been identified that the existing biochemistry building, and surgical wards and Ortho theatres overlap with the new open landscaped space associated with the PSC. Once the new facilities are operating and services have been transferred, these blocks can be demolished (either by the Board or the development construction team) and the landscaped frontage completed.

Thereafter, the Board will redevelop the remaining site, including the refurbishment of the listed buildings to provide administration and teaching accommodation.

The Trust is already undertaking enabling works in relation to the site infrastructure. These works are detailed on the drawings incorporated into appendix B. Outline descriptions have already been described in the Services sections above.

In principle the Trust's enabling works will remove the existing services that are currently in the PFI construction site and, where required, install new plant to the site boundary to re-feed the existing buildings that are to remain in operation during the construction phase. The objective of this is to provide a clear site for the successful contractor and also to ensure that the supplies to the buildings that are to remain in operation are under the control of the Trust, with no services within the contractor's site.

Every effort is to be made to provide dedicated new utility supplies to serve the new development. This will avoid potential interface issues with the existing infrastructure. This will mean some PFI installation work will be required on the hospital site, outside of the PFI site boundary and this process will require detailed planning and programming by the successful contractor team in conjunction with the Trust. It should be noted that at the time of writing, the Utility connections are subject to agreement with the providers.

As part of the PFI works a new centralised energy centre is to be constructed to serve both the Children's and Adult's hospitals. This will incorporate the heating plant, CHP, HV infrastructure and associated standby generation plant, with the centralised medical gas plant located in a nearby external space. The energy centre will be required to be operational for the completion of the Children's hospital as this will be in use during the continuing construction of the Adult's hospital. The HV ring around the PFI site will also be required to be installed at this early stage, although not necessary all of the transformers will be required. Cooling, air handling and water services plant is to be located on the related hospital building (Adult's or Children's) and hence can be installed to suit the related programme. The related services infrastructure (gas, water, power) will be installed to suit the earlier completion of the Children's hospital.

7.5 Prefabrication in Design

The potential for prefabrication will depend upon the final structural form and materials adopted. The Southern General hospital site will remain an operational hospital facility during all phases of the staged decant to the New Southern General Hospital over the full extent of the construction programme. The new buildings will be immediately adjacent to the maternity unit, neurology departments and care for the elderly facilities. The former two will be fully integrated with the new build and the new Children's hospital. As a consequence the minimisation of noise and general disruption is a primary requirement for the works on site and this can be facilitated through extensive prefabrication of structural and building components offsite and the development and implementation of low noise/vibration impact methods of installation.

Ground works and piling can be especially noisy depending upon the type of system selected. Driven piles or driven sheet piling would prove unacceptable for the site works and therefore a system of continuous flight auger piles or similar would be required. Certain components of this system can be prefabricated including the reinforcement cage. However in-situ concrete works will be required and while underground, will require generating plant and air compression equipment to be in operation for concrete placing works.

An in-situ reinforced concrete structural frame is not amenable to prefabrication other than for the reinforcement cages. Pre-cast concrete structural components can be brought to site and assembled in-situ. Similarly, structural steelwork can be brought to site completely prefabricated with connections ready to accept site fixed bolts for all primary and secondary column and beam components.

Floor systems can be pre-fabricated using pre-cast concrete floor units to accept in-situ toppings, all supported from structural steelwork or pre-cast concrete frames.

Prefabrication and design modularisation can reduce the cost of the project, improve the quality of the installation, reduce the number of operatives on site, improve on site health and safety and reduce the defects related to the installation. The value of off site fabrication is not generally found in the capital cost of the product, which is generally equivalent or higher, but in the reduced total project programme (installation and commissioning) and hence cost. The PFI process will allow all members of the contractor team, including manufacturers in their supply chain, to contribute and to ensure that all costs are considered e.g. cranage may not be considered as an additional cost associated to pre fabricated roof plant, if a suitable crane is already on site at that time.

The weak point in relation to prefabrication is often in the management of the interfaces between multiple trades. The key is to decide at the commencement of the detailed design which areas/products will provide suitable advantages so that these can be designed and selected on this basis from day one. The interfaces of these can then be understood, simplified and agreed at an early stage.

Careful consideration into the affect on other design members is also required, examples of this are to coordinate the structure and services design to size riser shafts to accommodate pre fabricated sections and their associated pre fabricated support structures and to allow for the weight of prefabricated plant rooms incorporating internal steel framework solutions and a concrete base.

Prefabricated solutions considered for this project are listed in the table below.

Prefabricated solutions considered:

| Solution Considered | Advantages of Prefabrication | Considerations |
|---|---|---|
| Operating theatres | Off site will provide better quality/cleanliness. | Location unlikely to provide programme advantage. |
| Pre assembled roof top plant rooms – chilled water plant (pumps, pressurisation etc.), possibly ventilation? | Allows construction of plant room to run concurrently with building structure then drop on, programme saving. | Potential additional weight.<br>AHUs trade off of weatherproof units Vs cost of enclosing. |
| Modular heat station solution – repetitive Heating & HWS plant rooms (on floor) using prefabricated plant solutions. | Replication will allow faster installation and commissioning and easier maintenance/understanding. Also minimises need for spares. | Repetitive solution required, should be possible to wards will require consideration for other areas so as not to undersize or oversize. |
| Risers | Reduced site work otherwise it will not commence until structure is finalised to provide complete riser. | Not particularly repetitive.<br>Structural frame and support may dictate larger riser area. |
| Modular electrical wiring | Will speed up installation if risers not pre fabricated or floor layout is repetitive. | Future flexibility/adaptability will require building in at day one as hard to alter at later date. |
| Pre fabricated/modular sanitary accommodation solutions. | Off site pre fabrication quality and reduced number of operatives in area of limited space. | Sanitary accommodation solutions required to be repetitive. |
| Pre assembled lift motor rooms | Allows construction of room to run concurrently with building structure then drop in, programme saving? | Would become more advantageous for roof top motor room solutions rather than basement. |
| Pre fabrication of distribution systems (ductwork, pipework, electrical) | Reduces operatives in circulation spaces, improves quality, improved understanding for maintenance. | Requires repetition, should be possible to ward areas. |
| Pre assembly of terminal units for repetitive installations. | Reduces operatives in spaces, improved quality, reduced commissioning, improved understanding for maintenance. | Limited opportunities for terminal units as will require repetition or use of off shelf solution. |
| Packaged plant solutions incorporating self contained controls e.g. boilers, booster sets etc. | Reduced interfaces saves on commissioning and maintenance. | Interface to centralised communications e.g. BMS. Compatibility with other systems. |

7.6 Standardised Construction

Standardisation of civil and structural engineering elements will assist speed of installation of construction and can assist in site quality control and assurance as well as providing a degree of flexibility within installation and construction activities. Such standardisation also has an effect on minimising waste and hence environmental benefits when duly evaluated using such methods as BREEAM or ENVEST.

Piling beneath the tower and podium areas can be standardised within these two areas subject to variations in the depth to rock-head or sound rock. The extent of the basement area is less than the full footprint of the tower, thereby giving rise to localised variability in the piling requirements. The grid is currently assumed to be 8 x 8 metres, but may be different in the final design scheme with a consequent change in the numbers and capacity of the piles and pile groups.

The storey heights in parts of the tower and podium are likely to vary, depending upon the function within each area. For local areas this will not lend itself to repetition, but for the majority of the remaining structure we note that it is likely to be amenable to structural rationalisation and standardisation.

The Architect's plans for the new hospital reflect functional groupings i.e. ward blocks. This will allow similarity in structural requirements which can further assist in standardisation of beams, columns and slab configurations.

7.7 Robust Construction

The New South Glasgow hospital will be designed to meet the requirements of all design and construction codes to ensure that all factors of safety for ultimate limits and serviceability limit states are fully achieved. Avoidance of progressive collapse, sufficient structural redundancy and horizontal and vertical ties will all provide the means to construct a robust building.

The facility is to be designed to ensure that all dead, live and dynamic load cases and factored load-case combinations are incorporated within the structural and civil analysis and design to ensure the facility achieves its design life whilst remaining fully serviceable and provides maximum utility.

The long term entity of the hospital building and the nature of it being a densely used public building dictates a robust and durable building services installation, particularly where the services are installed exposed within an occupied space. Robustness is required due to the risk of damage through normal use and accidental collisions. The additional movements of equipment and furniture around the hospital also adds to the risk of damaging services and hence the need for robust installations.

The design solution is initially to limit the extent of services installed in the occupied space, particularly those that are not concealed and run at low level. Due to the nature of some of the services and the function that they are providing, there will be areas where this is not possible. In these locations the correct specification/selection is to provide long term value rather than a low initial capital cost.

An example will be the taps installed in the public toilets, these will be regularly and repetitively used and hence a good quality product will outlive a cheaper version that will wear and require replacing very quickly. Consideration to automatic/presence activated taps could be a solution.

7.8 Maintenance

The building services design must allow adequate space around all installations to allow for future maintenance activities including replacement of plant and the related distribution systems, including valves etc. This maintenance space provision is not limited to that around the systems but must also include the route to them, transferring the components or plant items and the associated tools and personnel to complete the maintenance.

The design solution is to provide a low maintenance solution that allows the efficient and cost effective replacement of plant and equipment with minimal disruption to ongoing hospital operations.

The use of modular construction will allow easier and rapid withdrawal and replacement of the system/equipment using quick fix connections. Off the shelf solutions are to be utilised to allow for quick and easy replacement.

Repetitive design solutions are to be utilised to minimise the requirement to stock spares and specialist tools/equipment. A repetitive solution also allows easier understanding and familiarity for the maintenance engineers.

7.9 Life Cycle and Maintenance Costs

Lifecycle/FM Costs

Costs submitted represents anticipated LCC expenditure on a typical NHS PFI hospital, suitable for business case purposes, or equivalent indicative costs.

Costs are based on the acute PFI schemes in the Davis Langdon database.

Cost levels are brought to benchmark national average figures for January 2007. No allowance for Inflation. Assumes hospital is constructed as a new build single phase and is in use for approximately 30 years (the PFI shadow tariff period). No allowance for transitional LCC on any existing facilities.

The Lifecycle budget would cover planned major repairs and replacement to the proposed facility; day to day maintenance is covered by the FM Estates Service, etc.

No allowance is made in Lifecycle for:

* Day to day maintenance, cleaning, utility charges, administrative costs and overheads e.g. rates

* NHS Group 2, 3 and 4 equipment maintenance or replacement

* IM&T systems, hardware or software maintenance or replacement

* Any work in connection with conversion or adaptation of the facility to suit a different use or occupier

* VAT or other taxation

Other Assumptions

All costs have been uplifted to January 2007 using BMI Health Service Maintenance Cost Indices - General

All costs in £ sterling

Full Mechanical Ventilation and comfort cooling

Service costs based on standards of service delivery outlined in DoH Standard FM output specifications

Based on average service costs for acute hospital facilities taken from Davis Langdon's internal database

Caveats

Estates

i. Benchmark costs exclude rates / capital charges.
ii. Little detail with regard to proposed M&E plant
iii. Service costs only include for maintenance and replacement of equipment for categories 1 & 2.

The benchmark data allows for an element of risk e.g. possible higher labour equivalent on site to limit /mitigate deductions against the payment mechanism, but doesn't allow for a risk cost for such items as pure financial deductions against the payment mechanism, change of law etc. which bidders will be required to take risk on. This we would expect to be developed and costed into the PSC via a risk workshop.

Hard FM costs exclude –
Obligations contained within General services Specifications, provision of grounds maintenance, pest control, energy and utilities provision and provision of a helpdesk.

7.10 Capital Costs

The Capital Cost of the PSC is estimated at £ 725,041,510 and is based on the PSC Departmental area and Plant area schedule prepared by Avanti Architects and Max Fordham. Details of the Capital Cost Estimate are included in separate cost report to the report. The capital cost estimate includes costs for Departmental Construction, On-Costs, Fees, Non-Works, Equipment, Planning Contingency, Optimism Bias, VAT and Future Inflation.

Departmental Costs

All cost allowances whether standard, derived or ad hoc are rooted in DCA's for both price level and specification level as included in the current NHSE cost guidance "Healthcare Capital Investment" Version 2.1 dated 2002. Cost allowances have been generated on a basis of the areas contained in the PSC area schedule and have been updated in accordance with the firm MIPS indices contained in the "Estates and Facilities Division Quarterly Briefing Volume 15/Number 3/Winter 06/07".

On-Costs

On-costs have been assessed in relation to anticipated requirements and reflect the design intent of the PSC design. On-Costs are based on market rates where applicable. In the absence of information percentage allowances have been based on anticipated “benchmark” norms.

Fees

An allowance for fees associated with the project has been included as advised by the client.

Non-Works

In the absence of definitive costs, an allowance has been included to cover this element of the works. Decanting/decommissioning/commissioning of existing buildings are excluded and if required, we understand would be covered by a separate client budget.

Equipment Cost

All cost allowances whether standard, derived or ad hoc are rooted in ECA's for both price level and specification level as included in the current NHSE cost guidance "Healthcare Capital Investment" Version 2.1 dated 2002. Cost allowances have been generated on a basis of the areas contained in the PSC area schedule and have been updated in accordance with the “Equipment Cost Index” contained in the “Estates and Facilities Division Quarterly Briefing Volume 15/Number 3/Winter 06/07”. The cost allowance generated on the cost /m2 basis has been capped as advised by the Client, as their internal procurement department has confirmed this capped allowance.

Planning Contingency

The amount included against this heading is as detailed in the Quantified Risk Analysis appended to the estimate. The TA team reviewed the potential risks associated with the project and provisional cost allowances have been included to cover for the risk.

Optimism Bias

The allowance for Optimism Bias has been derived through the application of mitigation factors to the Upper Limit Calculation in accordance with NHS guidance..

VAT

VAT has been applied at the standard rate, to all components of cost with the exception of Fees on the basis that this is recoverable.

Future Inflation

For the purposes of comparison cost allowances are rooted in MIPS 466 and updated to 4Q 2006. An allowance for future inflation to the mid-points of construction – 4Q 2010 for the ‘Children’s’ Phase and 3Q 2011 for the ‘Adult’ Phase has been included.

Allowances updated in accordance with the ASPSAB Cost Index and Equipment Price Index as contained in the “Estates and Facilities Division Quarterly Briefing Volume 15/Number 3/Winter 06/07”.

# APPENDIX A

Appendix A  Architectural Drawings

Site Plans

05017-01-001 Existing Aerial Photograph
05017-01-002 EIA Scope
05017-01-004 Existing Key site plan (development areas)
05017-01-010 Existing site environment
05017-01-011 Existing site useage
05017-01-012 Existing site access
05017-01-013 Existing parking numbers
05017-01-014 Existing pedestrian /cycle routes
05017-01-101 Extent of existing site survey

05017-02-101 Extent of  campus plan
05017-02-111 Proposed site useage
05017-02-112 Proposed site access
05017-02-113 Proposed parking numbers
05017-02-114 Proposed pedestrian /cycle routes
05017-02-115 Indicative 3D Massing views
05017-02-116 Indicative 3D Massing views
05017-02-118 Indicative model views
05017-02-119 Indicative model views
05017-02-120 Indicative model views
05017-02-121 Indicative model views
05017-02-122 Possible future environmental expansion
05017-02-123 Possible future environmental expansion
05017-02-124 Possible future environmental expansion

Sections & Axonometrics

05017- SE-00 Existing Site Cross sections
05017- SE-01 Proposed Site Cross sections
05017- SE-03 Stacking Diagram
05017-AXO-001 Diagrammatic Axonometric of Adult & Children’s Hospital

Adjacency Plans

05017-GA—01 Adjacency Plan Basement Level
05017-GA-000 Adjacency Plan Ground Floor
05017-GA-001 Adjacency Plan First Floor
05017-GA-002 Adjacency Plan Second Floor
05017-GA-003 Adjacency Plan Third Floor
05017-GA-004 Adjacency Plan Fourth Floor
05017-GA-005 Adjacency Plan Roof Level

Departmental Plans 1:200

05017-GA-ED-001 Adult Emergency Department
05017-GA-ED-002 Children’s Emergency Department
05017-GA-ED-003 Adult & Children’s Emergency Department
05017-GA-CCU-001 Adult Critical Care Option A
05017-GA-PICU-001 Children’s Critical Care
05017-GA-WARDS-002 Adult Ward Layout Option Three
05017-GA-WARDS-003 Children’s typical ward floor
05017-GA-ATR-001 Adults Atrium
05017-GA-ATR-002 Children’s Atrium
05017-GA-RAD-001 Children’s Outpatients Radiology
05017-GA-RAD-002 Children’s Inpatients Radiology
05017-GA-RAD-003 Adult Outpatients Radiology
05017-GA-RAD-004 Adult Inpatients Radiology
05017-GA-FM-001 FM and Deliveries Area

Phasing Site Plans  1:2500

05017-04-X- 000 Phasing site Audit
05017-04-X- 001 Phasing drawing Phase 1
05017-04-X- 002 Phasing drawing Phase 2
05017-04-X- 003 Phasing drawing Phase 3
05017-04-X- 004 Phasing drawing Phase 4
05017-04-X- 005A Phasing drawing Phase 5A
05017-04-X- 005B Phasing drawing Phase 5B
05017-04-X- 006  Phasing drawing Phase 6
05017-04-X- 007  Phasing drawing Phase 7
05017-04-X- 008 Phasing drawing Phase 8
05017-04-X- 009 Phasing drawing Phase 9

# APPENDIX B

Appendix B Mechanical & Electrical Drawings

SITE SERVICES

| | |
|---|---|
| Gas Services | |
| Gas Services – Phase 1 Pre PFI April 2006 – March 2007 | S32P 001 |
| Gas Services – Phase 2 Pre PFI 2007 - 2008 | S32P 002 |
| Gas Services – Phase 3 Pre PFI 2008 - 2009 | S32P 003 |
| Gas Services – Phase 4 PFI 2009 | S32P 004 |
| Gas Services – Phase 5A PFI 2010 | S32P 005 |
| Gas Services – Phase 5B PFI 2011 - 2012 | S32P 006 |
| Gas Services – Phase 6 PFI 2012 - 2013 | S32P 007 |
| Gas Services – Phase 7 Post PFI 2013 | S32P 008 |
| Gas Services – Phase 8 Post PFI 2014 | S32P 009 |
| Gas Services – Phase 9 Post PFI 2015 | S32P 010 |
| HV Distribution | |
| HV Distribution – Phase 1 Pre PFI April 2006 – March 2007 | HVP 001 |
| HV Distribution – Phase 2 Pre PFI 2007 - 2008 | HVP 002 |
| HV Distribution – Phase 3 Pre PFI 2008 - 2009 | HVP 003 |
| HV Distribution – Phase 4 PFI 2009 | HVP 004 |
| HV Distribution – Phase 5A PFI 2010 | HVP 005 |
| HV Distribution – Phase 5B PFI 2011 - 2012 | HVP 006 |
| HV Distribution – Phase 6 PFI 2012 - 2013 | HVP 007 |
| HV Distribution – Phase 7 Post PFI 2013 | HVP 008 |
| HV Distribution – Phase 8 Post PFI 2014 | HVP 009 |
| HV Distribution – Phase 9 Post PFI 2015 | HVP 010 |
| IT Services | |
| IT Services – Phase 1 Pre PFI April 2006 – March 2007 | ITP 001 |
| IT Services – Phase 2 Pre PFI 2007 - 2008 | ITP 002 |
| IT Services – Phase 3 Pre PFI 2008 - 2009 | ITP 003 |
| IT Services – Phase 4 PFI 2009 | ITP 004 |
| IT Services – Phase 5A PFI 2010 | ITP 005 |
| IT Services – Phase 5B PFI 2011 - 2012 | ITP 006 |
| IT Services – Phase 6 PFI 2012 - 2013 | ITP 007 |
| IT Services – Phase 7 Post PFI 2013 | ITP 008 |
| IT Services – Phase 8 Post PFI 2014 | ITP 009 |
| IT Services – Phase 9 Post PFI 2015Oxygen | ITP 010 |
| Oxygen | |
| Oxygen – Phase 1 Pre PFI April 2006 – March 2007 | OXP 001 |
| Oxygen – Phase 2 Pre PFI 2007 – 2008 | OXP 002 |
| Oxygen – Phase 3 Pre PFI 2008 - 2009 | OXP 003 |
| Oxygen – Phase 4 PFI 2009 | OXP 004 |
| Oxygen – Phase 5A PFI 2010 | OXP 005 |
| Oxygen – Phase 5B PFI 2011 - 2012 | OXP 006 |
| Oxygen – Phase 6 PFI 2012 - 2013 | OXP 007 |
| Oxygen – Phase 7 Post PFI 2013 | OXP 008 |
| Oxygen – Phase 8 Post PFI 2014 | OXP 009 |
| Oxygen – Phase 9 Post PFI 2015 | OXP 010 |
| Steam Supply | |
| Steam Supply – Phase 1 Pre PFI April 2006 – March 2007 | T35P 001 |
| Steam Supply – Phase 2 Pre PFI 2007 - 2008 | T35P 002 |
| Steam Supply – Phase 3 Pre PFI 2008 - 2009 | T35P 003 |
| Steam Supply – Phase 4 PFI 2009 | T35P 004 |
| Steam Supply – Phase 5A PFI 2010 | T35P 005 |
| Steam Supply – Phase 5B PFI 2011 - 2012 | T35P 006 |
| Steam Supply – Phase 6 PFI 2012 - 2013 | T35P 007 |
| Steam Supply – Phase 7 Post PFI 2013 | T35P 008 |
| Steam Supply – Phase 8 Post PFI 2014 | T35P 009 |
| Steam Supply – Phase 9 Post PFI 2015 | T35P 010 |

| | |
|---|---|
| Water Services | S10P 001 |
| Water Services – Phase 1 Pre PFI April 2006 – March 2007 | S10P 002 |
| Water Services – Phase 2 Pre PFI 2007 - 2008 | S10P 003 |
| Water Services – Phase 3 Pre PFI 2008 - 2009 | S10P 004 |
| Water Services – Phase 4 PFI 2009 | S10P 005 |
| Water Services – Phase 5A PFI 2010 | S10P 006 |
| Water Services – Phase 5B PFI 2011 - 2012 | S10P 007 |
| Water Services – Phase 6 PFI 2012 - 2013 | S10P 008 |
| Water Services – Phase 7 Post PFI 2013 | S10P 009 |
| Water Services – Phase 8 Post PFI 2014 | S10P 010 |
| Water Services – Phase 9 Post PFI 2015 | |
| | |
| B MECHANICAL SERVICES | SK019 |
| CHW Distribution | SK021 |
| MTHW Distribution | SK022 |
| LTHW Distribution Schematic within Buildings | SK023 |
| CWS Distribution Adult Hospital | SK-29 |
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| Adult Ward Tower Ventilation Schematic | SK-37 |
| Typical Air Handling Unit Configuration | SK-38 |
| Operating Theatre Ventilation Outline Schematic Plan and Section | SK-39 |
| Plant Space Requirements - Basement | SK-40 |
| Plant Space Requirements – Ground Floor | SK-41 |
| Plant Space Requirements – First Floor | SK-42 |
| Plant Space Requirements – Second Floor | SK-43 |
| Plant Space Requirements – Third Floor | SK-44 |
| Plant Space Requirements – Fourth Floor | SK-45 |
| Plant Space Requirements – Roof | SK-47 |
| Medical Gas Pipeline System Outline Schematic | |
| | |
| C ELECTRICAL SERVICES | |
| 33kV/11kV Primary Transformer Substation | SK008 |
| HV/LV Distribution within Building – Outline Scheme | SK010 |
| HV Distribution Schematic Standby Generation and Transformer Substations | SK050 |
| Typical Transformer Switchroom | SK051 |
| Typical Tower LV Busbar and Distribution Board Riser | SK052 |
| Energy Centre Comparison | SK053 |
| Provision of Secondary Power Risks | V20-500 |

# APPENDIX C

Appendix C NEAT Assessment

NEAT Calculations- Assumed Scoresheet
NEAT Calculations- on Cost

# APPENDIX D

Appendix D  Civil & Structural Drawings

Civil

NE02355-C-800 Indicative Existing Main Drainage
NE02355-C-801 Indicative Drainage Diversions
NE02355-C-802 Indicative Discharge Local Strategies

EKO2355-S-001 Existing Site Plan with Collation of previous Site Investigations

Structural

NE02355-S-201 Indicative Slimfloor solution for Typical Theatre and Ward layout
NE02355-S-202 Indicative Slimfloor solution for Typical Theatre and Ward layout

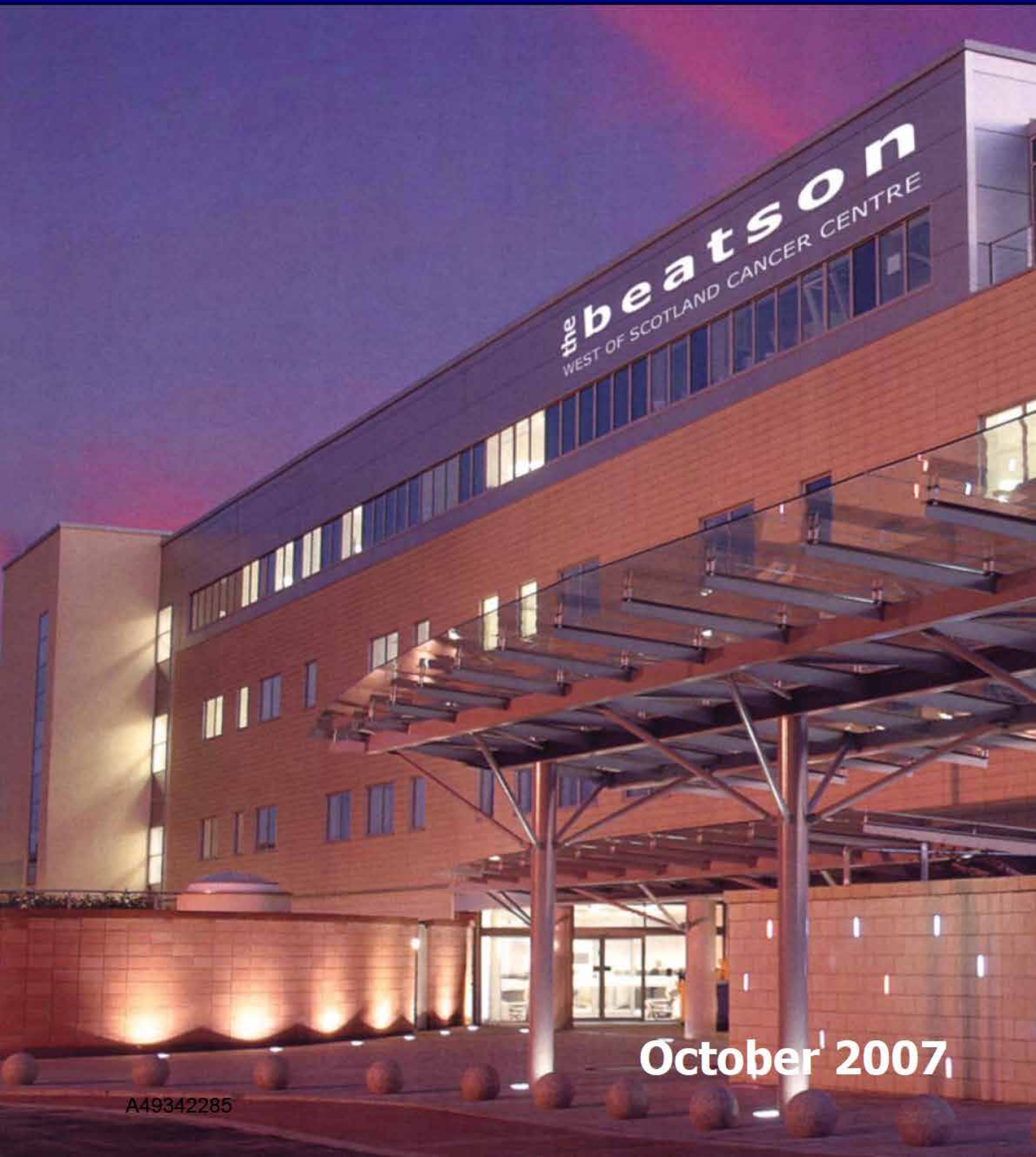
# APPENDIX E

Appendix E  Area Schedules

Schedule of Accommodation and Exemplar Areas

NHS
Greater Glasgow and Clyde

# DESIGN ACTION PLAN




October 2007

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## Foreword from the Chairman

As Chair of NHS Greater Glasgow and Clyde I am delighted to present our Design Action Plan. This document recognises the important role that good design plays in improving the health and well-being of our patients and staff and reflects our commitment and contribution to ensuring health care facilities improve the services we deliver, and impact positively on the economic, social and environmental well-being of our communities in which they are located.

The design action plan has been developed at a time when NHS Greater Glasgow and Clyde is undertaking an unparalleled period of development and refurbishment updating our substantial range of health centres, hospitals and care facilities. Our aspiration is one of achieving the highest quality healthcare possible for the population of Greater Glasgow and Clyde, ensuring health services are delivered in public buildings that the city is proud of.

I believe this Design Action Plan builds on recent successful developments such as the Beatson West of Scotland Cancer Centre, New Gartnavel Royal Hospital and Partick Centre for Community Health and sets a number of actions that will ensure an ongoing commitment to excellence in design, in which the quality of space and functionality work together, the environment in which health care is delivered provides reassurance and inspiration and is sensitive to personal nature and needs associated with the use of health services. While welcoming these examples of large scale new developments, we have not ignored the principles of good design in refurbishing and extending existing health centres.

I believe the design action plan provides a unique opportunity to work in partnership with our patients, communities, staff and partner organisations to deliver world class medical care in world class buildings and provide an appropriate legacy for the citizens of Greater Glasgow and Clyde.

## Executive Summary

This document sets out the Design Action Plan for NHS Greater Glasgow and Clyde (NHSGGC) and outlines the Board's vision for achieving design quality. It was developed in partnership with local authorities, staff and patient representatives and aims to develop the capacity of NHSGGC to support the delivery of design quality in healthcare facilities and services.

In setting out a vision for design quality, we have attempted to provide context and background to the development of the Plan, as well as outlining the key principles that will inform the planning and design process.

The aim is to be realistic in what can be achieved and to set out, in detail, a Plan that will seek to influence the delivery of the Board's vision for design quality. It is important also to recognise the progress already made by NHSGGC in delivering quality healthcare facilities and seeks to build on existing good practice.

The document sets out a direction of travel for NHS Greater Glasgow and Clyde, specifying a series of actions and responsibilities that are needed to strengthen the capacity of the organisation to deliver design quality.

## 1. Introduction

1.1 In 2006 the Scottish Executive Health Department (SEHD) set out in HDL 58 'A Policy on Design Quality for NHS Scotland' the requirement for all Health Boards to produce a Design Action Plan in recognition that good design in healthcare buildings makes a measurable difference to the experience of staff, patients and visitors. In NHS Greater Glasgow and Clyde (GGC) the Design Action Plan outlines both our commitment to quality design and also reinforces our commitment to ensuring healthcare buildings are cornerstones within our communities.

1.2 The concept of design established within the Action Plan has been defined locally and reflects the views of many stakeholders and partners. Our definition is comprehensive and reflects a balance between the aesthetic and the functional, the ambience, the accessibility and the environmental impact of new and refurbished buildings. The plan is also mindful of the need to ensure that projects deliver best value and that the overall affordability of capital projects is not compromised.

1.3 In striking this balance, the intentions is to build on existing practice, and develop the systems already in place within NHSGGC. The strategic objectives outlined will support the organisation to deliver our vision.

## 2. Purpose

2.1 The purpose of the Design Action Plan is to:

- Articulate the aspirations that NHSGGC wishes to achieve through any design process;
- Build the capacity of NHSGGC to deliver design quality by using existing resources more effectively.
- Analyse the process currently used to commission / refurbish buildings and facilities and optimise design quality by building on best practice and learning from others.
- Support a systems based approach to Service Development and Capital Development plans;
- Describe the actions required to enable NHSGGC to deliver the aspirations;
- Describe a clear process that supports the development of good design.

## 3. Context

3.1 NHSGGC is the biggest single healthcare system in the UK, employing 44,000 people and providing primary care, community and acute care to a population of 1.2 million people. A number of Community Health (and Care) Partnerships have joint structures with local authorities delivering integrated social care. The property portfolio is extensive.

3.2 The acute services and mental health strategies for NHSGGC support an unparalleled level of new development and offers significant opportunity to achieve quality design as we move to modern 'state of the art' healthcare facilities and service design. An extensive programme of refurbishment and development is underway to modernise many primary care facilities.

3.3 A NHSGGC Design Network has been established with a remit to develop the Design Action Plan and integrate the implementation of the Action Plan into the operation of NHSGGC. In doing so, the Network was clear that the Plan should be delivered within existing resources, recognise and incorporate current guidance and be responsive to the local political and economic context. This includes:

- Existing Procurement Policy;
- National specifications and standards for clinical space and function (Scottish Health Planning Note, Scottish Health Building Note, Scottish Health Technical Memorandum);
- Local Planning Context - 8 Local Authorities;
- Financial planning, models and resource allocation;
- Process and nature of external assessment;
- Legislative requirements including Fire / Disability, etc.
- Equalities Impact Assessment
- Scottish Arts Council /NHSGGC Arts programme

3.4 The network was also mindful that the needs of all of the groups identified in our single equality scheme require to be taken into account in the design of new buildings or refurbishment of existing facilities.

3.5 It is recognised that NHSGGC currently has a robust financial and planning structure in place to deliver major capital schemes. However, a number of issues were identified within these existing structures for further consideration as part of this Design Action Plan. These include ensuring that the knowledge and skills within the organisation are used effectively in delivering the Board's broader corporate objectives, putting capacity in place to support earlier engagement of stakeholders (clinical and non-clinical) at key stages of the project and that the project plan builds in adequate time and resource to deliver the key elements of the Board's vision for design quality.

3.6 However, the Design Network was also clear that NHSGGC is making significant progress in delivering quality buildings and already applying a number of principles outlined in the Design Action Plan. Examples include:

- Partick Centre for Community Health
- The New Stobhill and Victoria: New Ambulatory Care Hospitals
- The Beatson West of Scotland Cancer Centre
- The New Gartnavel Royal Hospital

3.7 To build on this, the Plan will identify and agree good practice tools to be used as part of capital projects and demonstrate compliance with recognised standards for health service design and redesign. In addition, the Plan has sought to incorporate a number of existing Board policies that should be integral to the delivery of all capital projects from the outset. Therefore the Design Action Plan has sought to build on the inherent skills, expertise and support within the organisation and our partners (statutory, voluntary and charitable organisations) and the learning from earlier projects and our partners is captured and embedded within the development and implementation process for future projects. Appendix 1 summarises a number of lessons learned and implications for future practice.

3.8 The Network also recognised that a number of structures were in place or emerging that would be important in delivering the design vision. The Plan has sought to build on these and develop their role in delivering design quality. These include the:

- Capital Planning Group (and agreed scheme of delegation);
- Better Access to Health Group; Involving People Committee
- Art, Architecture and Environment Steering Group; and
- Clinical Reference Groups.

3.9 The Capital Planning Group has already made significant progress in developing criteria for approved new capital developments and put in place arrangements to support effective governance and accountability extending to all organisational entities (more detail about the Capital Planning Group is provided in appendices 2a) and 2b)).

3.10 The initial development phase of the action plan was instigated in June 2007 when NHSGGC hosted a development session at Hampden Stadium. The event was widely attended with representation from hospital access panels, patient groups, local authority planners, facility managers, capital planners, clinicians, senior managers, architects, Glasgow art and health network, Board members, and other NHSGGC staff. The event was supported by Architecture and Design Scotland. The event generated considerable debate and discussion and ultimately produced the content now reflected in the Design Action Plan.

3.11 The draft Design Action Plan was then circulated for comment to the membership from the event and the Policy, Planning and Performance Group. A facilitated session for patient representatives was also undertaken before a final raft was submitted to the Board for approval.

3.12 A local definition of Design has been achieved as a result of the development process where by the term Design reflects the breadth of issues described within the vision below.

## 4. Our Vision

4.1 The importance of good design is paramount to the development and delivery of efficient and effective health care services.

4.2 NHS buildings need to be clinically functional, with the needs of patients, public and staff at the heart of this. Buildings should be fit for purpose, but also be flexible, progressive and adapt alongside advancing health care developments and the changing needs of the population.

4.3 NHS buildings should be an accessible resource to staff, patients and the public; presenting an infrastructure that feels welcoming, safe and inspiring of confidence. There should be an emphasis on therapeutic design which includes imaginative use of light, access to green space, intelligent arrangement of internal spaces and facilities, use of sustainable materials and the inclusion of art and creative activity. NHS buildings should provide an environment that reduces anxiety, improves health, retains staff and encourages healthier habits.

4.4 Buildings should be easy to navigate, and should consider and be responsive to the accessibility needs of all staff and visitors. In doing so, buildings should be fully integrated with public transport infrastructure as well as encouraging physical activity through effective design of walking and cycling routes.

4.5 The regeneration of surrounding communities should be integral to all projects, with sensitivity and responsiveness to the needs of local communities and environments. Buildings should be a resource for the wider community, encouraging interaction and participation, and creating a focal point and identity with the community.

4.6 To ensure NHS buildings are sustainable and offer good value for money, not just in the short term, but in the long term, the principles of sustainable design, low carbon design and wider environmental impact should be considered from the outset and integrated throughout the life of all design projects, making effective use of natural and sustainable resources where possible.

4.7 NHS buildings will be key to the effective and efficient delivery of 21st century health care, where the role of good design and a clear process to support good design will be a vital factor in ensuring the needs of staff, patients and the public are met now and in the future.

## 5. Principles of the Design Action Plan

5.1 The Design Action Plan will be used to support the development of any physical space or building within NHSGGC and deliver the vision of the design action plan. The Design Action Plan reflects the following principles:

- The need for development or refurbishment should be clearly articulated through a specification of Clinical or Service redesign;
- The functional design, construction and operation of a building should be clearly described and considered primarily within the process and articulated in a design brief (business case and brief);
- The wider environmental impact and design enhancements to the building will be considered alongside financial and clinical considerations;
- There will be a transparent and inclusive process to support any development;
- Improved partnership working will be instigated to support additional value for service users, staff and communities.

5.2 While the Plan specifies those responsible for individual elements of the scope and objectives, it is built on the concept of continuous team-working and the need to have effective communication throughout.

## 6. The Scope

6.1 The Scope of the Design Action Plan will include:

| Scope | This includes |
|---|---|
| ♦ Ethos and 'supportive ambiance' conveyed within the building | ♦ Welcoming reception / inviting / safe / information centre / clear way finding<br>♦ Comfortable / reduce anxiety / pleasant / not intimidating<br>♦ Inspirational / beautiful / imaginative / art and physical enhancements<br>♦ Health promoting environment<br>♦ Strong identity and purpose<br>♦ Ambient temperature |
| ♦ Internal spaces and the use of non clinical and clinical space | ♦ Functional / efficient and effective service delivery / infection control measures<br>♦ Light / windows / maximising views<br>♦ Quality of space<br>♦ Equalities Legislation<br>♦ Finishes / stimulating senses / colour<br>♦ Adaptable space / utility / flexibility / hard wearing<br>♦ Allocation of defined non-clinical space for various users including staff / patients / visitors including libraries / visitor rooms / quiet rooms / relaxation / privacy / continuing education / spiritual care / recreational<br>♦ Consideration of each space and function and service / identifiable staff<br>♦ Physical enhancements / arts<br>♦ Fixtures and fittings supportive of therapeutic environments and activity such as stair walking |
| ♦ External environment and outdoor space | ♦ Links to natural environment<br>♦ Sympathetic use of retained buildings<br>♦ Landscaping / usable greenspace / linked outside space / seating<br>♦ Sensitive to local landscape<br>♦ Architecture of building<br>♦ Accessible |
| ♦ Movement in and around a building or site | ♦ Way finding / clear navigation / defined pathways connecting services<br>♦ Signage and enabling equipment<br>♦ On site transport / disabled parking spaces<br>♦ Internal Accessibility / power doors / ramps / adaptations (including weight bearing) / quality walkways / bathrooms / Disability Discrimination Act compliance<br>♦ A front door / clear entrances<br>♦ Separate public and service areas |

| | |
|---|---|
| ♦ Impact and relationship of a building to and on the local community | ♦ Environmental impact assessment (major projects) / consideration of waste segregation and recycling / renewable energy / water<br>♦ Public perception 'proud' / ownership<br>♦ Including partners in delivery- artists / voluntary sector agencies / range of services available<br>♦ Local jobs / local economy / locally sourced materials / supplies<br>♦ Use of site by community<br>♦ Health impact and health improvement<br>♦ Interface with community |
| ♦ Inclusion of staff, patients and users within the design development process | ♦ Engaging partners<br>♦ Engaging clinicians<br>♦ Engaging patients / patient reps / user groups / volunteers<br>♦ Generating awareness of design |
| ♦ Supporting infra-structure and access to the building or site | ♦ Sustainable design / cost effective / energy efficient and environmentally friendly and safe construction process and materials (low carbon design)<br>♦ Quality workmanship<br>♦ Regeneration / stimulate other developments<br>♦ Travel plans / public transport / green travel / walkable<br>♦ Safe to visit / work<br>♦ Close to amenities / provision of amenities - shops / coffee facilities<br>♦ Accessible in location / car parking |

The Project Leader (as described in appendix 2a) will be responsible for ensuring that the scope of the policy, as outlined above is applied to and described within the Project Brief for individual capital projects.

## 7. Action Plan Objectives

7.1 NHSGGC requires to undertake the following the actions to enable the organisation to deliver the aspirations described within the vision and scope of this plan.

| Objective | Elements | Action | Lead | Timescale |
|---|---|---|---|---|
| **1. Establish effective project governance systems to deliver best value and Board's vision for design quality** | • Effective and equitable use of resources<br>• Effective project governance<br>• Implementation of Design Action Plan | Ensure Project Steering Groups are established for each project (see description in appendix 2a) with clear leadership from a senior manager with responsibility for commissioning the project is identified for all projects | Capital Planning Group | Ongoing |
| | | Capital Planning Group monitors and reviews implementation of Design Action Plan. | Director Acute Services Strategy, Implementation and Planning | From February 2008 |
| **2. Ensure that all capital projects deliver the boards strategic objectives including service delivery, property strategy and health improvement.** | • Supporting redesign through engagement of clinical staff<br>• Improving health and regenerating communities<br>• Agreeing capital projects criteria | Engage with clinical staff to agree core considerations in relation to clinical redesign and functionality to be agreed by capital planning group. | Project leaders / Head of Acute Planning and Redesign | March 2008 |
| | | Develop policy on health improvement for capital projects to be agreed by capital planning group. | Health Improvement and Inequalities Manager – Acute Planning | March 2008 |
| | | Capital planning group to agree project initiation pro-forma for all capital projects to ensure fit with strategic objectives and Design Action Plan. | Head of Capital Planning | March 2008 |
| | | Capital Planning Group to approve supplementary guidance (handbook) for project teams to ensure delivery of design quality in line with Design Action Plan. | Director Acute Services Strategy, Implementation and Planning | April 2008 |

| | | | | |
|---|---|---|---|---|
| **3. Establish mechanisms to support effective project management, ensuring projects deliver the boards vision for design quality.** | ♦ Agreeing the project brief<br>♦ Communicating the brief<br>♦ Managing and reviewing the brief<br>♦ Procurement<br>♦ Corporate working<br>♦ Supporting project leads | In line with Capital Planning process, ensure all Capital Plan proposals are in line with Design Action Plan vision, principles and scope. | Directors / Capital Planning Group / Project Leaders | April 2008 |
| | | Agree criteria for consideration in determining how the procurement model can best support delivery of the Board's vision for design quality. | Head of Capital Planning | April 2008 |
| | | Project leads to utilise supplementary guidance (handbook) to ensure that project briefs are compatible with vision for design quality and capital projects criteria. | Head of Capital Planning | April 2008 |
| | | Capital planning group to agree supplementary criteria for consideration in assessing tender documentation for capital projects to ensure compatibility with Design Action Plan. | Head of Capital Planning | April 2008 |
| | | Provide process flowchart and supporting guidance (handbook) to project leads / partners to support project management and delivery of key milestones in line with vision for design quality. | Head of Capital Planning | April 2008 |
| | | Develop clear policy outline in relation to each element of the Design Action Plan scope and key actions to support project leads for inclusion in the supplementary guidance (handbook). | Leads to be identified | April 2008 |
| | | Capital planning team to agree design tools to be used by NHSGGC project teams and guidance for their use | Head of Capital Planning | April 2008 |
| **4 Work in formal partnership with stakeholders to ensure projects deliver vision for design quality** | ♦ Engage stakeholders in formulation of project briefs<br>♦ Ensure design brief reflects external environment and demonstrates analysis e.g. Health Impact | As part of project initiation process project leads will evidence that stakeholders have been engaged in formulation of project brief. | Project Leaders | Ongoing |
| | | Undertake review of opportunities for joint capital planning arrangements with local authority partners to ensure joint working arrangements in place to support delivery of design vision. | Head of Capital Planning | March 2008 |

| | | | | |
|---|---|---|---|---|
| | Assessment, Environmental Impact Assessment<br>♦ Assessing potential opportunities<br>♦ Agreeing shared objectives | Provide guidance as part of process flowchart and accompanying documentation to support project teams to engage with partners. | Head of Capital Planning | April 2008 |
| | | Provide guidance to project leads on the availability of external assessment tools to support projects deliver the vision for design quality. | Head of Capital Planning | April 2008 |
| | | Where appropriate work with partners to undertake supporting analysis of individual projects to support delivery of vision for design quality and identify shared objectives. | Project Leaders | Ongoing |
| **5. Ensure that projects have the appropriate skills and resources in place to deliver the boards vision for design quality.** | ♦ Establishing effective multidisciplinary project teams<br>♦ Ensuring project teams have the right skills mix<br>♦ Engaging and connecting with stakeholders appropriately<br>♦ Building capacity within the organisation to deliver design quality<br>♦ Embedding best practice within the organisation<br>♦ Identifying the appropriate tools to support project teams<br>♦ Putting in place training to deliver design quality | Senior manager with responsibility for commissioning project to identify multidisciplinary project team (project steering group) appropriate to size and nature of the project. | Project Leaders | Ongoing |
| | | Ensure appropriate information in relation to the Design Action Plan is available at project initiation stage. | Head of Learning and Development / Project Leaders | Ongoing |
| | | Establish a programme of continuous professional development for capital planning and facilities directorate to support delivery of design quality. | Head of Capital Planning / Director of Facilities / Head of Organisational Development Acute | Ongoing |
| | | Establish a programme of continuous professional development to build clinical capacity for capital planning and design quality linked to clinical redesign activity. | Heads of OD / Learning and Development / Project Leaders | Ongoing |
| | | Agree a portfolio of learning and networking opportunities to support delivery of design vision and support programme of continuous professional development. | Head of Learning and Development | April 2008 |

| | | | | |
|---|---|---|---|---|
| **6. Establish mechanisms to ensure that project process and outcomes are measured effectively and lessons learned.** | • Establish key stage reviews<br>• Ensure projects undertake Post Project Evaluation reviews<br>• Establish annual review process | Agree as part of process flowchart and supporting documentation milestones for additional key stage reviews to ensure compatibility with brief and design vision. | Head of Capital Planning | November 2007 |
| | | Provide annual report to Capital Planning Group on progress and project compliance with Design Action Plan for new capital projects based on project steering group feedback. | Head of Capital Planning | March 2008 (Ongoing) |
| | | Agree process to ensure that Post Project Evaluations include design quality and are undertaken on completed capital schemes no later that 12 months following commissioning. | Head of Facilities | March 2008 |
| **7. Ensure that projects engage stakeholders appropriately and timeously in the delivery of capital schemes.** | • Involving Patients/ Public<br>• Involving staff<br>• Involving partners<br>• Building working relationships<br>• Communicating effectively<br>• Consultation | Agree minimum standards and guidance for project teams for the engagement of patients, staff and users | Head of Community Engagement | April 2008 |
| | | Provide pro-forma as part of project initiation stage requiring project leads to demonstrate appropriate communication plan is in place for each project. | Director of Communications | April 2008 |
| | | Implement corporate communication plan to ensure profile of Design Action Plan is raised and stakeholders are aware of plans key messages. | Director of Communications / Design Network | April 2008 |
| **8. Ensure design action plan supports the delivery of vision of design quality** | • Pilot Design Action Plan | Identify current project to test applicability of Design Action Plan. | Project leaders | January 2008 |
| | | Undertake evaluation and review of Design Action Plan in relation to impact and usability in delivering our vision of design quality. Feedback initial report to Board. | Capital Planning Group | October 2008 |

## 8. Describing the Process

An initial goal for the Design Action Plan was to be able to describe a process for Capital Projects that supports quality design and is widely accessible and easily understood across NHSGGC. The process flow chart will be supported in more detail through the production of further supplementary guidance (handbook). The process outline is detailed in appendix 3. It is the responsibility of the commissioning manager / project leader to apply the process outline with sensible and reasonable judgement dependant on the size and requirements of a given project.

## 9. Conclusion

9.1 In conclusion, the intended outputs from the Design Action Plan will be:

- A clear Capital Project Governance Framework and Capital Development Proforma / Project initiation documentation with clear capital project criteria that addresses the vision in Design Action Plan
- Production of supplementary guidance (handbook) resource to support capital projects
- Capital project design process flowchart to guide activity at each stage
- Core list of NHSGGC tools to support design quality
- Portfolio of design learning and development opportunities
- Evaluation Report of implementation process.

**Appendix 1 – Lessons Learned and Implications for Future Practice**

**Current Good Practice**

- **Design Quality** – AEDET Evolution Design Toolkit has been used for briefing and design assessment at various stages on the Beatson Oncology Centre and the New Stobhill and Victoria Hospitals.

- **Sustainability**- the inclusion of the Carbon Trust in assisting in the design of the Beatson Oncology Centre environmental systems and consideration of options for low carbon design. Ensuring all new buildings meet minimum energy requirements in the Scottish Building Technical Standards from May 2007.

- **Environmental** - major schemes are audited against the NHS **NEAT** assessment Toolkit to ensure they meet minimum criteria

- **External Design Teams** - are selected not just based on financial bid but on their track record on design and delivery of similar projects, this must feed through into a better end result.

- **Functionality** – all of our projects utilise the standard NHSiS design guidance to ensure uniformity across the service and compliance with current guidance.

- **Design Awards** - a number of the Board's recent commissions have received design awards or are acknowledged with the design community as being good examples of their type, most notably new Health centres within Glasgow.

**Improvements for the Future Practice**

- **Briefing Documents** - historically our briefs have focused on functional aspects such as rooms, room sizes, environmental conditions, room relationships more technical brief. We should consider how best to develop more aspirational for example, thinking more creatively about the use of space and light.

- **Briefing Documents**- should be more fully developed at OBC stage, to establish design priorities and project objectives at the earliest possible stage. Ensuring external organisations spend meaningful time in current buildings to understand our needs.

- **Design assessment and review** - should be extended to smaller value projects, we currently focus on larger value schemes.

- **Leadership** - a design lead to be identify for all major projects to ensure aspects of the design action plan are incorporated, always working within the financial envelope approved.

- **Monitor and Evaluation** – Lessons from the implementation of the Design Action Plan will be incorporated into the design process and future iterations of the plan to inform future developments.

- **Design Competition** - consider the introduction of design competition to select design teams, this would hopefully feed through to finished buildings. This would depend on form of procurement. For PPP we need to clearly develop output specifications including design quality as part of the evaluation and selection process.

- **Project Team** - ensure projects are adequately staffed on all sides, especially from clinical side ensuring engagement from beginning to assist wider understanding of principles and philosophies of project at later stage.

- **Project Management** - a standard project plan (even if nothing more than a checklist for each stage) should be developed for all projects to ensure uniformity and standard delivery of good project management and communication.

- **Organisation** - establish clear and committed leadership for the project, identify project management structure, roles, decision making and accountability arrangements. Ensure continuous information flow between project sub-groups and project lead. Communicate clearly when a decision has been finalised.

**Appendix 2a) – Capital Planning Group**

The Capital Planning Group (CPG) was established in May 2006. This group meets every three months and is responsible for development and implementation of the Board's capital plan, in 2007/08 worth approximately £140m. Membership comprises Directors from each of the organisational entities across the Board. The CPG is responsible for submission of the capital plan outlining year on year plans to the Board.

The CPG has established a framework of accountability and a clear scheme of delegation for projects for all schemes including those up to £1.5m, projects between £1.5 to £5m, projects between £5m – £10m and projects over £10m.

It has been agreed that a Project Steering Group should be established for each individual project. This group will involve key stakeholders and vary in size depending on the value and complexity of the project. The key roles in the Project Steering Group are as follows:

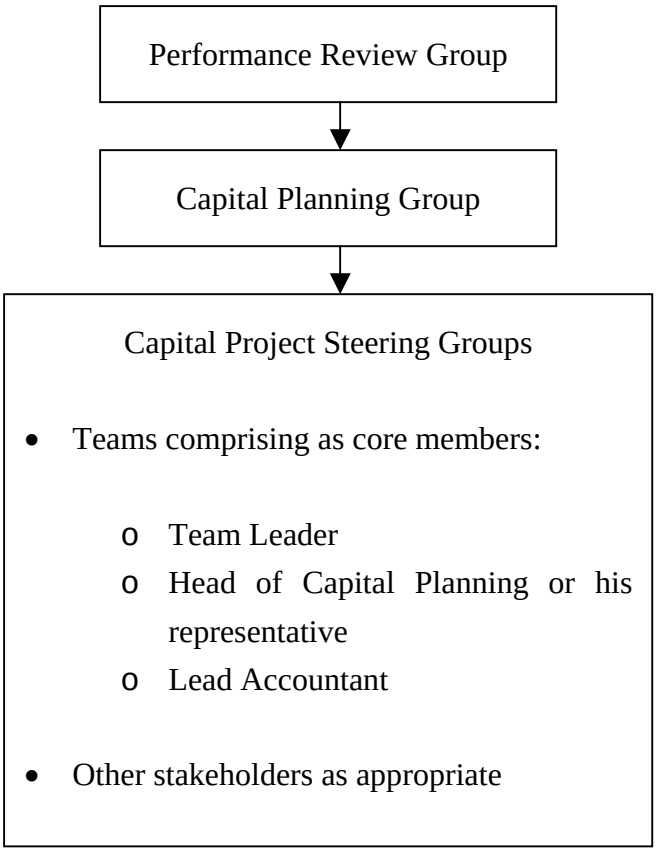
- A Project Leader - should be appointed to manage and oversee the project as a whole and chair the Project Steering Group.

- To support the Project Leader, the Head of Capital Planning, or his designated lead, will be appointed as Project Manager to take forward the project and implement a regime of sound project management controls.

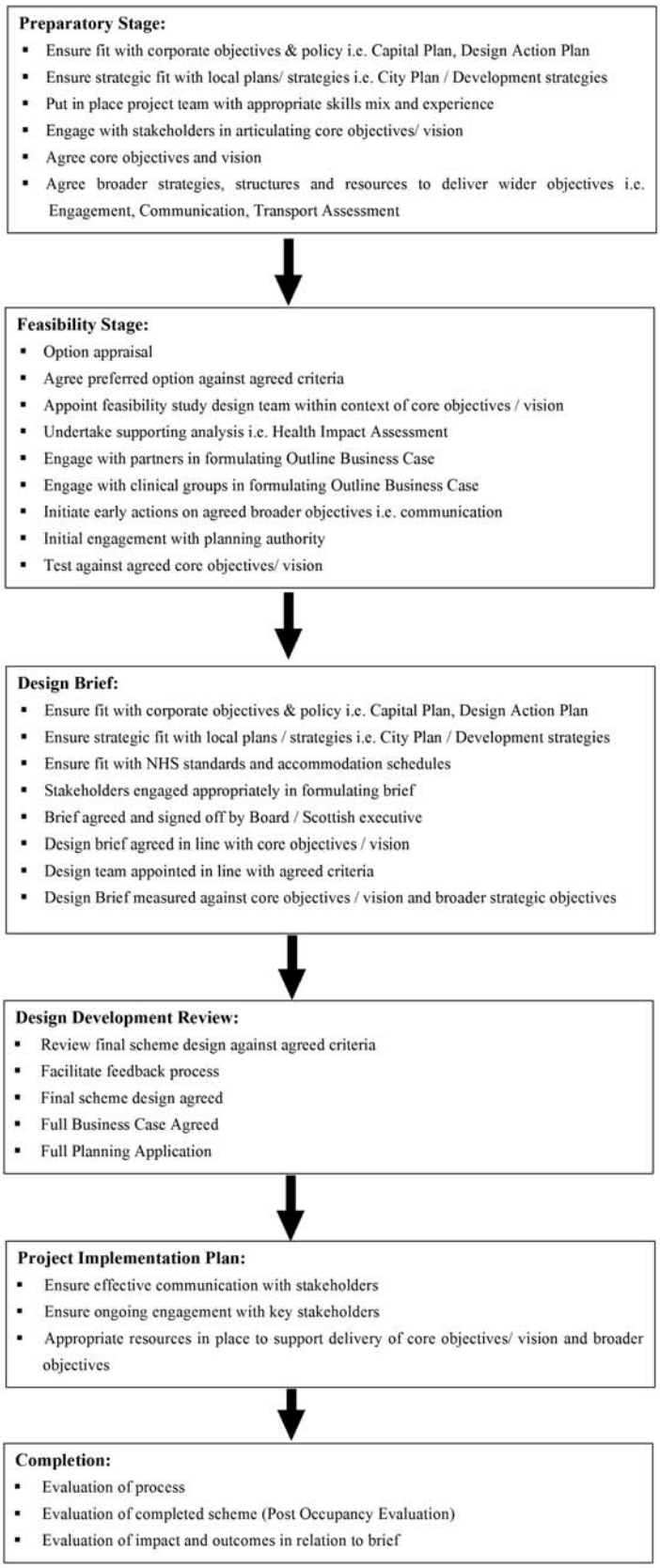
- To support the Project, a Lead Accountant would also be identified, who would ensure a financial monitoring system is in place for the project and would provide regular update reports on spend/slippage etc.

The Project Steering Group will be responsible for the development of the Project's Capital Plan. This will be prepared at the outset of each project and updated as appropriate to take account of changes in planned expenditure due to timing changes, changes to specifications/expenditure and other factors. This is presented graphically in appendix 3. The design plan has sought to build on these structures and views them as key delivery mechanisms. It is acknowledged that this incorporates local capital planning arrangements in Partnerships that feed into the system wide Capital Planning Group.

**Appendix 2b) - Capital Planning Structure**



## Appendix 3. Process Outline



NHS
Greater Glasgow and Clyde

A49342285

**From:** Roy G (Glenda)
**Sent:** 19 February 2008 07:03
**To:** Baxter M (Mike) (Health)
**Subject:** FW: NEW SOUTH GLASGOW HOSPITALS - PROCUREMENT WORKSHOP 19th FEBRUARY 2008. @ PROJECT OFFICE, HILLINGTON
**Attachments:** NSGH Procurement wkshop evaluation form Feb 08.xls; List of Procurement Options Feb 08.doc; NSGH CURRENT POSITION - procurement workshop.doc; Procurement Workshop Feb 08 agenda.doc

Mike

Please see the attached from Peter Moir.

Glenda
-----Original Message-----
**From:** Moir, Peter [redacted]
**Sent:** 18 February 2008 16:11
**To:** Roy G (Glenda)
**Subject:** FW: NEW SOUTH GLASGOW HOSPITALS - PROCUREMENT WORKSHOP 19th FEBRUARY 2008. @ PROJECT OFFICE, HILLINGTON

**********

This email has been received from an external party and
has been swept for the presence of computer viruses.
**********

Glenda

I tried to send the attached to Mike on Friday, just received a notification was undelivered.

Wonder if you could pass to him, its regarding the procurement workshop for new South Glasgow Hospitals in Glasgow tomorrow.

Thanks

Peter Moir

---

**From:** Moir, Peter
**Sent:** 15 February 2008 12:20
**To:** Alan Seabourne [redacted]; Calderwood, Robert; Byrne, Helen; McIntyre, Alex; Gallagher, Peter; Curran, Anthony; Cocozza, Tony; [redacted] Rhona Harper [redacted] David Stark [redacted] KEN FRASER [redacted] Jim Hackett [redacted]; Ian Courtney [redacted] Brian Stewart [redacted] Macleod, Mairi; Griffin, Heather; [redacted]; Julia Kennedy [redacted]
**Cc:** Shiona Frew [redacted] Carol Craig [redacted]
**Subject:** NEW SOUTH GLASGOW HOSPITALS - PROCUREMENT WORKSHOP 19th FEBRUARY 2008. @ PROJECT OFFICE, HILLINGTON

All

Please find attached briefing pack for Tuesdays workshop, sandwich lunch available from 1.30pm with start soon afterwards, 2pm latest. There's a lot of ground to cover, hopefully this will involve some lively discussion. I expect the workshop could run to at least 5pm if not later.

Attached are the following;

- Agenda
- Position paper – highlighting key areas of progress to date.
- Long list of procurement options - a number will probably be discounted early on in the session.
- The Board requirements have been loaded into the scoring sheet under key headings of cost, programme, quality, risk and others. We will wish to consider how a few operational / FM issues could be factored in.
- Scoring sheet – note we have suggested weightings and these are included in the sheet, these can be reviewed and amended during discussion prior to scoring.

If anyone has specific concern about any aspect of the workshop please contact me on [redacted].

Regards

Peter

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**NEW SOUTH GLASGOW HOSPITALS PROJECT** **PROCUREMENT ROUTE - EVALUATION FORM**

**PROCUREMENT WORKSHOP**

Objective: To determine the most appropriate public finance procurement route that meets the Board's key objectives.

| Procurement Route / Evaluation Criteria | Suggested Weighting | Agreed Weighting* | Traditional | | Design & Build Single Stage | | Design & Build Two Stage | | Management Contracting | | Construction Management | | Design Build Manage Operate | | Alliancing | | Prime | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Score 1-5 | Weighted Score | Score 1-5 | Weighted Score | Score 1-5 | Weighted Score | Score 1-5 | Weighted Score | Score 1-5 | Weighted Score | Score 1-5 | Weighted Score | Score 1-5 | Weighted Score | Score 1-5 | Weighted Score |
| **Cost** | | | | | | | | | | | | | | | | | | |
| Meet the Board's and Scottish Governments annual cashflow requirements. | | | | | | | | | | | | | | | | | | |
| Cost certainty as early as possible, at latest pre-contract award. | 40 | | | | | | | | | | | | | | | | | |
| Risk transfer on cost over run if no changes. | | | | | | | | | | | | | | | | | | |
| Work within contract budget and achieve best value for money | | | | | | | | | | | | | | | | | | |
| **Programme** | | | | | | | | | | | | | | | | | | |
| Delivers facilities to meet Board's site start, completion and operational dates. (SOS 2nd qtr 2010). | | | | | | | | | | | | | | | | | | |
| Early transfer of programme risk. | 20 | | | | | | | | | | | | | | | | | |
| Incentivise to achieve early completion. | | | | | | | | | | | | | | | | | | |
| Acieve early programme certainty. | | | | | | | | | | | | | | | | | | |
| **Quality** | | | | | | | | | | | | | | | | | | |
| High degree of control over detailed design and design quality | | | | | | | | | | | | | | | | | | |
| Control of sustainability and whole life issues. | 17 | | | | | | | | | | | | | | | | | |
| Integrated design and construction solution. | | | | | | | | | | | | | | | | | | |
| Ability to deliver against Board's quality benchmarks | | | | | | | | | | | | | | | | | | |
| **Risk** | | | | | | | | | | | | | | | | | | |
| Flexibility for change post contract and post completion. | | | | | | | | | | | | | | | | | | |
| Shift design and construction risk to contractor early as possible. | 15 | | | | | | | | | | | | | | | | | |
| Collaborative approach to cost risk, continuous review and mitigation. | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| **Others** | | | | | | | | | | | | | | | | | | |
| Is procurement route suitable for this value of project. | | | | | | | | | | | | | | | | | | |
| Early involvement of contractor for buildability and programme advice. | | | | | | | | | | | | | | | | | | |
| Procurement route is proven and attractive to market. | 8 | | | | | | | | | | | | | | | | | |
| Design development process to have least disruptive interface with user groups( staff availability). | | | | | | | | | | | | | | | | | | |
| Total Weighted Score | 100 | | | | | | | | | | | | | | | | | |

Notes:
Score: 1 - 5 = Poor - Good
Weighting should add up to 100%
* = Actual weighting to be agreed at workshop.

NEW SOUTH GLASGOW HOSPITALS PROJECT

PUBLIC FINANCE - LONG LIST OF PROCUREMENT OPTIONS

Traditional

Management Contracting

Construction Management

Design & Build - Single stage

Design & Build – Two stage

Design Build Manage & Operate

Alliancing

Prime

There are a number of ‘variations or bolt on’s’ to some of the contract forms listed above, these will be considered during the workshop.

# CURRENT POSITION

For the purposes of the workshop this is a reminder of the current position with regard to the project.

**Outline Business Case (OBC)**

The OBC has been submitted to the Health Board for approval at its meeting on 19 February 2008. The Scottish Government's Capital Investment Group will consider it on 26 February 2008, and then if approved at both these stages to the Cabinet for consideration.

**Town Planning**

Glasgow City Council gave Outline Planning consent to the project on 15 January 2008.

A Campus Development Plan has been developed and was submitted as part of the Outline Planning application. The Outline application has been referred to the Scottish Government for approval by the end of February 2008.

**Exemplar Design**

An exemplar design has been developed for both the Children's and Adult hospitals. There are 1:500 layouts (clinical adjacencies) agreed in principle, 1:200 plans (dept layouts) developed for 5 departments in each hospital (A&E, Imaging, a generic ward, Intensive Care and front entrances).

Further work will be required with clinicians to develop the hospital plans. More detailed work on how FM services will operate within the complex and on the retained estate is also required.

**Constraints**

The information below is a list of the constraints of the project:

- The site has to continue to operate as an acute hospital
- The building requirements are complex
- The site will be congested
- Interface with enabling work on existing estate
- High rise construction
- Equipment integration
- Design complexity
- There will be other building works – Labs, car parking, skills & education centre
- Access restrictions for construction staff (at peak there will be 1000-1500 staff on site)

**Technical Advisers**

Once the Procurement route has been agreed a team of technical advisers will need to be appointed for the next stage of the project, at the moment we do not have a team we can access – at the moment we seek advice when it is required.

NHS GREATER GLASGOW & CLYDE
NEW SOUTH GLASGOW HOSPITALS PROJECT

PROCUREMENT WORKSHOP

Date: Tuesday 19 February 2008.
Time: 2-5 pm (1.30 sandwich lunch available)
Venue: Project office Jubilee Court, Hillington.

AGENDA

| | | |
|---|---|---|
| 1. | Introduction and setting scene | Sheppard & Wedderburn (S+W) |
| 2. | Board requirements | Peter Moir |
| 3. | Presentations | 4 teams in alphabetical order |

a. Currie & Brown 1 – 20 mins
b. Davis Langdon – 20 mins
c. Keppie Design – 20 mins
d. Mott MacDonald – 20 mins

| | | |
|---|---|---|
| 4. | Summary of Options | S+W |
| 5. | Refine through discussion | All |
| 6. | Evaluation and ranking | All |
| 7. | Facilitate selection of preferred option | S+W |
| 8. | Report and recommendation | S+W |

# Greater Glasgow & Clyde NHS Board

## Performance Review Group

**Tuesday, 16th September 2008** **PRG Paper No.**

**Report of the Director of Acute Services Strategy, Implementation and Planning / Chief Operating Officer**

**Procurement Strategy to develop the Southern General Hospital Site – New Adult & Children's Hospitals and new Laboratory facility.**

### RECOMMENDATION

The Performance Review Group is asked to note the attached report from Ernst and Young which sets out the latest work in developing a procurement method to procure the new hospitals and laboratory developments on the Southern General Hospital site. This proposed method is to be further discussed and tested with the newly appointed Technical Advisers and Partnerships UK (PUK) and will be subject to Board approval at the Board meeting in October 2008.

### 1.0 PURPOSE OF THIS PAPER

This paper provides both an overview of the work undertaken since March 2008 in developing a procurement method and sets out the proposed procurement method to take forward the new hospitals and laboratory developments on the Southern General Hospital site, subject to further discussion with the Technical Advisers (TA) and PUK and subject to Board approval in October 2008.

### 2.0 BACKGROUND

The Board embarked upon a plan to determine how best to deliver the new hospitals and laboratory developments on the Southern General Hospital campus prior to the approval of the OBC. This plan included taking soundings from a range of Technical Advisers known to the Board and seeking their initial thoughts on the best way to deliver the new facilities.

Following on from this, Board Officers, supported by the Board's Legal & Financial Advisers and with Scottish Government representation, held a formal workshop with a number of Technical Advisers to carry out further analysis and evaluation to develop the most appropriate procurement plan. The Board's Financial Advisers (Ernst & Young) undertook a market sounding exercise to test out attractiveness and robustness of the proposed procurement plan.

The aim of the Market Sounding exercise was to establish the market view on a) how the New South Glasgow Hospitals Project should be procured and b) what the market bidding intentions may be. It was also to determine those factors which would reduce the attractiveness of the project and the market views on how these issues should be addressed.

The attached report from Ernst and Young sets out the findings of the market consultation and outlines a procurement method that it is believed, will maximise interest from potential bidders and achieve the Board's key objective of identifying a procurement process which:

- Allows for a significant degree of design development discussions to occur prior to the appointment of a single contractor;
- Offers the possibility of market innovation in the design development process;
- Provides for competition up to the point where the Guaranteed Maximum Price is largely established;
- Meets the delivery timescales.

The points in the report to note are as follows:

- Of the nine companies approached, three: Carillion PLC; Laing O'Rourke; and Balfour Beatty Ltd, indicated that they were sufficiently interested in the project to take part in the consultation process
- Given the size and complexity of this project there is risk of significant abortive costs being incurred by unsuccessful bidders. Two of the three companies who have an interest in the project have estimated the bid cost between £10m-£20m and have indicated that this sum at risk may prevent their participation. This would significantly reduce the competitive tension available to drive innovation and provide value for money.
- In order to enhance the market attractiveness of the project the companies identified a range of options. These included the Health Board underwriting some, if not all, of the bid costs for the unsuccessful bidders or the rapid selection of a single preferred bidder reducing the initial bidder input and therefore the bid costs at risk.
- In developing the revised procurement process, the risks and opportunities of applying different procurement paths were analysed. The key factors are:
    a) Ensuring there is sufficient market interest by reducing the risk to the bidder at the outset thereby achieving value for money through competition. A Target Price Contract and process which reduces the number of bidders to one at the 1st stage with a reasonable level of design requires significantly lower bidder input, and therefore bid costs at risk, than producing a fully detailed design.
    b) The nature of the procurement selected. The benefits and disbenefits of both the restricted and competitive dialogue process were analysed. The competitive dialogue route was considered to provide the degree of dialogue necessary to achieve design innovation, final contract form and financial arrangements to meet the Board's affordability profile.
- The outcome of the procurement analysis therefore proposes that the most appropriate procurement method to achieve the Board's objectives is a two stage Design and Build process with rapid selection to a single preferred bidder at stage one using the competitive dialogue procedure. At stage two, the preferred bidder develops the detailed design in conjunction with the Board. This requires now to be tested with the TA and PUK, work which will be completed to enable a report to be submitted to Board in October 2008.

## 3.0 CONCLUSION

The Project Team, supported by advisers and other Board Officers, have carried out a robust process to develop, what is proposed as, the most appropriate delivery vehicle for the construction of a New Adult Hospital, New Children's Hospital and Laboratory Facility on the Southern General Hospital Campus.

This is now subject to a final review by newly appointed Technical Advisers and PUK. A report will be submitted to October Board for approval.

## RECOMMENDATION

The Performance Review Group is asked to note the attached report from Ernst and Young which sets out the latest work in developing a procurement method to procure the new hospitals and laboratory developments on the Southern General Hospital site. This proposed method is to be further discussed and tested with the newly appointed Technical Advisers and Partnerships UK (PUK) and will be subject to Board approval at the Board meeting in October 2008.

NHS Greater Glasgow and Clyde
1948-2008 60 years of the NHS

# NEW SOUTH GLASGOW HOSPITALS PROJECT

## AGREEMENT FOR THE APPOINTMENT OF A

## LEAD CONSULTANT and TECHNICAL TEAM

## FOR A PUBLIC FINANCE PROCUREMENT ROUTE

**INVITATION TO TENDER DOCUMENT**

**26th June 2008**

OJEU Ref : 2008 / S 89-121302

A49342285

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| 4.0 | Provision of fees and expenses | Page 27 |
| 5.0 | Definitions | Page 32 |
| 6.0 | Memorandum of Agreement and Fee Proposal | Page 38 |
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| | Signatures of Parties to the Agreement | Page 63 |

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5 questions to be included as part of your response. Page 70

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Departmental relationship drawings Page 86

# 1.0 INTRODUCTION

## 1.1 The Project

NHS Greater Glasgow & Clyde (the Board) require the services of a Lead Consultant and full technical support team to co-ordinate and manage the procurement process for the re-development of the Southern General Hospital campus. The new facilities will include a new 1109 bed Adult Acute Hospital for the south of Glasgow, a new 240 bed Children's Hospital for the West of Scotland and a new Laboratory Project providing Biochemistry, Haematology and city wide mortuary services.

Approval to proceed and develop the project was confirmed on 24th April 2008, by agreement of the Scottish Government that the Board should proceed and develop proposals to Full Business Case (FBC), and confirmed that funding would be provided through public finance. The project budget has been confirmed at £842m and this sum includes works costs, fees, equipment, contingency, VAT and an allowance for inflation to middle 2012. Broken down, this figure equates to a capital build allowance of circa £550m this figure includes fees, equipment and VAT but excludes inflation allowance and contingency.

The Board require to have their FBC completed by 2nd quarter 2010. A start on site is proposed early 3rd quarter 2010 and completion of all works by 4th quarter 2014, although if the procurement process permits, an early start on ground works and sub-structure packages would be advantageous. A more detailed timetable is included within this document in Section 2.7.

## 1.2 Current Position

The Board have received Outline Business Case (OBC) approval from the Scottish Government to proceed and develop detailed proposals prior to Full Business Case for a new Children's Hospital, a new Adult Acute Hospital and new Laboratory Facilities on the site at the Southern General Hospital.

Design and project work undertaken to prepare the OBC was based on the project being procured through the PPP process, but this route proved to be unaffordable and so a public finance solution has been confirmed. The Board have therefore developed a full Public Sector Comparator (PSC) design for OBC purposes, including schedules of accommodation, project cost plan and design drawings at 1:500 (all areas) and 1:200 (10 selected departments). A full Technical Adviser team have been assisting the Board to develop the PSC design and capital cost plan, this work culminating in the preparation of the Design Solution Report in July 2007. The change of procurement route and other issues has resulted in the need to re-advertise the commission.

The Board have secured Outline Planning Consent for the project, conditional on a Section 75 agreement being concluded on transportation issues, there are also around 40 planning conditions a number of which will need to be addressed with the assistance of the Lead Consultant team. The Board are actively pursuing the conclusion of the Section 75 agreement and the final confirmation of planning consent. It is hoped to have this work substantially completed prior to the appointment of the Lead Consultant.

The Board will expect the appointed Lead Consultant team to work with the established project network, including all appointed advisers; all project related documentation, PSC designs and specification, PSC /OBC budgets and programmes developed to date, subject to any changes agreed with the Project Director or their nominee. The Board wish to stress that the design intent of the PSC design is not open for wholesale change. However, the site plan does require to be adapted to meet the requirements of OBC Option 1A this option retains a number of existing buildings not envisaged in OBC Option 1 and will require the architect to revise the site plan, which may also impact on the footprint of the podium. This re planning will be at 1:500.

The Lead Consultant will be appointed by the Board under one appointment to fulfil the following roles from commencement of Stage 1A through to a fully commissioned and operational building based on the stages and tasks listed later in this document: -

- Lead Consultant / Project Management
- Employer's Agent role (construction stage)/Contract Administration
- Architectural Design and Site masterplanning
- Healthcare Planning
- Civil and Structural Engineering
- Building Services Engineering & IT Infrastructure
- Cost Consultant/Quantity Surveying/Lifecycle costing
- CDM Co-ordinator
- Procurement and Construction Management advice.
- Landscape Architect.
- Risk and Value Management advice
- Facilities Management advice (soft and hard FM)

The purpose of this ITT document is to obtain concise responses from parties who have pre-qualified as part of the OJEU process. The cost of preparation of your proposal, and associated documentation is entirely at the discretion of the bidder and bid costs will not be reimbursed.

## 1.3 Background

### 1.3.1 Strategic Context & Direction
### Description of the Organisation – NHS GG&C

NHS Greater Glasgow and Clyde (NHS GG&C) was formed in April 2006 and is Scotland's newest and largest Health Authority. The Board has 44,000 staff serving a total population of 1.2million people, with a total budget of £2.2 billion. The new Health Board joins the urban centres of the former Argyll & Clyde with the former Greater Glasgow, to create NHS Greater Glasgow and Clyde. The organisation provides a comprehensive range of services from community based care (midwives, dental services and various outreach services) to the full range of general hospital services. In addition the organisation hosts some of the most specialised health services in the country, including: cardiothoracic services, the Beatson Oncology Centre, the new West of Scotland Cancer Care Centre, the Institute of Neurological Sciences, transplant services, world-class paediatricians and obstetricians and cardiothoracic services.

There is also an active and dynamic teaching, research and development environment with contributions being made at National, UK and international levels.

### 1.3.2 The Acute Services Strategy

#### Acute Adult Services

Over the last 10 years the Health Board has been developing an acute services strategy to modernise the acute adult health service in Glasgow. The proposals were agreed by the Health Minister, Malcolm Chisholm, in 2002. In brief the strategy is to reduce the number of adult inpatients sites from the current 5 hospital sites to three, two with A&E and trauma facilities and the third providing acute receiving. The A&E and trauma services will be located at the Glasgow Royal Infirmary and the Southern General sites and the acute receiving facility at Gartnavel General. This will involve building a new inpatient hospital on the Southern General site and refurbishment/smaller builds at the Glasgow Royal and Gartnavel General sites.

The Acute Strategy is composed of four distinct phases. New build Ambulatory Care Hospitals are currently in construction at the Victoria Infirmary and Stobhill sites, these are the first stage in Glasgow's Acute Strategy and due for completion in March 2009. When commissioned, the outpatient and day case services will transfer from the existing Stobhill Hospital and Victoria Infirmary into the new Ambulatory Care hospitals. This will effectively leave two Victorian Hospitals operating below capacity with inpatient services only.

The New South Glasgow Hospital project forms the second phase of the acute strategy. This will allow the inpatient services in the Victoria Infirmary to transfer into a new build hospital on the Southern General site thus vacating the Victoria Infirmary site. The new build will also allow inpatient services currently housed in dilapidated buildings on the Southern General site to be relocated into a modern facility. Finally there will be a proportion of the Accident and Emergency and associated beds at the Western Infirmary services transferring into the Southern General new build.

Phase 3 and 4 of the Acute Services Strategy involve smaller builds/refurbishment at the Glasgow Royal Infirmary and Gartnavel General.

### 1.3.3 Children's Services

Hospital services for children in Glasgow are provided by the Royal Children for Sick Children which is sited at Yorkhill and co-located to the Queen Mother's (Maternity) Hospital. The Queen Mother's Hospital is one of three maternity hospitals in Glasgow, the others being located at the Southern General and Glasgow Royal sites. Following a fall in birth rate and difficulties in the sustainability of staffing complement and rotas the Health Board is reducing the number of maternity hospitals to two. The recognised gold standard of care is to achieve triple co-location of children services, maternity and adult acute services. Following a review of options around the future location of the children's services the Minister for Health agreed in 2006 to proposals to re-locate the children's hospital at the Southern General site.

### 1.3.4 Laboratory Services

At present there are laboratory services on each acute site. As part of the Acute Strategy Review a review of laboratory services across Glasgow was undertaken to explore how the service might best support the future reconfigured clinical services. The preferred option is to centralise laboratory services onto two main sites these being the Southern General Hospital site and the Glasgow Royal Infirmary site, the remaining sites would have a laboratory presence for essential services and rapid results only. It is hoped to have the new laboratory build on the Southern General site substantially complete before the new adult and children's build commences on site. The new Laboratory Project will be developed within the same area of land and will be linked by an underground route to the hospitals. The Lead Consultant team will be responsible for the masterplanning of the two projects to ensure the Laboratory Building, the service yard, links to the Mortuary, links to the main Energy Centre and the underground link to the main hospitals are all fully coordinated, and works to provide the service yard are allocated to the most appropriate project .

## 1.4 Project Management Structure

The Board has established a project organisation structure to oversee the implementation of the Acute Services Strategy, including this project. (Appendix A). The Acute Services (ASR) Programme Board will be responsible for the implementation of the Strategy. The Programme Board consists of the Chief Executive, Divisional Managers, Finance Director, Executive Medical and Nursing Directors, Partnership Representation and a Senior Civil Servant.

A Project Director has been appointed who has Executive responsibility for the Implementation Plan. The New South Glasgow Hospitals Executive Group has been established to ensure that all the governance and project milestones are achieved.

The Project Team includes a range of staff from clinical, operational, planning, facilities, finance and estates areas. The Project Team is led by the Project Director and is supported by legal, financial and technical advisors.

A number of groups have been set up to support the project as noted in the following sections, and the Lead Consultant will be expected to attend and participate in the works of the Executive Board, the Procurement and Finance Group and the Site Programme Co-coordinating Group.

### 1.4.1 New South Glasgow Hospitals Executive Board

The New South Glasgow Hospitals Executive Board will have delegated authority to make executive decisions on critical points in the project process. The role of the Board will be to oversee the overall process of the project and to co-ordinate the work streams of the two groups. The Board will meet bi-monthly or more frequently depending upon the stage of the project and will report into the ASR Programme Board.

### 1.4.2 ASR Systems Redesign Group

The development of the New South Glasgow Hospitals will result in a number of radical changes not just in reconfiguring clinical services across Glasgow but also in working practices and the way in which patients receive their treatment. A comprehensive and co-ordinated process will be developed to take forward the re-design aspects and work hand in glove with staff, human resources and workforce planning to ensure both staff involvement and that the right number of staff and skills are available to support the new ways of working.

### 1.4.3 Procurement and Finance

Once the model (design and build method) of procurement has been identified and authorisation to proceed has been given there will be a requirement for specialist skills in relation to taking the procurement process forward. Skills will also be required with regard to the funding, affordability and value for money aspects. A high level of risk management and scrutiny will be needed to assure the Health Board of appropriate delivery.

### 1.4.4 Site Programme Co-ordinating Group

There is a very substantial construction programme planned over the next six years at the Southern General Hospital. The site will continue to operate during the full construction programme and therefore there is a requirement to establish a group to monitor, co-ordinate and control all on-site works. Refer Appendix A for further detail on roles, remit and membership of these groups.

### 1.4.5 Gateway Review Process

The project will be subject to regular review as part of the Government's Gateway process with key milestone reviews at Gateways 0, 2, 3, 4 and 5, the Lead Consultant team will be expected to participate and assist the Board to a successful conclusion at all these stages.

The Board have already completed Gateway 1 (January 2008), and a team of 4 reviewers have been selected to overview the project at various stages through to conclusion of Gateway 5.

## 1.5 Procurement Strategy

In parallel with the review and approval of the OBC on 24th April 2008, the Board have been considering a range of procurement options to deliver the main new build project. Subject to Government Gateway approval, the Board have selected a Design and Build contract form, utilising a two stage tender process as it best meets the Board's key requirements on programme, cost, quality and risk transfer.

The Board have decided to batch the new build Laboratory project within the scope of service of this appointment, in other words the appointed Lead Consultant team will manage the delivery of the Adult Acute Hospital, the New Children's Hospital and the new Laboratory Project. The Board believe that these large and complex projects are best managed by a single Lead Consultant team, albeit the delivery of the projects may differ. The Lead Consultants commission will therefore be sub-divided into two projects as below; the projects have been sub-divided due to programme and cashflow requirements.

- New Adult Acute Hospital & New Children's Hospital – Two stage Design & Build.
- New Laboratory Project – Single stage Design & Build.

In tandem with the first stage of the process to select and appoint a Lead Consultant, the Board have been sounding out the market in terms of the appetite to compete in a two stage D&B process, and initial feedback is positive. Concern has been raised at the potential high bid cost to D&B consortia relative to the number of parties being asked to develop fully worked up bids. This has raised questions on reimbursement of bid costs, if say two teams were taken to a level of detail expected for example at financial close for a PPP project.

The Board have considered how best to progress the selection and appointment of the lead Consultant while the final confirmation of the procurement route remains under discussion. It should be noted that the main item to be resolved is whether the two stage process is down selected on a 3-2-1 or 3-1 basis, each route will generate its own particular levels of input during the second stage of design and tender. To simplify this process, the Board have prepared this document on a first stage engagement with 3 D&B consortia, with down selection to one and this team would then work up detailed proposals with the Board on an open book basis.

The Lead Consultant, once appointed will be required to advise the Board on structuring the selected tender process, and advise the Board on how to maximise competition whilst securing the maximum level of market interest. A key feature will also be to advise the Board on how best to incetivise the D&B team, to ensure best value for money is achieved and how to maintain true competition during the package procurement stages.

## 1.6 Scope of Appointment

The scope of the Lead Consultant and technical team service will be to take the project from OBC approval, supported by a PSC design and cost plan through, design and brief development, development of full Employer's Requirements documentation, full two stage tender process as described in Section 6 to include package tender process and negotiations, agree GMP, construction phase, commissioning, into full operation.

The Board will expect the appointed Lead Consultant team to work with the established project network, including all appointed advisers; all project related documentation, designs and specification, budgets and programmes developed to date as part of the OBC/PSC stage, subject to any changes agreed with the Project Director or their nominee.

The Board will not novate the role of the Lead Consultant, this applies to both projects. Further it is confirmed that the support design roles (architect, M&E Engineer, C&S Engineer), within the Lead Consultant team will not be novated as part of the main Adult Acute and Children's Hospitals, but maybe considered as part of the new build Laboratory Project, post RIBA Stage E. Team submissions should be structured as per the schedules and information in Section 6.0, which at present do not anticipate any novation on either project. The team role is that of developing and managing the process, and advising the Board on all technical aspects related to the procurement of the new builds.

The key stages are currently seen as follows, for more detail refer Section 6.0: -

Two Stage D&B

| Project Stage | Key Tasks (Refer Section 6.0 for full detail on expected scope of service). |
|---|---|
| Stage 1A | Review existing project data. Design development of PSC departmental relationship drawings and site masterplan to conclude revised masterplan and full departmental relationship drawings with the Board. Preparation of full Employer's Requirements (ER) documentation (detailed elsewhere). Manage selection of D&B consortia to include OJEU, Information Memorandum, PQQ and design and management of the evaluation process through to selection of maximum 3 bidders. Design the bid evaluation process, confirm bid deliverables and include in ER document. Package and issue all ER documentation, drawings and specifications. Manage the undertaking of site investigation and other ground surveys relative to the full development site for the new projects. Participate in Gateway 2 review. |

| | |
|---|---|
| Stage 1B | Manage design and tender development process with 3 bidders, manage interface with user groups, structured around a series of open days (2 or 3) throughout this stage. Manage the bid evaluation process through a series of internal meetings and presentations of bid proposals. Prepare full report and recommendation for Board on preferred bidder for approval, post confirmation of all deliverables being met by preferred bidder, the selection will be made on a commercial, financial and qualitative basis. During this stage the Lead Consultant team would develop further detailed information to supplement the ER's for the next stage if required. |
| Stage 2 | Design and bid development with the preferred contractor team to develop full Contractors Proposals (CP's). This process is envisaged as being 'open book', perhaps using NEC3 contract form with aspects such as prelims, contractor's overheads and profits, pre-construction fees etc., all being agreed prior to conclusion of Stage 1B, indeed being part of the evaluation and selection criteria for that stage. Manage the detailed design development of both projects with NHS user groups through a formal approval and sign off process, developed and managed by the Lead Consultant. Test the CP's against the ER's and negotiate and manage the process to a conclusion with the submission of a formal report to the Board to include as a minimum - design and specification compliance, cost and agreement on GMP, programme, site organisation, risk transfer and lifecycle issues. Assist as required to help the bidder apply and secure detailed planning consent, although securing consent will be a bidder risk. Assist with the preparation, submission and negotiation of the Full Business Case and eventual contract close with bidder post FBC approval. Participate in Gateway 3 review. |
| Stage 3 | Construction works – full Employer's Agent role to manage the build process on site and confirm compliance with ER's or Contractors Proposals (whatever is agreed at contract) over 4 year period. Develop and manage a process to record change, cost control and risk throughout the build phase. Manage the work and direct site inspectorate team on site. Manage interface with operational site at SGH and any other building projects ongoing on site. Manage and co-ordinate the ongoing design development process. Equipping Group 1& 2. Participate in Gateway 4 review. Technical commissioning and hand-over at practical completion. |
| Stage 4 | Operational commissioning, equipping Group 3 & 4, orientation of staff, staff and service relocation to new facilities transitional operation. |
| Stage 5 | Post project evaluation and defect liability period. |

For the new Laboratory project, the single stage D&B process will broadly follow the format above with exception that the initial stage with multiple bidders may last longer and the final selection of the design/cost proposal and D&B team will be made prior to securing detailed planning consent, confirmation of final price and agree contract will be post receipt of planning consent, post this FBC / GMP will need agreement prior to signature and final award of contract.

The Board will expect the appointed Lead Consultant team to work with the established project network, including all appointed advisers; all project related documentation, PSC designs and specification, PSC /OBC budgets and programmes developed to date, subject to any changes agreed with the Project Director or their nominee.

### 1.7 Tendering Procedure

It is the Board's intention to appoint a single Lead Consultant team, with this person in a managing role for all consultancy work undertaken by the team. All fee, PII arrangements will be channelled through this lead company. It will be the Lead Consultant's responsibility to prepare a comprehensive team response to this enquiry document, including costs for each sub-consultant member of the team by stage, as well as a schedule of hourly rates for all participants. The bid should therefore reflect a full team submission by work stage and by discipline. The team must also include as part of their submission in Section 6.7 a narrative of the tasks and activities which they understand necessary to undertake and successfully complete this commission by work stage.

These documents are issued as a composite set to the Lead Consultant of each team short-listed and invited to prepare a second stage ITT submission. It is the Lead Consultant's responsibility to divide up and distribute the relevant information to each member of the team, to enable a comprehensive response to be made.
Each team response and fee offer should be formatted into a single co-ordinated document. The Board require 1 paper copy and 1 electronic copy of the teams submission returned to the address in Section 1.9 by the date and time noted.

The Board wish to procure the new Laboratory project as part of this commission, although as a separate contract, and by a single stage D&B process. Tenders are asked to amplify their bids and provide a clear fee and team structure for both projects as listed below;

- A bid for the New Adult and Children's Hospital Project – two stage D&B process.
- A bid for the New Laboratory Project – single stage D&B process.

Both bids should be based on the general information in earlier sections and Section 6.0 on scop,e timetable and budget cost. For evaluation purposes the two financial fee bids will be added together and taken as a composite bid.

The following information should be included as part of your bid;

- Clear diagram of team structure, including proposed leads for individual projects and CV's for each senior team member who will deliver the services to the Board, including membership of professional organisations and relevant project experience. In other words a clear organisational diagram of how your team will be structured between the new Adult, Children's and new Laboratory projects.
- Schedules of Lump Sum Fee Offer – for all disciplines by work stage (Section 6.0).
    - Lumps sum fee offer for new Adult and Children's Hospital Project.
    - Lump sum fee offer for new Laboratory Project.
- Schedule of Hourly Rates.
- Certificate of Bona Fide Tender – signed by Partner/Director's for the Project Manager.
- Detailed methodology and understanding of tasks and actions, which are anticipated throughout the period of each work stage based on the schedules included in Section 6. Note these schedules are included as a guide and you may wish to expand on, or include additional tasks within your fee proposal if you consider necessary or indeed beneficial to the project.
- Detailed comment on enclosed project timetable, with elaboration on tasks/timescale.

Fee offers received after the date and time specified in the covering letter will be rejected, in absence of any exceptional circumstances.

Bidders maybe treated as ineligible and maybe excluded from the evaluation of tenders on the grounds listed in Regulation 23, the Public Contracts (Scotland) Regulations 2006.

## 1.8 Points of Clarification

Prospective responders can raise points of clarification prior to the submission date for responses by contacting;

Peter Moir
Head of Major Projects
Project Offices
1 Jubilee Court
Hillington
Glasgow G52 4LB
Tel: [redacted]
Email: [redacted] If unavailable please contact Mr Andy Bell at same address.

The Board are available to meet and discuss the project during the ITT bid process and arrangements can be made by contacting the individuals in 1.8 above.

## 1.9 Tender Return

Your completed tender package with all related supporting information should be delivered by 12 noon on Wednesday 6th August 2008 to;

Mr Gordon Beattie
Head of Procurement
NHS Greater Glasgow & Clyde
1st Floor, Walton Building Annexe
Glasgow Royal Infirmary
84 Castle Street
Glasgow G4 0SF.

All documents must be sealed in envelopes provided using labels supplied (Appendix E). No package should bear on the outside the name or mark by which a team can be identified.

## 1.10 Evaluation of Tender

Respondents must complete all the lump sum and time charge fee schedules in Section 6.0 and return these with the Statement of Bona Fide Tender and the offer qualification form. If you have no qualifications please confirm by stating 'no qualifications' on this form and return as part of your submission.

In overall terms, submissions will be evaluated on the following criteria, the numbers in brackets against criteria provides a guide range to the weighting, and the total will be 100.

Fee Proposal - the teams fee proposals both lump sum and time charge rates. (60-65%)

Methodology - A detailed response by way of written understanding and description of the roles responsibilities of the team and named input by key individuals against each of the projects, and the tasks to be undertaken and deliverables to be provided by the team. This narrative should be provided for each stage of the process and respondents must ensure that their lump sum fee covers all aspects within the narrative. (15-20%)

Programme – prepare a programme as part of your submission to cover all stages assuming your appointment commences 1st September 2008. Provide commentary on the Board's indicative timeline in Section 2.4, noting areas which you consider challenging, and what steps could be taken to ensure the key date for FBC can be met. (10-15%)

Sustainability - Response to the question set on sustainability in Appendix B . (3-5%)

Note: respondents are asked to re-affirm the names of key staff within their team, and confirm their availability at short notice. The Board are aware that key business development managers and business unit directors are listed in roles requiring considerable time input on the project and wish to clarify and confirm that these individuals will indeed deliver the services to the Board on a daily basis. The teams appointment will require clarity on this issue.

Respondents must also identify any elements of the 'Scope of Advice Required' that they are unable to provide in full, and detail any sub-contracting proposals, clearly stating business relationship for this commission.

The Board may wish to interview up to 3 teams and respondents attending for interview will be invited to give a short presentation during their interview (note a provisional date has been set for 18th August). The presentation should focus on your past experience, the individuals involved, approach, methodology and benefits your company and/or team will bring to the procurement of this project and your teams understanding of a two-stage Design & Build procurement process.

Prior to your interview the Board can make available for teams to review, the documents prepared during Stage 1the OBC/PSC stage of the process. These documents include schedules of accommodation; PSC design; capital costs and associated campus and town planning documentation. Again arrangements can be made by contacting the individuals noted in 1.8.

The Board is not obliged to accept the lowest tender. The Lead Consultant's commission will be awarded on the basis of the most economically advantageous offer, taking account of price, technical merit, quality and overall value for money.

## 2.0 Scheme Particulars

### Scope of appointment / scheme

### 2.1 Location:

Southern General Hospital,
1345 Govan Rd.
Glasgow G51 4TF

### 2.2 General description:

The services are required to assist the Board to develop a full brief, tender and all Employer's Requirements documentation to enable engagement in a public finance procurement for the New South Glasgow Hospital Project, to provide the hospital facilities as listed below. The service is to include the management of the Building Contract with a D&B consortia, through to the successful completion of the works, commissioning and equipping, transfer and occupation.

Key elements of the project are (for information);

- Development of an integrated adult acute and children's hospital proving the full range of acute health services.
- Development of a new Laboratory facility including Mortuary and Post-Mortem Services, Biochemistry, Haematology and Blood Transfusion.
- Provision of a rooftop helipad.
- Possible provision of non-clinical services such as Hard FM services to the new facilities by the D&B contractor for an initial 3-5 year period.
- The supply and installation of Group 1 equipment and location and/or fitting of Group 2 equipment supplied by the Board.
- Information Management and Technology (IM&T) – Out with this project, the Board is procuring software and end-use hardware as part of a separate IM&T project.

The Board requires the provision of integrated facilities that are readily adaptable to changing clinical practice and makes the best use of new technologies. The functional content of the project is envisaged to include the following new build accommodation, note there will be some flexibility around the content noted below as the scope of the scheme is further developed during Stage 1A.

### 2.3 The New South Glasgow Hospital - Adult Acute

1109 in-patient beds and 12 bed medical day unit planned within the New South build.

- In Patient Accommodation

435 surgical beds (gen. Surgery, orthopaedics, urology, vascular, ENT, renal); 571 medical beds. ITU/HDU/CCU – 77 beds total. Acute Stroke – 26 beds

- Out Patient Accommodation

Full range of General outpatient clinics including, among others, diabetic unit, respiratory, haematology, urology etc.

- Day Services

12 medical day bed area; 30 stationed dialysis unit

- Treatment & Diagnostic Services

Accident & Emergency, 20 operating theatres, imaging, Endoscopy and rehabilitation.

- Clinical Support Services

Pharmacy dispensary, medical physics, medical illustration. (laboratory services linked to hospital by underground route and pneumatic tube system, aseptic unit within the children's hospital.)

- Non Clinical Support Services

Main entrance, medical records, administration, chaplaincy, social work, staff changing, switchboard, estates, facilities, security, catering, portering, domestic, management and energy centre.

## 2.4 New Children's Hospital – Acute

There are circa 240 beds planned within the new build. About 20% of the beds will be for day patents and the rest inpatients. The hospital will provide DGH services, tertiary and some national services.

Outpatient Accommodation

Full range of Children's outpatient clinics including audiology, general paediatrics, orthopaedics, ENT etc

Day Services

Circa 10 medical day beds; 4 dialysis stations and circa 25 day surgery beds.

Treatment & Diagnostic

Accident and Emergency, minor injuries, Imaging, 7 theatres, rehabilitation

Clinical Support Services

Aseptic unit, pharmacy, medical physics, medical illustration

Non Clinical Support Services

Facilities, ancillary services, administration, spiritual services, medical records, staff change, staff dining.

## 2.5 New Laboratory Building

This build will be one of two major Laboratory sites in Glasgow. The services planned to be delivered from the new Laboratory build at Southern General Hospital are as follows: Biochemistry, Haematology, Blood Transfusion, mortuary and post mortem services. It is worth noting that the mortuary and post mortem facilities will include the re-provision of the Glasgow City mortuary which also provides forensic services for the City of Glasgow.

The Board propose to procure the new laboratory project through a single stage D&B process. The Lead Consultant team will be responsible for developing an exemplar design to 1:200 with user groups for inclusion in a full set of Employers Requirements documentation. The Board will require a separate design team from within the Lead Consultant's team to develop these proposals and provide a full Employer's Agent role during construction phase.

The current planned floor areas are as follows; Haematology 1,800 sq.m, Biochemistry 1,900 sq.m, Mortuary and City Mortuary 1,500 sq.m.

The current timetable for the new Laboratory Block is as follows;

| Milestone/Process | Target Date |
|---|---|
| Appoint Lead Consultant | 1 Sept 2008 |
| User group meetings, brief and design development | Sept / Nov2008 |
| Further Design Development | Dec 2008 / Jan 2009 |
| Prepare Employers Requirements documentation | Oct 2008 / Jan 2009 |
| OJEU – D&B consortia | Nov / Dec 2008 |
| Issue ER's and Tender | February 2009 |
| Tender period | Feb /May 2009 |
| Evaluation | June 2009 |
| Construction - start | July 2009 |
| Construction - complete | Sept 2010 |
| Commission | Oct/Nov 2010 |
| Operational | Dec 2010 |

## 2.6 New Build Floor Areas

As a guide to the extent of the build proposals, the current gross internal floor area for the new build proposals are noted below; these figures include allowances for departmental circulation and building wide communications. Plans also include a remote Energy Centre and Service yard with sub-terranian link to the basement of the new Adult and Children's Hospital.

| | |
|---|---|
| Adult Acute Hospital | 100,624 sq.m |
| Children's Hospital | 33,007 sq.m |
| Laboratory Facility | 5,200 sq.m |
| **Total** | 138,831 sq.m |

The redevelopment of the campus and clinical services at the Southern General Hospital will most likely be undertaken through a multi phase programme of refurbishment, decant, demolition and new build over a works period of at least 4-5 years. The Board are currently initiating a programme of enabling work over the next 2 years to establish a un-encumbered site for the new hospital development. These works involve the relocation of hospital services, diversion of main hospital M&E services, demolition of redundant buildings and general site clearance and preparation works. These enabling works will be funded from the Board's ordinary capital programme. The Lead Consultant will be required to co-ordinate with design teams delivering these projects to ensure all works are sequenced to meet the desired start date on site of Summer 2010.

## 2.7 Project Target dates

The timetable below indicates the Board's indicative timetable for the procurement. Provisional dates for a two stage D&B process have been included for information only at this stage.

| Milestone/Process | Target Date |
|---|---|
| Publication of OJEU Notice | 6th May 2008 |
| Deadline for receipt of requests to participate/submission of responses to the Pre-Qualification Questionnaire (PQQ) | 5th June 2008 |
| Issue of Invitation to Tender (ITT) Documentation to selected Applicants | 19th June 2008 |
| Deadline for submission of response to ITT | 31st July 2008 |
| Evaluation of ITT Submissions | 12th August 2008 |
| Appointment of Technical Adviser | 22nd August 2008 |
| Brief Development / Masterplan | September-November 2008 |
| Employers Requirements - Stage 1 | September- December 2008 |
| OJEU Construction Teams | October – Dec 2008 |
| Stage 1 Tender Period | January-May 2009 |
| Stage 1 Evaluation – Selection Preferred Bidder | June 2009 |
| Stage 2 Tender Development - Planning application | July 2009 |
| Stage 2 Evaluation | April 2010 |
| Negotiate GMP, FBC and Contract Close | July 2010 |
| Phase 1 Complete – New Children's Hospital | Ist qtr 2013 |
| Phase 2 Complete – New Adult Acute Hospital | 3rd qtr 2014 |
| Commissioning | 4-5 months |
| 12 Months Defects Period – Acute Hospital | 3rd qtr 2015 |

## 2.8 Estimated cost

The current estimated capital cost of the new Adult Acute, Children's Hospital and Laboratory project as of April 2008 is c. £550 million, this cost includes equipment, VAT, and fees but excludes inflation to mid build and contingencies. The split between the projects of this cost is approximately New Adult and Children's Hospital - £530m; new Laboratory Project £21m. Teams may wish take account of these figures for fee tendering purposes.

## 2.9 Programme Sponsor

Ms Helen Byrne
Director of Acute Services Strategy, Implementation and Planning
NHS Greater Glasgow & Clyde
Acute Services Strategy Implementation and Planning Directorate
Management Building
1345 Govan Road
Glasgow G51 4TF

## 2.10 Project Director

Mr Alan Seabourne
Project Director - New South Glasgow Hospitals Project
Project Offices
1 Jubilee Court, Hillington
Glasgow, G52 4LB
[redacted]

## 2.11 Board Technical Lead

Mr Peter Moir
Head of Major Projects
Project Offices
1 Jubilee Court, Hillington
Glasgow, G52 4LB
[redacted]

## 2.12 Lead Consultant Team

It is the Board's intention to appoint the following disciplines as part of the Lead Consultant team. The team will be lead by the Lead Consultant/Project Manager; a single appointment will be made with this company for the whole team. Billing on behalf of the whole team will undertaken by the Lead Consultant, in short fee notes will be from single source and not individual team members.

- Lead Consultant / Project Management
- Employer's Agent role (construction stage)/Contract Administration
- Architectural Design and Site Masterplanning
- Healthcare Planning
- Civil and Structural Engineering
- Building Services Engineering & IT Infrastructure
- Cost Consultant/Quantity Surveying/Lifecycle costing
- CDM Co-ordinator
- Risk and Value Management advice
- Facilities Management advice (soft and hard FM)
- Procurement and Construction Management Advice
- Landscape Architect

The Board will expect the appointed Lead Consultant to work with the established project network, including all appointed advisers; all project related documentation, designs and specification, budgets and programmes developed to date as part of Stage 1, subject to any changes agreed with the Project Director or their nominee.

The Board have existing Consultancy agreements for the supply the following services, these appointments have been made and do not form part of this commission. The Lead Consultant team will be expected to work with these advisers, and acceptance of the commission will be conditional on this.

- Legal – Shepherd & Wedderburn LLP.
- Financial – Ernst & Young LLP.
- Town Planning Consultant – Keppie Planning.
- Enviromental Consultant– Ironside Farrar.
- Transportation Consultant – JMP Consultants Ltd.
- The Carbon Trust and sub-consultant.

## 2.13 Contract Strategy

The following contract strategy is currently proposed by the Board, this is subject to Government Gateway review and approval.

- New Adult Acute and Children's Hospital Project – Two stage Design & Build.
- New Laboratory Project – Single stage Design & Build

## 2.14 Site Inspection Staff

It is the Board's intention to make direct appointments for the under-noted roles, some will be made for the duration of the works contract others for particular stages, the appointments will be full-time. The Lead Consultant team will be required to structure and manage the selection and appointment process for all site inspection staff on behalf of the Board, although the contractual and payment arrangements will be between the Board and the respective companies.

- Building Clerk of Works (4)
- M&E Clerk of Works (3)
- Site Engineer (2) – sub-structure, drainage, groundworks and frame.

The Lead Consultant will manage and direct the work of the site inspectorate staff. Site Inspectorate staff will be based on site for the duration of the works contract.

## 2.15 Details of documentation

The client requires two paper copies of all documents, reports, budgets, programmes, drawings, maps, 3-D graphics and animations, photographs and other documents or reports produced by the consultant. In addition, all the above must be provided in electronic format as noted below;

| | |
|---|---|
| Cost plan | MS Excel at all stages |
| Text | MS Word, MS Excel, MS Access. |
| Programmes | MS Project. |
| Drawings | Autocad at all stages. |
| 3D / Animations | Various. |

Working documents will require to be in base software programme format e.g. not Adobe Acrobat. Consultants may use Adobe Acrobat for working use and for email while providing final versions of documents, drawings etc., in base software as noted above.

## 2.16 Client's procedures / requirements

- NHS GG&C PSC / OBC documentation and OBC Stage Design Report as prepared by others, including all associated drawings, specifications and project costs.
- Scottish Capital Investment Manual (SCIM).
- SEHD – Procode V 2.0
- The Board's Design Action Plan
- Health Facilities Scotland – SHPN and/or NHS HBN and HTM's.
- NHS Estates and others guidance documents such as AEDET, NHS NEAT, or BREEAM.
- Government Gateway reviews will be undertaken at various stages (see separate section).
- OGC Guidance on Competitive Dialogue and general project delivery.(use of CD unlikely).
- FBC

## 2.17 OGC Gateway Reviews

The project will be subject to external review by a Gateway Review Panel at various stages of the project and the Lead Consultant team will be expected to assist the Board's Project Team at the following stages;

Gateway Review 0 – Strategy assessment (2 reviews)
Gateway Review 2 – Procurement strategy.
Gateway Review 3 – Investment Decision.
Gateway Review 4 – Readiness for Service.
Gateway Review 5 – Benefits Realisation.

Input from the Lead Consultant will be focussed to technical elements associated with each review, and cover matters such as programme, cost management, procurement strategy and structure, project specification and buildability. Each Gateway Review will last approximately 2- 3 days and it is likely that the Lead Consultant will need to prepare a status report on technical elements and be available for interview for 2-3 hours.

## 2.18 Meetings

The Lead Consultant team will be required to attend regular progress and associated briefing meetings at each stage of the project, which are typical for this form of procurement and consultancy service. These meetings will generally be held within one of the Board's project offices within the Glasgow conurbation, costs for attendance at all meetings should be included within your capped lump sum fee proposal.

During key stages of the procurement process the Board will requires some or all of the TA team to be based in the ASR Project Offices at Hillington, to ensure good continuity and communication is maintained at critical times of the programme. During the construction phase, the Board's Project Team will have a presence within the site compound, and suitable project offices accommodation will be provided for key members of the Lead Consultant team as well.

The Lead Consultant will require to be suitably represented at all meetings throughout the duration of the project. Regular meetings will be held throughout the commission, some of the key meetings will be;

- The Lead Consultant will meet at least once a week with the Project Director or their nominee throughout all stages of the project from commencement to completion of the commission.
- Open days and presentations during bidder selection Stage 1A.

- 2-3 meetings a week throughout Stage 1A to develop the Employer's Requirements documentation, note this may run into multiple daily meetings at certain stages.
- Weekly meetings throughout Stage 1A to develop and adapt the current PSC design solution with the Board's Project Team and departmental user groups. This will involve the further development of the existing PSC departmental relationship drawings(1:500) as well as the site master plan (1:500) to reflect changes to the Board's phasing of the overall re-development proposals. (See section 6.0)
- Regular meetings during Stage 1B bid process to suit number of bidders (3) to ensure adequately briefed, for design and bid development and for commercial and financial negotiations.
- Regular meetings during Stage 2 process during bid and design development. Again meetings will frequently be held with Project Team, user groups to assist design development with bidder design team, for commercial meetings with bid team
- Regular meetings during Stage 2 preferred bidder stage, and evaluation process to include weekly bidder meetings up to contract close.
- Weekly in house bid team meeting up to contract close.
- Provide technical input, review and comment and take active involvement in the room layout review and approval process both before and after contract close. Note, room layout drawings will be developed for all room types and variants on a room type.
- Monthly Project Executive and Procurement & Finance meetings for duration of commission, including regular reporting and progress update reports for these meetings.
- Monthly project progress/technical meetings during construction & commissioning phase and one site meeting per month.
- Bi-weekly for 3 months then weekly commissioning team meetings for 12 months prior to completion.
- User consultation/design development meetings, at least weekly during Stage 1 & 2.

The meetings listed above are for guidance only and the team should make their own judgement on the type and frequency of meetings to deliver the commission including attendance. This should be confirmed as part of your submission in the response on methodology, possibly tabulated.

Meetings with Planners, Roads Department, Local Authority Flood prevention, SEPA, Scottish Water and Fire Brigade as well as NHS Fire Officer, Health Protection Agency . With the exception of meetings with the Planning Authority, meetings with these individuals should be infrequent.

The team may also be called up to support the Board and Project Team at public presentations out with normal working hours, this should be an infrequent occurrence.

Meetings with the Hospital Manager and Operational Estates staff to confirm operational issues and co-ordinate with site infrastructure.

Presentations to a number of internal stakeholders i.e. Board Members, Clinical Groups, etc.

### 2.19 Continuity with other projects and site operations

The team will be responsible for ensuring the maintenance and safe operation of the hospital site in respect of the various projects they are managing, as well as full co-ordination with any associated works contracts. The team will be responsible for planning and programming of any associated works to maintain access to all areas. All works programmes must be fully consulted with the Project Director or their nominee and approved by same.

### 2.20 Post Project Evaluation (PPE)

The team will actively assist the Board to develop and undertake the PPE process throughout the life of the project, and assist in the preparation and completion of this documentation no later than 9 months post occupation of the new facilities.

## 2.21 Further Development of the Board's OBC/PSC Design Exemplar

As stated in Section 1.0 the Board have developed a PSC design exemplar through the first stage of a PPP procurement strategy. While this strategy has now changed course towards a public finance route, a good deal of the design and information prepared for OBC is still valid.

As part of the development of the OBC the Board looked at alternative options to re-use some of the existing buildings on the campus for administration and support functions, this was driven by capex cost pressures, although these building may eventually be replaced by new build's at a later date.

The PSC design therefore requires to be revised and updated before it can be used as the design exemplar and form part of the Employers Requirements documentation. Copies of site plans for Option 1 and Option1A (Preferred option) are included in Appendix G, Option 1A will require the re-design of some of the roadways to the main frontage of the planned new hospitals, with resultant impact on the podium footprint. The location of the new Laboratory Project and the design and layout of the Service yard and Energy Centre all require further work before the design exemplar is complete. This work is likely to take 4-5 months from commencement up to the issue of the Stage 1 Employer's Requirements tender, the Board have decided to provide Stage 1 bidders with an exemplar design on which to develop their bid proposals.

## 2.22 Masterplan

In drafting the conditional planning report for Committee, Glasgow City Council Planners have made a condition of the first reserved matters application on campus that……..

'a finalised masterplan which re-affirms an overall vision, set within a clear design and development framework, reflecting the strategic design guidance on built form and landscape contained in the South Glasgow Hospitals Campus Development Plan, April 2007 shall be submitted and agreed in writing by the Planning Authority. The submission shall include (i) an audit of the changes between the finalised masterplan and the indicative Campus Plan ref 05017-02-100 Development Option C; identified in the Campus Development Plan and (ii) an assessment of the extent to which the finalised masterplan accords with the Environmental Statement (ES) submitted as part of the outline planning application. Thereafter the Council will determine whether the finalised masterplan accords with the outline consent and whether a reserved matters/full planning application accompanied by an EA is required.

The Board will therefore require the site plan to be updated to incorporate the retention of the Surgical Blocks and re-routing of the main entrance road, and Fastlink routes. This reflects the change from Option 1 to Option 1A referred to above and as indicated on drawings included within Appendix G. For the avoidance of doubt, the Lead Consultant team will be required to revise the site plan to reflect the layout Option 1A which has never been fully developed to scale 1:500.

On completion the team will need to update the Campus Development Plan, the Board are unclear quite when this should be undertaken, as it will need to reflect the final proposals developed by the preferred bidder as they enter the detailed planning process for their scheme with Glasgow City Council.

## 3.0 Conditions of Appointment

This part describes the conditions, which normally apply to a consultant's appointment. If different or additional conditions apply, they are set out in the Memorandum of Agreement.

### Generally

Note, while reference is made to the 'consultant' throughout this section, this refers to the Project Manager and the technical advisory team as a whole.

### 3.1 Duration of commission

The appointment of the consultant will commence from the date of notification from the Board and the commission, unless suspended or terminated, shall be deemed to be completed on the conclusion of the duties by stage, as set out in Schedule 1 of the Memorandum of Agreement. Note this will be a staged appointment, the Board reserve the right to terminate the commission at the end of each and every stage from 1A - 5. Progression from one stage to another will be subject to written confirmation by the Project Director.

### Objectives and obligations of the consultant

### 3.2 Scope of duties

The duties to be performed by the consultant are those recorded in Section 6.0 Schedule 1 of the Memorandum of Agreement.

### 3.3 Attendance at meetings

In performing the duties recorded in Schedule 1 of the Memorandum of Agreement – 6.12, the consultant shall arrange and attend all meetings necessary to their proper execution, and as a minimum those listed in 2.11.

### 3.4 Additional duties

The consultant is to include within their fee proposal for all normal duties expected for the provision of technical advisory services for a project procured using a two stage design and build process. The Board does not anticipate any additional duties out with normal duties, no advisers should undertake any work which they consider additional to normal duties without the written agreement of the Project Director or their nominee. Any such approval shall indicate the maximum budget for fees and works where appropriate, which should not be exceeded without further approval having been obtained. These shall be conditions precedent to any payment being due from the Board.

### 3.5 Information from the consultant

The consultant shall provide information to the Project Director or their nominee in accordance with the target dates defined in clause 2.4. The consultant will be expected to prepare and actively manage a detailed project programme as per Clause 3.12.

### 3.6 Duty of care

The consultant is to exercise reasonable skill, care and diligence in the discharge of the duties agreed to be performed by him in relation to this commission. Submission of drawings, calculations, specification and other documentation produced by the consultant for comment by the Project Director or their nominee shall not relieve the consultant of this responsibility. If in the performance of his/her duties the consultant has a discretion exercisable as between the client and any other body the consultant shall exercise his/her discretion fairly.

3.7 Co-ordination of consultant's services

Co-ordination and integration of the activities of technical advisory team, however employed, shall be the responsibility of the lead consultant/project manager, as identified in article 6.3 of the Memorandum of Agreement. This includes co-ordination of the works by planning, environmental and transportation consultants.

3.8 Collaboration between consultants

All consultant's shall take account of the role of the lead consultant/project manager and collaborate with other members of the technical advisory team and with other professional consultants employed by the Board and in the Board's employment. Note the team may require to undertake preliminary meetings with the current technical advisory team, to establish work undertaken to date.

3.9 Changes caused by the Project Director or their nominee

The consultant shall provide the Project Director or their nominee with the cost and programme consequences of any material alteration, addition to or omission from the project caused or proposed by the Project Director. This information is to be provided before the Project Director or their nominee takes a final decision.

3.10 Changes not caused by the Project Director or their nominee

The consultant shall not cause to be made any material alteration, addition to or omission from the approved project documentation. The consultant shall promptly inform the Project Director or their nominee in writing of anything that the likely effect of which the consultant believes would be to either vary the project, or to materially change the financial viability, quality or function of the project.

3.11 Progression between work stages

The consultant shall obtain approval in writing from the Project Director or their nominee before proceeding between the work stages described in clause Schedule 1 of the Memorandum of Agreement. Only those stages authorised shall be eligible for payment. The Board reserve the right to terminate the commission at each individual stage.

3.12 Master Programme

The consultant shall undertake to fulfil the current project and maintain a detailed project programme for the commencement of Stage 1A to the conclusion of the Project based on the key stages, breaking down tasks and times for all participants within each stage. The programme will be submitted to the Project Director for review and approval prior to issue. The consultant will be responsible for maintaining the programme and to review on a regular basis with the Project Director or their nominee to monitor progress and the implementation of any corrective action agreed by the Project Director or their nominee. The first draft of the Master Programme will require to be in place by no later than 4th September 2008, and is to be considered as a working document to structure the activities of the Board's Project team, and the Lead Consultant team. This programme will also require to be actively monitored against the progress of the project at all stages.

3.13 Site Inspection

The member consultants of the Lead Consultant Shadow Design Team shall visit the site at regular intervals as appropriate to the stage of construction and generally inspect the works for compliance with the Employer's Requirements documents. This tender should also include for any site staff directly employed by the Lead Consultant team and in direct support of their duties and responsibilities .

The Lead Consultant team will be expected to make frequent visits to site during construction stage, suitable accommodation will be provided, as noted below.

Obligation of the Board

3.14 Duties of the Board

The Board shall nominate a Project Director or their nominee, to enable the proper performance of the Lead Consultant's duties as stated in Schedule 1 of the Memorandum of Agreement.

Construction (Design and Management) Regulations 2007

3.15 The Board shall appoint a CDM Co-ordinator and a Principal Contractor, in accordance with the provision of the Construction (Design and Management) Regulations.

Information from the Board

3.16 The Project Director or their nominee will be responsible for providing information and making such decisions as are necessary for the proper performance of the agreed duties as recorded in Section 6.0 - Schedule 1 of the Memorandum of Agreement, all in accordance with the programme.

Provision of site accommodation and facilities during construction stage

3.17 The Board will be responsible for the provision of suitable site based accommodation for the Lead Consultant team, for the use of consultant's staff associated with the project. The provision of these facilities will be for the duration of the works on site and funded through the construction contract prelims.

Ownership of documents and copyright

Copyright entitlement

3.18 The copyright and all other intellectual property rights in all drawings, documents reports, specifications, pricing documents, calculations and other documents provided by the consultant in connection with the works shall be vested in the Board.

Documentation provided by the client

3.19 Where standard documentation, including drawings, is provided by the client, copyright of such documentation and drawings shall remain vested in the Board.

Client's Licence and Restrictions

3.20a The Board shall have a licence to copy and use such drawings, reports, specifications, pricing documents, calculations and other information to facilitate future extension, alteration, maintenance or repair of the works. The Lead Consultant team shall not be liable for any such use by the Board or its appointee of any drawings or other documents for any purpose other than for which the same were prepared and provided by the consultant.

Consultant's rights of publication

3.20b The consultant shall not communicate with the media or any outside body or publish or display alone or in conjunction with any other person, any articles, photographs or other illustrations relating to the Project without prior written consent from the Project Director or their nominee, which consent shall not be unreasonably withheld.

3.21 Client's use of priced documents

Priced documents may be used by the client for the Project, without prior approval by the Lead Consultant.

3.22 Freedom of Information

The consultant acknowledges that the Board is obliged to comply with the Freedom of Information (Scotland) Act 2002 ("the Act") and any codes of practice applicable from time to time relating to access to public authorities' information. The Consultant shall (and shall procure that each of its Sub-Consultants shall) co-operate, facilitate, support and assist the Board to comply with the Act and any codes of practice applicable from time to time relating to access to public authorities' information including by providing documents and other information relating to the Project within the timescales necessary to allow the Board to comply with its obligations and duties under the Act and the codes of practice.

All information submitted to the Board may need to be disclosed and/or published by the Board. Without prejudice to the foregoing generality, the Board may disclose information in compliance with the Act, (the decisions of the Board in the interpretation thereof shall be final and conclusive in any dispute, difference or question arising in respect of disclosure under its terms), any other law, or, as a consequence of judicial order, or order by any court or tribunal with the authority to order disclosure. Further, the Board may also disclose all information submitted to them to the Scottish or the United Kingdom Parliament or any other office or agency of Her Majesty's Government in Scotland or the United Kingdom, and their servants or agents. When disclosing such information to either the Scottish Parliament or the United Kingdom Parliament it is recognised and agreed by both parties that the Board shall if they see fit disclose such information but are unable to impose any restriction upon the information that they provide to Members of the Scottish Parliament, or Members of the United Kingdom Parliament; such disclosure shall not be treated as a breach of this Agreement.

Professional Indemnity insurance

3.23 Extent of insurance cover

The consultant shall (and shall procure that each of its Sub-Consultants shall) in respect of their services, obligations and liabilities arising out of this Agreement take out and maintain throughout the period, from the date of commencement of their services under this commission, professional indemnity insurance.. The professional indemnity insurance shall be maintained until the expiration of Twelve (12) years, provided that it can be obtained at reasonable market rates, from the date of completion of his commission. The level of indemnity shall be a minimum of £10m GBP per individual team member. The level of professional indemnity insurance for Sub-Consultants (other than Principal Sub-Consultants) shall be a level to agreed by the Board on an individual basis.

PII cover will be required for all aspects of the consultants (and Sub-Consultants) work from date of appointment.

3.24 Professional indemnity insurance certificate

The consultant team shall provide a certificate (including for each of its Sub-Consultants), signed by or on behalf of the insurers on an annual basis and present to the Project Director.

Certification

3.24 Certification generally

The consultant shall provide the Project Director or their nominee with completed certificates when required to do so.

Assignment and sub-contracting

3.25 Assignment by the Lead Consultant

The Lead Consultant shall not assign the whole or part of the benefit or in any way transfer the obligations of this agreement or any part thereof without the written consent of the Board.

3.26 Assignment by the client

The Board reserves the right to assign the whole or any part of the benefits or transfer obligations of the agreement or any part thereof to another Scottish NHS organisation without the consent of the consultant. (Note this covers re-organisation of NHS within lifecycle of project).

3.27 Sub-contracting

The consultant shall not sub-contract any of the duties under this agreement without the written consent of the Project Director or their nominee. The consultant shall be fully responsible and liable for the performance of the services to be performed in Section 6.0 Schedule 1 of the Memorandum of Agreement by any Sub-Consultant notwithstanding that the consent of the Project Director or their nominee has been obtained.

The consultant shall enter into Sub-Consultancy Agreements with each Sub-Consultant engaged by it in connection with the Project in substantially equivalent terms to this Agreement and shall within 14 days of execution of the Sub-Consultancy Agreement deliver 2 certified true copies of such Sub-Consultancy Agreements to the Project Director or their nominee.

The consultant shall comply with its obligations and shall ensure compliance by each Sub-Consultant with their respective obligations in the Sub-Consultancy Agreement(s). The consultant shall not waive any of the Sub-Consultants obligations or liabilities, or release the Sub-Consultant of its obligations or compromise or settle any claims against or from the Sub-Consultant without the prior written consent of the Project Director or their nominee. Such Sub-Consultancy Agreement shall not be assignable by either party to it without the prior written consent of the Project Director or their nominee, (which consent may be granted or withheld at the absolute discretion of the Project Director or their nominee).

The consultant shall be responsible for any fees or expenses claimable by the Sub-Consultants in terms of the Sub-Consultancy Agreement. Such fees and expenses shall be deemed to be included in the consultants remuneration including its fees and expenses in terms of this Agreement. The consultant shall not (i) vary, release or waive in whole or in part any of the obligations of the Sub-Consultants arising out or in connection with the Sub-Consultancy Agreements nor terminate any of the Sub-Consultancy Agreements, or any Sub-Consultant's employment thereunder, in whole or in part without the prior written consent of the Project Director or their nominee; and / or (ii) prejudice any rights or remedies which the Board may have under a collateral warranty granted by a Sub-Consultant.

3.28 Sub-Consultant collateral warranties

The consultant shall within 30 days of appointment of a Sub-Consultant deliver to the Project Director or their nominee collateral warranty agreements (incorporating step-in rights) from each Sub-Consultant (duly executed in a self proving manner by both parties) in favour of the Board in terms of the draft collateral warranty agreement set out in Appendix F.

3.29 Commercial Interests

Any commercial interests held by Partners/Directors/Principals of the Lead Consultant team in firms engaged in manufacturing, contracting or commissioning in building and engineering services, other services or construction, shall be declared to the Project Director prior to conclusion of this agreement, or if appointed without delay should such event occur.

Variation, extension, suspension or termination

3.30 Variation or extension by the client
The Board may vary or extend in time the performance of the whole or part of the agreed duties by giving reasonable notice in writing to the Lead Consultant. In such notice the Project Director or their nominee shall specify the duties affected.

3.31 Suspension or termination by the client
The Board may suspend or terminate the performance of the whole or part of the agreed duties by giving reasonable notice in writing to the consultant. In such notice the Board shall specify the duties affected and the reason for suspension or termination.

3.32 Suspension or termination by the Board shall be permitted in the following circumstances:
- the Board has decided to suspend or terminate the scheme;
- non-performance by the Lead Consultant;
- breach of the provisions of this agreement by the Lead Consultant;
- the Lead Consultant becoming bankrupt or insolvent;
- the Board has decided to terminate the appointment at the conclusion of a stage.

3.33 Resumption of duties
If the Lead Consultant has not been given instruction to resume any work suspended under clauses 3.31 and 3.32 within six months from the date of suspension, the consultant may make written request for such instructions, which must be given in writing. If these have not been received within 30 days of the date of such request the Lead Consultant shall have the right to treat the appointment as terminated.

3.34 Suspension or termination by the Lead Consultant
The Lead Cconsultant may suspend or terminate the performance of the agreed duties on the expiry of reasonable notice given in writing to the Board. In such notice the consultant shall specify the duties affected and the reason for suspension or termination.

3.35 Suspension or termination by the Lead Consultant shall be permitted on the following circumstances:

- the client has not provided an instruction to resume work under clause 3.31;

- breach of the provisions of this agreement by the Board.

3.36 Death or incapacity of the Lead Consultant's key personnel
Should the Lead Consultant through death or incapacity be unable to perform the whole or part of agreed duties, this agreement shall thereby be terminated.

3.37 Delivery of documents
On determination of the performance of the whole or part of the agreed duties and on satisfactory delivery of all drawings, reports, calculations, production information and any other documentation prepared by the Lead Consultant to the Project Director or their nominee, the Lead Consultant shall be paid all due fees and expenses.

Settlement of disputes

3.38 Adjudication
Any difference or dispute arising out of this agreement shall be referred to an adjudicator within 28 days of either party being made aware of the occurrence of the difference or dispute.

3.39 The party that is first made aware of the occurrence of the difference or dispute shall send a notice to the adjudicator with a copy of the notice being sent to the other party. The notice shall specify the matter in dispute and set out all the principal facts and arguments relating to it. Copies of all relevant documentation shall be attached to the notice.

3.40 The party to whom a copy of the notice required under clause 3.39 has been sent shall send representations to the adjudicator within 14 days of receipt of the copy of the notice.

3.41 The adjudicator shall notify his/her decision to the parties within 28 days from the date of receipt of the notice required under clause 3.39. The adjudicator may extend this period by 14 days should he require to do so.

3.42 The decision of the adjudicator on any matter will be binding until completion, suspension or determination of the commission.

3.43 The adjudicator shall not be liable to the parties for breach of duty.

3.44 Payment of the adjudicator's fees shall be shared equally between the parties.

3.45 During the process of adjudication the performance of the agreed duties shall continue as if there were no difference or dispute.

3.46 If the adjudicator resigns or is unable to act, the parties shall choose a new adjudicator jointly.

3.47 If the parties have not chosen a new adjudicator jointly within 28 days of the adjudicator resigning or becoming unable to act, then the President or Vice President of the RIAS shall be requested to nominate a new adjudicator.

## Discrimination and Equal Opportunities

3.48 The consultant shall not, and shall take all reasonable steps to ensure that all employees, workers, agents, or sub-contractors of the consultant shall not, unlawfully discriminate within the meaning and scope of the provisions of the following legislation, or any statutory modifications or re-enactment thereof:

- The Equal Pay Act 1970;
- The Sex Discrimination Act 1975;
- The Race Relations Act 1976;
- The Disability Discrimination Act 1995;
- The Employment Equality (Religion or Belief) Regulations 2003;
- The Employment Equality (Sexual Orientation) Regulations 2003; and
- The Employment Equality (Age) Regulations 2006.

3.49 The consultant shall observe, and shall take all reasonable steps to ensure that all employees, workers, agents, or sub-contractors of the consultant shall observe, any relevant codes of practice (and any amended or replacement codes from time to time in place) in respect of employment issued by any of the following bodies:

- The Commission for Racial Equality;
- The Disability Rights Commission; or
- The Equal Opportunities Commission;

or any replacement codes of practice issued by the Commission for Equality and Human Rights."

## Governing laws

3.50 The application of these conditions shall be governed by the laws of Scotland.

## 4.0 Provision for Fees and Expenses

This part defines fees in relation to the Lead Consultant and describes the methods of payment for the consultant's services and expenses.

### 4.1 Lump Sum Fees

Lump sum fees will be payable on a staged basis as agreed at date of appointment, and as set out in Section 6.5 – 6.7 of the Memorandum of Agreement.

Time charge fees will be based on rates supplied and agreed at appointment, and as set out in Section 6.8 of the Memorandum of Agreement. Time charge work should not be undertaken without the prior written agreement of the Project Director or their nominee.

### Payment for duties

### 4.2 Methods of payment

The fees, except for those on a time-charge basis, shall be deemed to include the provision of all services necessary to perform the duties listed in Section 6.0 Schedule 1 of the Memorandum of Agreement – Scope of Services.

### 4.3 Payment on a percentage basis

No fee proposal will be accepted on a percentage basis.

### 4.4 Payment on a lump sum basis

Where payable on a lump sum basis, the fees shall be calculated for each work stage in accordance with the apportionment recorded in article 6.5 of the Memorandum of Agreement. The lump sum bid will be fixed and capped for each stage in respect of this agreement.

### 4.5 Payment on a time-charge basis

Where payment is on a time-charge basis the scale of charges shall be set out as below. The consultant team will regularise their hourly rates across the team to the effect that all similar grades have the same hourly rates across all respective disciplines in the team.

#### Principals - hourly rates:

a) where a principal is specifically nominated by the Project Director or nominee to perform the duties, the principal's time shall be reimbursed at the rate per hour quoted in article 6.8a of the Memorandum of Agreement, or at such other rate as may be agreed between the Project Director or nominee and the consultant. Hourly rates should include allowance for travel time within the Greater Glasgow conurbation.

b) principals doing work which they consider would normally be done by another member of staff shall be reimbursed at the rate per hour quoted in article 6.8b of the memorandum of agreement or such other rate as may be agreed between the Project Director or nominee and the consultant. For the purposes of this clause, the rate for a principal's time shall be calculated at the rate applicable to a senior professional member of staff in the firm. Hourly rates should include allowance for travel time within the Greater Glasgow conurbation.

4.6 Professional and technical staff - hourly rates

Professional and technical staff time shall be reimbursed at the rate per hour quoted by the consultant in article 6.8b of the Memorandum of Agreement in the categories stated or such other rate as may be agreed between the Project Director or nominee and the consultant. The rate per hour shall include salary, payroll and other costs of employment. Hourly rates should include allowance for travel time within the Greater Glasgow conurbation.

4.7 Travelling time:

Time spent by principals, professional and technical staff on travelling in connection with the duties set out in Schedule 1 of the Memorandum of Agreement shall include allowance for travel time to the Greater Glasgow conurbation from the consultants place of work, or travel within the Glasgow area.

4.8 Supervisory duties:

The supervisory duties of a principal shall be deemed to be included in the rate per hour quoted by the consultant in article 6.8b of the Memorandum of Agreement.

4.9 Secretarial and administrative staff

Time charges rates shall include the cost of providing secretarial staff or staff engaged on general accountancy or administrative staff.

4.10 Consultant's records

The consultant shall maintain records of time spent on services performed on a time-charge basis. The consultant shall make such records available to the Project Director upon request.

4.11 Travelling, subsistence and other expenses

Travelling, subsistence and other expenses shall be deemed to be included within lump sum fee shall be deemed to include the cost of:

a) telex, facsimile and telephone calls;

b) postage and similar delivery charges;

c) travelling, hotel and other similar expenses;

d) all printing, reproduction and purchase of all documentation, drawings, maps, photographs, manuals needed by the consultant and other members of the design team insofar as they are produced by the consultant for the proper performance of the duties relating to this particular commission.

e) the cost of all office equipment and site related protective clothing.

4.12 Additional expenses

The consultant shall be reimbursed for all expenses properly incurred in connection with the following:

a. advertising for tenders and site staff;

b. disbursements required by the client, such as planning and building warrant fees, special surveys by third parties instructed by the client.

c. Travel out with the Greater Glasgow conurbation on business agreed in advance with the Project Director or nominee.

Payment for additional duties

4.14 Fees for additional duties required by the client

For additional duties not normally necessary such as those in connection with prolonged contractor's claims and all similar duties where the Project Director specifically instructs the consultant in writing, the charges shall be an agreed lump sum in accordance with the scale of charges as described in clause 6.8.

Use of computers and/or special equipment

4.15 Computers and/or other special equipment - where no extra fees are payable

Where the consultant in performing his/her duties decides to use a computer and/or other special equipment it shall be at no extra charge to the client unless the Project Director or nominee has specifically requested the development and/or use of special programs.

4.16 Where extra fees are payable

No extra fees will be incurred by the consultant without the prior written agreement of the Project Director or their nominee

Statutory fees

4.17 Payment of statutory fees

The Board shall pay all fees in respect of applications under planning and other statutory requirements.

Suspension, resumption and termination

4.18 Fees on suspension or termination

On suspension or termination of the consultant's appointment under clauses 3.29, 3.30a or 3.34, the consultant shall be entitled to fees for all work completed at the date of suspension or termination.

4.19 Reimbursement during suspension

During any period of suspension the consultant shall be reimbursed by the Board for costs necessarily incurred under the appointment up to the date of resumption or termination, always with prior agreement with the Project Director or their nominee.

4.20 Fees on resumption

On resumption within six months of suspension, previous payments shall be regarded as payments on account towards the total fee.

4.21 Reimbursement on termination by the client

Where the consultant's appointment is terminated by the Board under clause 3.32, the Lead Consultant shall be reimbursed by the Board for costs, excluding loss of profit, necessarily incurred in connection with work up to the date of termination or arising as a result of the termination.

4.22 Fees where the scheme does not proceed beyond Stage 1A

Where the scheme does not proceed beyond Stage 1A, the Lead Consultant shall be paid in accordance with article 6.4 of the memorandum of agreement.

4.23 Reimbursement on termination by the consultant

Where the consultant terminates the appointment under clause 3.32, the client shall be responsible for costs necessarily incurred by the consultant arising as a result of the termination.

Payment of accounts

4.24 Submission of accounts and documentary evidence

Accounts for payment of fees and/or expenses and disbursements shall be submitted to the Project Director or their nominee at the intervals stated in article 6.6 of the Memorandum of Agreement. Interim payments of fees shall be proportionate to the extent to which the commissioned duties have been discharged. Accounts for time-charge based duties and/or travelling, subsistence and other expenses shall be accompanied by documentary evidence of the time and expenses incurred. Such time charges and/or travelling, subsistence and other expenses shall be in respect of the whole of the period since the preceding interim payment.

4.25 Payment of accounts

All sums due from the Board to the Lead Consultant under the agreement shall be paid by the due date, which is 30 days from submission by the Lead Consultant of his account to the Project Director.

Where the Lead Consultant sub-contracts any of the duties forming part of this agreement there shall be included in the conditions of appointment of the sub-contractor a term which requires that payment be made to the sub-contractor within a period not exceeding 30 days from receipt of a fee account by the consultant from the sub-contractor.

The Board shall give notice not later than 5 days after the date on which payment becomes due to the consultant, or would have become due if:-

(a) the Lead Consultant has carried out his obligations under the agreement; and

(b) no set off or abatement was permitted by sequence to any sum claimed to be due under one or more other agreements, specifying the amount of the payment made or proposed to be made and the basis on which the amount was calculated.

The Board shall not withhold payment after its due date for payment of a sum due under the agreement, unless the Board has given notice of intention to withhold payment.

A notice of intention to withhold payment shall specify:

a) the amount proposed to be withheld, and the ground for withholding payment; or

b) if there is more than one ground, each ground and the amount attributable to it; and must be give not later than 7 days before the due date for payment of the relevant sum.

### Value Added Tax - in relation to fees and expenses

All fees and expenses set out in this agreement are exclusive of Value Added Tax, the amount of which, at the rate and in the manner prescribed by law, shall be paid by the Board to the Lead Consultant.

### Other requirements

Respondents must provide a detailed breakdown for individuals who will work on each stage of the project and provide details of their experience. Respondents must identify the hourly charge rate and estimated input hours of each individual. Respondents must also identify an hourly Time Charge for undertaking additional work at the request of the Project Director or their nominee.

Respondents must provide details of how they propose to self audit their time and resource input. The Board must be provided with accurate input time invoices.

# 5 Definitions

This part contains a list of terms used throughout this agreement and in understanding this agreement the following expressions shall have the meaning hereby assigned to them except where the context otherwise requires.

Activity data

Information sheets describing:

a. tasks and activities performed in health buildings and having planning significance;

b. environmental and spatial requirements;

c. the equipment and engineering terminals required.

Ad hoc departments

Health building departments without a Scottish Hospital Planning Note or Health Building Note and associated cost allowance.

Adjudicator

The individual agreed between the consultant and the client to whom all disputes in connection with this agreement shall be referred until completion of the commission.

Agreement

This agreement shall comprise the following parts:

Scheme particulars;

Conditions of appointment;

Provision for fees and expenses;

Specimen certificates;

Definitions;

Memorandum of agreement.

Approved sum

The overall capital sum for construction work on a scheme (including main contract, enabling and preliminary work necessary to bring planned facilities into use) approved by the client NHSiS body at work stage 3B prior to agreeing contract and approved in Full Business Case. This sum will be calculated on the basis of tenders received or prices negotiated. Once the contract is let, the approved sum should not be increased without further fresh approval obtained in accordance with a NHSiS body's standing orders/instructions. The approved sum is exclusive of fluctuations allowable under the contract and Value Added Tax.

Architect

The person, partnership, company or firm appointed by the client to act as the architect for the scheme described in the memorandum of agreement.

Asset register

A record of data on each capital asset or group of capital assets (for example, land, buildings, fixed plant and other assets). The register consists of a number of structured records, each of which holds details of an asset.

Brief

*a)* *Consultant's brief*

A document issued to consultants containing information about the scheme, the client's procedure etc to enable them to understand exactly the extent of the service they are required to provide.

*b)* *Appraisal brief*

A document containing guidelines, instructions and information to act as a basis for the appraisal of options and the outline business case submission at stage 0.

*c)* *Initial brief*

A document prepared at stage 0 or 1, which shall include the following:

I. objectives of the scheme;

II. cost parameters;

III. outline requirements for the scheme including content, accommodation, location and town planning statement;

IV. management control plan;

V. procurement strategy;

VI. full business case submission;

VII. any additional information about the site which has become available since stage 0;

VIII. functional content.

*d)* *Full brief*

A document containing instructions to the design team at stage 2A stating the essential detailed requirements of the client that the scheme must meet, including the following:

confirmation of any changes to the parameters set down in the scheme brief, especially regarding programme, planning operational and cost criteria;

detailed design briefing;

any updating of the initial brief.

*e)* *Commissioning brief*

The operational concomitant to the full brief, containing the essential operational/implementation, programming and budgeting requirements for bringing the scheme into operation.

Budget cost

An estimated cost of the whole of the anticipated capital expenditure and value added tax for the project, including:

a. departmental costs;

b. on-costs;

c. work costs (total of departmental and on-costs);

d. location adjustment;

e. fees;

f. non-work costs;

g. equipment; and

h. contingencies.

Once approved within the full business case submission the total of these costs become the "Approved Budget Cost". In order to estimate the total outturn cost for the project the Scottish Executive Health Department will add an additional amount for inflation.

Building surveyor

The person, partnership, company or firm appointed by the client to act as the building surveyor for the scheme described in the memorandum of agreement.

Capital budget

The capital costs component of the budget cost.

Client

The NHSiS body named in the memorandum of agreement.

Commissioning brief

See "Brief".

Commissioning officer

The individual responsible for the overall management, supervision and co-ordination of commissioning by the client who is accountable to NHSiS body management.

Commissioning team

A team comprising a core of officers responsible to the commissioning officer, and concerned with the management and supervision of commissioning for the client necessary to being the scheme into effective and efficient operation, representatives of those responsible for managing and running services may be co-opted into the commissioning team.

Construction (Design and Management) Regulations

These Regulations enact into UK law the requirements of the EC Temporary or Mobile Construction Sites Directive (92/57/EEC). They place responsibilities for health and safety on all those involved in the process of procuring a building (clients, designers and contractors).

There are certain basic requirements, for example the appointment of a planning supervisor and principal contractor, the preparation and maintenance of a health and safety plan for the project, the preparation and maintenance of a health and safety plan for the life of the building.

Consultant

A person, partnership, company or firm employed by the client in connection with the design and administration of contract(s) for construction work.

Contract administrator

The consultant with particular additional responsibilities for administering the building contract.

Contract Strategy

The method by which the building project is to be achieved, determining:

The relations between the clients, the design team and the consultants team;

The methods of financing and management; and

The form of construction contract.

Contractor

Any person or persons, firm or company under contact to the client to perform work and/or supply goods in connection with the scheme.

Contractor's proposals

That part of the tender documents submitted by a contractor detailing the proposals to meet the employer's requirements.

Contract sum analysis

That part of a design and build tender detailing the breakdown of costs as specified by the client in the employer's requirements.

Co-ordination of design

i. *Of design generally - means:*

The production of a complete and integrated design solution that provides a satisfactory standard of accommodation and accords with the full brief.

ii. *Of user outlets and terminals - means the following activities:*

a. Provision by the architect/building surveyor of drawings, either at 1:50 or appropriate larger scale, showing the location of all fixtures, furniture and equipment together with all user outlets both in plan and in elevation.

b. Provision by the architect/building surveyor of general and, if necessary, particular information relating to the location of all terminals. This will cover unacceptable locations and may be in the form of drawn or written guidance.

c. Where the public health services are designed by the architect/building surveyor or other independent designer, inclusion by the architect/building surveyor under b. above, details of restrictions on all terminals which relate to services.

d. The examination of the drawings supplied by the architect/building surveyor and comments on them by the services engineer. These comments will refer not only to location, but where appropriate will indicate dimensions and support requirements. The comments supplied will be on the basis of preferred solutions.

e. Examination by the architect/building surveyor of the services engineer's comments and relocation of all terminals as indicated or the initiation of discussions with the services engineer to agree and record an acceptable alternative solution as necessary. Issue by the architect/building surveyor of the total final

agreement with the services engineer on co-ordination of user outlets and all terminals so that the latter may complete his designs and undertake the preparation of the production drawings and other documentation.

iii. *Of engineering design - means:*

a. The process of arranging the engineering service works such that each individual item can be physically installed, operated and subsequently maintained.

b. Showing such arrangements on building and engineering services production information so that the objectives of a. can be achieved and to enable detailed structural provision to be made for the engineering works.

iv. *Of the lead consultant and other members of the design team - means:*

a. Co-ordinating and integrating the activities of all the other consultants.

b. The production of a complete and integrated design solution that provides a satisfactory standard of accommodation and accords with the design brief.

Cost analysis

An analysis of the accepted tender using a form of cost analysis for health building work suitable for the requirements of the Scottish Capital Investment Manual.

Cost checking

An estimate of the probable cost of the developing design in comparison with the cost included in the cost plan.

Cost management

A continuous process of cost management throughout the duration of the project or scheme from initial brief to payment of the final certificate to enable expenditure to match specific defined cost targets. It can be considered in two parts:

pre-contract cost management during design/preparation of employer's requirements, the object of which is to obtain a tender within the updated budget costs;

post-contract cost management during execution, the object of which is to obtain a final account within the approved sum (excluding fluctuations).

Cost plan

A statement of the cost of the proposals prepared by the professional design team, presented in elemental format in accordance with NHS in Scotland guidance.

Cost planning

The process of assisting the design team to produce a cost effective solution and controlling the cost of the scheme within the sum approved by the client during all stages up to the placing of the contract.

Defects liability period

The period of time stated in the contract and starting from the date of practical completion of the works, during which the contractor is liable for making good defects attributable to workmanship or materials not having been made in accordance with the contract.

Departmental Cost Allowance Guides (DCAG's)

The guidance on capital sums calculated for the provision of a defined amount of functional accommodation. DCAG's are produced by the Scottish Executive Health Department. Cost allowance guides may be reduced or exceeded where an investment appraisal has demonstrated that within the context of an economical and efficient overall design, further running cost savings and/or measurable service benefits may be obtained from the decreased or increased capital provision.

Departmental cost

The capital sum allowed for functional provisions based on (or derived from) Scottish Office cost allowance guides. Where cost allowances are not appropriate, the costs for individual departments should be justified on the basis of similar accommodation in other schemes.

Design/cost reports

Reports on design development and cost consequences to demonstrate fulfilment of the design brief and adherence to the budget cost. Costs must be reported at a known cost datum.

Design team

A team comprising consultants or an NHSiS body's design staff responsible for design of the scheme, inspection of its construction, adjustment of accounts and the issue of the final certificate.

Development Control Plan

A series of drawings comprising site plans with contours (or spot levels), schematic plans and sections of buildings, showing existing properties and proposed cycle of site development, identifying individual schemes, outline of engineering service networks, functional relationships and main communications within and between buildings. The development control plan should not pre-empt the appraisal of options at stages 0 and 1 and may be revised as a consequence of Full Business Case approval for the scheme.

Employer's agent

The consultant with the particular responsibility for administration of the contract when using a design and building contract strategy.

Employer's requirements

A document prepared by the client, project, manager and consultants for obtaining tenders when using a design and building contract strategy.

Engineering services commissioning

Bringing the entire engineering service works together into full normal working condition and handing over the whole to the client a an operating entity capable of meeting the levels of load and/or performance specified.

Engineering services works

The engineering services in connection with which the client has engaged the services engineer to perform the professional duties.

Equipment

Equipment is classified into four groups:

Group 1: items usually supplied and fixed by the contractor;

Group 2: items, having a significant effect on space or structural requirements, which are supplied by the NHSiS body and fixed by the contractor;

Group 3: items, having a significant effect on space or structural requirements, which are supplied by the NHSiS body and put into position by them or their agents outside the general contract (for example includes x-ray equipment, linear accelerators and other medical equipment);

Group 4: small items, usually storage items, supplied and put into position by the NHSiS body.

Final account

The document to arrive at the total remuneration due to the contractor under the terms of the contract.

Full business case submission

A document whose objective is to confirm in detail the viability of the preferred option for the project and make recommendations as to the methods to be used to deliver the project on time, cost and quality. This document is used to obtain final approval to the funding of the project.

Functional content

The service/departmental capacity of a health building scheme expressed in terms of functional units.

Functional unit

A unit for measuring the capacity of health building accommodation in terms of service related content. For example, the functional unit for measuring the capacity of wards is the bed.

Health and safety file

This is the document referred to in the Construction (Design and Management) Regulations which contains information on the design of the scheme together with information added during construction to provide "as built" records. The information contained in the file is handed to the project director and is used to assist any persons carrying out work on the scheme after its completion (eg maintenance, extensions, refurbishment, demolition).

Health and safety plan

This is the document referred to in the Construction (Design and Management) Regulations which is prepared for a specific scheme. It sets out the health and safety policies to be adopted together with methods for monitoring Health and Safety Performance, identified the principal health and safety hazards that may be encountered during construction together with precautions where appropriate, requires work to be carried out to recognised standards and in accordance with published guidelines as specified in the plan.

Lead consultant

The consultant member of the design team appointed by the client to act as the lead consultant for the scheme described in the memorandum of agreement.

Management Control Plan

The overall programme and plan of work for the execution and commissioning of a scheme. The plan must take account of Scottish Capital Investment Manual activities and a scheme's requirements in terms of resources and timing. It will normally be expressed in a diagrammatic form (network or bar chart) and will be updated regularly to reflect progress made.

Management staff categories

For the purpose of time charge rates, the definitions of the project management staff grades listed in Article 6.7b of the Memorandum of Agreement are:

*Senior professional*: a person who has held corporate membership of a professional body recognised by the NHSiS body for a period of at least five years.

*Professional*: a person who has held corporate membership of a professional body recognised by the NHSiS body.

*Senior technician*: a person not holding corporate membership of a professional body with ten years or more relevant work experience.

*Technician*: a person not holding corporate membership of a professional body with less than ten years relevant work experience.

Material(s) - (in relation to copyright)

Any document, item, material or the work produced for the purpose of the scheme or in connection with the scheme by the consultant, any of its employees or any third party engaged by the consultant or working under the direction or supervision of the consultant.

NHSiS Body

This includes Scottish NHS Trusts, Health Board and any other centrally funded bodies.

On-costs

Capital costs arising from the interaction between the functional departmental units and the total building and site complex (for example the cost of communications between departments, external works and services, additional energy saving measures, auxiliary buildings and abnormals).

Operating manuals

Sets of documentation which shall include the operating instructions, servicing and maintenance instructions, spare parts lists and test reports dealing with the building and engineering systems provided under the commission. The manuals shall cover in an orderly fashion each item of equipment and each system in the works.

Outline business case submission

A document whose objective is to demonstrate the viability of the project (this includes investigation and evaluation of strategic planning, service planning and capital planning) and obtain initial approval to funding of the preferred option, subject to confirmation of viability in the full business case submission. The preparation of the outline business case submission involves a systematic analysis of the relative advantages and disadvantages of alternative options in meeting specific health objectives. Both monetary and non-monetary consequences are considered.

Outline plans

Drawings prepared by the architect/building surveyor to a scale of not less than 1:100 of the layouts of the departments for the purposes of consultation with external local interests, other consultants and the client.

Participant

A person, partnership, company or firm involved in the scheme and making a contribution to its completion, operation or occupation.

Planning supervisor

The firm, professional discipline or individual name in clause 1.8 if the scheme particulars to perform the duties ascribed to the planning supervisor in the Construction (Design and Management) Regulations.

Post-contract changes (stage 4 onwards)

The alteration or modification of the design, quality or quantity of the work shown on the contract drawings and described by or referred to in the contract bills, priced documents or other production information for main and sub-tender; the addition, alteration or omission of any obligations or restrictions imposed by the client in the contract bills or priced documents.

Practical completion (certificate of)

Document certifying that a scheme or specified part of a scheme has in the opinion of the contract administrator/employer's agent achieved practical completion of the works in accordance with the contract, the date of this certificate marks the commencement of the defects liability period (maintenance period) and of the period of final measurement for the purposes of the final account.

Principal

Member of firm generally in overall charge of the policy and conduct of the firm's business who is able to commit the firm to undertake commissions.

Principal contractor

The contractor selected to be responsible under the provision of the Construction (Design and Management) Regulations for the maintenance, implementation and development of the health and safety plan during construction and co-ordinating the activities of all contractors and sub-contractor (including the self-employed) to ensure that they comply with the relevant health and safety legislation.

Production information

The co-ordinated drawings, specification/employer's requirements, schedules and bills of quantities or priced documents needed for tendering, co-ordination and construction of the building and its services.

Professional advisor

An individual or form appointed by the project director to provide advice on:

a) actions, decisions and approvals from the NHSiS body;

b) interpretation or reports and recommendations submitted by the project manager and advice on when, and what action is needed as a result;

c) the adequacy and contents of the project execution plan; and

d) internal NHSiS body matters affecting the project.

Project

The complete cycle of development work envisaged for an individual hospital or NHSiS site. A project may include a number of building schemes.

Project director

The individual, usually an employee of the client, who represents, and has the authority of the client in respect of the specific scheme. All instructions given by the project director are deemed to be given by the client. All advice given to the project director is deemed to have been given to the client. More detailed information is provided in the Scottish Capital Investment Manual; Project Organisation.

Project execution plan

A manual prepared by the project manager and agreed with the project sponsor, acting as a common control document for the scheme including, inter alia, the following subjects:

a) management and organisational structure;

b) identification of all participants;

c) summary of duties of all participants;

d) responsibilities of all participants;

e) delegated authority limits of all participants;

f) lines of communications;

g) administrative procedures;

h) client/project director approval/instruction procedures;

i) progress procedures;

j) reporting procedures and formats (including cost control and reporting);

k) financial procedures (including risk and sensitivity analysis, change and cost management procedures);

l) meetings structure;

m) quality assurance/control;

n) construction procedures;

o) technical and operational commissioning procedures;

p) post project evaluation procedures.

Post information manuals

Sets of documentation, which shall include all essential information about the construction of the building, together with all the necessary sources of information for its proper maintenance, for example, information regarding safety and fire integrity.

Project manager

The person, partnership, company or firm named in the memorandum of agreement and appointed by the client to act as the project manager for the scheme described in the memorandum of agreement.

Quantity surveyor

The person, partnership, company or firm appointed by the client to act as the quantity surveyor for the project/scheme described in the memorandum of agreement.

Record drawings

Drawings showing the building and service installation as erected at the date of practical completion.

Revenue/running costs

The annual operational costs element of the outline/full business case submission, for example, maintenance and staffing costs.

Scheme

All planning, design and construction work and commissioning activity necessary to bring planned facilities into use (including essential preliminary and enabling works) referred to in the memorandum of agreement.

Scottish Capital Investment Manual

The document published by the Scottish Executive Health Department in the version current at the date of this agreement. It comprises the following sections:

- Overview
- Project Organisation
- Business Case Guide
- Private Finance Guide
- Management of the Construction Project
- Commissioning a Health Care Facility
- IM & T Guidance
- Post-Project Evaluation

Services engineer

The person, partnership, company or firm appointed by the client to act as the services engineer for the scheme described in the memorandum of agreement.

Shop drawings

Drawings and documentation prepared by the contractor or sub-contractor or suppliers to supplement the production information for use in manufacturing of components or installation or on-site assemblies.

Site inspection staff

Staff resident on site on a full or part-time basis to inspect the progress and quality of the work and to determine that the works are being executed in accordance with the contract documents.

Stage payments

Payments made on completion of pre-determined stages of the work.

Structural engineer

The person, partnership company or firm appointed by the client to act as the structural engineer for the scheme described in the memorandum of agreement.

Structural engineering works

Those works for which the structural engineer is require to prepare calculations and generality give advice and otherwise perform professional duties.

Sub-contractor

Any person, partnership, company or firm under contract to the contractor to perform work and/or supply goods and/or services in connection with the scheme.

Sub-programme

Detail programme based on the constraints of the management control plan, relating to a particular stage or part of the scheme.

Tender documents

All the documents used to invite tenders for the execution of the works.

User panel

A group representing the end users of the scheme comprising representatives of the NHSiS body's finance department, medical staff and those responsible for operating the various ancillary services.

These representatives will be authorised to define their department's needs and to renew and to review and agree how those needs will be met whilst ensuring that the scheme remains financially viable. The user panel will communicate its requirements and decisions to the project manager through the project director.

Works

The construction works relative to the scheme.


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# 6.0 Memorandum of Agreement

This part comprises the Memorandum of Agreement between the NHS Greater Glasgow & Clyde and the Lead Consultant team.

Consultancy Service:

Lead Consultant and Technical Team services for the procurement of hospital facilites utilising public finance and a two stage Design & Build process.

Memorandum of Agreement

This agreement is made on the _____day of _____2008

between

NHS Greater Glasgow and Clyde

of

Dalian House, 350 St Vincent Street, Glasgow G3 8YZ (hereinafter called the 'Board') of the one part

and

(hereinafter called the lead consultant) of the other part

WHEREAS

the Board intends to proceed with (the 'scheme')

New South Glasgow Hospitals Project

and has appointed ……..to be their Lead Consultant and Technical Advisory Team to complete the project services and has requested the consultant and their team to perform professional duties in connection with the items stated in this Memorandum.

NOW IT IS HEREBY AGREED AS FOLLOWS:

6.1 The Board agrees to engage the Lead Consultant and the Lead Consultant agrees to perform the professional duties subject to and in accordance with Parts 2-6 including any specific requirements listed at clause 2.15 – 2.22 of the scheme particulars.

6.2 This Memorandum of Agreement, together with parts 2-6 of this agreement shall together constitute the agreement between the Board and the Lead Consultant.

6.3 The Lead Consultant will be the Technical Advisory Team Leader as further amplified in the Memorandum of Agreement.

## 6.4 Payment of duties

The Lead Consultant's duties shall be as set out in Schedule 1 of the Memorandum of Agreement and any additional services incorporated within the Lead Consultant's fee proposal, as agreed with the Project Director or his nominee at the date of appointment.

Payment of fees will be a set out in the following schedule.

Payment shall be based on the capped fee bids for each stage, with interim payments based thereon within each stage, to be agreed between the Project Director and the Lead Consultant prior to commencement.

There is no obligation for the Board to continue with the project beyond each key stage (this includes 1A and 1B as separate stages), and the consultant shall seek written authority from the Project Director or their nominee to proceed to Stage 1B duties, and all subsequent stages, before doing so.

Respondents must identify individuals who will work on each stage of the project and provide details of their experience with associated CV's. Respondents must identify the hourly charge rate and estimated input hours of each individual. Respondents must also identify an hourly Time Charge for undertaking additional work at the request of the Project Director or their nominee.

Respondents must provide details of how they propose to self audit their time and resource input at each stage. The Board must be provided with accurate input of time with each and every invoice.

Respondents must confirm that work to be completed by a designated individual will not be delegated to anyone else without advanced discussion and agreement with the Project Director.

The fee bid for all stages must be inclusive of all travel, accommodation expenses, sub-commissions and reflect the output requirements and project timetable.

Respondents should assume all meetings will be held within the Glasgow city area.

If any work is undertaken without the prior knowledge and approval of the Project Director or their nominee, either within a commissioned stage of the project or as preparatory work for a subsequent stage, there will be no ability to seek to recover that cost on a quantum meruit basis should the project change or be aborted.

Capped fee bids for all stages of the project must be based on the outline programme in 2.7.

Respondents should note that project continuation is subject to successful completion of project milestones. Failure to meet project milestones could result in project cessation at any stage.

Fees will be paid on a staged basis but only on completion of complete packages of work as set out in the billing schedules 6.5 and 6.6.

All fees set out in this agreement are exclusive of Value Added Tax. VAT will be recovered at the current prevailing rate.

Fees for all stages should include inflationary uplift, no additional request for uplift at any stage will be considered while the project runs to programme. Please ensure the inflationary uplift for each stage is included and identified within your bid submission, the Board will not make calculations on behalf of bidders who supply % figures per annum, in short bids provided without % uplift incorporated will be void.

6.5 Apportionment of Fee Stages – Summary for Full Team

Please insert the total lump sum fees by stage, to include all normal project disbursements, out of pocket expenses, subsistence, photocopying, printing, support staff and office equipment required to undertake this commission. This table summarises the stage schedules in 6.7.

Please note - the schedules have been prepared to form a basis for the consultant's fee proposal, and include the key stages and some of the activities required to undertake this commission. The Consultant is required as part of this submission to list all activities they consider necessary for each stage to complete the commission and include the associated costs and resources required. Respondents may wish to tabulate their fee bid by an alternative method and the Board have no objection to this provided the base information is provided on a stage by stage basis.

| Stage | Description<br>Refer Schedule 6.12 for detail | Lump Sum Fees ex VAT.<br><br>(incl. expenses & inflation) |
|---|---|---|
| 1A | Preparation of Employers Requirements Documentation<br><br>Preparation of PQQ, OJEU, MOI and Employers Requirements documentation and full Stage 1B tender and contract information, PSC design development. | |
| 1B | Stage One Design & Bid Development<br><br>Issue of ER's design and bid development proposals, with 3 D&B consortia, including evaluation and short listing for next stage down selection (3-1). | |
| 2 | Stage Two Design & Bid Development<br><br>Design and bid development with a single D&B consortia based on open book process to design and tender all packages and agree commercial arrangements to conclude a GMP within the Board's cost budget. | |
| 3 | Stage Three – Construction Phase<br><br>Implementation and Construction with continued design development. | |
| 4 | Stage Four – Operational commissioning and equipping | |
| 5 | Stage Five – Post Project Evaluation and Defects. | |
| | Total £ | |

Bidders are asked to prepare separate fee responses for the following projects, although your bid will be evaluated as a composite offer. This reflects differing contract arrangements for the projects.

- New Adult and Children's Hospitals.
- New Laboratory Project.

6.6 Apportionment of Fee Stages – Frequency of Payment of Staged Fees

Please insert the frequency of payment of the lump sum fee for each stage, this could be, for example, single payment at end of stage, or 6 interim equal payments at two month intervals.

| Stage | Description<br><br>Refer Schedule 6.12 for detail. | Frequency and Value of Payments |
|---|---|---|
| 1A | Preparation of Employers Requirements Documentation<br><br>Preparation of PQQ, OJEU, MOI and Employers Requirements documentation and full Stage 1B tender and contract information, PSC design development. | |
| 1B | Stage One Design & Bid Development<br><br>Issue of ER's design and bid development process, with 3 D&B consortia, including evaluation and short listing for next stage down selection (3-1). | |
| 2 | Stage Two Design & Bid Development<br><br>Design and bid development with a single D&B consortia based on open book process to design and tender all packages and agree commercial arrangements to conclude a GMP within the Board's cost budget. | |
| 3 | Stage Three – Construction Phase<br><br>Implementation and Construction with continued design development. | |
| 4 | Stage Four – Operational commissioning and equipping | |
| 5 | Stage Five – Post Project Evaluation and Defects. | |
| | Total £ | |

6.7 LUMP SUM FEE SCHEDULE

Also read in conjunction with Section 1.6

Stage 1A - Preparation of Employers Requirements Documentation

Preparation of PQQ, OJEU, MOI and Employers Requirements documentation and full Stage 1B tender and contract information, PSC design development.

For list of key activities refer schedules in section 6.12, note you must complete the following page listing the key activities and inputs for this stage for the whole of your team. This information maybe supplied in a different format if desired, but requires to be part of your submission.

| RESOURCE SCHEDULE FOR ALL TEAM MEMBERS FOR THIS STAGE | | | | | |
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Please provide a summary of tasks and deliverables for this stage within your submission.


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Stage 1 B - Stage One Design & Bid Development

Issue of ER's to 3 D&B consortia, design and bid development process with 3 D&B consortia, including evaluation and short listing for next stage down selection (3-1) to arrive at recommendation of preferred D&B consortia for next stage.

For list of key activities refer schedules in section 6.12, note you must complete the following page listing the key activities and inputs for this stage for the whole of your team. This information maybe supplied in a different format if desired, but requires to be part of your submission.

RESOURCE SCHEDULE FOR ALL TEAM MEMBERS FOR THIS STAGE

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Please provide a summary of tasks and deliverables for this stage within your submission.


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6.7 LUMP SUM FEE SCHEDULE

Stage 2 – Stage Two Design & Bid Development

Design and bid development with a single D&B consortia based on open book process to design and tender all packages and agree commercial arrangements to conclude a GMP within the Board's cost budget.

For list of key activities refer schedules in section 6.12, note you must complete the following page listing the key activities and inputs for this stage for the whole of your team. This information maybe supplied in a different format if desired, but requires to be part of your submission.

| RESOURCE SCHEDULE FOR ALL TEAM MEMBERS FOR THIS STAGE | | | | | |
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Please provide a summary of tasks and deliverables for this stage within your submission.

6.7 LUMP SUM FEE SCHEDULE

Stage 3 – Construction Phase

Implementation and Construction with continued design development.

For list of key activities refer schedules in section 6.12, note you must complete the following page listing the key activities and inputs for this stage for the whole of your team. This information maybe supplied in a different format if desired, but requires to be part of your submission.

| RESOURCE SCHEDULE FOR ALL TEAM MEMBERS FOR THIS STAGE | | | | | |
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Please provide a summary of tasks and deliverables for this stage within your submission

6.7 LUMP SUM FEE SCHEDULE

Stage 4 – Operational commissioning and equippping

For list of key activities refer schedules in section 6.12, note you must complete the following page listing the key activities and inputs for this stage for the whole of your team. This information maybe supplied in a different format if desired, but requires to be part of your submission.

| RESOURCE SCHEDULE FOR ALL TEAM MEMBERS FOR THIS STAGE | | | | | |
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Please provide a summary of tasks and deliverables for this stage within your submission

6.7 LUMP SUM FEE SCHEDULE

Stage 5 – Post Project Evaluation and 12 Months Defects.

For list of key activities refer schedules in section 6.12, note you must complete the following page listing the key activities and inputs for this stage for the whole of your team. This information maybe supplied in a different format if desired, but requires to be part of your submission.

| RESOURCE SCHEDULE FOR ALL TEAM MEMBERS FOR THIS STAGE | | | | | |
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Please provide a summary of tasks and deliverables for this stage within your submission


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6.8 Time charge rates.

For those duties where fees are payable on a time charge basis, the rates referred to in clause 4.5 of the agreement shall be:

| | | |
|---|---|---|
| a. | principal (clause 4.5a): | £_____per hour |
| b. | professional and technical staff (clause 4.6): | |
| | senior professional | £_____per hour |
| | professional | £_____per hour |
| | senior technician | £_____per hour |
| | technician | £_____per hour |

Note: every category of the above as entered by the Board, is to be completed by the consultant.

Teams are asked regularise the hourly rates for each grade of staff, and ensure that all staff included within your fee proposal are allocated a appropriate grade as noted above and that this information is included within the team submission.

6.9 Travelling, subsistence and other expenses

Travelling, subsistence and other expenses referred to in part 3 of this agreement shall be deemed to be included in the capped fees.

Attendance at meetings required by the client specified in clause 2.18 shall be deemed to be included in the capped fee.

6.10 Site accommodation and equipment

The Lead Consultant team will have access to Health Board accommodation at Hillington in Glasgow. Site accommodation will be available to the Lead Consultant team throughout the duration of the works on site. All members of the Lead Consultants team will be responsible for the provision of their own protective clothing for site visits.

6.11 Accounts and interim payments

The intervals at which accounts shall be submitted and interim payments made in accordance with Schedule 6.6 reckoned from the commencement of the consultant's appointment.

6.12 SCHEDULE ONE – MEMORANDUM OF AGREEMENT
LEAD CONSULTANT TECHNICAL ADVISORY TEAM – SCOPE OF SERVICES

The requirements of this section should be used as a basis of your team response and should be amplified and extended within your ITT tender response. The Lead Consultant / Technical Advisory team will provide guidance, advice and active input to the Board in the following key area's throughout the duration of the commission, the Lead Consultant team will be expected to manage and direct the process on behalf of the Board. The Team will be responsible for the procurement of;

- The New Adult and Children's Hospital Project – two stage D&B process.
- The New Laboratory Project – single stage D&B process.

The Board require the following consultancy services as a minimum;

- Lead Consultant / Project Manager
- Employer's Agent role (construction stage)/Contract Administration
- Architectural Design and Site Masterplanning
- Healthcare Planning
- Civil and Structural Engineering
- Building Services Engineering & IT Infrastructure
- Cost Consultant/Quantity Surveying/Lifecycle costing
- CDM Co-ordinator
- Procurement and Construction Management advice.
- Landscape Architect.
- Risk and Value Management advice
- Facilities Management advice (soft and hard FM)

Note: the process described in this section envisages a two stage process, with down selection 3-1 at the end of Stage 1B. If the review of procurement strategy determines a 3-2-1 process, with 2 bidders fully participating in Stage 2, then Board reserve the right to negotiate the lump sum fees with the Lead Consultant team.

General Duties of the Team

- Attend relevant meetings of Project Executive & Project Team and support the Board as required. Refer Section 2.18.
- Remain up to date and responsive to changes in legislation or guidance on all matters relative to the project.
- Be responsive to demands for input at short notice.
- Advise the Board on general issues of on-going advice on government policy; compliance with SCIM, SEHD, DoH, OGC and Treasury procedures; compliance with Local Council planning procedures. Compliance with legislation and NHS Design Guidance.
- Ensure that advice is consistent with SEHD, DoH, NEC, SOPC4 standard form contract and Treasury Taskforce model contract templates.
- Work closely with other advisors, legal, financial, planning, transportation etc.
- Assist the Board with developing strategies for FM & lifecycle improvements and monitoring on a 1) non PPP contract, 2) installation of Group 2, 3 and 4 equipment, and 3) existing, retained estate and its linkage to the new build projects.
- Participate in SGHD review at various stages throughout the life of the project, teams should anticipate to be involved in:
  PUK – 3 reviews
  Gateway – 4 reviews
  Architecture+Design Scotland – 2 reviews
- Team to familiarise themselves with all existing site data, all project related design and technical data developed during PSC / OBC stage.

- All technical data related to Board funded enabling works which will be underway during period 2008 -2010. Note the Lead Consultant team will not be delivering these projects, but need to be aware of them for any impact on NSGH projects.

As stated earlier in the document, the Board wish to procure the new Laboratory project as part of this commission, although as a separate contract, and by a single stage D&B process. As there will be a good deal of repetition in some of the process and information developed by the team for both this and the bigger project only the two stage process has been developed in detail in the following pages. Bidders are asked to amplify their methodology and provide a clear fee and team structure for both projects as listed below;

- A bid for the New Adult and Children's Hospital Project – two stage D&B process.
- A bid for the New Laboratory Project – single stage D&B process.

Both bids should be based on the general information in earlier sections on scope, timetable and budget cost. For evaluation purposes the two financial fee bids will be added together and taken as a composite fee bid.

The Lead Consultant team will be responsible for the following tasks and deliverables, this list is seen as a minimum, and you are asked to supplemented this in your ITT tender response to reflect your proposal to manage the complete the procurement process for the new hospitals project.

## Key Team Activities and Tasks for Stage 1A - Preparation of Employers Requirements Documentation

Preparation of OJEU, PQQ, MOI for D&B consortia; Employers Requirements documentation and full Stage 1B tender and contract information. Design development of site masterplan and OBC/PSC design exemplar.

1) Manage the compilation and publication of a comprehensive set of Employers Requirements documents for the approval of the Project Director. The contents should include as a minimum the items list below, and the bulk of the work will be undertaken by your team.

- Board's ASR Strategy and clinical strategy.
- Whole SGH site development brief.
- Functional content and schedules of accommodation.
- Whole hospital; clinical and non clinical output specifications.
- ADB room data information. ( provide 4 page ADB information for each individual room type).
- Sustainability and low carbon strategy.
- PSC design and other spatial planning drawings at 1:500 @ 1:200 ( further developed by your team).
- Project specification – Architectural/ building; Building Services, energy saving / lifecycle / cost in use; structural & civils; externals works/landscaping; other performance parameters;
- Construction and site procedures.
- Requirements for post contract design development.
- Details of commissioning process and requirements for handover, training, H&S file.
- CDM & Health & safety requirements.
- Board's general design requirements/ design action plan.
- Board's PSC Design Solution – as updated by your team Oct-Jan 2009.
- Cost information – amended and updated from OBC by your team.
- Design and Tender Evaluation - The process, criteria and scoring.
- Details of D&B response requirements for Stage 1 and 2.

### General Tender Information

- Project execution plan.
- Contract conditions and terms.
- Project programme and other works inter dependencies.
- Suggested forms for bonds, warranties, guarantees and other legals.
- Site survey and site investigation reports.
- Preliminaries requirements and pricing structure for Stage 1B bid response by D&B consortia.


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- Stage 1 Design Report – updated by your team to provide exemplar design info for bidders.
- Cost plan prior to tender.
- Copies of statutory approvals secured by Board.
- Health & Safety Plan and questionnaire.
- Pricing schedules for pre-construction services.
- Pricing schedules for profit, overheads.
- Board's FM requirements.
- Board's lifecycle requirements.
- Project insurance arrangements.

2) Develop and manage a process through OJEU to advertise the project (in association with the Board's legal adviser), and then to evaluate and shortlist interested D&B consortia, to include preparation of a PQQ and Information Memorandum. Provide advice and guidance to the Board on all aspects of this process including timetable. The Board hope to engage a maximum of 3 D&B teams in this process. Assist the Board's Project Team with responses to request for further information during pre-qualification process.

3) Prepare full design and financial evaluation process for the Stage One Bid process.

4) Prepare and submit a review of the contract options to develop the Stage 2 bid process on an open book basis with a single D&B consortia, to include recommendation on contract form and process. This will be for approval by the Project Director, and included within the Stage 1 bid documentation.

5) Review the PSC Cost Plan and associated OBC cost information prepared by others. Update plan to format your team are comfortable working with, but general format to remain same. Continuously update cost plan for the Board throughout this and successive stages. Submit for approval by the Project Director.

6) Develop the Board's existing risk register for the project and assist the Board to review and update on a monthly basis throughout the full project. Manage cost allocated against risk in respect of the project cost plan. Submit for approval by the Project Director.

7) Develop a project Master Programme for the duration of your commission (Sept 2008 – Dec 2015), which may require short term sub programmes to be developed for individual stages. Submit for approval by the Project Director or their nominee.

8) Development of the Board's OBC/PSC design exemplar to produce a workable site masterplan at 1:500 for the campus in light of the retention of some of the hospitals existing building stock. This will also involve the reworking of the floor plans for each level at 1:500, and studies of typical ward layouts at 1:200. This will involve periodic interaction with Glasgow City Council and A+DS to reach agreement on a revised site masterplan, and also provide workable design exemplar for the Employer's requirements package.

9) In conjunction with the Laboratory Project team/users group, develop a project brief, schedules of accommodation and prepare 1:500 departmental relationship drawings for the new build Laboratory Block. In conjunction with this team and the Project Team for the Adult and Children's Hospitals further develop proposals for FM service yard / Energy Centre and agree a structured layout for the site planning of this part of the site. Take account of the block plan design and linkage to main hospital block. Review new build schedules of accommodation for the Laboratory Project as they develop to ensure that space is optimally used and tested to optimise value for money.

10) Develop a process to manage the Stage One design and bid development process and interaction between the Board and the three D&B consortia to ensure that adequate knowledge flows between the parties to ensure

11) Assist the Board's Project Manager's for the Adult Acute Hospital and New Children's Hospital to develop and provide for the Stage 1 tender package a full clinical briefing pack which will involve user group meetings to review and sign off operational policy and clinical output specifications.

12) Develop ADB room data sheets for key rooms within all departments to be included in Stage 1 bid documentation, reduce number where repetition but all major room types with variations to be developed during this stage. Allow for review with users and update prior to issue with bid documents. ADB format to be used.
13) Attend project launch day, and prepare suitable presentation material, assist with presentations

14) In conjunction with NHS Project Team and Planning Adviser, continue dialogue with Glasgow City Council, Architecture+Design Scotland and public/private utility bodies to conclude discussion on site wide issues, and conclusion on any outstanding matters on the master plan process.

15) Lead and manage dialogue with providers for power and gas service supplies and establish main supplies for the new facilities and site wide for maintenance of existing estate.

16) Develop and cost a technical solution for a roof top helipad to be included within the ER's for the new Adult and Children's Hospital, directly linked to the A&E trauma reception of both hospitals.

17) At the conclusion of Stage 1A, prepare a progress report by Lead Consultant team, to include a full review of Stage 1A, the progress with exemplar design, tender process, project budget and cost plan, timetable and confirm readiness to proceed to tender. Await approval from Project Director to proceed to next stage.

Key Team Activities and Tasks for Stage 1B – Stage One Design and Bid Development and Evaluation, selection of a preferred bidder D&B team.

1) Produce, print, package and issue Employer's Requirements tender documentation to selected D&B consortia – max 3. During this stage further develop any tender documentation and information for this or next stage that maybe outstanding. Note much of this information will be developed in conjunction with the Board's Project Team and user groups and ongoing development and detail of the project requirements.

2) Generally maintain and update project management documents, schedules, cost plan and programmes to take account of progress and change as project evolves through stage.

3) Manage the interface between the three D&B Consortia and the Board. The process developed by you in Stage 1A should provide a mechanism where by the bid teams can have access to the Board's user groups at intervals throughout the Stage 1 bid development phase to inform design development. This process will require to be carefully managed.

4) Manage all requests for information from the bid consortia during the tender process and provide responses timeously.

5) Attend bidders meetings and presentations throughout stage.

6) Manage the receipt of Stage 1 bids from three D&B Consortia, and commence and manage the full process to evaluate the bids with full involvement of the Board's Project Team and the eventual involvement of user groups perhaps by way of open day presentations by each D&B bid team. Below is a suggested content of a Stage 1 bid response;

- Details of contractor's team and structure.
- Relevant experience & reference sites.
- Key personnel and management structure.
- Legal framework for team, parent company.
- Company financial and commercial information.
- Response to PSC design, high level proposals.
  - 1:500 phased site plans for duration of works.
  - 1:500 floor plans all levels, 5@ 1:200 floor plans.
- 3-D visualization of design intent.

- Healthcare planning solution.
- Typical specification for building and engineering aspects.
- Approach to building design proposals.
- Commentary on buildability.
- Detailed review and commentary of project cost plan.
- Project risk assessment and management.
- Contractors proposals on quality and lifecycle costs.
- Detailed method statement for delivery of the project.
- Design and procurement timetable.
- Construction timetable.
- Contract management proposals.
- Manpower and resourcing proposals.
- Proposals for low carbon design and sustainable issues.
- Proposals for building commissioning and handover.
- Preliminaries, overheads and profit costs for project
- Priced schedules for any advanced works, and pre-construction services at next stage.
- Fixed % for mark-up on provisional sums for trade works.
- Cost plan at Stage 1.
- Pricing matrix for Stage 1, needs more thought on scoring on cost.
- Contractor's draft tendering protocol.

7) On completion of the evaluation of bids, prepare a full report giving the Project Director a recommendation based on (exact criteria will be confirmed later) value for money, design solution / functionality, healthcare design and technical specifications and systems and all financial and commercial aspects. The report should also include any significant areas of deviation from the Employer's Requirements and compliance statement and detailed 'technical' and 'user' evaluations.

8) Present recommendations to the Project Director and subject to approval, the Executive Board.

9) End of Stage 1B prepare a progress report by Lead Consultant team, with recommendation for next stage, await approval from Project Director to proceed to next stage.

10) The successful conclusion of this stage will be the selection of a preferred bid team through an equitable process, to progress to the next stage of bid development on a 'open book' basis.

Key Team Activities and Tasks for Stage 2 – Stage 2 Design and Bid Development, package tender through to agreement of a Guaranteed Maximum Price, Full Business Case preparation and approval and contract sign off.

1) Complete and issue any further information in respect of the Employers Requirements.

2) Engage with preferred bidder and develop and agree a structured programme to allow the design and work packages to be fully developed for tender issue.

3) Fully manage the process of item 2) above on behalf of the Board, to include detailed negotiations.

4) Respond to D&B Consortia queries and attend briefing meetings with teams throughout Stage 2 bid development stage.

5) Support the Board in the 'user' evaluation of the design proposals as they develop, by developing approaches to enable users to fully understand the design, technical and clinical operational issues implicit in the preferred bidders design proposals.

6) Participate in SGHD stage review and any associated design and environmental review.

7) Participate in review and evaluation of all aspects of Stage 2 bid response, provide clarification as required on all design and technical matters. Prepare technical report on Stage 2 bid submission, including evaluation

process and giving recommendation to the Project Director and Executive Board. The report should also include any significant areas of deviation from the output specification and compliance statement and detailed 'technical' and 'user' evaluations.

8) Based on the format/content for Stage 2 tender response, developed by your team and included for information in the Stage 1 tender documents, secure a full Stage 2 tender submission from the D&B consortia. While the detail of this package will be complex we reproduce below a minimum requirement to assist you to prepare your bid. The bulk of this evaluation will be undertaken by your team, and the output included in a formal report to the Project Director.

Content

- By end of stage – full clinical sign off;
- Agreed functional content.
- Agreed and audited schedule of accommodation.
- Agreed audit of communication and circulation areas.
- Audit of scheme against infection control requirements.
- Audit of actual design versus brief.
- Whole site development control plans (incl. phasing).
- Site analysis of access and transport for design.
- 1:500 departmental relationship drawings and stacking diagrams.
- 1:200 department layout plans for all individual departments and wards.
- 1:200 elevations and sections.
- 1:50 typical room layouts (say 50 rooms in each facility).
- ADB Room data sheets for all departments.
- Equipment lists for all departments.
- Confirmation on all Group I & II equipment related costs.
- Typical construction details for envelope, floors, walls.
- Interior design proposals including sample boards.
- Landscape proposals.
- 3-D design and computer studies.
- Wayfinding strategy.
- Fire evacuation and safety strategy, full fire risk assessment – risk with D&B designer.
- Demonstrate low carbon design strategy.
- Flexibility of design to change.
- Demonstrate FM services have been incorporated into design.
- Integration of sustainable issues, waste management, recycling.
- Demonstrate lifecycle on materials and equipment.
- Schedules for all architectural, building, M&E engineering, C&S engineering and IT infrastructure proposals.
- Details of finishes, components, fixtures, fittings.
- Engineering strategy, specification, schematics and schedules.
- Design programme.
- Programme to secure detailed planning consent.
- Project management and quality management arrangements.
- Construction programme, methodology phasing etc.
- Contractor's overhead and profit percentages (as Stage 1).
- Agreement on LADS.
- Agreement on contract form and willingness to enter into contract.
- Project insurance.
- Finalised tendering protocol
- FBC forms.
- Secure detailed planning consent, prior to contract close.
- Final submission and review of contractor's proposals.
- Agree GMP and cashflow forecast.
- Detailed review of clinical functionality, space, accommodation schedules.
- Detailed review of project specification and quality, detailed review of lifecycle issues.
- Finalise all contract matters, insurance, bonds, warranties etc.
- Finalise and agree all sub contract packages and agree GMP.

- Finalise any enabling / service disconnections.
- Finalise site establishment and layout.
- Finalise FBC, clarify all outstanding contract issues in advance.
- Continue with design development and sign off within cost envelope.

Note: teams should make adequate allowance within their bid for the likely high frequency of meeting by various key team members in the run up to contract close.

9) Undertake and manage a full technical, financial and commercial review of the preferred bidders final tender submission, provide clarification as required on all technical matters, prepare a full report giving the Project Director a recommendation for approval or otherwise. The report should also include any significant areas of deviation from the Employer's Requirements and detailed 'technical' and 'user' evaluations. Await approval from Project Director to proceed to next stage.

Key Team Activities and Tasks for Stage 3 – Implementation and Construction, Design Development.

1) Manage the process to agree all outstanding design matters at contract close which may include the balance of 1:50 detailed layouts, room data sheets and drawings. Liaise with Clinicians and user groups as required to secure sign off.

2) Undertake the role of Employers Agent for the duration of the works contract and manage the interface between the Board and the D&B contractor.

Meetings – the following are an indication of frequency

- Monthly progress meetings on site.
- Monthly technical meetings.
- Frequent design development and package development meetings.
- Monthly cost control meetings with Board.
- Monthly cost control meetings with D&B contractor.
- Frequent design development meetings with Board user groups - room layouts.
- Monthly Project Executive meetings with Board.
- Monthly procurement and Finance Group meetings.
- Monthly Gp. II equipment meetings, as required.

3) On a monthly basis prepare and submit a Lead Consultants technical report on progress on site in respect of programme, cost / cost control, change control and design change / development and other relevant procurement related matters.

4) Actively manage the change and cost control process to ensure that the works remain within budget, advise the Project Director on the implications of change on programme, cost and quality parameters.

5) Manage and administer building contract and associated processes on behalf of the Board.

6) Visit the works on a weekly basis and ensure that the new facilities are being constructed in compliance with all the approved and agreed contract documentation, drawings, specifications, the ER's or CP's, whichever have been confirmed as the basis for the project at contract close.

7) Direct the work of the Site Inspectorate team for the duration of the works contract, incorporate key output from their weekly reports into the Lead Consultants monthly progress report as required.

8) In association with Board technical estates staff, manage the process on behalf of the Board to overview and sign off of the full technical commissioning of the building, building engineering plant and equipment and provide the Board with a full report and recommendation for the acceptance and handover of the building from the D&B contractor to the Board. (Note - due to the scale and technical complexity of the building and engineering services, the Board are receptive to the inclusion of some form of operational management of the facilities by the D&B contracting team for a period of 3-5 years. This will allow NHS staff to shadow and learn

operation and function of the buildings systems). This aspect will be further considered by the Board during Stage 1 A for inclusion in the Employer's requirements.

9) Inspect the project at practical completion, agree schedule of outstanding items/defects with D&B contractor, including remedial action. Monitor progress/quality of remedial works.

Key Activities and Tasks for Stage 4 – Equipping and Operational Commissioning

1) Participate as an active member of the Board's Commissioning Team to enable migration of staff from old to new facilities. This will involve equipment and logistics, migration plan, orientation of staff to new facilities and keeping staff up to date on progress on a regular basis. This input will be required from mid 2012 for the Children's Hospital through to Summer 2015 by which time most of the moves into the new builds will be complete.

2) Assist the Project Director to develop a fully structured Commissioning Plan for the operational commissioning and equipping of the following projects in chronological order;

- New Laboratory Project
- New Children's Hospital
- New Adult Acute Hospital

This work will involve the setting up of a range of groups by the Board, associated with the management, staffing and operation of the new facilities, groups will include;

- Building Commissioning
- Service Migration
- Clinical Transition
- Clinical Systems/IT
- Equipment Procurement
- Communications
- Human Resources
- Community Engagement
- Operational Management

Bidders should assume that they will develop the process and populate a number of the teams but that the Board will project manage the commissioning process with Board staff.

Key Activities and Tasks for Stage 5 – Post Project Evaluation and 12 Months Defects Period

1) Participate in the preparation of PPE documentation for the project, in accordance with the NHS Scottish Capital Investment Manual. This will commence post operational opening of facilities and will be undertaken over a period of 2-3 months, likely to complete circa 9 months after opening.

2) Participate in 12 months defects inspection on behalf of the Board, prepare comprehensive lists and participate in any associated negotiations to conclude. Include an allowance you consider appropriate for this function and an assessment of hours based on date for final inspection.

LEAD CONSULTANT / PROJECT MANAGER – KEY ROLE AND RESPONSIBILITIES

Key aspects of Project Manager's role:-

- Manage the work and output of your team, and act as main point of contact reporting direct to the Board's Project Director or nominee.
- Represent Technical Advisory team at all key meetings (e.g Local Council, NHS, legal, contractor), or as delegated by prior agreement with the Board's Project Director or nominee.
- Development and management of project plan/programme, with regular review and update as required.
- Prepare a full project Execution Plan for the project early in Stage 1A for Project Director approval.
- Develop and manage risk register from start of Stage 1A to completion of works.
- Co-ordinate interface with operational hospital staff, and adjacent works projects as required.
- Resource management of Lead Consultant team through all stages of the project, to ensure proper delivery of service to the Board.
- In discussion with the Boards Project Director, develop lists of key project activities, programme and actively manage each stage of project delivery, advising PD on corrective action as required.
- Prepare monthly progress reports on Lead Consultant team activity, project procurement and works activity, for the Project Director, to be circulated 5 workings days in advance of TA monthly Project Team meetings.
- At the end of each stage, prepare a technical progress report for approval by the Project Director, with recommendations on actions to proceed to next stage, to include comment on timetable, costs, site, estates, facilities, build and construction, planning and design, risk and value management, compliance of contractor's proposals, technical evaluations, site infrastructure, town planning and progress with negotiations prior to contract sign.
- Fully lead, manage and develop works contract change and cost control procedures for approval by the Project Director or his nominee.
- Meet regularly with Project Director to review progress, timetable, costs, design and bid development.
- Lead the preparation and structuring of all key documents for the D&B process to provide a 'designed' published output e.g. it looks like a single document.
- Manage the technical review of D&B bidder proposals during the procurement process for Stage 1 and Stage 2 final bid at Contract Close.
- Carry out and deliver the duties of Employers Agent throughout the construction phase, manage interface with D&B contractor, manage and administer contract and associated processes.
- Collaboratively work with the Board's existing consultant's and other associated organisations such as The Carbon Trust.
- Provide full shadow design team service throughout the duration of the works contract.
- Provide procurement and construction management advice on behalf of the TA team.

ARCHITECT / SITE MASTERPLANNER – KEY ROLE AND RESPONSIBILITIES

Key aspects of Architects role:-

- Take lead on all matters relative to architectural, building and site master planning, interior design, room layouts, fire engineering, fire escape and fire safety, fabric, components and their life-cycle, phasing and construction.
- Redraw the existing 1:500 departmental relationship drawings.
- Update PSC design through to FBC as required. Initially integrate Client changes to departmental layouts and adapt the1:500 departmental relationship diagrams.
- Develop a full set of exemplar design drawings for inclusion in the Employer's requirements documentation.

- Develop alternative options for 28 Bed Ward layouts (100% single rooms), layouts to reflect height of building, means of escape and fire compartmentation and escape issues. This work will parallel the development of the brief and Employer's Requirements documentation as part of Stage 1A.
- Review and adapt the current Development Control Plan to incorporate current proposals to retain additional existing buildings post completion of the new builds in 2014.
- Assist the Board with any design related discussion with Architecture and Design Scotland relative to the PSC design and the designs developed by D&B consortia.
- Lead the preparation and submission to Glasgow City Council of a Site Masterplan document in conjunction with the Board's Town Planning Advisor.
- Actively participate in room layout development and sign off process.
- Assist with preparation of Employer's Requirements documentation, the bid process and evaluation at all stages. Note the Board intend developing a palette of standardised room layouts for as many repeat rooms as possible to reduce the workload at the early stage.
- Manage and lead the AEDET review and any related architectural design led review processes as required at relevant stages.
- Participate and assist with the development of ADB room data sheets for Employer's Requirements document. This is a team responsibility which will be led and managed by the Healthcare Planner.
- Develop a full Building specification and construction requirements for inclusion in the Employer Requirements/Tender document.
- Review bidders proposals at all stages for compliance with Employer's Requirements document, participate in the production of technical reports at the end of each stage, to include aspects on architectural, building construction, healthcare design, interior design, landscape and master planning.
- In conjunction with Project Director or his nominee, take team lead with any discussions with Architecture + Design Scotland.
- Review design proposals developed at OBC/PSC stage, allow for personalisation as and if required.
- Input to reports on bids at various stages of the D&B process and Contract Close stages of the project in respect of healthcare planning solutions, and as required for OBC and FBC submissions by the Board.
- Provide full shadow design team architectural and building service throughout the duration of the works contract.
- In conjunction with Board, manage activities of Board appointed Clerks of Works during construction phase.
- Provide monthly reports on compliance of project with Employer's Requirements.
- Input to the Lead Consultant's monthly reports to the Project Director on architectural design, healthcare design and building related matters.

HEALTHCARE PLANNER – KEY ROLE AND RESPONSIBILITIES

Key aspects of Healthcare Planners role:-

- Take lead on all matters relative to clinical design, clinical output specifications, operational policies, functional content, schedules of accommodation, within Technical Advisory team.
- Review the schedules of accommodation prepared as part of OBC stage, and comment as required. Assist Board to further develop key areas of their current design through briefing stage and through to completion of Employer's Requirements and updated Departmental Relationship drawings and Site Development Control Plan in conjunction with the Architect.
- Lead in development, preparation and review of ADB room data sheets for Employer's Requirements/Tender documentation, to include 1 iteration with user groups. This will assist with the preparation of equipment lists for the Board's internal use. It is the intention to provide RDS/ADB information for all key rooms on basis of standardising rooms to avoid a prolonged exercise.
- Lead on behalf of the TA team and assist the Project Managers for the Adult and Children's Hospitals with the development of Clinical Output Specs / Operational Policies for all departments within the new facilities, working closely with NHS staff to agree and sign off a standard reference document for the Employer's Requirements briefing process and documents. In other words ensure full briefing packs are prepared for all departments to a suitable level for the project.

- Actively participate in design development process between user groups and bidder design teams through the various stages of tender through to contract close.
- Lead in clinical and healthcare planning design reviews from bidders and evaluation meetings at each stage of the process.
- Input to reports on bids at various stages of the D&B process and Contract Close stages of the project in respect of healthcare planning solutions, and as required for FBC submission by the Board.
- Review bidders proposals at all stages for compliance with Employer's Requirements, participate in the production of technical reports at the end of each stage, to include aspects on healthcare planning and design, good practice, compliance with National healthcare quality, infection control and design standards.
- Provide full shadow design team 'due diligence' service on healthcare planning and design matters throughout the duration of the works contract.

BUILDING SERVICES ENGINEER – KEY ROLE AND RESPONSIBILITIES

Key aspects of Building Services Engineer's role:-

- Take lead on all matters relative to mechanical and electrical engineering services, energy and environmental matters, renewables, carbon neutral design, integration with existing hospital and other main utility services.
- Establish and lead discussions with main utility providers for gas electricity and water
- Assist with the Design Development process and input to the ADB room data and room layout processes by the supply of building engineering information for the sheets to focus on environmental conditions, air changes, room temperatures, humidity any specialist filtration, negative or positive pressure systems. Also review and advise on M&E equipment, including the location of M&E apparatus such as light and power switches, light fitments, air handling grillage, appropriate types of heating systems, powered medical equipment, telecoms and IT.
- Fully participate in the design development/briefing Stages 1&2, assist the Board to prepare a comprehensive Employers Requirements document which fully reflects the Board's desire to reduce lifecycle / running costs by providing high quality specification for/and equipment at outset.
- Provide advice and guidance on the integration of large scale Group II equipment such as specialist imaging, PACS, MRI, CT and any special shielding requirements. Ensure all relevant standards are met.
- Review bidders proposals at all stages for compliance with tender requirements, participate in the production of technical reports at the end of each stage, to include aspects on building services.
- Required to be based in the Board's Project Office at critical stages of project to be determined by the Board.
- Ensure environmental and sustainable design concepts and practices are incorporated into the Boards Employer's Requirements specification and are demonstrated by bidders in their responses through to contract close.
- Provide advice to the Board, to include visits to reference sites to review integrated building management systems suitable to run facilities of this size on a daily basis, linkage with CDM advisor for linkage to as built info and building systems.
- Provide full shadow design team service throughout the duration of the works contract.
- Fully participate in the technical commissioning of the new facilities in conjunction with Board estates staff and the contractor.

COST CONSULTANT / QUANTITY SURVEYOR – KEY ROLE AND RESPONSIBILITIES

Key aspects of Cost Consultants role:-

- Provide advice on building and life cycle costs throughout briefing and development of Employer's requirements through to completion of works, and update as required, assist with negotiations with contractors on cost and contract matters.
- Review and fully update the OBC/PSC stage DCAG cost plan and provide the Project Director with a new format to suit you working practice, to take forward for the project. The coast plan was last updated to Dec 2007 cost base, the £842m budget ceiling is inflated to mid build as follows

New Children's Hospital – 3rd qtr 2011.
New Adult Acute Hospital – 2nd qtr 2012.

- Review contractors proposals at all stages and benchmark against PSC capital cost plan.
- Continually update Project Cost plan.
- In association with the Lead Consultant, develop a robust cost control and change management processes for approval by the Project Director, establish regular monitoring and reporting process throughout the life of the project. Reports will be required for the Procurement and Finance Group on a monthly basis at all stages of the project.
- Review bidders programme for construction and any associated works at all stages.
- Provide detailed input on construction management aspects of bidders proposals at all stages.
- Review bidders proposals at all stages for compliance with Employer's Requirements, participate in the production of technical/cost reports at the end of each stage, to include aspects related to capital costs, lifecycle costs and general construction / build management and programme.
- Prepare and maintain a costed risk register for regular review by Project Director.
- Preparation of all cost information to assist with completion of FBC documentation.
- Input to reports on bids at various stages of the D&B process and Contract Close stages of the project in respect of healthcare planning solutions, and as required for OBC and FBC submissions by the Board.
- In conjunction with Lead Consultant, lead negotiations with bidders at all stages regarding all financial and commercial matters. Lead the detailed review and negotiations associated with the Stage II package tenders to secure final agreement on the cost plan within the Board's financial envelope.
- Detailed financial negotiations on costs with bidders at end of each key stage, concluding with negotiation and agreement of GMP pre contract sign.
- Provide risk and value management advice on behalf of the Lead Consultant team. Provide full shadow design team cost management service throughout the duration of the works contract, including monthly valuations and cost control and reporting.
- In conjunction with Board's project staff engage and agree final account with contractor.

CIVIL AND STRUCTURAL ENGINEER – KEY ROLE AND RESPONSIBILITIES

Key aspects of civil and structural engineer's role:-

- Take lead on all matters relative to structure, site external works, roads, main drainage, drainage and structural fabric connections to existing buildings and demolitions within Lead Consultant team.
- Assist with preparation of Employer's Requirements documentation in respect of Civil and structural engineering matters, during the bid process and evaluation at all stages.
- Develop PSC structural solution further, based on further SI work confirm cost plan requirements.
- Input to reports on bids at various stages of the D&B process and Contract Close stages of the project in respect of healthcare planning solutions, and as required for OBC and FBC submissions by the Board.
- Manage a full site investigation and remediation project to clear the site of debris, review for ground contaminants, and manage the undertaking of a full site investigation of ground conditions across the whole development site to provide a full report for inclusion in the Employer's Requirements documentation and further inform the Board's cost plan. Note cost of surveys will be paid by Board direct to contractor. This work needs to be taken forward as soon as possible and results available for inclusion in the Employer's Requirements.
- The development site is covered with large piles of building debris, old trees, tyres, and concrete. The Board require a package of works to be developed following on from the site investigation results to clear the site. These works should minimise any potential costs for landfill tax, and post crush/grade stock pile materials for re-use for bottoming etc.
- The OBC / PSC design option incorporates a basement over much of the podium area, as well as a subterrainian link from the Energy Centre/Service Yard to the new builds. The cost plan includes for 900mm diameter CFA piles on a 7.5m grid, 22.5m long. The site conditions of alluvial soil over rock head some 16-27m below, and a high water table make this solution challenging, and de-watering maybe required during the ground works package. The Engineer will further review the situation

during preparation of the Employer's Requirements and undertake further flood / water table studies to inform design solution and cost plan allowance.

- Review bidders proposals at all stages for compliance with Employers Requirements/tender documents, participate in the production of technical reports at the end of each stage, to include all project related aspects of civil and structural engineering, site infrastructure and drainage.
- Provide full shadow design team inspection service throughout the duration of the works contract; manage the work of site based engineering staff employed separately by Board.

FACILITIES MANAGEMENT DESIGN ADVICE

Key aspects of this role:-

- The Board require the Lead Consultant team to provide an individual to give detailed input on aspects relative to Hard FM and perhaps Soft FM services throughout the Employers Requirements stage, through to detailed negotiations with bidders. This will be in conjunction with the Board's Facilities Department.
- The adviser will also be actively involved in preparation of specifications, for inclusion in the Employer's Requirements which will incorporate lifecycle and running cost/maintenance issues. In other words the Board wish to incorporate within their specification aspects which will drive down future running and operational costs, for example integration of robotics, lifecycle of materials and building systems and modularisation of construction.
- The Board also wish to investigate the option of including a period of operational maintenance for the new facilities within the bid, say 3-5 years, with incentivisation to provide a bedding in period for their staff , and also to assign the risk of problems with Building Systems to the builder.
- Meetings between Board staff and bidders at all stages.
- Evaluation of bids at all stages.
- Evaluation of buildings and compliance with Employer's Requirements.
- Active participation in building commissioning phase, providing advice on operational issues to the Project Director.

PLANNING SUPERVISOR – KEY ROLE AND RESPONSIBILITIES

Key aspects of the CDM Co-ordinator's role:-

- Take lead on all matters relative the CDM Regulations and Health & Safety matters generally within Technical Advisory team.
- Point of contact with HSE for Technical Advisory team.
- Assist with the preparation of a robust Employer's Requirements document and tender package in respect of CDM & H/S matters.
- Preparation of H&S pre tender plan.
- Manage all aspects of CDM in partnership with Board. Regularly liase with Board H&S staff based at the Southern General site, ensure any operational matters / interfaces are raised and satisfactorily dealt with.
- Fully advise the Board on their duties and responsibilities in respect CDM Regulations.
- Ensure full H&S file and related submissions made at conclusion of contract works.
- In conjunction with M&E Engineer, give advice on suitable building management system for estates data to run and manage a building of this size and complexity in daily use by estates staff once complete and operational.
- Provide full site related service during contract works, providing monthly reports on site management operation and safety issues as part of team.

LANDSCAPE ARCHITECT

Key aspects of Landscape Architects role:-

- Take lead on all matters relative to landscape architecture, external environment and external works.
- Prepare landscape specification and design for revised site masterplan to be developed as part of Stage 1A, assist Architect with development, and discussions with Glasgow City Council on Masterplan.
- In respect of OutlinePlanning Condition 3, the Board are required to prepare a landscape and visual impact assessment for the site ( Based on Landscape Inst. Guidelines 2002), to feed into work to develop and agree a revised masterplan. This task will probably take 3-4 months to complete, you are asked to detail in your response you view on scope and content.
- Assist with adaptation of the current Development Control Plan to incorporate current proposals to retain additional existing buildings post completion of the new builds in 2014. (eg Adapt Option 1 to Option 1A, see site plans in Appendix G).
- Assist with preparation of Employer's Requirements documentation, the bid process and evaluation at all stages.
- Participate in the AEDET review and any related design led review processes as required at relevant stages.
- Develop a full landscape and external works (not roads) specification and construction requirements for inclusion in the Employer Requirements/Tender document.
- Review bidders proposals at all stages for compliance with Employer's Requirements document, participate in the production of technical reports at the end of each stage, to include aspects on architectural, building construction, healthcare design, interior design, landscape and master planning.
- In conjunction with Project Director or his nominee, participate in discussions with Architecture + Design Scotland.
- Review design proposals developed at all stages.
- Provide full shadow design team service throughout the duration of the works contract, including inspection of the works onsite for compliance.
- Input monthly reports on compliance of project with Employer's Requirements on landscape and externals matters.

SIGNATURES

DATE:_____

AS WITNESS the hands of the parties the day and year first above written

Signed:_____
(Client)

Witness to the signature of the client:_____

Name:_____

Address:_____

_____

_____

Description

_____

Signed:_____
(Consultant)

Witness to the signature of the consultant:_____

Name:_____

Address:_____

_____

_____

Description

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APPENDIX A

PROJECT MANAGEMENT REPORTING STRUCTURES



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ASR PROGRAMME BOARD

Role and Remit

The ASR Programme Board (ASRPB) is responsible for overseeing the delivery of the Acute Services Review. This includes the planning and implementation of the individual elements identified as necessary to achieve the strategic change and also the quantification of outcomes to ensure they are in line with the agreed aims and objectives of the Acute Services Strategy.

The ASRPB will ensure that all activities are in line with agreed principles and timescales. The ASRPB will receive updates regarding all aspects of planning and implementation of the Acute Services Review.

The ASRPB will ensure that the strategic direction is reviewed and confirmed as still appropriate.

The ASRPB will consider the wider implications of implementing the Acute Services Review including: the impact on local communities; providing direction and advice on liaising and working with the many interested parties, maximising local benefit through advocating good community planning processes are adhered to and ensuring that political sensitivities are managed appropriately.

The ASRPB will ensure the necessary linkages between elements of the strategy are in place to allow delivery of the strategy.

The ASRPB will ensure overall financial control is being managed and is kept within the parameters of the Board's expenditure.

The ASRPB will approve and monitor the appropriate governance is in place to ensure a successful outcome for each major element of the Acute Services Plan.

The ASRPB ensure that the performance of all aspects of planning and implementing the Acute Services Review is monitored and progressed at the appropriate level for a successful outcome.

The ASRPB will consider and approve specific aspects/proposals of the planning and implementation process to the agreed level of delegation.

NEW SOUTH GLASGOW HOSPITALS EXECUTIVE BOARD

Role and Remit

The New South Glasgow Executive Board (NSGEB) will ensure that all activities of the ASR Systems Redesign Group and Procurement & Finance Group (PFG) are co-ordinated and achieving the appropriate progress.

The NSGEB will have appropriate delegated authority to take forward necessary negotiations to ensure objectives are achieved, progress is maintained and business is concluded especially where time is critical to the ASR2 viability with respect to financial aspects and the implementation programme.

The NSGEB will report and advise the Acute Services Review Board (ASRPB) on all aspects of the implementation of ASR2.

The NSGEB will monitor all aspects of performance of the implementation of ASR2.

The NSGEB will provide change management control in that any change which impacts upon the project must be authorised by this Board before it can be implemented.

The NSGEPB will meet regularly (every 2 months) to assess programme progress. The NSGEPB will also meet as often as necessary when critical factors that may be detrimental to the progress of implementation of ASR2 require to be addressed.

## ASR SYSTEMS REDESIGN GROUP

### Role and Remit

The ASR Systems Redesign Group will oversee the impact of implementing the Acute Services Review (ASR) on the whole organisation and drive forward the service transformation programme which will include changes in activity, models of care and new ways of working.

As the project progresses the remit of this group will evolve from a strategic clinical redesign focus to a more operational focus. On this basis it is proposed that the chair will change to reflect the evolving remit. The ASR Systems Redesign Group will ensure that external and internal stakeholder involvement is at the heart of planned change and that a development plan for staff is fully supported and implemented to enable change to happen appropriately.

The ASR Systems Redesign Group will report to the New South Glasgow Hospital Executive Board and be accountable for ensuring a fully co-ordinated approach is adopted to completing the work to achieve the objectives of the ASR.

The ASR Systems Redesign Group will approve and commission all aspects of clinical/service redesign in order to provide assurance to the ASRPB that the programme of transformation and change is on target and achieving agreed objectives.

The ASR Systems Redesign Group will monitor the stakeholder management plan to assure it interfaces with the following organisations and manages these links appropriately.

- Scottish Government
- MP's/MSP's (Local politicians)
- City Council Members and Offices
- Town Planning/Heritage Groups/Architect and Design Scotland
- Neighbourhood Groups
- Patient Groups
- Local/National media, safety and sustainability

The ASR Systems Redesign Group will approve or make recommendations to ASRPB all aspects of;

- Clinical Output Specs
- User Interface
- Bid Evaluation – (Service Based)
- Assure clinical functionality, safety and sustainability

## PROCUREMENT AND FINANCE GROUP

The Procurement & Finance Group (PFG) will be responsible to New South Glasgow Hospitals Executive Board.

### Role and Remit

The following describes the group's remit in respect of a) the procurement aspects and b) financial aspects.

#### a) Procurement aspects

The PFG is accountable for the planning and delivery of all procurement measures required to deliver the identified investment and services that fall within the scope of the whole project.

The PFG will ensure the following are completed to the satisfaction of the Acute Services Review Project Board (ASRPB):-

- Procurement Plan and timetable
- Procurement Administration
- Bid evaluation process and administration
- Procurement budget control
- Issues, risks, dependency logs administration
- Change control administration

The PFG will take forward and complete all aspects of:

- Negotiating commercial issue
- Draft Contracts/Final Contracts
- Report on issues affecting affordability to the Investment Board
- Examine financing proposals and make recommendations to the ASRPB.
- Bid evaluation
- Monitor funding competition
- Develop and report Value for Money (VfM) proposals.

The PFG will be responsible for attending to all technical requirements and issues which arise during the full procurement programme and hence oversee and approve the:

- Technical Output Specs
- Bid Evaluation Process
- Test technical viability of solutions
- All planning issues
- All changes to contract/design/specification

The PFG will oversee all aspects of commissioning and agree main programme interface with equipment installations.

The PFG will have specific NHS Board delegated authority to conduct and conclude negotiations at time critical and project critical moments of the procurement process.

b) Financial aspects

The PFG will oversee the whole investment programme associated with the implementation of ASR and will be responsible for the planning and completion of the procurement programmes including:

- New Adult and Children's Hospital complex
- Medical and Non-Medical Equipment
- IT Equipment
- All enabling schemes
- All advisor procurements (financial, legal & technical).

It will also be responsible for ensuring that critical expenditure forecasting for the project is in line with agreed income levels supporting the roll-out of the project and this will include:

- Approval, monitoring and reporting savings plans required to fund the project
- Income forecasting
- Financial risk management assessments
- Capital cost control approval, monitoring and reporting
- Incorporation of any new service developments are matched with income sources

The PFG will advise the Acute Services Review Project Board (ASRPB) on all major financial aspects of the project ensuring that any financial concerns are raised immediately.

The PFG will consider and approve all aspects of achieving Value for Money (VfM).

The PFG will ensure all Standing Financial Instructions (SFI's) are adhered to and that all financial transactions are enacted within the appropriate financial convention of accepted practice.

The PFG will monitor financial model and affordability and examine financing proposals to advise and make recommendations to ASRPB

SITE PROGRAMME CO-ORDINATING GROUP

The role of the Site Programme Co-ordinating Group (SPCG) will be to ensure that all construction projects on the Southern General Hospital Site are planned, developed and constructed in a co-ordinated matter to ensure that all potential impacts and risks that may occur in delivering a multi construction project environment are appropriately managed. The SPCG will report to the Procurement & Finance Group.

The SPCG will ensure that:-

- There is an overall site development plan which identifies every aspect of change being planned for the Southern General Hospital Site.

- There is an agreed critical path which identifies the key actions necessary to be taken to ensure all construction takes place in accordance with the agreed programming and the appropriate level of Health & Safety, cost, time and quality are delivered at all times.

- There is a Project Steering Group managing all individual projects on the Southern General Site and an accountable officer identified to deliver the project and take account of all other projects on the site.

- Priority is given to those aspects of the site development which will provide the least overall risk (including:- Health & Safety, cost, time and service implications).

- The SPCG will sign off all planned activity to ensure the agreed critical path for site development can be met taking account of:

    - Current clinical services requirements
    - Health & Safety
    - Cost
    - Time
    - Overall programme requirement

PROJECT TEAM

The Project Team are responsible for managing the planning and delivery of all aspects of the project up to Full Business Case and the following construction and commissioning process.

NEW ADULT HOSPITAL

ACH and New South Glasgow Hospital Directors Group (Subject to Consultation)
The Group membership will include the Acute Directors and senior clinicians and its key role will be to:

- Act as a focus in driving and overseeing the user input and signing off the outputs, e.g. patient models, design plans and equipment.
- Provide drive and strategic vision for the clinical redesign, co-ordinating work from different specialties.

- Act as a first stage change management control considering financial and non-financial impacts before deciding whether or not the request proceed to the NSGEB for authorisation or otherwise.
- Act as a conduit for keeping staff groups up to date (medical, nursing, AHP's, technical, auxillary).

NEW CHILDREN'S HOSPITAL

Clinical Transition Group

The New Children's Hospital Clinical Transition Group delivers a programme of work agreed and directed by the Project Team. It operates within a clear framework of delegated decision making, bringing together the strands of work being led by the Project Team and the Clinical Advisory Group.

It ensures that there is positive and consistent involvement of the public and staff. It is informed by the views of children and young people.

APPENDIX B

Questions on Sustainability

Five questions to included as part of your response.

The Board wish to incorporate a whole range of sustainable technologies and low carbon design into their new project. This project will produce the flagship hospital for Scotland, the project must be seen to demonstrate the use of the most appropriate and affordable technologies, low lifecycle cost with value for money, design excellence, we need to set the bar high.

The following questions are intended to secure you thoughts and views and also capability to advise the Board on the wide range of topics that come under the heading of sustainability.

You will note from the evaluation process set out in Section 1.10 that your response will be scored. Your response should focus on your views and where possible illustrate with examples from projects you have worked on. You are asked to keep you response to a maximum of a single side of A4 paper for each question, photographs illustrating examples would be useful.

1) Summer overheat – provide evidence of your experience of design consideration to minimise summer overheat via passive means such as solar shading, thermal mass of fabric and free overnight cooling.

2) Internal planning and quality of internal environment – your thoughts and views on the need to achieve a high quality internal environment, whilst achieving clinical planning objectives.

3) Energy & Sustainable Cooling – provide details of your understanding with an example where sustainable cooling has been used in a healthcare building and state the consequential reduction to conventional mechanical cooling.

4) Ventilation – what is your experience and what are the opportunities to maximise natural ventilation in a project of this size, especially where 100% single room provision is confirmed.

5) Minimisation of maintenance – your experience and proposals for this project whereby the Board can drive down the future costs of maintenance at the strategic and detail design stages.

APPENDIX C

Certificate of Bona Fide Tender

FORM OF OFFER

NHS Greater Glasgow & Clyde

STATEMENT OF BONA FIDE TENDER

TENDER FOR LEAD CONSULTANT SERVICES
FOR
NEW SOUTH GLASGOW HOSPITALS PROJECT

CLOSING TIME/DATE:_____

The essence of selective tendering is that the client shall receive bona fide competitive tenders from all firms tendering. In recognition of this principal, we certify that this is a bona fide tender, intended to be competitive, and that we have not fixed or adjusted the amount of the tender by or under or in accordance with any agreement or arrangement with any other person. We also certify that we have not done and we undertake that we will not do any time before the returnable date for this tender any of the following acts:

a) Communicating to a person other than the person calling for these tenders the amount or approximate of the tender herewith submitted;

b) Entering into agreement or arrangement with any other person that he shall refrain from tendering or as to the amount of any tender to be submitted;

c) Offering or paying or giving or agreeing to pay or give any sum of money Or consideration directly or indirectly to any person for doing or having done or causing or having caused to be done in relation to any other tender for the Said work any act or thing of the sort described above;

In this certificate, the word "person" includes any persons and anybody or association, corporate or incorporate and "any agreement or arrangement", includes any such transaction, formal or informal, whether legally binding or not.

SIGNED:

NAME: (please print)

DESIGNATION:

NAME OF COMPANY / FIRM:

DATE:

APPENDIX D

Offer Qualification Page



A49342285

OFFER QUALIFICATION PAGE

TENDER FOR LEAD CONSULTANT SERVICES
FOR
NEW SOUTH GLASGOW HOSPITALS PROJECT

CLOSING TIME/DATE.

THE TENDERER MUST ENTER ON THIS SHEET ANY CLAUSE, CONDITION, AMENDMENT TOTHE SPECIFICATION OR ANY OTHER QUALIFICATION OR COMMENT HE MAY WISH TO MAKE CONDITIONAL TO HIS OFFER. THIS SHEET MAY BE USED TO LIST/CLARIFY THE SERVICES INCLUDED FOR IN THE TENDER.

SIGNED:

NAME (Please Print)

DESIGNATION:

NAME OF COMPANY:

DATE:

APPENDIX E

Tender Return Address Label



A49342285

Please return your submission in a plain A4 envelope with the attached label. Do not apply or display company logos on this envelope.

Responses by post should be sent via 'recorded delivery' and posted to Mr Gordon Beattie at address below.

***Tender for Lead Consultant – New South Glasgow Hospitals Project***

Mr Gordon Beattie
Head of Procurement
NHS Greater Glasgow & Clyde
1st Floor, Walton Building Annexe
Glasgow Royal Infirmary
84 Castle Street
Glasgow G4 0SF.

Hand deliveries should be given to;

[redacted]
PA to Gordon Beattie
Address as above.

A receipt will be provided for hand deliveries.



A49342285

APPENDIX F

Draft Collateral Warranty Agreement for Sub-Consultants

COLLATERAL WARRANTY AGREEMENT

between

GREATER GLASGOW HEALTH BOARD (known as NHS Greater Glasgow and Clyde)

and

[INSERT SUB-CONSULTANT DETAILS]

and

[INSERT "CONSULTANT" DETAILS]

Re: New South Glasgow Hospitals Project

COLLATERAL WARRANTY

between

(1) [The Firm of [ ] and the partners thereof individually and as partners and trustees for said firm, having its principal place of business at [ ]], [incorporated under the Companies Acts (Company No. [ ]) and having their registered office at [ ]] (the "Sub-Consultant");

(2) NHS GREATER GLASGOW AND CLYDE, of Dalian House, 350 St Vincent Street, Glasgow, G3 8YZ (together with its permitted successors and assignees referred to as the "Beneficiary"); and

(3) [ ], incorporated under the Companies Acts (Company No. [ ]) and having their registered office at [ ] (the "Consultant").

WHEREAS: -

A The Beneficiary has appointed the Consultant in terms of an Appointment dated [•] [(hereinafter referred to as "the Main Appointment") to carry out certain obligations and perform services in connection with the Project (as defined in Section 6.0 Schedule 1 of the Memorandum of Agreement forming part of the Main Appointment);

B The Sub-Consultant has entered or intends to enter into an agreement ("the Sub-Consultant Agreement") with the Consultant for the provision of certain services (forming part of the Services to be provided by the Consultant under the Main Appointment) ("the Services") in connection with the Project;

C It is a condition of the Sub-Consultant Agreement that the Consultant procures that the Sub-Consultant enters into this agreement with the Beneficiary; and

D words and expressions used in this agreement shall bear the same meaning ascribed to them in the Main Appointment unless the context otherwise requires.

THE SUB-CONSULTANT AND THE BENEFICIARY AND THE CONSULTANT HEREBY AGREE as follows: -

1 PROFESSIONAL RESPONSIBILITY

1.1 The Sub-Consultant warrants and undertakes to the Beneficiary that in performing any services under the Sub-Consultant Agreement, any agreement entered into under the Sub-Consultant Agreement, or this Agreement, the Sub-Consultant has exercised, and will continue to exercise reasonable skill, care and diligence in the discharge of the duties agreed to be performed by him under any such agreements.

1.2 The Sub-Consultant acknowledges that it is aware of the terms of the Main Appointment.

1.3 The Sub-Consultant undertakes to the Beneficiary to perform and observe the obligations and warranties on the part of the Sub-Consultant contained in the Sub-Consultant Agreement.

1.4 The Sub-Consultant warrants and undertakes to the Beneficiary that it has the requisite competence and resources to fulfil the requirements and obligations pursuant to the CDM Regulations insofar as same apply to the Sub-Consultant in connection with the Sub-Consultant Agreement or the Services.

2 DUTY OF CARE/UNDERTAKINGS

2.1 By entering into this agreement, the Sub-Consultant acknowledges that the Beneficiary has relied upon the Sub-Consultant's skill and judgement in respect of those matters relating to the Project and to each Build which lie within the scope of the Sub-Consultant's express and/or implied responsibilities arising under the Sub-Consultant Agreement, and the Sub-Consultant acknowledges and extends its duty of care to the Beneficiary. The Sub-Consultant agrees and undertakes that it owes to the Beneficiary no greater duty of care than the Sub-Consultant would have owed to the Beneficiary if the Sub-Consultant had been appointed by the Beneficiary instead of the Sub-Consultant being appointed by the Consultant in respect of the Services and its duties under the Sub-Consultant Agreement.

2.2 The Sub-Consultant acknowledges that the Beneficiary has relied or will rely upon, *inter alia*, all information and certificates (if any) issued or approved by the Sub-Consultant pursuant to the Main Appointment or the Sub-Consultant Agreement.

2.3 Where the Sub-Consultant is a firm, the duties and obligations of the Sub-Consultant under the Sub-Consultant Agreement and this agreement shall be binding jointly and severally on all persons who are or become partners of the Sub-Consultant's firm at any time after commencement of the Project or the Services provided thereunder whichever is the earlier and their respective executors and representatives whomsoever as well as on the Sub-Consultant's firm and its whole stock, funds, assets and estate without the necessity of discussing them in their order and such duties and obligations shall subsist and remain in full force and effect notwithstanding any change or changes which may take place in the Sub-Consultant's firm whether by the assumption of a new partner or by the retiral, bankruptcy, apparent insolvency or death of any individual partner.

3 INSURANCE

3.1 The Sub-Consultant shall in respect of their services, obligations and liabilities under the Sub-Consultant Agreement, any agreement entered into under the Sub-Consultant Agreement or this Agreement take out and maintain throughout the period, from the date of commencement of their services under this commission, professional indemnity insurance. The professional indemnity insurance shall be maintained until the expiration of Twelve (12) years, provided that it can be obtained at reasonable market rates, from the date of completion of his commission. The level of indemnity shall be a minimum of £[TO BE AGREED BY THE BOARD] GBP per individual team member.

PII cover will be required for all aspects of the Sub-Consultants work from date of appointment.

3.2 If such insurance is not available or ceases to be available at commercially reasonable rates or upon commercially reasonable terms, or if there is a material change in such insurance cover, the Sub-Consultant shall inform the Beneficiary immediately and the Sub-Consultant shall use its best endeavours to effect and maintain such insurances as are available and in doing so, the Sub-Consultant shall be under a duty to: -

3.2.1 have regard to the commercial position of the Beneficiary in terms of this agreement; and

3.2.2 use reasonable endeavours to see that the Beneficiary's commercial position under this agreement is fully protected by such insurance.

3.3 The Sub-Consultant shall exhibit to the Beneficiary satisfactory evidence of such insurance cover prior to or contemporaneously with delivery of this agreement and on each subsequent renewal date of such insurance together with evidence that such insurance is in place, that the premiums are fully paid and that the Sub-Consultant's potential liability under this agreement is covered. The Sub-Consultant shall procure the delivery of a letter from its insurers, brokers or underwriters to the Beneficiary confirming details of such insurance duly completed and signed. The Sub-Consultant shall pass a copy of this agreement to its insurers or underwriters and exhibit evidence to the Beneficiary.

4 INTELLECTUAL PROPERTY

4.1 Copyright and design rights in all the Documents produced by, or on behalf of the Consultant in relation to the Project shall be vested in the Beneficiary.

4.2 The Consultant shall provide the originals of and/or copies of the Documents to the Beneficiary upon reasonable request.

5 ASSIGNATION/ DELEGATION

5.1 The Beneficiary's interest in this agreement may be assigned in whole or in part to another Scottish NHS Organisation without the consent of the Sub Consultant.

5.2 The Sub-Consultant shall not be entitled to assign its rights, obligations and/or liabilities under this agreement.

5.3 The Sub-Consultant shall not be entitled to delegate further any aspect of the Services in relation to the Project without the consent of the Beneficiary.

6 NOTIFICATION OF DELAY

6.1 The Sub-Consultant shall immediately inform the Beneficiary if they have reason to suspect that it may prove impossible or impracticable to complete the Project, or any Services within

the period required by the Beneficiary or the Consultant, or that the Sub-Consultant may be unable to complete the discharge of their duties under this agreement, the Sub-Consultant Agreement or that there is likely to be any delay in completing the Project.

7 TERMINATION AND STEP-IN

7.1 Not later than twenty-one days prior to the Sub-Consultant terminating the Sub-Consultant Agreement with the Consultant for any reason whatsoever, the Sub-Consultant shall notify the Beneficiary in writing of the Sub-Consultant 's intention to do so.

7.2 The Sub-Consultant confirms that this agreement is independent of the Sub-Consultant Agreement and the Main Appointment and shall endure notwithstanding completion of the Services or the Sub-Consultant and/or Consultant being entitled to rescind or terminate the Sub-Consultant Agreement or doing so or the Sub-Consultant Agreement or the Appointment being defective, unenforceable or ceasing to be enforceable.

7.3 The Sub-Consultant's right to terminate the Sub-Consultant Agreement or treat it as terminated by the Consultant or to discontinue performance of any obligations under the Sub-Consultant Agreement shall cease if within the period of 21 days: -

7.3.1 the Beneficiary gives written notice to the Sub-Consultant requiring it to fulfil the terms of the Sub-Consultant Agreement as if the Beneficiary and not the Consultant were the employer;

7.3.2 the Beneficiary acknowledges in such notice that it is assuming all of the obligations of the Consultant under the Sub-Consultant Agreement, including without prejudice to the foregoing generality payment of any fees outstanding at the date of the notice and notified by the Sub-Consultant to the Beneficiary or which may subsequently become due under the Sub-Consultant Agreement.

7.4 In the event of notice being given by the Beneficiary as aforesaid and/or in accordance with clause 8.3, the Sub-Consultant Agreement will continue in full force and effect as if no right to terminate the Sub-Consultant Agreement or treat it as terminated had arisen, and the Sub-Consultant shall assume liability to the Beneficiary in terms of the Sub-Consultant Agreement in lieu of liability to the Consultant.

7.5 By its signature hereof, the Consultant confirms that the Beneficiary shall be entitled to assume that, as between the Sub-Consultant and the Consultant circumstances have occurred which entitle the Sub-Consultant to give notice under Clause 7.1. The Consultant acknowledges that the Sub-Consultant shall incur no liability to the Consultant when acting in accordance with the provisions of this Clause 7 provided the Sub-Consultant acted properly in giving notice to the Beneficiary in accordance with Clause 7.1.

7.6 The Sub-Consultant shall, if required by the Beneficiary following determination of the Sub-Consultant Agreement with the Consultant, contract direct with the Beneficiary by novation or otherwise on the same terms, *mutatis mutandis*, as are contained in the Sub- Consultant Agreement.]

8 NOTICES

8.1 Any notice to be given by the Sub-Consultant shall be deemed to be duly given if it is delivered by hand at or sent by registered post or recorded delivery to the Beneficiary at the address specified in this agreement or such other address as may be specified from time to time and any notice given by the Beneficiary pursuant to this agreement shall be deemed to be duly given if it is delivered by hand at or sent by registered post or recorded delivery to the Sub-Consultant at its registered or principal office.

8.2 Notices sent by registered post or recorded delivery shall be deemed to have been received forty-eight hours after being posted.

8.3 All notices to be given under this agreement shall be in writing. All notices given to or by the Beneficiary or the Consultant or the Sub-Consultant under Clause 7.3 shall be copied to the other parties.

9 LAW AND JURISDICTION

9.1 This agreement shall be governed by the law of Scotland.

9.2 The parties' prorogate the non-exclusive jurisdiction of the Scottish courts.

11 FURTHER WARRANTIES

11.1 Within the timescale set out in the Sub-Consultant Agreement, upon each written request from the Beneficiary to do so, the Sub-Consultant shall execute in a self proving manner and deliver to the Beneficiary, collateral warranties in favour of each party entitled to such collateral warranties in equivalent terms to this Agreement but that only in so far as not already granted.

12 WAIVER

12.1 The Sub-Consultant warrants and undertakes to the Beneficiary that it shall not vary or depart from any or all of the terms and conditions of the Sub-Consultant Agreement or discharge or waive such terms and conditions in such a way as to reduce or extinguish the rights and remedies of the Beneficiary hereunder without the prior written consent of the Beneficiary and the Sub-Consultant agrees that any such variation, departure, discharge or waiver made or accepted without such consent shall not be binding on the Beneficiary or affect or prejudice the Beneficiary's rights and remedies hereunder or under the Sub-Consultant Agreement or in any other way.

13 FREEDOM OF INFORMATION

13.1 The Sub-Consultant shall co-operate, facilitate, support and assist the Beneficiary to comply with the Freedom of Information (Scotland) Act 2002 and any codes of practice applicable from

time to time relating to access to public authorities' information, including by providing Documents and other information relating to Builds, the Project, the Sub-Consultant, etc. within the timescales necessary to allow the Beneficiary to comply with its obligations and duties under the Act and codes of practice.

13.2 All information submitted to the Beneficiary (directly or indirectly) may need to be disclosed and/or published by the Beneficiary. Without prejudice to the foregoing generality, the Beneficiary may disclose information in compliance with the Freedom of Information (Scotland) Act 2002, (the decisions of the Beneficiary in the interpretation thereof shall be final and conclusive in any dispute, difference or question arising in respect of disclosure under its terms), any other law, or, as a consequence of judicial order, or order by any court or tribunal with the authority to order disclosure. Further, the Beneficiary may also disclose all information submitted to them to the Scottish or the United Kingdom Parliament or any other department, office or agency of Her Majesty's Government in Scotland or the United Kingdom, and their servants or agents. When disclosing such information to either the Scottish Parliament or the United Kingdom Parliament it is recognised and agreed by both parties that the Beneficiary shall if they see fit disclose such information but are unable to impose any restriction upon the information that they provide to Members of the Scottish Parliament, or Members of the United Kingdom Parliament; such disclosure shall not be treated as a breach of this agreement.]

14 WARRANT

14.1 The Sub-Consultant and the Beneficiary [and the Consultant] consent to the registration of this agreement for preservation: IN WITNESS WHEREOF these presents and the preceding [#] pages are executed as follows:

[to be executed in a self-proving manner]

APPENDIX G

1) PSC Design Drawings - Site Plans for

Site masterplans;

Options 1

Option 1A – Preferred option

2) Departmental Relationship Drawings

All levels for New Adult Acute Hospital and new Children's Hospital.

Note – respondents may wish to meet with the Board and review the PSC Design Report in more detail. Arrangements can be made by contacting the individual in Section 1.8.



A49342285

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Currie & Brown

Mr Gordon Beattie
Head of Procurement
NHS Greater Glasgow & Clyde
1st Floor, Walton Building Annexe
Glasgow Royal Infirmary
84 Castle Street
Glasgow
G4 0SF

06 August 2008

Dear Mr Beattie

**NHS Greater Glasgow & Clyde**
**Acute Services Strategy 2**
**Appointment of Lead Consultant**

With regard to the above, I would like to confirm the importance of this key strategic project to Currie & Brown UK Limited. The Company and in particular our senior management team have shown total commitment and support to the bid which, should we be successful, we will continue into the implementation and delivery stages.

The Currie & Brown project team in Glasgow have already been working well in partnership with the NHS Greater Glasgow & Clyde team on the first phase of the Acute Services Strategy at the Victoria and Stobhill Hospitals, as well as on the schemes at Stobhill (Rowanbank) and Gartnavel Hospitals.

The Acute Services Strategy Phase 2 scheme is of prime importance to myself and the Board at Currie & Brown, as well as to the local office in Glasgow. I can confirm the utmost commitment to the success of this project from all at our organisation, including the availability of the individuals named in our bid, and you can be assured that any work undertaken will be in line with one of our Key Values – Striving for Excellence.

Yours sincerely
For and on behalf of
Currie & Brown UK Limited

[redacted]

Euan McEwan
Group Chief Executive Officer



Currie & Brown Group Limited
Registered in England no 3830593
Registered Office
140 London Wall
London EC2Y 5DN

Project Offices
1 Jubilee Court
Hillington
Glasgow
G52 4LB

NHS
Greater Glasgow and Clyde

Mr. James Hackett
Divisional Director
Currie & Brown UK Ltd
140 West Campbell Street
Glasgow
G2 4TZ

Date 2nd September 2008
Your Ref
Our Ref AS/SF

Enquiries to Alan Seabourne
Direct Line [redacted]
E-mail [redacted]

Dear Mr. Hackett

**NEW SOUTH GLASGOW HOSPITAL PROJECT**
**APPOINTMENT OF LEAD CONSULTANT**

On behalf of NHS Greater Glasgow and Clyde, I write to confirm acceptance of your tender dated 6th August 2008 and as further clarified in your letter dated 13th August.

The contract commencement date will be Tuesday 2nd September 2008, and your team are appointed to undertake the role of Lead Consultant as set out in the Board's Invitation to Tender document dated 26th June 2008. The appointment is initially for Stage 1A – Preparation of Employer's Requirements Documentation, with appointment to successive stages subject to approval from the Board, all as set out in our ITT documentation.

With regard to completion of the Memorandum of Agreement, I will have the documents prepared for signature over the next week and send to you for signature. I would also be obliged if you could confirm your acceptance of this letter in writing by return.

As you will appreciate, the Board are keen to proceed with the project to develop the design and procurement streams over the forthcoming months and I look forward to working with you and your team over the coming months and years.

Yours sincerely,

[redacted]

**Alan Seabourne**
Project Director

Cc Helen Byrne Director of Acute Services Strategy Implementation and Planning.



A49342285

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Currie & Brown

Mr Peter Moir
NHS Greater Glasgow & Clyde
Project Offices
St Andrews House
80 Queen Elizabeth Avenue
Hillington
Glasgow
G52 4NQ

Ref: DJR/PB/GW4854M

26 February 2010

Dear Peter

**New South Glasgow Hospitals**
**Technical Advisor Appointment**

We acknowledge receipt of your letter dated 18 January 2010 and confirm agreement to the changes to our appointment and fee structure for Brookfield Construction Contract Stage 1 and Stage 2.

We would confirm key changes to appointment scope as follows:-

1. Responsibility for managing and administering the Building Contract sits with the Board as the designated Project Manager under the Contract and we will accept Delegated Duties as directed.

2. The requirement to direct the work of the Site Inspectorate team is no longer required. The required role of Supervisor under the NEC3 Contract will be procured separately.

With regard to the role of Supervisor we note the Board are proposing to utilise the Health Facilities Scotland Framework for the selection of a Supervisor. We would request that the Board consider ourselves for Supervisor duties alongside the HFS process as a variation to our TA appointment. The management of the Site Inspectorate Team was part of our original appointment and consider Supervisor Services to be a variation to same. We are operating a similar dual role for NHS Lanarkshire and delivering an efficient and streamlined service.

We have significant experience in the role and confirm recent projects where a Supervisor / Independent Certifier role has been undertaken:

| | |
|---|---|
| • NHS Forth Valley Acute Hospital | £300M |
| • NHS Lanarkshire Airdrie Resource Centre | £15M |
| • NHS Lanarkshire Coatbridge Resource Centre | £20M |
| • NHS Bundling Projects | £25M |
| • Highbury Hospital | £100M |
| • West Dunbartonshire Schools PPP | £120M |
| • Aberdeen Schools PPP | £100M |

Regulated by the RICS
Registered in England no 1300409
Registered Office
Dashwood House
69 Old Broad Street
London EC2M 1QS

Our lump sum fee for the required services would be:-

| | |
|---|---|
| Stage 1 | £150,000 |
| Stage 3 | £935,000 |
| Stage 3A | £15,000 |
| Defect Periods | £150,000 |
| | **£1,250,000 excluding VAT** |

We would re-affirm our commitment to support the Board to deliver the New South Glasgow Hospitals Project and in addition hope that our Supervisor Fee proposal can be considered.

Yours sincerely
For and on behalf of
Currie & Brown UK Limited

[redacted]

D J Ross
Director - Glasgow

The "Supervisor" is a person or firm, directly appointed by the employer to check that the works are constructed in accordance with the contract.

This is not unlike the role of a "Clerk of Works" or "Resident Engineer" in other types of contracts, however the Supervisor has a distinct level of authority that is not delegated to him by others.

NEC 3 separates the functions of contract administration and supervision. It does this not by delegation of powers but by specifying different roles for the project manager and supervisor.

Although those appointed as Project Manager can be the same as those appointed as Supervisor, the roles are significantly different and should be independent of one another whilst working together in tandem.

The Supervisor's role is to monitor and inspect the quality of work and defects for the project. To do this NEC 3 gives the Supervisor certain powers such as the ability to inspect and test materials, works and plant involved on the project or off site.

The following is a summary of the core clauses that outline the express duties and obligations of the supervisor:

- 10.1 – to act as stated in the contract and in a spirit of mutual trust and co-operation
- 13.1 – to communicate in a form which can be read, copied and recorded
- 13.3 – to reply to a communication within the period for reply
- 13.6 – to issue certificates to the project manager and the contractor
- 40.3 – to notify the contractor of his tests and inspections before they start and afterwards of the results
- 40.5 – to do tests and inspections without causing unnecessary delay
- 41.1 – to notify the contractor when plant and materials have passed pre-delivery tests and inspections
- 42.1 – to give reasons for searches which are instructed
- 42.2 – to notify the contractor of defects found
- 43.3 – to issue the defects certificate
- 71.1 – to mark equipment, plant and materials outside the working areas for payment purposes

As can be seen from the previous, the Supervisor's role is more of a technical role rather than administrative, yet, the Supervisor has one contractual responsibility. The Supervisor issues the Defects Certificate. This is significant as it largely ends the obligations of the parties involved in the contract.

It must be noted however, that although the Supervisor issues the defects certificate, it is the Project Manager who decides upon acceptance of defects.

NHS
Greater Glasgow and Clyde

Project Offices
St Andrews House
80 Queen Elizabeth Avenue
Hillington
Glasgow
G52 4NQ

Mr. D. Ross
Currie & Brown UK Ltd
140 West Campbell Street
Glasgow
G2 4TZ

Date: 18th January 2010
Your Ref:
Our Ref: PJM
Tel. No: [redacted]
Fax No:
Email:

Dear Mr. Ross

**NEW SOUTH GLASGOW HOSPITALS – LEAD CONSULTANT AND TECHNICAL TEAM**
**FEES FOR STAGE 1 LABORATORY PROJECT AND STAGE 2 DESIGN DEVELOPMENT MAIN BUILD**

I refer to recent dialogue regarding fees for the next stages of the project and write to confirm the agreed fee envelope for the key stages as follows.

**New Laboratory Project**

The fee allocation for a period of 116 weeks commencing Tuesday 5th January 2010 are as follows;

| Activity | Fee Allowance | Remarks |
|---|---|---|
| Project Management support | [redacted] | Based on input of 2 days (15hrs) per week by Mark Baird. |
| Cost Management | [redacted] | Based on input of 2 cost managers each for 2days (15hrs) per week. |
| **Agreed Budget Total** | [redacted] | |

**New Adult & Children's Hospitals**

The fee allocation for a period of 57 weeks commencing Tuesday 5th January 2010 are as follows;

| Activity | Fee Allowance | Remarks |
|---|---|---|
| Conclusion of Contract | [redacted] | This work is complete. |
| Project Management support | [redacted] | Based on input of 3 days (22hrs) per week by David Hall. |
| Cost Management | [redacted] | Based on input of 2 cost managers each for 2days (15hrs) per week. In addition input from Director at 2 days per week (15hrs). |
| PM Support - Commissioning | [redacted] | This a sum of money is allocated for provision of advice and support as provided by Paul Fairie [redacted] on a call off basis and only by instruction by either the Project Director or Project Manager. This sum may not be fully expended over the 57 week period. |
| CDMC service | [redacted] | Support provided by URS Corporation as part of your team for the period. Fee split [redacted] - Hospitals / Laboratories. |
| Healthcare Planning support | [redacted] | Input as required at key stages during design development, input subject to agreement with Project Director/Manager. |
| Building Services support | [redacted] | Input as required during design and package development in line with Appendix K of ITPD requirements, input subject to agreement with Project Director/Manager. |
| **Agreed Budget Total** | [redacted] | |

**Project Management Support**
The inputs by David Hall and Mark Baird will be developed over the next 2-3 weeks based on the attached schedules for both Design Development (Schedule A) and construction works on the Laboratory Project (Schedule B).

**Cost Management**
Inputs by the Cost Managers will generally follow the requirements listed in the attached Schedule C.

**Monthly Look Ahead**
As previously discussed the Board want to ensure that the input by Currie & Brown is managed within an agreed cost envelope, and that any pressures are highlighted and additional work agreed in advance of this being undertaken. I propose that we meet on a monthly basis to review progress and deal with any specific areas of concern. We can jointly agree the most appropriate time to do this, and I suggest this is tagged onto the monthly Commercial Group meetings.

**Work Outwith the Agreed Budgets**
The agreed budgets are considered as a ceiling subject to additional activities being agreed with the Project Director / Manager. On this basis, it is the responsibility of Currie & Brown staff to manage their time and input within these allowances, work undertaken without approval will be at your risk. It is understood that workload may fluctuate by week and the agreed allowances are an average input over the period.

**Delegation of Duties**
As the Board are undertaking the role of Project Manager we require to delegate a range of duties which will most likely mirror the attached schedules A-C. I propose that David and Mark meet with myself and Alan Seabourne to agree duties for both Project Manager and Cost Advisor, please let me know if you wish to undertake this task.

To conclude, I would like to be clear that the Board value the work and support the Currie & Brown team have brought to the project up to this stage, and look forward to jointly taking the project into the construction stage.

Yours sincerely

[redacted]

**Peter J. Moir**

**Head of Major Projects**

Cc Alan Seabourne Project Director

**New South Glasgow Hospitals and Laboratory Project**

**Project Management Support – Schedule A** (This reference not NEC related)

**Design Development Stage for Main Hospitals**

Key activities and tasks to be undertaken during the 57 week programme commencing 5th January 2010.

- Support the Project Director/ Manager to ensure that the Design Programme is progressing on schedule and to flag and action necessary requirements to ensure the milestones of project programme(s) are achieved.
- Participate in the design development user group sessions as required to support the Hospital Project Managers to deliver their objectives within time and cost.
- In conjunction with the Project Manager, control all early warning issues arising from design development and manage, control, report these warnings to relevant staff/groups. Provide mitigation advice to Project Director/Manager to mitigate all potential cost increases and prolongations to the works programme.
- Liaise with cost advisers to keep them aware of all potential cost issues.
- Liaise with the project Manager to keep him aware of all potential cost and programme issues.
- Oversee, manage and control other Technical Adviser input to Stage 2, ensuring that the Project Director/Manager is aware of all activities and resource requirements.
- Set out programme of work for Technical Adviser input to ensure Design is developed and compliant with contract (Employer's Requirements and Works Information).
- Attend meetings, groups as required to complete stage 2, ensure adequate liaison and co-ordination is made regarding programme of works, etc.
- Keep Project Manager fully informed about project management support in terms of need and resources.
- Attend risk management and reduction meetings as directed by the Project Director/Manager and assist with the review and update of the project risk register.
- Input to Full Business Case development and completion for submission to NHS Board.
- Complete NEC3 duties as required by Project Manager. For example, assisting the Project Manager to:
    - give notice of ambiguities or inconsistencies in the documents. To give instructions resolving ambiguities or inconsistencies
    - Accept particulars of the Contractor's design or to give reason for non-acceptance.
    - Accept particulars of the design of equipment or to give reasons for non-acceptance.

- Accept replacements persons proposed by the Contractor or to give reasons for non-acceptance.
- Assess the amount due for payment at each assessment date. To decide the first assessment date to suit the procedures of the parties
- Consider any application from the Contractor when assessing amounts due for payment. To give the contractor details of how amounts due have been assessed.
- Notify the Contractor of the compensation events which arise from the giving of instructions or changing of earlier decisions. To instruct the Contractor to submit quotations unless the event arises from a fault of the Contractor.
- Extend the time allowed for the submission of quotations and replies if the contractor agrees. To notify the Contractor of any agreed extensions for the submission of quotations or replies.
- Correct the description where a change to Works Information makes the description of the Condition for a Key Date incorrect.
- decide whether the Contractor did not give any early warning of compensation event which should have been given and to notify the contractor of his decision.
- Assist the PM to review potential effects to programme and assist with development of strategies to mitigate any prolongation as required.

This schedule generally summarises the key Project Manager supporrt services required by the Board commencing 5th January 2010, for periods;

Stage 2 – Design Development of Main Hospitals Duration 57 weeks.

.

**New South Glasgow Hospitals and Laboratory Project**

**Project Management Support – Schedule B** (This reference not NEC related)

**Laboratory Project – Site Works**

**Type of Support**

- Management of Construction programme and to accept any revisions in association with the Project Manager.
- Co-ordination of all Technical Adviser requirements (Advise on their input level and resource)
- Attend meetings as agreed with Project Director/Manager.
- Active management of all technical actions required to complete project.
- Close liaison with contractor to provide Project Manager with information on raising Early Warnings and managing these through the construction programme, providing Project Manager with mitigation strategies
- Liaising with the client to develop and deliver all interface issues such as: equipment/IT plans and commissioning plans, etc.
- Working in conjunction with Project Manager and Cost Advisor(s) to ensure adequate liaison and co-ordination is provided to assure progress is made regarding works, costs, payments, etc.
- Keep Project Manager fully informed about project management support in terms of need and resources.
- Support Project Manager to manage project risks and monitor and report on risk register items.
- To support the Project Manager in monitoring and controlling testing and inspection process.
- Complete NEC3 duties as required by Project Manager. For example, assisting the Project Manager to:
    - give notice of ambiguities or inconsistencies in the documents. To give instructions resolving ambiguities or inconsistencies
    - Accept particulars of the Contractor's design or to give reason for non-acceptance.
    - Accept particulars of the design of equipment or to give reasons for non-acceptance.
    - Accept replacements persons proposed by the Contractor or to give reasons for non-acceptance.
    - Assess the amount due for payment at each assessment date. To decide the first assessment date to suit the procedures of the parties
    - Consider any application from the Contractor when assessing amounts due for payment. To give the contractor details of how amounts due have been assessed.

- Notify the Contractor of the compensation events which arise from the giving of instructions or changing of earlier decisions. To instruct the Contractor to submit quotations unless the event arises from a fault of the Contractor.
- Extend the time allowed for the submission of quotations and replies if the contractor agrees. To notify the Contractor of any agreed extensions for the submission of quotations or replies.
- Correct the description where a change to Works Information makes the description of the Condition for a Key Date incorrect.
- decide whether the Contractor did not give any early warning of compensation event which should have been given and to notify the contractor of his decision.

Work in a collaborative manner with the Project Director/Manager, Cost Advisor, Supervisor, NHS Client Team and the Contractor.

This schedule generally summarises the key Project Manager support services required by the Board commencing 5th January 2010, for periods;

Stage 1 – Laboratory Project Site Works Duration 116 weeks.

**New South Glasgow Hospitals and Laboratory Project**

**Cost Management – Schedule C** (This reference not NEC related)

**Design Development Stage for Main Hospitals – Works Stage for Laboratory Project**

**NEC3 Engineering and Construction Contract - Option 'C' target contract with activity schedule; scheme contract)**

The Cost Advisor will report to the named Project Manager for the NEC Contract.
Note the full services are listed below, those not required have been struck through.

~~1. Assist with investigation into and evaluation of procurement strategy~~

2. Advise on VAT liability. Utilising the free VAT advisory service provided by Department of Health

3. Monitor VAT advice and the application of that advice and provide ad-hoc reports to Department of Health liaising with the free Department of Health VAT assessment & advisory section. Also liase with the Board's VAT advisor and Board Finance Manager.

4. Provide the NHS Client with general advice on the NEC3 ECC Contract.

5. Assist in establishing key dates for the proposed scheme and advise the NHS Client on programme and completion strategy for inclusion in the Scheme Contract.

~~6. Advise on the capital costs associated with any proposed contract phasing~~

~~7. Assist in preparation or validation of a conceptual scheme total construction cost, if possible, to establish financial scope of work for inclusion in the scheme pack and contract.~~

~~8. Assist in establishing appropriate level of Delay damages for the *works* and Sections~~

~~9. Provide the NHS Client with advice on NEC3 insurance provisions and Scheme specific options.~~

~~10. Assist in preparation of a Scheme Pack to be issued for return of expression of interest by the Principal Supply Chain Partner (PSCP)~~

- ~~Scope of work generally~~
- ~~Prepare Draft Scheme Contract and Agreement The National Integrated Construction Framework for NHS Scotland Template for the Scheme Contract~~
- ~~Include Works Information and Site Information in draft scheme contract document~~
- ~~Advise NHS Client on use of standard options in Scheme Contract~~

~~11. Participate in open day and selection of PSCP and PSCM's.~~

~~12. Finalise draft Scheme Contract for acceptance and issue by NHS Client to selected PSCP~~

~~13. Prepare letter of appointment for NHS Client to engage PSCP.~~

14. Attend regular (usually monthly) NHS Client meetings.

15. Provide cost review advice service during design development stage for main hospitals specifically assisting the Project Manager to review both early warnings and compensation events and any cost related processes.

**Post Contract**

1. Provide and maintain appropriate support for the Client's *Project Manager*, including assist the *Project Manager* to carry out the following during the life the scheme

    - Compile reports and recommendations for submission to the Project Steering Group and Project Board.
    - Prepare Management Control forms (MCP) as required by Capital Investment Manual for submission to NHS Client on monthly/quarterly programme as appropriate.
    - Maintain appropriate communications with the contractor (Brookfield).
    - Maintain appropriate communications with the Board's Director of Finance and the Board's Finance Team, provide guidance and information relative to cashflow, valuation as required.
    - Validation of the proposals for risk management & transfer, and corresponding contingency adjustments.
    - Participate in DART workshop to establish scheme specific analysis of risks leading to a cost effective and jointly owned Risk Register
    - Provide advice on all aspects of insurance for the project.
    - Assist with the validation of cost components other than construction.
    - Participation in Value Management & Value Engineering process lead by the contractor – ~~based on a one half-day workshop and validation of cost impacts arising as submitted by the *Contractor*.~~
    - ~~Prepare priced submission for indexation, send to DTI who will carry out indexation and analyse and report on same.~~
    - Validation of Life Cycle Cost advice prepared by the contractor.
    - ~~Participate in development of the target Price up to setting of Target Total of the Prices by checking and substantiating the PSCP's proposal in context of 'open book accounting'~~
    - Monitor and review performance of contract administration by the contractor.

- Assist with the implementation of an Early Warning and other contractual procedures using the pro forma documentation pack, work with project Manager and Project Management support to maintain up to date and accurate system.
- Monitor VAT advice and the application of that advice and provide ad-hoc reports to NHS Client.
- Assist the Project Manager to establish and manage an internal Change Control Reporting Procedure, which is compatible with contractual procedures, for all potential Compensation Events (change) whether initiated by the Client through the *Project Manager*, the *Project Manager* or by the contractor. The purpose of this procedure being to :
    - Alert all parties to <u>all</u> change whether considered having any implications or not.
    - Circulate the relevant information to all parties.
    - Facilitate the assessment (with contractor, NHS Client and Client Advisors input where appropriate) of the implications of all change – scheme cost, programme and quality - in advance of instruction to the contractor.
    - Enable decisions to be taken by the NHS Client whether to approve (i.e. proceed with) or not approve (i.e. abandon) the proposed changes and to identify actions needed to accommodate the implications of both actual and approved potential changes.
    - Facilitate the central registering of <u>all</u> change.
- Attend monthly progress meetings chaired by the *Project Manager*
- Attend regular (usually monthly) Client meetings

2. Assist the *Project Manager* during Stage 3 FBC to

    a. Administer the ECC contract

    - Monitor the Accepted Programme
    - Monitor expenditure against the contractors FBC expenditure profile
    - Review *Contractor* forecast of Defined Cost
    - Perform acceptance of proposed subcontractors
    - Perform early warning duties
    - ~~Input to the development of the target Price – and make recommendations to *Project Manager* in respect of value for money.~~
    - Validation of Price Model.
    - Propose updated key dates for the contract, and provide the *Project Manager* with advice on the cost aspects of the programme

- Perform assessment duties,
- Review contractors assessment application
- Prepare assessment documents and certification for issue by the *Project Manager*
- Prepare compensation event notifications for the *Project Manager*
- Advice to the *Project Manager* on compensation events notified by the contractor
- Evaluate compensation quotations and advise on Defined Cost implications and contractual acceptability

~~b. Work with the PSCP to develop a realistic target (for the design completion, construction commissioning and handover Stage of the scheme) that can be used as the foundation for agreeing the Prices (target for stage 4).~~

~~c. To arrive at a mutually acceptable stage 4 total of the Prices (target) for proposal to the NHS Client; including participating in DART workshop to establish levels and apportion responsibilities for identified risk—~~

~~d. Work with the PSCP to establish proposals in respect of documentation and procedures in anticipation of completing the scheme:~~

e. Completion of FBC

Assist the Project Manager to agree total of Defined Cost of the Stage for updating of the FBC *Activity Schedule* and adjustment to the Summary Total of the Prices.

If the scheme is terminated assist the *Project Manager* and advise the NHS Client on the Termination Procedure.

3. Assist the *Project Manager* during the construction and handover to

a. Administer the NEC3 ECC contract

- Monitor the Accepted Programme
- Monitor expenditure against the contractors FBC expenditure profile
- Review contractors forecast of Defined Cost
- Perform acceptance of proposed subcontractors
- Perform early warning duties
    - Input to the development of the target Price – and make recommendations to *Project Manager* in respect of value for money.
    - Validation of Price Model.
- Propose updated key dates for the contract, and provide the *Project Manager* with advice on the cost aspects of the programme
- Perform assessment duties including, assess the price of work done (PWDD) through the

validation of records of Defined Cost submitted by the contractor and compliance with the Schedule of Cost Components. Take site particulars as necessary; assess progress against programme and liaise with the *Project* Manager to determine any disallowed costs that may apply. Agree with contractor the amount due and report same to the *Project Manager*

- Review contractors assessment application
- Prepare assessment documents and certification for issue by the *Project Manager*
- Assist with preparation of compensation event notifications for the *Project Manager*
- Advice to the *Project Manager* on compensation events notified by the contractor.
- Evaluate compensation quotations and advise on Defined Cost implications and contractual acceptability
- Monitoring work related to Provisional Amounts in the contract and adjusting same.
- Validate construction cost profiles – as prepared by the contractor – following monthly or other event driven programme reviews
- Monthly reporting of the financial status of the project bringing together and summarising the construction cost all Compensation Events (change), advised to date, together with anticipated change and incorporating the construction expenditure profile.
- Validate, negotiate and agree the final account including *share* calculations.
- Assist the *Project Manager* in the administration of the contract during the Defects period and calculations for the Final Amount Due at the end of the *Defects Date*.

Work with Supervisor to review implications of rectifying defects in terms of cost and programme.

Work in a collaborative manner with the Project Director/Manager, Project Manager support team, Supervisor, NHS Client Team and the Contractor.

This schedule generally summarises the key Cost Advisor services required by the Board commencing 5th January 2010, for periods;

| | |
|---|---|
| Stage 2 – Design Development of Main Hospitals | Duration 57 weeks. |
| Stage 1 – Laboratory Project Site Works | Duration 116 weeks. |

1.11

FILE FOR REF 15/01/10

## Currie and Brown – Areas of Work

### Construction Programme – Stage 1 (Labs)

PM support to Project Manager – 2 days per week

### Type of Support

- Management of Construction programme and to accept any revisions in association with the Project Manager
- Co-ordination of all Technical Adviser requirements (Advise on their input level and resource)
- Attend meetings as agreed with Project Director and Project Manager
- Active management of all technical actions required to complete project
- Close liaison with contractor to provide Project Manager with information on raising Early Warnings and managing these through the construction programme, providing Project Manager with mitigation strategies
- Liaising with the client to develop and deliver all interface issues such as: equipment/IT plans and commissioning plans, etc.
- Working in conjunction with Project Manager and Cost Advisor(s) to ensure adequate liaison and co-ordination is provided to assure progress is made regarding works, costs, payments, etc.
- Keep Project Manager fully informed about project management support in terms of need and resources.
- Support Project Manager to manage project risks and monitor and report on risk register items.
- To support the Project Manager in monitoring and controlling testing and inspection process.
- Complete NEC3 duties as required by Project Manager. For example, assisting the Project Manager to:
    - give notice of ambiguities or inconsistencies in the documents. To give instructions resolving ambiguities or inconsistencies

- Accept particulars of the Contractor's design or to give reason for non-acceptance.
- Accept particulars of the design of equipment or to give reasons for non-acceptance.
- Accept replacements persons proposed by the Contractor or to give reasons for non-acceptance.
- Assess the amount due for payment at each assessment date. To decide the first assessment date to suit the procedures of the parties
- Consider any application from the Contractor when assessing amounts due for payment. To give the contractor details of how amounts due have been assessed.
- Notify the Contractor of the compensation events which arise from the giving of instructions or changing of earlier decisions. To instruct the Contractor to submit quotations unless the event arises from a fault of the Contractor.
- Extend the time allowed for the submission of quotations and replies if the contractor agrees. To notify the Contractor of any agreed extensions for the submission of quotations or replies.
- Correct the description where a change to Works Information makes the description of the Condition for a Key Date incorrect.
- decide whether the Contractor did not give any early warning of compensation event which should have been given and to notify the contractor of his decision.

Include Scheme header as required by the NHS Health Board

**NEC3 Duty of the *Project Manager***

10.1 To act as stated in the contract and in a spirit of mutual trust and co-operation.

13.1 To communicate in a form, which can be read, copied and recorded.

13.3 To reply to a communication within the period for reply.

13.4 To reply to a communication submitted or resubmitted for acceptance. To state reasons for non-acceptance.

13.5 To notify any agreed extension to the period for reply.

13.6 To issue certificates to the *Employer* and to the *Contractor*.

13.7 To communicate notifications separately from other communications.

13.8 To state reasons for withholding an acceptance of a submission by the *Contractor*

16.1 To give early warning of matters with delay, cost or performance implications.

16.3 To co-operate at risk reduction meetings.

16.4 To revise the Risk Register to record the decisions made at each risk reduction meeting and issue the revised Risk Register

17.1 To give notice of ambiguities or inconsistencies in the documents. To give instructions resolving ambiguities or inconsistencies

18.1 If he agrees with a *Contractor's* notification of considered illegal or impossible requirements in Works Information; give instruction to change Works Information

21.2 To accept particulars of the *Contractor's* design or to give reasons for non-acceptance

23.1 To accept particulars of the design of equipment or to give reasons for non-acceptance

24.1 To accept replacements persons proposed by the *Contractor* or to give reasons for non- acceptance.

25.3 Assess the additional cost to the *Employer* for recovery when a Key Date is not met

~~26.2 To accept proposed subcontractors or to give reasons for non-acceptance.~~

~~26.3 To accept proposed subcontract conditions or to give reasons for non-acceptance.~~

30.2 To decide the date of Completion. To certify completion within one week of Completion

31.3 To accept the *Contractor's* programme within two weeks of submission or to give reasons for non-acceptance.

32.2 To accept a revised programme or to give reasons for non-acceptance.

35.3 To certify within one week the date when the *Employer* takes over any part of the works.

40.6 To assess the cost incurred by the *Employer* in repeating a test or inspection after a defect is found.

43.4 To arrange for the *Employer* to allow the *Contractor* access and use to of a part of the works which he has taken over if they are needed for the correcting a Defect.

44.2 To change the Works Information, the prices and the completion date if a quotation for not correcting Defects is accepted.

45.1 To assess the cost to the *Employer* of having Defects corrected by other people if the *Contractor* is given access but has not corrected a notified Defect within the defect correction period.

45.2 To assess the cost to the *Contractor* of correcting a Defect if he is not given access to correct it.

50.1 To assess the amount due for payment at each assessment date. To decide the first assessment date to suit the procedures of the parties.

50.4 To consider any application from the *Contractor* when assessing amounts due for payment. To give the contractor details of how amounts due have been assessed.

51.1 To certify payment within one week of each assessment date.

61.1 To notify the *Contractor* of the compensation events which arise from the giving of instructions or changing of earlier decisions. To instruct the *Contractor* to submit quotations unless the event arises from a fault of the *Contractor*..

61.4 To decide within one week of notification (or such longer period as the *Contractor* agrees) whether the prices and the completion date should be changed when the *Contractor* notifies a compensation event. To instruct the *Contractor* to submit quotations for change prices and the completion date.

61.5 To decide whether the *Contractor* did not give any early warning of compensation event which should have been given and to notify the contractor of his decision.

61.6 To state assumptions for the assessment of compensation events in the event that the effects are too uncertain to be forecast reasonably. To correct any assumptions later found to have been wrong.

62.3 To reply within two weeks to quotations for compensation events submitted by the *Contractor*.

62.4 To give reasons to the *Contractor* when instructing the submission of a revised quotation.

62.5 To extend the time allowed for the submission of quotations and replies if the contractor agrees. To notify the *Contractor* of any agreed extensions for the submission of quotations or replies.

63.9 If a change to Works Information makes the description of the Condition for a Key Date incorrect the *Project Manager* corrects the description.

64.1 To assess a compensation event:

- If, the *Contractor* has not submitted a quotation within the time allowed.
- If, the *Project Manager* decides the contractor has not assessed the compensation event correctly in a quotation and he does not instruct the *Contractor* to submit a revised quotation.
- If, when the *Contractor* submits quotations for a compensation event he has not submitted a programme or alterations to a programme which this contract requires him to submit or
- If, when the *Contractor* submits quotations for a compensation event the *Project Manager* has not accepted the *Contractor's* latest programme

64.2 To assess compensation event using his own assessment of the programme for the remaining work:

- If there is no Accepted Programme
- If the contractor has not submitted a programme or alterations to a programme for acceptance as required

64.3 To notify the *Contractor* of any assessments made of a compensation event within the period allowed to the *Contractor* for his quotation.

73.1 To instruct the *Contractor* how to deal with objects of value, historical or other interest found within the Site.

85.1 To accept policies and certificates of insurance submitted by the contractor or to give reasons for non-acceptance

87.1 To submit to the *Contractor* policies and certificates for insurances to be provided by the *Employer*.

90.1 Issue to both Parties a termination certificate if the reason complies with this contract.

90.4 To certify final payments within 13 weeks of termination.

W2.3((9) Unless and until the *Adjudicator* has notified the Parties of his decision, to proceed as if the matter disputed was not disputed.

**Hospitals – Design Development**

- Support the Project Director to ensure that the Design Programme is progressing on schedule and to flag and action necessary requirements to ensure the milestones of project programme(s) are achieved.
- Participate in the design development user group sessions as required to support the Hospital Project Managers to deliver their objectives within time and cost.
- Take control of all early warning issues and manage, control, report these warnings to relevant staff/groups. Provide mitigation advice to Project Director/Construction to mitigate all potential cost increase.
- Liaise with cost advisers to keep them aware of all potential cost issues.
- Oversee, manage and control other Technical Adviser input to Stage 2, ensuring that the Project Director is aware of all activities and resource requirements.
- Set out programme of work for Technical Adviser input to ensure Design is developed and compliant with contract (Employer's Requirements).
- Attend meetings, groups as required to complete stage 2, ensure adequate liaison and co-ordination is made regarding programme of works, etc.
- Keep Project Manager fully informed about project management support in terms of need and resources.
- Input to Full Business Case development and completion for submission to NHS Board.
- Complete NEC3 duties as required by Project Manager. For example, assisting the Project Manager to:
    - give notice of ambiguities or inconsistencies in the documents. To give instructions resolving ambiguities or inconsistencies
    - Accept particulars of the Contractor's design or to give reason for non-acceptance.
    - Accept particulars of the design of equipment or to give reasons for non-acceptance.
    - Accept replacements persons proposed by the Contractor or to give reasons for non-acceptance.
    - Assess the amount due for payment at each assessment date. To decide the first assessment date to suit the procedures of the parties

- Consider any application from the Contractor when assessing amounts due for payment. To give the contractor details of how amounts due have been assessed.
- Notify the Contractor of the compensation events which arise from the giving of instructions or changing of earlier decisions. To instruct the Contractor to submit quotations unless the event arises from a fault of the Contractor.
- Extend the time allowed for the submission of quotations and replies if the contractor agrees. To notify the Contractor of any agreed extensions for the submission of quotations or replies.
- Correct the description where a change to Works Information makes the description of the Condition for a Key Date incorrect.
- decide whether the Contractor did not give any early warning of compensation event which should have been given and to notify the contractor of his decision.

Include Scheme header as required by the NHS Health Board

**Schedule of key duties of Cost Advisor acting as client adviser for Frameworks Scotland scheme contracts**

**Pre-contract (before appointment of the Principal Supply Chain Partner (PSCP) to NEC3 Engineering and construction contract - Option 'C' target contract with activity schedule; scheme contract)**

Note:

It is assumed the NHS Client will decide and state, in the scheme specific scope of work for the Cost Advisor Professional Services Contract (PSC), whom the Cost Advisor reports to and / or works with in the pre-contractor appointment stage, either the Project Director or, if appointed the scheme *Project Manager*.

1. ~~Assist with investigation into and evaluation of procurement strategy~~

2. Advise on VAT liability. Utilising the free VAT advisory service provided by Department of Health

3. Monitor VAT advice and the application of that advice and provide ad-hoc reports to Department of Health liaising with the free Department of Health VAT assessment & advisory section.

4. Provide the NHS Client with general advice on the NEC3 ECC Contract.

5. Assist in establishing key dates for the proposed scheme and advise the NHS Client on programme and completion strategy for inclusion in the Scheme Contract.

6. ~~Advise on the capital costs associated with any proposed contract phasing~~

7. ~~Assist in preparation or validation of a conceptual scheme total construction cost, if possible, to establish financial scope of work for inclusion in the scheme pack and contract.~~

8. ~~Assist in establishing appropriate level of Delay damages for the works and Sections.~~

9. ~~Provide the NHS Client with advice on NEC3 insurance provisions and Scheme specific options.~~

10. ~~Assist in preparation of a Scheme Pack to be issued for return of expression of interest by the Principal Supply Chain Partner (PSCP)~~

    - ~~Scope of work generally.~~
    - ~~Prepare Draft Scheme Contract and Agreement The National Integrated Construction Framework for NHS Scotland Template for the Scheme Contract.~~
    - ~~Include Works Information and Site Information in draft scheme contract document.~~
    - ~~Advise NHS Client on use of standard options in Scheme Contract~~

Include Scheme header as required by the NHS Health Board

~~11. Participate in open day and selection of PSCP and PSCM's.~~

~~12. Finalise draft Scheme Contract for acceptance and issue by NHS Client to selected PSCP.~~

~~13. Prepare letter of appointment for NHS Client to engage PSCP.~~

14. Attend regular (usually monthly) NHS Client meetings

Include Scheme header as required by the NHS Health Board

**Post Contract**

Note:

To avoid conflict with the Engineering and Construction Contract conditions of contract it is advisable that, in the post contract Stage Professional Services Contract (PSC) the Cost Advisor is designated as an assistant to the *Project Manager*.

1. Provide and maintain appropriate support for the Client's *Project Manager*, including assist the *Project Manager* to carry out the following during the life the scheme

    - Compile reports and recommendations for submission to the NHS Client
    - Prepare Management Control forms (MCP) as required by Capital Investment Manual for submission to NHS Client on monthly/quarterly programme as appropriate
    - Maintain appropriate communications with the PSCP.
    - Validation of the proposals for risk management & transfer, and corresponding contingency adjustments.
    - Participate in DART workshop to establish scheme specific analysis of risks leading to a cost effective and jointly owned Risk Register
    - Provide advice on all aspects of insurance for the project.
    - Assist with the validation of cost components other than construction.
    - Participation in Value Management & Value Engineering process lead by ~~PSCP – based on a one half-day workshop and validation of cost impacts arising as submitted by the *Contractor*.~~
    - ~~Prepare priced submission for indexation, send to DTI who will carry out indexation and analyse and report on same.~~
    - Validation of Life Cycle Cost advice prepared by the PSCP.
    - ~~Participate in development of the target Price up to setting of Target Total of the Prices by checking and substantiating the PSCP's proposal in context of 'open book accounting'~~
    - Monitor and review performance of contract administration by the *PSCP*
    - Implementation of an Early Warning and other contractual procedures using the pro forma documentation pack
    - Monitor VAT advice and the application of that advice and provide ad-hoc reports to NHS Client.
    - Propose, and manage an internal Change Control Reporting Procedure, which is compatible with contractual procedures, for all potential Compensation Events (change) whether initiated by the Client through the *Project Manager*, the *Project Manager* or by the PSCP. The purpose of this procedure being to :

Include Scheme header as required by the NHS Health Board

- Alert all parties to all change whether considered having any implications or not.
- Circulate the relevant information to all parties.
- Facilitate the assessment (with PSCP, Client and Client Advisors input where appropriate) of the implications of all change – scheme cost, programme and quality - in advance of instruction to the PSCP.
- Enable decisions to be taken by the Client whether to approve (i.e. proceed with) or not approve (i.e. abandon) the proposed changes and to identify actions needed to accommodate the implications of both actual and approved potential changes.
- Facilitate the central registering of all change.

- Attend monthly progress meetings chaired by the *Project Manager*
- Attend regular (usually monthly) Client meetings

2. ~~Assist the *Project Manager* and PSCP to prepare and agree the formal Scheme Contract document and its stage updates based on The National Integrated Construction Framework for NHS Scotland Template for the appropriate stages of the scheme, in 3 to 9 following:~~

3. ~~Initiation of Stage 1 – IA~~

   a. Commencement of IA – assist in preparation and agreement of contract documentation:

      - Programme for the scheme stage
      - Identify PSCP resources for the stage
      - Transfer of TRS information into the contract documentation
      - Establish activity schedule for IA - the Prices including Fee
      - Completion of PSCP Form of Proposal, including Appendix *Activity Schedule* and supporting Attachments
      - Revision of Contract Data Part one – Data provided by the *Employer*
      - Completion of Contract Data Part two – Data provided by the *Contractor*
      - Form of Agreement for signature of the *Employer* and *Contractor*.

4. Assist the *Project Manager* during Stage1 IA to

   a. Administer the NEC3 ECC contract

      - Validation against The National Integrated Construction Framework for NHS Scotland agreements
      - Monitor the Accepted Programme
      - Monitor expenditure against the PSCP's IA expenditure profile
      - Review PSCP forecast of Defined Cost

Include Scheme header as required by the NHS Health Board

- Perform acceptance of proposed subcontractors
- Perform early warning duties
- Input to the development of the target Price – and make recommendations to *Project Manager* in respect of value for money.
- Validation of Price Model.
- Proposed key dates for the contract, and provide the *Project Manager* with advice on the cost aspects of the programme
- Perform assessment duties, including agree assessment date based on the *assessment interval*
- Review PSCP's assessment application
- Prepare assessment documents and certification for issue by the *Project Manager*
- Prepare compensation event notifications for the *Project Manager*
- Advice to the *Project Manager* on compensation events notified by the PSCP
- Evaluate compensation quotations and advise on Defined Cost implications and contractual acceptability

b. During Stage 1 IA, in consultation with the PSCP prepare programme proposals and forecast Defined Cost for Stage 2 OBC stage for *Project Manager* submission to NHS Client and implementation if commencement of OBC is approved.

Documentation and procedures as follows:

- Programme for the scheme stage
- Identify PSCP resources for the stage
- Update TRS information into the contract documentation if necessary
- Establish activity schedule for OBC - the Prices including Fee
- Initiating PSCP Form of Proposal Appendix *Activity Schedule* and supporting Attachments, ensure understanding and completion by the PSCP
- Revision of Contract Data Part one – Data provided by the *Employer* if necessary
- Updating of Contract Data Part two – Data provided by the *Contractor*
- Form of Agreement Appendix for signature of the *Employer*.

c. Completion of Stage - IA

- Agree total of Defined Cost of the stage for updating of the IA *Activity Schedule* and adjustment to the Summary Total of the Prices.
- If the scheme is terminated assist the *Project Manager* and advise the NHS Client on the Termination Procedure.

Include Scheme header as required by the NHS Health Board

5. Assist the *Project Manager* and establish documentation for OBC Form of Agreement Appendix, where IA is accepted and confirmation to proceed with OBC is given by the NHS Client

    - Form of Agreement Appendix - signed by *Employer* and issued to the *PSCP* as agreement to proceed with Stage 2 OBC

6. Assist the *Project Manager* during Stage 2 OBC to

    a. Administer the NEC3 ECC contract

    - Monitor the Accepted Programme
    - Monitor expenditure against the *Contractor's* OBC expenditure profile
    - Review PSCP forecast of Defined Cost
    - Perform acceptance of proposed subcontractors
    - Perform early warning duties
    - Input to the development of the target Price – and make recommendations to *Project Manager* in respect of value for money.
    - Validation of Price Model.
    - Propose updated key dates for the contract, and provide the *Project Manager* with advice on the cost aspects of the programme
    - Perform assessment duties,
    - Review PSCP's assessment application
    - Prepare assessment documents and certification for issue by the *Project Manager*
    - Prepare compensation event notifications for the *Project Manager*
    - Advice to the *Project Manager* on compensation events notified by the PSCP
    - Evaluate compensation quotations and advise on Defined Cost implications and contractual acceptability

    b. During OBC and in consultation with the PSCP prepare programme proposals and forecast Defined Cost for Stage 3 FBC for *Project Manager* submission to NHS Client and implementation if commencement of FBC is approved.

    Documentation and procedures as follows:

    - Programme for the scheme Stage
    - Identify PSCP resources for the Stage
    - Update Framework information into the contract documentation if necessary
    - Establish activity schedule for FBC - the Prices including Fee
    - Initiating PSCP Form of Proposal Appendix *Activity Schedule* and supporting Attachments, ensure understanding and completion by the PSCP.

Include Scheme header as required by the NHS Health Board

- Revision of Contract Data Part one – Data provided by the *Employer* if necessary
- Updating of Contract Data Part two – Data provided by the *Contractor*
- Form of Agreement Appendix B for signature of the *Employer*.

d. Completion of OBC

- Agree total of Defined Cost of the Stage for updating of the OBC *Activity Schedule* and adjustment to the Summary Total of the Prices.
- If the scheme is terminated assist the *Project Manager* and advise the NHS Client on the Termination Procedure

7. Assist the *Project Manager* and establish documentation for FBC Form of Agreement Appendix, where OBC is accepted and confirmation to proceed with FBC is given by the NHS Client

- Form of Agreement Appendix - signed by *Employer* and issued to the *Contractor* as agreement to proceed with FBC

8. Assist the *Project Manager* during Stage 3 FBC to

a. Administer the ECC contract

- Monitor the Accepted Programme
- Monitor expenditure against the PSCP's FBC expenditure profile
- Review *Contractor* forecast of Defined Cost
- Perform acceptance of proposed subcontractors
- Perform early warning duties
- ~~Input to the development of the target Price – and make recommendations to *Project Manager* in respect of value for money.~~
- ~~Validation of Price Model.~~
- Propose updated key dates for the contract, and provide the *Project Manager* with advice on the cost aspects of the programme
- Perform assessment duties,
- Review PSCP's assessment application
- Prepare assessment documents and certification for issue by the *Project Manager*
- Prepare compensation event notifications for the *Project Manager*
- Advice to the *Project Manager* on compensation events notified by the PSCP
- Evaluate compensation quotations and advise on Defined Cost implications and contractual acceptability

~~b. Work with the PSCP to develop a realistic target (for the design completion, construction commissioning and handover Stage of the scheme) that can be used.~~

~~as the foundation for agreeing the Prices (target for stage 4).~~

~~c. To arrive at a mutually acceptable stage 4 total of the Prices (target) for proposal to the NHS Client, including participating in DART workshop to establish levels and apportion responsibilities for identified risk.~~

~~d. Work with the PSCP to establish proposals in respect of documentation and procedures in anticipation of completing the scheme:~~

Full hierarchy of programmes, including procurement, design, construction, commissioning and handover.

Identify PSCP resources including proposed subcontractors for the stage

Update Framework information into the contract documentation if necessary

Establish activity schedule for the Prices including Fee

Initiating PSCP Form of Proposal *Activity Schedule* and supporting Attachments, ensure understanding and completion by the *Contractor*

Revision of Contract Data Part one – Data provided by the *Employer* if necessary

Updating of Contract Data Part two – Data provided by the *Contractor*

Form of Agreement Appendix C for signature of the *Employer* and *Contractor* if the scheme is to proceed to completion

e. Completion of FBC

~~Agree total of Defined Cost of the Stage for updating of the FBC *Activity Schedule* and adjustment to the Summary Total of the Prices.~~

~~If the scheme is terminated assist the *Project Manager* and advise the NHS Client on the Termination Procedure.~~

9. Assist the *Project Manager* during the construction and handover to

a. Administer the NEC3 ECC contract

- Monitor the Accepted Programme
- Monitor expenditure against the PSCP's FBC expenditure profile
- Review *PSCP* forecast of Defined Cost
- Perform acceptance of proposed subcontractors
- Perform early warning duties
  - Input to the development of the target Price – and make recommendations to *Project Manager* in respect of value for money.
  - Validation of Price Model.
- Propose updated key dates for the contract, and provide the *Project Manager* with advice on the cost aspects of the programme
- Perform assessment duties including, assess the price of work done (PWDD) through the validation of records of Defined Cost submitted by the *PSCP* and compliance with the Schedule of Cost Components. Take site particulars as necessary; assess progress against programme and liaise with the *Project* Manager to determine any disallowed costs that may apply. Agree with PSCP the amount due and report same to the *Project Manager*

Include Scheme header as required by the NHS Health Board

- Review PSCP's assessment application
- Prepare assessment documents and certification for issue by the *Project Manager*
- Prepare compensation event notifications for the *Project Manager*
- Advice to the *Project Manager* on compensation events notified by the PSCP
- Evaluate compensation quotations and advise on Defined Cost implications and contractual acceptability
- Monitoring work related to Provisional Amounts in the contract and adjusting same.
- Validate construction cost profiles – as prepared by the PSCP – following monthly or other event driven programme reviews
- Monthly reporting of the financial status of the project bringing together and summarising the construction cost all Compensation Events (change), advised to date, together with anticipated change and incorporating the construction expenditure profile.
- Validate, negotiate and agree the final account including *share* calculations.
- Assist the *Project Manager* in the administration of the contract during the Defects period and calculations for the Final Amount Due at the end of the *Defects Date.*

I.11.

**Moir, Peter**

**From:** Lindsay, Alan
**Sent:** 17 July 2009 09:57
**To:** Byrne, Helen; Seabourne, Alan; Moir, Peter
**Cc:** Surgenor, Linda
**Subject:** RE: CURRIE & BROWN ADDITIONAL FEES

Helen

Thank you for this – it satisfies the governance requirements.

Alan

---

**From:** Byrne, Helen
**Sent:** 16 July 2009 08:52
**To:** Lindsay, Alan; Seabourne, Alan; Moir, Peter
**Cc:** Surgenor, Linda
**Subject:** FW: CURRIE & BROWN ADDITIONAL FEES

Alan

As discussed on 15 July 2009, I agreed to provide a file note to you on the additional fees paid to Currie and Brown in relation to the new Hospitals and Laboratory project

You advised that the additional work required of Currie & Brown falls to be treated as a "waiver to tender" in terms of SFIs (para 10.9 refers). As the responsible Director, I authorised the "waiver to tender".

The attached document sets out the additional work for which the additional fees were paid to Currie and Brown.

helen

1.11.

**New South Glasgow Hospitals Project – Consultant's Fees**

**Additional Fees for Stage 1A – Development of Exemplar Design and Tender (ITPD) Documentation**

**1 - Additional Work by Lead Consultant Team to Complete the Site Investigation (SI)**
The Lead Consultant's brief required the team to tender and manage the SI contractor to undertake the survey of the development site for the new hospitals and laboratory block.

During the SI tender process it became clear that it would be beneficial to survey other development sites within the SGH campus at the same time and take advantage of economies of scale of the single package rather than tender these surveys at a later date. The additional sites were;

- Ronald MacDonald
- Education Block
- Mental health Unit

The additional fee of [redacted]s for the tender, management and reporting on findings arising from these additional sites by the Lead Consultant team, the bulk of the work being undertaken by URS Corporation.

**2 – Red Day Review**
This review was proposed by James Stewart of Partnerships UK as a 'third party' overview or audit of the Board's ITPD documentation prior to issue. The proposal was floated at the NSGH Executive Board meeting in March 2009, and the review took place during April 2009, prior to issue of the Board's ITPD documents on 29th April 2009.

The additional fee of [redacted]accounts for time of senior members of the Lead Consultant's team to brief the Red Day Reviewers (Atkins) and generally respond to their questions. The Red day Review was not included as part of the Lead Consultant's brief.

**3 – Site Wide Energy Strategy**
The exemplar design and OBC document developed by the Davis Langdon team did not include for the connection of the retained estate to the new Energy Centre. The brief for the new Lead Consultant team reflected the same arrangement.

During the Competitive Dialogue process the Board decided that key elements of the retained estate should be serviced by the new Energy Centre, and the Lead Consultant team were instructed to adapt their design and specification to reflect this.

The additional fee of [redacted] covers the cost of additional design work, primarily undertaken by Wallace Whittle, to adapt the exemplar design and ITPD documentation issued to the three bidding teams.

**4 – Retained Estate Space Study**
At the conclusion of the construction works the Board require to transfer hospital services from a number of sites into the new builds. The new builds will not accommodate all the space requirements from the transfer, the outstanding space relates to office accommodation, Doctor's offices and some associated educational support accommodation.

While some preliminary work had been undertaken by the Project Team in 2008, no definitive document exists that records in detail, space available in retained estate set against space requirements with any shortfall of over capacity identified. To complete this work the Lead Consultant team were commissioned in April 2009 to undertake this study in conjunction with the Project Team to conclude this piece of work and establish any costs arising.

This work was not part of the Lead Consultant's brief, and the additional fees to date amount to [redacted] with an anticipated maximum cost of [redacted] for the task.

**5 – Acoustics Specification**

The Lead Consultant's brief for development of the ITPD documentation did not provide for a detailed review and development of design and specification requirements for acoustics and general sound reduction requirements for bidder design.

The cost of [redacted] accounts for work undertaken by a specialist acoustics consultant to prepare Appendix S of the ITPD documentation.

**6 – ADB Activity Database Codes for Equipment**

The brief requirement for ADB information allows for 50 rooms per hospital to help develop the full ADB code requirements, these codes then derive the equipment lists by room that are then passed to our Procurement Department to develop equipment requirements for the new facilities. In hindsight, 50 rooms per facility did not adequately cover the project need to develop a full equipment requirement for the new hospitals.

The Lead Consultant team were asked to develop ADB codes for all room types within both facilities to allow the full Group II, III and IV equipment lists to be developed and provided to the bid teams to allow more robust tenders to be returned. This work has predominantly been undertaken by HLM Architects. The cost for this work is [redacted] and would need to have been completed at some stage during the process, we had assumed this would be by the bid team. Either way this work would come under the professional fees banner for the project whether undertaken by our directly employed team or through design fees through the contract.

**Additional Fees for Stage 1B – Competitive Dialogue Stage 1 Tender Response**

**1 – Competitive Dialogue Process**

The Lead Consultants brief was prepared in May 2008 while the Board was still developing its procurement strategy, while the brief reflects a two stage design and build process it did not anticipate the use of competitive dialogue during the first stage of the tender process.

The competitive dialogue is far more labour intensive than traditional two stage D&B, and the additional fees arising relate primarily to additional input by the Lead Consultant team in attendance at the four streams of meetings over the twelve week period of dialogue. The four streams relate to Design, Logistics, Laboratory Block and Commercial issues and are undertaken with each of the three bid teams on a rolling programme, based on three to three and a half hour sessions.

The project team have assessed the work allowance within the original bid and set this against the resource requirement for the CD process, the resultant on cost after discussion with the team has been established at [redacted]

NHS Greater Glasgow and Clyde
1948-2008 60 years of the NHS

# NEW SOUTH GLASGOW HOSPITALS PROJECT

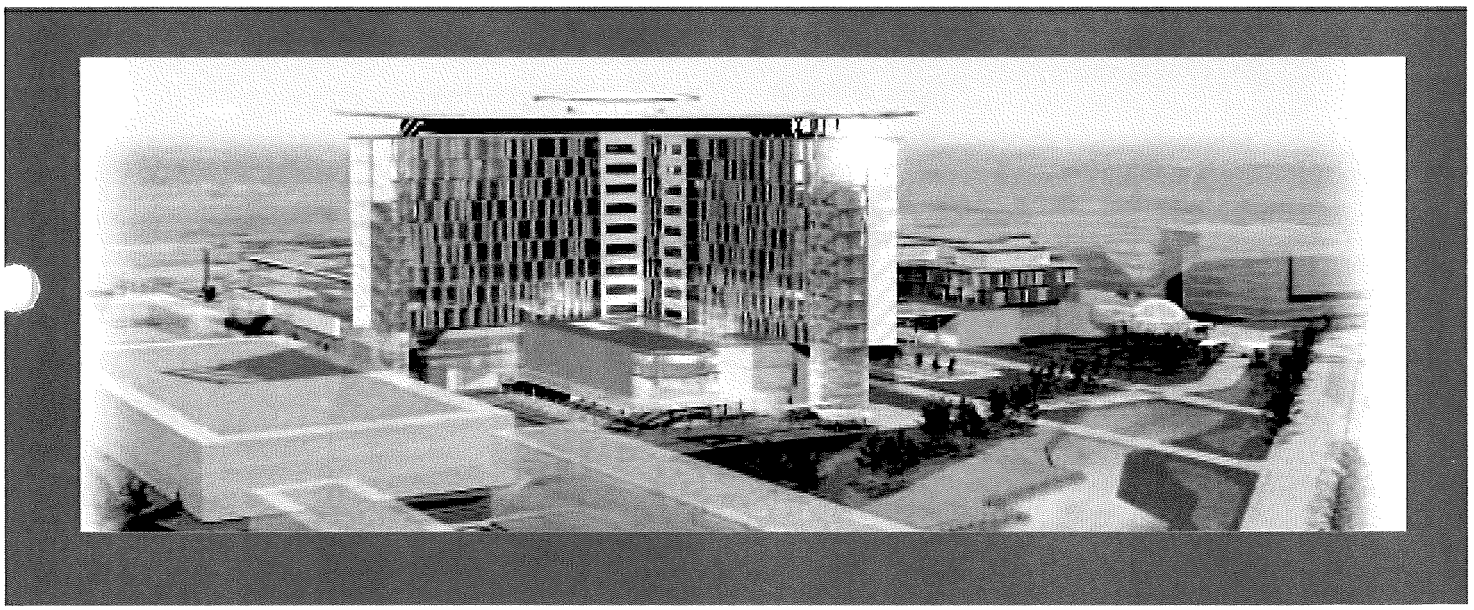
Memorandum of Agreement

between

Greater Glasgow Health Board

and

Currie & Brown UK Limited



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# Memorandum of Agreement

This part comprises the Memorandum of Agreement between the Greater Glasgow Health Board and Currie & Brown UK Limited

**Consultancy Service:**

Lead Consultant and Technical Team services for the procurement of hospital facilities utilising public finance and a two stage Design & Build process.

**Memorandum of Agreement**

This agreement is made

between

**GREATER GLASGOW HEALTH BOARD** of J B Russell House, Gartnavel Royal Hospital, One thousand and fifty five Great Western Road, Glasgow G12 0XH (formerly at Dalian House, 350 St Vincent Street, Glasgow G3 8YZ) (hereinafter called the 'Board') of the one part

and

**CURRIE & BROWN UK LIMITED** a company incorporated under the Companies Acts (Company Number 01300409) and having its registered office at Dashwood House, 69 Old Broad Street, London EC2M 1QS (formerly at 140 London Wall, London EC27 5DN) (hereinafter called the 'Lead Consultant') of the other part

WHEREAS

the Board intends to proceed with the New South Glasgow Hospitals Project (the 'Scheme')

and has appointed Currie & Brown UK Limited to be their lead consultant and to lead the Technical Advisory Team by performing the Duties in connection with the Scheme.

NOW IT IS HEREBY AGREED AS FOLLOWS:

1.1 The Board agrees to engage the Lead Consultant and the Lead Consultant agrees to perform the Duties subject to and in accordance with the terms of the Agreement.

1.2 This Memorandum of Agreement, together with Parts A-G of the Appendix shall together constitute the Agreement between the Board and the Lead Consultant.

1.3 The Lead Consultant will be the Technical Advisory Team Leader as further amplified in the Memorandum of Agreement.

1.4 **Payment of Duties**

The fee payable for performance of the duties set out in Part C of the Appendix is set out in the Lead Consultants Fee Proposal in Part D of the Appendix and payment shall be made in accordance with the following.

Payment shall be based on the capped fee bids for each Work Stage, with interim payments based thereon within each Work Stage. Payments shall be due on the issue of the Lead Consultant's account. The final date for payment of the Lead Consultant's account by the Board shall be 30 days from the date of issue of the Lead Consultant's account. The Lead Consultant is entitled to render monthly accounts.

The Board shall not withhold payment of any amount stated to be due as set out in the preceding paragraph unless it has given written notice not less than 7 days before the final date for payment to the Lead Consultant of the Boards intention to withhold payment and specifies the amount which it is proposed to withhold and the grounds for making the withholding. If there is a more than one ground the notice shall specify each ground and the amount attributable to it.

There is no obligation for the Board to continue with the Scheme beyond each Work Stage (this includes 1A and 1B as separate Work Stages), and the Consultant shall seek written authority from the Board to proceed to Work Stage 1B duties, and all subsequent Work Stages, before doing so.

If any work is undertaken without the prior knowledge and approval of the Board, either within a commissioned Work Stage of the project or as preparatory work for a subsequent Work Stage, there will be no ability to seek to recover that cost on a quantum merit basis should the project change or be aborted.

All fees set out in this Agreement are exclusive of Value Added Tax, VAT will be recovered at the current prevailing rate.

**IN WITNESS WHEREOF** these presents consisting of this and the preceding 2 pages together with the Appendix (in Parts A – G) are executed as follows:

Subscribed for and on behalf of **Greater Glasgow Health Board**

at GLASGOW, on 6/4/2011 by:-

[redacted] Authorised Signatory

ALAN SEABOURNE Full name

[redacted] Authorised Signatory

PETER MOIR Full name

before this witness

[redacted] Witness

MAIKI MACLEOD Full name

NHS GG+C Address

Southern General site

Subscribed for and on behalf of **Currie & Brown UK Limited** at 2 Parklands Avenue Mexim Office Park Eurocentral ML1 4WQ on 28th March 2011 by:-

[redacted] Director/Company Secretary/Authorised Signatory

ANDREW ALEXANDER LOUDON Full name

before this witness [redacted]

[redacted] Witness

Douglas Ross Full name

2 Parklands Avenue, Mexim Address

Office Park, Eurocentral

ML1 4WQ

## APPENDIX PART A – CONDITIONS OF APPOINTMENT

### Conditions of Appointment

This part describes the conditions, which normally apply to a lead consultant's appointment. Different or additional conditions are set out in the Memorandum of Agreement. If there is any discrepancy between the terms of the Memorandum of Agreement and this Part A of the Appendix, the terms of the Memorandum of Agreement shall prevail.

### Generally

Note, where reference is made to the 'Consultant' throughout this section, this refers to the Lead Consultant and the Technical Advisory Team as a whole.

**1.1 Duration of commission**

The appointment of the Consultant will commence from the date that the Consultant commenced carrying out the Duties and the commission, unless suspended or terminated, shall be deemed to be completed on the conclusion of the duties by Wok Stage, as set out in Part C of the Appendix.

Note this will be a staged appointment, the Board reserves the right to terminate the commission at the end of each and every Work Stage from 1A - 5. Progression from one Work Stage to another will be subject to written confirmation by the Board (which may be via the Project Director).

### Objectives and obligations of the Consultant

**1.2 Scope of duties**

The duties to be performed by the Consultant are those listed at Part C of the Appendix, as amplified by the Consultants' Bid Submission, (provided always that where there is a conflict between the duties listed at Part C of the Appendix and deliverables and methodologies contained within the Consultants' Bid Submission that the duties listed at Part C of the Appendix shall prevail) and any Additional Duties.

**1.3 Attendance at meetings**

In performing the Duties, the Consultant shall arrange and attend all meetings necessary to their proper execution, and as a minimum those listed in Clause 1.18 of the Scheme Particulars set out in Part B of the Appendix.

**1.4 Additional Duties**

The Consultant shall not undertake any work, which they consider additional to the Duties listed at Part C of the Appendix without the prior written agreement of the Board. Any such approval shall indicate the maximum budget for fees and works where appropriate, which should not be exceeded without further approval having been obtained. These shall be conditions precedent to any payment being due from the Board for Additional Duties.

**1.5 Information from the Consultant**

The Consultant shall provide information to the Board in accordance with the indicative target dates defined in Clause 1.7 of the Scheme Particulars set out in Part B of the Appendix. The Consultant will be expected to prepare and actively manage a detailed project programme as per Clause 1.12 of these Conditions of Appointment.

**1.6 Duty of care**

The Consultant is to exercise reasonable skill, care and diligence in the discharge of the Duties. Submission of drawings, calculations, specification and other documentation produced by the Consultant for comment by the Board shall not relieve the Consultant of this responsibility. If in the performance of the Duties the Consultant has discretion exercisable as between the Board and any other body the Consultant shall exercise its discretion fairly.

**1.7 Co-ordination of consultant's services**

Co-ordination and integration of the activities of Technical Advisory Team, however employed, shall be the responsibility of the Lead Consultant. This includes co-ordination of the works by planning, environmental and transportation consultants.

**1.8 Collaboration between consultants**

The Consultant shall collaborate with other professional consultants employed by the Board.

The Consultant shall procure that its Sub-Consultants appointed pursuant to Clause 1.29 of these Conditions of Appointment shall take account of the role of the Lead Consultant and collaborate with other members of the Technical Advisory Team and with other professional consultants employed by the Board.

**1.9 Changes caused by the Board**

The Consultant shall provide the Board with the cost and programme consequences of any material alteration, addition to or omission from the project caused or proposed by the Project Director. This information is to be provided before the Board takes a final decision.

**1.10 Changes not caused by the Board**

The Consultant shall not cause to be made any material alteration, addition to or omission from the approved Project Documentation. The Consultant shall promptly inform the Board in writing of anything that the likely effect of which the Consultant believes would be to either vary the Scheme, or to materially change the financial viability, quality or function of the Scheme.

**1.11 Progression between Work Stages**

The Consultant shall obtain approval in writing from the Board before proceeding between the Work Stages described in Part C of the Appendix. Only those Work Stages authorised shall be eligible for payment. Without prejudice to clause 1.33, the Board reserves the right to terminate the commission at the end of each individual Work Stage.

**1.12 Master Programme**

The Consultant shall prepare and maintain a detailed project programme for (i) each Work Stage and (ii) the overall procurement timetable and programme until appointment of the Contractor (the "Programme"). The Programme shall break down tasks and times for all participants within each Work Stage. The Programme will be submitted to the Project Director for review and approval prior to issue. The Consultant will be responsible for maintaining the Programme and to review on a regular basis with the Board to monitor progress and the implementation of any corrective action agreed by the Board.

**1.13 Site Inspection**

From Work Stage 3 the Consultant will be expected to make frequent visits to site during construction stage, suitable accommodation will be provided, as noted below.

**1.14 Construction (Design and Management) Regulations 2007**

Insofar as the same apply to the performance of the Duties the Lead Consultant warrants and undertakes to the Board that it has and shall maintain for the duration of the Project the competence and resources to fulfill the obligations of a designer and CDM Co-ordinator pursuant to the CDM Regulations and shall comply with all the requirements of the CDM Regulations and shall co-operate with other consultants and the Contractor to allow such parties to fulfill the obligations incumbent on them pursuant to the CDM Regulations.

**Obligations of the Board**

**1.15 Duties of the Board**

The Board shall nominate a Board, to enable the proper performance of the Duties.

**Construction (Design and Management) Regulations 2007**

**1.16** The Board shall appoint a Principal Contractor, in accordance with the provision of the Construction (Design and Management) Regulations 2007

**Information from the Board**

**1.17** The Project Director will be responsible for providing information and the giving of instructions on behalf of the Board under this Agreement. Unless and until the Board notifies the Consultant otherwise, the Project Director shall be deemed to have the full authority of the Board under the Agreement and the Board may replace the Project Director from time to time by notice to the Consultant. .

**Provision of site accommodation and facilities during construction stage**

**1.18** The Board will be responsible for the provision of suitable site based accommodation for the Lead Consultant team, for the use of Consultant's staff associated with the Scheme. The provision of these facilities will be for the duration of the works on site and funded through the construction contract.

**Ownership of documents and copyright**

**Copyright entitlement**

**1.19** The copyright and all other intellectual property rights in all drawings, documents reports, specifications, pricing documents, calculations and other documents provided by the Consultant in connection with the Scheme ("Documents") shall be vested in the Consultant. The Consultant hereby grants to the Board an irrevocable, royalty-free, non-exclusive licence to copy, use and reproduce all Documents and the designs contained within them (including electronically stored information) prepared or to be prepared by or on behalf of the Consultant (the "Copyright Materials") for any purpose whatsoever related to the Scheme and/or the site of the Scheme. The Consultant warrants that no Copyright Materials shall infringe any third party rights whatsoever. The Consultant shall provide to the Board such copies of the Copyright Materials as the Board may reasonably require. The Consultant hereby waives in favour of the Board all moral rights which they might be deemed to possess as authors of the Copyright Materials under the Copyright Designs and Patents Act 1988. For the avoidance of doubt, the provisions of this clause 1.19 shall survive termination of this Agreement or the Consultant's engagement hereunder for any reason whatsoever.

**Documentation provided by the Board**

**1.20** Where the Board provides standard documentation, including drawings, copyright of such documentation and drawings shall remain vested in the Board.

**Consultant's Licence and Restrictions**

**1.21(a)** The Consultant and its Sub-Consultants shall have a licence to copy and use such drawings, reports, specifications, pricing documents, calculations and other information required for performance of the Duties. The Board shall not be liable for any such use by the Consultant of any drawings or other documents for any purpose other than for which the same were prepared and provided by the Board.

**Consultant's rights of publication**

**1.21(b)** The Consultant shall not communicate with the media or any outside body or publish or display alone or in conjunction with any other person, any articles, photographs or other illustrations relating to the Scheme without prior written consent from the Board, which consent shall not be unreasonably withheld.

**1.22 Board's use of priced documents**

The Board may use priced documents for the Scheme, without prior approval by the Consultant.

**1.23 Freedom of Information**

The Consultant acknowledges that the Board is obliged to comply with the Freedom of Information (Scotland) Act 2002 ("the Act") and any codes of practice applicable from time to time relating to access to public authorities' information. The Consultant shall (and shall procure that each of its Sub-Consultants shall) co-operate, facilitate, support and assist the Board to comply with the Act and any codes of practice applicable from time to time relating to access to public authorities' information including by providing documents and other information relating to the Scheme within the timescales necessary to allow the Board to comply with its obligations and duties under the Act and the codes of practice.

All information submitted to the Board may need to be disclosed and/or published by the Board. Without prejudice to the foregoing generality, the Board may disclose information in compliance with the Act, (the decisions of the Board in the interpretation thereof shall be final and conclusive in any dispute, difference or question arising in respect of disclosure under its terms), any other law, or, as a consequence of judicial order, or order by any court or tribunal with the authority to order disclosure. Further, the Board may also disclose all information submitted to them to the Scottish or the United Kingdom Parliament or any other office or agency of Her Majesty's Government in Scotland or the United Kingdom, and their servants or agents. When disclosing such information to either the Scottish Parliament or the United Kingdom Parliament it is recognised and agreed by both parties that the Board shall if they see fit disclose such information but are unable to impose any restriction upon the information that they provide to Members of the Scottish Parliament, or Members of the United Kingdom Parliament; such disclosure shall not be treated as a breach of this Agreement.

The Board acknowledges that it is incumbent upon it to timeously pass on any request for information under the Act to enable the Consultant comply with its obligations under this clause.

**Professional Indemnity insurance**

**1.24 Extent of insurance cover**

The Lead Consultant shall take out and maintain from the date of commencement of the Duties professional indemnity insurance of not less than £10 million pounds in respect of each and every claim. The professional indemnity insurance shall be maintained until the expiration of Twelve (12) years, provided that it can be obtained at reasonable market rates and terms, from the date of completion of the Scheme

**1.24A** The Lead Consultant shall procure that each person (which includes a firm or company) forming the Technical Advisory Team take out and maintain from the date of commencement of their individual professional duties, professional indemnity insurance. The professional indemnity insurance shall be maintained until the expiration of twelve (12) years, provided that it can be obtained at reasonable market rates and terms, from the date of completion of the project. The minimum level of professional indemnity insurance cover required for each person shall be as set out in the table below:

| Team Role | Insurance level in respect of each and every claim |
|---|---|
| HLM Architects | £10million |
| Buchan Associates – healthcare planning | £5million |
| URS – civil and structural engineer | £10million |
| Wallace Whittle – building services | £10million |

For the purposes of Clause 1.24 and 1.24A the claims and financial history of the Consultant shall be disregarded in ascertaining whether or not rates and terms are reasonable.

**1.25 Professional indemnity insurance broker's certificate**

The Consultant shall annually provide to the Board a broker's certificate or similar and shall procure that

each member of the Technical Advisory Team provide a broker's certificate or similar as evidence that professional indemnity insurance is being maintained.

## Certification

**1.26 Certification generally**

The Consultant shall provide the Board with completed certificates issued by the Consultant pursuant to the building contract when required to do so.

## Assignment and sub-contracting

**1.27 Assignation by the Consultant**

The Consultant shall not assign the whole or part of the benefit or in any way transfer the obligations of this Agreement or any part thereof without the written consent of the Board.

**1.28 Assignation by the Board**

The Board reserves the right to assign the whole or any part of the benefits or transfer obligations of the Agreement or any part thereof to another Scottish NHS organisation without the consent of the Consultant.

**1.29 Sub-contracting**

The Lead Consultant shall not sub-contract any of the Duties without the written consent of the Board. The Lead Consultant shall be fully responsible and liable for the performance of the Duties by any Sub-Consultant notwithstanding that the consent of the Board has been obtained.

The Lead Consultant shall enter into Sub-Consultant Agreements with each Sub-Consultant engaged by it in connection with the Scheme in substantially equivalent terms to this Agreement and shall within 14 days of execution of the Sub-Consultant Agreement deliver 2 certified true copies of such Sub-Consultant Agreements to the Board.

The Lead Consultant shall comply with its obligations and shall ensure compliance by each Sub-Consultant with their respective obligations in the Sub-Consultant Agreement(s). The Lead Consultant shall not waive any of the Sub-Consultants obligations or liabilities, or release the Sub-Consultant of its obligations or compromise or settle any claims against or from the Sub-Consultant without the prior written consent of the Board. Such Sub-Consultant Agreement shall not be assignable by either party to it without the prior written consent of the Board, (which consent may be granted or withheld at the absolute discretion of the Board).

The Lead Consultant shall be responsible for any fees or expenses claimable by the Sub-Consultants in terms of the Sub-Consultant Agreement. Such fees and expenses shall be deemed to be included in the Lead Consultants remuneration including its fees and expenses in terms of this Agreement. The Board shall not be obliged to make any payment attributable to Duties performed by a Sub-Consultant where the written consent of the Board was not obtained in respect of such Sub-Consultants appointment. The Lead Consultant shall not (i) vary, release or waive in whole or in part any of the obligations of the Sub-Consultants arising out or in connection with the Sub-Consultant Agreements nor terminate any of the Sub-Consultant Agreements, or any Sub-Consultant's employment thereunder, in whole or in part without the prior written consent of the Board; and / or (ii) prejudice any rights or remedies which the Board may have under a collateral warranty granted by a Sub-Consultant.

Notwithstanding the foregoing the Lead Consultant shall not require to obtain consent from the Board in respect of the appointment of the following Sub-Consultants and organisations forming part of the Technical Advisory Team or delivering services to the Technical Advisory Team:

- HLM Architects – architect for the adult and children's hospital (sub-contracting to BMJ Architects – architect for the laboratory block and all projects; Hirst Landscape Architects –

landscape architect; and Buro Happold – fire engineers);
- Buchan Associates – healthcare planning for all projects;
- URS – civil and structural engineer for all projects; and
- Wallace Whittle – building services for the adult and children's hospital and laboratory (sub-contracting to Harley Haddow - building services for the adult and children's hospital).

**1.30 Sub-Consultant collateral warranties**

The Consultant shall within 30 days of appointment of a Sub-Consultant deliver to the Board collateral warranty agreements (incorporating step-in rights) from each Sub-Consultant (duly executed in a self proving manner by both parties) in favour of the Board in terms of the draft collateral warranty agreement set out in Appendix F.

**1.31 Commercial Interests**

Any commercial interests held by Partners/Directors/Principals of the Consultant in firms engaged in manufacturing, contracting or commissioning in building and engineering services, other services or construction, shall be declared to the Project Director prior to conclusion of this Agreement, or if appointed without delay should such event occur.

**Variation, extension, suspension or termination**

**1.32 Variation or extension by the Board**

The Board may vary or extend in time the performance of the whole or part of the agreed Duties by giving reasonable notice in writing to the Consultant. In such notice the Board shall specify the Duties affected.

**1.33 Suspension or termination by the Board**

The Board may suspend or terminate the performance of the whole or part of the Duties by giving reasonable notice in writing to the Consultant. In such notice the Board shall specify those of the Duties affected and the reason for suspension or termination. On suspension or termination of Agreement and subject to Clause 1.39 of these Conditions of Appointment payment shall be made in accordance with Clause 1.16 of Part D of the Appendix.

**1.34 Suspension or termination by the Board shall be permitted in the following circumstances:**

- the Board has decided to suspend or terminate the Scheme;
- non-performance by the Consultant;
- breach of the provisions of this Agreement by the Consultant;
- the Consultant becoming bankrupt or insolvent;
- the Board has decided to terminate the Agreement at the conclusion of a Work Stage.

**1.35 Resumption of Duties**

If the Consultant has not been given instruction to resume any work suspended under Clauses 1.33 or 1.34 of these Conditions of Appointment within six months from the date of suspension, the Consultant may make written request for such instructions, which must be given in writing. If these have not been received within 30 days of the date of such request the Consultant shall have the right to treat the Agreement as terminated.

**1.36 Suspension or termination by the Consultant**

The Lead Consultant may suspend or terminate the performance of the Duties on the expiry of reasonable notice given in writing to the Board. In such notice the Consultant shall specify the duties affected and the reason for suspension or termination.

**1.37 Suspension or termination by the Consultant shall be permitted on the following circumstances:**

- the Board has not provided an instruction to resume work under Clause 1.35 of these

Conditions of Appointment;

- breach of the provisions of this Agreement by the Board.

**1.38 Death or incapacity of the Consultant's key personnel**

Should the Consultant through death or incapacity be unable to perform the whole or part of agreed duties, this Agreement shall thereby be terminated.

**1.39 Delivery of documents**

On termination of the performance of the whole or part of the Duties and on satisfactory delivery of all drawings, reports, calculations, production information and any other documentation prepared by or on behalf of the Lead Consultant to the Board, the Lead Consultant shall be paid all due fees and expenses in accordance with Clause 1.16 of Part D of the Appendix.

**Settlement of disputes**

**1.40 Adjudication**

**1.40.1** Any difference or dispute arising out of this Agreement may be referred to an adjudicator.

**1.40.2** The party that is first made aware of the occurrence of the difference or dispute shall give notice to the other party of their intention to refer such dispute or difference to adjudication and shall then refer the dispute to an adjudicator agreed between the parties, or failing agreement within 5 days, appointed by RICS, Scottish Branch. A copy of the notice sent to the Adjudicator shall be sent to the other party. The notice shall specify the matter in dispute and set out all the principal facts and arguments relating to it. Copies of all relevant documentation shall be attached to the notice.

**1.40.3** The parties shall use reasonable endeavors to ensure that the Adjudicator is appointed as soon as possible and in any event within 7 days of the reference to adjudication.

**1.40.4** The Adjudicator shall notify his/her decision to the parties within 28 days from the date of receipt of the notice required under Clause 1.40.2 of these Conditions of Appointment or such longer period agreed by the parties.

**1.40.5** Without prejudice to Clause 1.40.4 the Adjudicator may extend the 28-day period by 14 days, with the consent of the party by whom the dispute was referred.

**1.40.6** The Adjudicator shall be obliged to act impartially in determining any dispute referred to him under Clause 1.40.2 of these Conditions of Appointment and shall be entitled to take the initiative in ascertaining the facts and the law.

**1.40.7** The decision of the Adjudicator on any matter will be binding until the dispute is finally determined by legal proceedings or by agreement.

**1.40.8** The Adjudicator shall not be liable to the parties for breach of duty unless in bad faith.

**1.40.9** Payment of the Adjudicator's fees shall be shared equally between the parties.

**1.40.10** During the process of adjudication the performance of the Duties shall continue as if there were no difference or dispute.

**1.40.11** If the Adjudicator resigns or is unable to act, the parties shall choose a new adjudicator jointly.

**1.40.12** If the parties have not chosen a new adjudicator jointly within 28 days of the Adjudicator resigning or becoming unable to act, then the President or Vice President of the RICS shall be requested to

nominate a new adjudicator.

**Discrimination and Equal Opportunities**

**1.41** The Consultant shall not, and shall take all reasonable steps to ensure that all employees, workers, agents, or Sub-Consultants of the Consultant shall not, unlawfully discriminate within the meaning and scope of the provisions of the following legislation, or any statutory modifications or re-enactment thereof:

- The Equal Pay Act 1970;
- The Sex Discrimination Act 1975;
- The Race Relations Act 1976;
- The Disability Discrimination Act 1995;
- The Employment Equality (Religion or Belief) Regulations 2003;
- The Employment Equality (Sexual Orientation) Regulations 2003;
- The Employment Equality (Age) Regulations 2006 and
- The Equality Act 2010.

**1.42** The Consultant shall observe, and shall take all reasonable steps to ensure that all employees, workers, agents, or sub-contractors of the Consultant shall observe, any relevant codes of practice (and any amended or replacement codes from time to time in place) in respect of employment issued by any of the following bodies:

- The Commission for Racial Equality;
- The Disability Rights Commission; or
- The Equal Opportunities Commission;

or any replacement codes of practice issued by the Commission for Equality and Human Rights.

**Governing laws**

**1.43** The laws of Scotland shall govern the application of these conditions.

**Limitation of Liability**

**1.44** Subject to clause 1.45, the liability of the Consultant in respect of breach of contract or in delict (including negligence) shall not exceed £10,000,000 in respect of each and every claim, save in respect of any liability relating to: death or personal injury; wilful misconduct and/or fraud.

**1.45** The liability of the Consultant in respect of breach of contract or in delict directly relating to acts or omissions of Buchan Associates shall not exceed £5,000,000, save in respect of any liability relating to: death or personal injury; gross negligence, willful misconduct and/or fraud.

APPENDIX PART B – SCHEME PARTICULARS

**Scheme Particulars**

**Scope of Agreement / Scheme**

**1.1 Location**
Southern General Hospital
1345 Govan Road
Glasgow G51 4TF

**1.2 General description**
The Duties are required to assist the Board to develop a full brief, tender and all Employer's Requirements documentation to enable engagement in a public finance procurement for the New South Glasgow Hospital Project, to provide the hospital facilities as listed below. The Duties include the management of the Building Contract with a D&B consortia, through to the successful completion of the works, commissioning and equipping, transfer and occupation.

Key elements of the project are (for information):

- Development of an integrated adult acute and children's hospital proving the full range of acute health services.
- Development of a new Laboratory facility including Mortuary and Post-Mortem Services, Biochemistry, Haematology and Blood Transfusion.
- Provision of a rooftop helipad.
- Possible provision of non-clinical services such as Hard FM services to the new facilities by the D&B contractor for an initial 3-5 year period.
- The supply and installation of Group 1 equipment and location and/or fitting of Group 2 equipment supplied by the Board.
- Information Management and Technology (IM&T) – Out with this project, the Board is procuring software and end-use hardware as part of a separate IM&T project.

The Board requires the provision of integrated facilities that are readily adaptable to changing clinical practice and makes the best use of new technologies. The functional content of the project is envisaged to include the following new build accommodation, note there will be some flexibility around the content noted below as the scope of the Scheme is further developed during Work Stage 1A.

**1.3 The New South Glasgow Hospital - Adult Acute**
1109 in-patient beds and 12-bed medical day unit planned within the New South build.

- In Patient Accommodation

435 surgical beds (gen. Surgery, orthopaedics, urology, vascular, ENT, renal); 571 medical beds. ITU/HDU/CCU – 77 beds total. Acute Stroke – 26 beds

- Out Patient Accommodation

Full range of General outpatient clinics including, among others, diabetic unit, respiratory, haematology, urology etc.

- Day Services

12 medical day bed area; 30-stationed dialysis unit

- Treatment & Diagnostic Services

Accident & Emergency, 20 operating theatres, imaging, Endoscopy and rehabilitation.

- Clinical Support Services

Pharmacy dispensary, medical physics, medical illustration. (laboratory services linked to hospital by underground route and pneumatic tube system, aseptic unit within the children's hospital.)

- Non Clinical Support Services

Main entrance, medical records, administration, chaplaincy, social work, staff changing, switchboard, estates, facilities, security, catering, portering, domestic, management and energy centre.

### 1.4 New Children's Hospital – Acute

There are circa 240 beds planned within the new build. About 20% of the beds will be for day patents and the rest inpatients. The hospital will provide DGH services, tertiary and some national services. Outpatient Accommodation
Full range of Children's outpatient clinics including audiology, general paediatrics, orthopaedics, ENT etc

Day Services
Circa 10 medical day beds; 4 dialysis stations and circa 25 day surgery beds.

Treatment & Diagnostic
Accident and Emergency, minor injuries, Imaging, 7 theatres, rehabilitation

Clinical Support Services
Aseptic unit, pharmacy, medical physics, medical illustration

Non-Clinical Support Services
Facilities, ancillary services, administration, spiritual services, medical records, staff change, staff dining.

### 1.5 New Laboratory Building

This build will be one of two major Laboratory sites in Glasgow. The services planned to be delivered from the new Laboratory build at Southern General Hospital are as follows: Biochemistry, Haematology, Blood Transfusion, mortuary and post mortem services. It is worth noting that the mortuary and post mortem facilities will include the re-provision of the Glasgow City mortuary, which also provides forensic services for the City of Glasgow.

The Board proposes to procure the new laboratory project through a single stage D&B process. The Lead Consultant team will be responsible for developing an exemplar design to 1:200 with user groups for inclusion in a full set of Employers Requirements documentation. The Board will require a separate design team from within the Lead Consultant's team to develop these proposals and provide a full Employer's Agent role during construction phase.

The current planned floor areas are as follows; Haematology 1,800 sq.m, Biochemistry 1,900 sq.m, Mortuary and City Mortuary 1,500 sq.m.

The current timetable for the new Laboratory Block is as follows;

| Milestone/Process | Target Date |
|---|---|
| Appoint Lead Consultant | 1 Sept 2008 |
| User group meetings, brief and design development | Sept / Nov2008 |
| Further Design Development | Dec 2008 / Jan 2009 |
| Prepare Employers Requirements documentation | Oct 2008 / Jan 2009 |
| OJEU – D&B consortia | Nov / Dec 2008 |
| Issue ER's and Tender | February 2009 |
| Tender period | Feb /May 2009 |
| Evaluation | June 2009 |
| Construction – start | July 2009 |
| Construction – complete | Sept 2010 |
| Commission | Oct/Nov 2010 |
| Operational | Dec 2010 |

### 1.6 New Build Floor Areas

As a guide to the extent of the build proposals, the current gross internal floor area for the new build proposals are noted below; these figures include allowances for departmental circulation and building wide communications. Plans also include a remote Energy Centre and Service yard with subterranean link to the basement of the new Adult and Children's Hospital.

| | |
|---|---|
| Adult Acute Hospital | 100,624 sq.m |
| Children's Hospital | 33,007 sq.m |
| Laboratory Facility | 5,200 sq.m |
| **Total** | 138,831 sq.m |

The redevelopment of the campus and clinical services at the Southern General Hospital will most likely be undertaken through a multi phase programme of refurbishment, decant, demolition and new build over a works period of at least 4-5 years. The Board is currently initiating a programme of enabling work over the next 2 years to establish an un-encumbered site for the new hospital development. These works involve the relocation of hospital services, diversion of main hospital M&E services, demolition of redundant buildings and general site clearance and preparation works. These enabling works will be funded from the Board's ordinary capital programme. The Lead Consultant will be required to co-ordinate with design teams delivering these projects to ensure all works are sequenced to meet the desired start date on site of Summer 2010.

### 1.7 Project Target dates

The timetable below indicates the Board's indicative timetable for the procurement. Provisional dates for a two-stage D&B process have been included for information only at this stage.

| Milestone/Process | Target Date |
|---|---|
| Publication of OJEU Notice | 6th May 2008 |
| Deadline for receipt of requests to participate/submission of responses to the Pre-Qualification Questionnaire (PQQ) | 5th June 2008 |
| Issue of Invitation to Tender (ITT) Documentation to selected Applicants | 19th June 2008 |
| Deadline for submission of response to ITT | 31st July 2008 |
| Evaluation of ITT Submissions | 12th August 2008 |
| Appointment of Technical Adviser | 22nd August 2008 |
| Brief Development / Masterplan | September-November 2008 |
| Employers Requirements - Stage 1 | September- December 2008 |
| OJEU Construction Teams | October – Dec 2008 |
| Stage 1 Tender Period | January-May 2009 |
| Stage 1 Evaluation – Selection Preferred Bidder | June 2009 |
| Stage 2 Tender Development - Planning application | July 2009 |
| Stage 2 Evaluation | April 2010 |
| Negotiate GMP, FBC and Contract Close | July 2010 |
| Phase 1 Complete – New Children's Hospital | Ist qtr 2013 |
| Phase 2 Complete – New Adult Acute Hospital | 3rd qtr 2014 |
| Commissioning | 4-5 months |
| 12 Months Defects Period – Acute Hospital | 3rd qtr 2015 |

**1.8 Estimated cost**

The current estimated capital cost of the new Adult Acute, Children's Hospital and Laboratory Project as of April 2008 is c. £550 million, this cost includes equipment, VAT, and fees but excludes inflation to mid build and contingencies. The split between the Projects of this cost is approximately New Adult and Children's Hospital - £530m; new Laboratory Project £21 m.

**1.9 Programme Sponsor**

Ms Helen Byrne
Director of Acute Services Strategy, Implementation and Planning
NHS Greater Glasgow & Clyde
Acute Services Strategy Implementation and Planning Directorate
Management Building
1345 Govan Road
Glasgow G51 4TF

**1.10 Project Director**

Mr Alan Seabourne
Project Director - New South Glasgow Hospitals Project
Project Office
St Andrew's House
80 Queen Elizabeth Avenue
Hillington
Glasgow
G52 4NQ
[redacted]

**1.11 Board Technical Lead**

Mr Peter Moir
Head of Major Projects
Project Offices
St Andrew's House
80 Queen Elizabeth Avenue
Hillington
Glasgow
G52 4NQ
[redacted]

**1.12 Lead Consultant Team**

It is the Board's intention to appoint the following disciplines as part of the Lead Consultant team. The team will be lead by the Lead Consultant/Project Manager; a single appointment will be made with this company for the whole team. Billing on behalf of the whole team will undertaken by the Lead Consultant, in short fee notes will be from single source and not individual team members.

- Lead Consultant / Project Management
- Employer's Agent role (construction stage)/Contract Administration
- Architectural Design and Site Masterplanning
- Healthcare Planning
- Civil and Structural Engineering
- Building Services Engineering & IT Infrastructure
- Cost Consultant/Quantity Surveying/Lifecycle costing
- CDM Co-ordinator
- Risk and Value Management advice
- Facilities Management advice (soft and hard FM)

- Procurement and Construction Management Advice
- Landscape Architect

The Board will expect the appointed Lead Consultant to work with the established Project network, including all appointed advisers; all Project related documentation, designs and specification, budgets and programmes developed to date as part of Stage 1, subject to any changes agreed with the Project Director or their nominee.

The Board has existing Consultancy agreements for the supply the following services, these appointments have been made and do not form part of this commission. The Lead Consultant team will be expected to work with these advisers, and acceptance of the commission will be conditional on this.

- Legal – Shepherd & Wedderburn LLP.
- Financial – Ernst & Young LLP.
- Town Planning Consultant – Keppie Planning.
- Environmental Consultant– Ironside Farrar.
- Transportation Consultant – JMP Consultants Ltd.
- The Carbon Trust and sub-consultant.

**1.13**

The Board currently proposes the following Contract Strategy, this is subject to Government Gateway review and approval.

- New Adult Acute and Children's Hospital Project – Two stage Design & Build.
- New Laboratory Project – Single stage Design & Build

**1.14 Site Inspection Staff**

It is the Board's intention to make direct appointments for the under-noted roles, some will be made for the duration of the works contract others for particular stages, the appointments will be full-time. The Lead Consultant team will be required to structure and manage the selection and appointment process for all site inspection staff on behalf of the Board, although the contractual and payment arrangements will be between the Board and the respective companies.

- Building Clerk of Works (4)
- M&E Clerk of Works (3)
- Site Engineer (2) – sub-structure, drainage, groundworks and frame.

The Lead Consultant will manage and direct the work of the site inspectorate staff. Site Inspectorate staff will be based on site for the duration of the works contract.

**1.15 Details of documentation**

The Board requires two paper copies of all documents, reports, budgets, programmes, drawings, maps, 3-D graphics and animations, photographs and other documents or reports produced by the Consultant. In addition, all the above must be provided in electronic format as noted below;

| | |
|---|---|
| Cost plan | MS Excel at all stages |
| Text | MS Word, MS Excel, MS Access. |
| Programmes | MS Project. |
| Drawings | Autocad at all stages. |
| 3D / Animations | Various. |

Working documents will require being in base software programme format e.g. not Adobe Acrobat. Consultants may use Adobe Acrobat for working use and for email while providing final versions of documents, drawings etc., in base software as noted above.

**1.16 Board's procedures / requirements**

- NHS GG&C PSC / OBC documentation and OBC Stage Design Report as prepared by others, including all associated drawings, specifications and Project costs.

- Scottish Capital Investment Manual (SCIM).
- SEHD – Procode V 2.0
- The Board's Design Action Plan
- Health Facilities Scotland – SHPN and/or NHS HBN and HTM's.
- NHS Estates and others guidance documents such as AEDET, NHS NEAT, or BREEAM.
- Government Gateway reviews will be undertaken at various stages (see separate section).
- OGC Guidance on Competitive Dialogue and general project delivery. (use of CD unlikely).
- FBC

### 1.17 OGC Gateway Reviews

The Scheme will be subject to external review by a Gateway Review Panel at various stages of the Scheme and the Lead Consultant team will be expected to assist the Board's Project Team at the following stages;

Gateway Review 0 – Strategy assessment (2 reviews).
Gateway Review 2 – Procurement strategy.
Gateway Review 3 – Investment Decision.
Gateway Review 4 – Readiness for Service.
Gateway Review 5 – Benefits Realisation.

Input from the Lead Consultant will be focused to technical elements associated with each review, and cover matters such as programme, cost management, procurement strategy and structure, project specification and buildability. Each Gateway Review will last approximately 2- 3 days and it is likely that the Lead Consultant will need to prepare a status report on technical elements and be available for interview for 2-3 hours.

### 1.18 Meetings

The Lead Consultant team will be required to attend regular progress and associated briefing meetings at each stage of the Scheme, which are typical for this form of procurement and consultancy service. These meetings will generally be held within one of the Board's project offices within the Glasgow conurbation, costs for attendance at all meetings should be included within your capped lump sum fee proposal.

During key stages of the procurement process the Board will requires some or all of the TA team to be based in the ASR Project Offices at Hillington, to ensure good continuity and communication is maintained at critical times of the programme. During the construction phase, the Board's Project Team will have a presence within the site compound, and suitable project offices accommodation will be provided for key members of the Lead Consultant team as well.

The Lead Consultant will require to be suitably represented at all meetings throughout the duration of the project. Regular meetings will be held throughout the commission, some of the key meetings will be;

- The Lead Consultant will meet at least once a week with the Project Director or their nominee throughout all stages of the project from commencement to completion of the commission.
- Open days and presentations during bidder selection Stage 1A.
- 2-3 meetings a week throughout Stage 1A to develop the Employer's Requirements documentation, note this may run into multiple daily meetings at certain stages.
- Weekly meetings throughout Stage 1A to develop and adapt the current PSC design solution with the Board's Project Team and departmental user groups. This will involve the further development of the existing PSC departmental relationship drawings(1:500) as well as the site master plan (1:500) to reflect changes to the Board's phasing of the overall redevelopment proposals. (See section 6.0)
- Regular meetings during Stage 1B bid process to suit number of bidders (3) to ensure adequately briefed, for design and bid development and for commercial and financial negotiations.
- Regular meetings during Stage 2 process during bid and design development. Again meetings will frequently be held with Project Team, user groups to assist design development with bidder design team, for commercial meetings with bid team
- Regular meetings during Stage 2 preferred bidder stage, and evaluation process to include weekly bidder meetings up to contract close.

- Weekly in house bid team meeting up to contract close.
- Provide technical input, review and comment and take active involvement in the room layout review and approval process both before and after contract close. Note, room layout drawings will be developed for all room types and variants on a room type.
- Monthly Project Executive and Procurement & Finance meetings for duration of commission, including regular reporting and progress update reports for these meetings.
- Monthly project progress/technical meetings during construction & commissioning phase and one site meeting per month.
- Bi-weekly for 3 months then weekly commissioning team meetings for 12 months prior to completion.
- User consultation/design development meetings, at least weekly during Stage 1 & 2.

Meetings with Planners, Roads Department, Local Authority Flood prevention, SEPA, Scottish Water and Fire Brigade as well as NHS Fire Officer, Health Protection Agency . With the exception of meetings with the Planning Authority, meetings with these individuals should be infrequent.

The team may also be called up to support the Board and Project Team at public presentations out with normal working hours, this should be an infrequent occurrence.

Meetings with the Hospital Manager and Operational Estates staff to confirm operational issues and co-ordinate with site infrastructure.

Presentations to a number of internal stakeholders i.e. Board Members, Clinical Groups, etc.

### 1.19 Continuity with other projects and site operations

The team will be responsible for ensuring the maintenance and safe operation of the hospital site in respect of the various projects they are managing, as well as full co-ordination with any associated works contracts. The team will be responsible for planning and programming of any associated works to maintain access to all areas. All works programmes must be fully consulted with the Project Director or their nominee and approved by same.

### 1.20 Post Project Evaluation (PPE)

The team will actively assist the Board to develop and undertake the PPE process throughout the life of the project, and assist in the preparation and completion of this documentation no later than 9 months post occupation of the new facilities.

### 1.21 Further Development of the Board's OBC/PSC Design Exemplar

The Board have developed a PSC design exemplar through the first stage of a PPP procurement strategy. While this strategy has now changed course towards a public finance route, a good deal of the design and information prepared for OBC is still valid.

As part of the development of the OBC the Board looked at alternative options to re-use some of the existing buildings on the campus for administration and support functions, this was driven by capex cost pressures, although these building may eventually be replaced by new build's at a later date.

The PSC design therefore requires to be revised and updated before it can be used as the design exemplar and form part of the Employers Requirements documentation. Copies of site plans for Option 1 and Option1A (Preferred option) are included in Appendix G, Option 1A will require the redesign of some of the roadways to the main frontage of the planned new hospitals, with resultant impact on the podium footprint. The location of the new Laboratory Project and the design and layout of the Service yard and Energy Centre all require further work before the design exemplar is complete. This work is likely to take 4-5 months from commencement up to the issue of the Stage 1 Employer's Requirements tender, the Board have decided to provide Stage 1 bidders with an exempar design on which to develop their bid proposals.

## 1.22 Masterplan

In drafting the conditional planning report for Committee, Glasgow City Council Planners have made a condition of the first reserved matters application on campus that .....

'a finalised masterplan which re-affirms an overall vision, set within a clear design and development framework, reflecting the strategic design guidance on built form and landscape contained in the South Glasgow Hospitals Campus Development Plan, April 2007 shall be submitted and agreed in writing by the Planning Authority. The submission shall include (i) an audit of the changes between the finalised masterplan and the indicative Campus Plan ref 05017-02-100 Development Option C; identified in the Campus Development Plan and (ii) an assessment of the extent to which the finalised masterplan accords with the Environmental Statement (ES) submitted as part of the outline planning application. Thereafter the Council will determine whether the finalised masterplan accords with the outline consent and whether a reserved matters/full planning application accompanied by an EA is required.

The Board will therefore require the site plan to be updated to incorporate the retention of the Surgical Blocks and re-routing of the main entrance road, and Fastlink routes. This reflects the change from Option 1 to Option 1A referred to above and as indicated on drawings included within Appendix G. For the avoidance of doubt, the Lead Consultant team will be required to revise the site plan to reflect the layout Option 1A which has never been fully developed to scale 1:500.

On completion the team will need to update the Campus Development Plan, the Board are unclear quite when this should be undertaken, as it will need to reflect the final proposals developed by the preferred bidder as they enter the detailed planning process for their Scheme with Glasgow City Council.

## APPENDIX PART C – CONSULTANTS' DUTIES

### Lead Consultant Technical Advisory Team – Scope Of Services

The Lead Consultant / Technical Advisory Team will provide guidance, advice and active input to the Board in the following key area's throughout the duration of the commission, the Lead Consultant team will be expected to manage and direct the process on behalf of the Board. The Team will be responsible for the procurement of;

- The New Adult and Children's Hospital Project – two stage D&B process.
- The New Laboratory Project – single stage D&B process.

The Board require the following consultancy services as a minimum;

- Lead Consultant / Project Manager
- Employer's Agent role (construction stage)/Contract Administration
- Architectural Design and Site Masterplanning
- Healthcare Planning
- Civil and Structural Engineering
- Building Services Engineering & IT Infrastructure
- Cost Consultant/Quantity Surveying/Lifecycle costing
- CDM Co-ordinator
- Procurement and Construction Management advice.
- Landscape Architect.
- Risk and Value Management advice
- Facilities Management advice (soft and hard FM)

**Note: the process described in this section envisages a two stage process, with down selection 3-1 at the end of Stage 1 B. If the review of procurement strategy determines a 3-2-1 process, with 2 bidders fully participating in Stage 2, then Board reserve the right to negotiate the lump sum fees with the Lead Consultant team.**

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### General Duties of the Team

- Attend relevant meetings of Project Executive & Project Team and support the Board as required. Refer Section 1.18 of the Scheme Particulars set out in Part B of the Appendix.
- Remain up to date and responsive to changes in legislation or guidance on all matters relative to the project.
- Be responsive to demands for input at short notice.
- Advise the Board on general issues of on-going advice on government policy; compliance with SCIM, SEHD, DoH, OGC and Treasury procedures; compliance with Local Council planning procedures. Compliance with legislation and NHS Design Guidance.
- Ensure that advice is consistent with SEHD, DoH, NEC, SOPC4 standard form contract and Treasury Taskforce model contract templates.
- Work closely with other advisors, legal, financial, planning, transportation etc.
- Assist the Board with developing strategies for FM & lifecycle improvements and monitoring on a 1) non PPP contract, 2) installation of Group 2, 3 and 4 equipment, and 3) existing, retained estate and its linkage to the new build projects.
- Participate in SGHD review at various stages throughout the life of the project, teams should anticipate to be involved in:
  - PUK – 3 reviews
  - Gateway – 4 reviews
  - Architecture+Design Scotland – 2 reviews
- Team to familiarise themselves with all existing site data, all project related design and technical data developed during PSC / OBC stage.
- All technical data related to Board funded enabling works which will be underway during period 2008 – 2010. Note the Lead Consultant team will not be delivering these projects, but need to be aware of

them for any impact on NSGH projects.

**Key Team Activities and Tasks for Stage 1A - Preparation of Employers Requirements Documentation**

Preparation of OJEU, PQQ, MOI for D&B consortia; Employers Requirements documentation and full Stage 1 B tender and contract information. Design development of site masterplan and OBC/PSC design exemplar.

1) Manage the compilation and publication of a comprehensive set of Employers Requirements documents for the approval of the Project Director. The contents should include as a minimum the items list below, and the bulk of the work will be undertaken by your team.

- Board's ASR Strategy and clinical strategy.
- Whole SGH site development brief.
- Functional content and schedules of accommodation.
- Whole hospital; clinical and non clinical output specifications.
- ADB room data information. (provide 4 page ADB information for each individual room type).
- Sustainability and low carbon strategy.
- PSC design and other spatial planning drawings at 1:500 @ 1:200 (further developed by your team).
- Project specification – Architectural/ building; Building Services, energy saving / lifecycle / cost in use; structural & civils; externals works/landscaping; other performance parameters;
- Construction and site procedures.
- Requirements for post contract design development.
- Details of commissioning process and requirements for handover, training, H&S file.
- CDM & Health & safety requirements.
- Board's general design requirements/ design action plan.
- Board's PSC Design Solution – as updated by your team Oct-Jan 2009.
- Cost information – amended and updated from OBC by your team.
- Design and Tender Evaluation - The process, criteria and scoring.
- Details of D&B response requirements for Stage 1 and 2.

<u>General Tender Information</u>

- Project execution plan.
- Contract conditions and terms.
- Project programme and other works inter dependencies.
- Suggested forms for bonds, warranties, guarantees and other legals.
- Site survey and site investigation reports.
- Preliminaries requirements and pricing structure for Stage 1 B bid response by D&B consortia.
- Stage 1 Design Report – updated by your team to provide exemplar design info for bidders.
- Cost plan prior to tender.
- Copies of statutory approvals secured by Board.
- Health & Safety Plan and questionnaire.
- Pricing schedules for pre-construction services.
- Pricing schedules for profit, overheads.
- Board's FM requirements.
- Board's lifecycle requirements.
- Project insurance arrangements.

2) Develop and manage a process through OJEU to advertise the project (in association with the Board's legal adviser), and then to evaluate and shortlist interested D&B consortia, to include preparation of a PQQ and Information Memorandum. Provide advice and guidance to the Board on all aspects of this process including timetable. The Board hope to engage a maximum of 3 D&B teams in this process. Assist the Board's Project Team with responses to request for further information during pre-qualification process.

3) Prepare full design and financial evaluation process for the Stage One Bid process.

4) Prepare and submit a review of the contract options to develop the Stage 2 bid process on an open book basis with a single D&B consortia, to include recommendation on contract form and process. This will be for approval by the Project Director, and included within the Stage 1 bid documentation.

5) Review the PSC Cost Plan and associated OBC cost information prepared by others. Update plan to format your team are comfortable working with, but general format to remain same. Continuously update cost plan for the Board throughout this and successive stages. Submit for approval by the Project Director.

6) Develop the Board's existing risk register for the project and assist the Board to review and update on a monthly basis throughout the full project. Manage cost allocated against risk in respect of the project cost plan. Submit for approval by the Project Director.

7) Develop a project Master Programme for the duration of your commission (Sept 2008 – Dec 2015), which may require short term sub programmes to be developed for individual stages. Submit for approval by the Project Director or their nominee.

8) Development of the Board's OBC/PSC design exemplar to produce a workable site masterplan at 1:500 for the campus in light of the retention of some of the hospitals existing building stock. This will also involve the reworking of the floor plans for each level at 1:500, and studies of typical ward layouts at 1:200. This will involve periodic interaction with Glasgow City Council and A+DS to reach agreement on a revised site masterplan, and also provide workable design exemplar for the Employer's requirements package.

9) In conjunction with the Laboratory Project team/users group, develop a project brief, schedules of accommodation and prepare 1:500 departmental relationship drawings for the new build Laboratory Block. In conjunction with this team and the Project Team for the Adult and Children's Hospitals further develop proposals for FM service yard / Energy Centre and agree a structured layout for the site planning of this part of the site. Take account of the block plan design and linkage to main hospital block. Review new build schedules of accommodation for the Laboratory Project as they develop to ensure that space is optimally used and tested to optimise value for money.

10) Develop a process to manage the Stage One design and bid development process and interaction between the Board and the three D&B consortia to ensure that adequate knowledge flows between the parties to ensure

11) Assist the Board's Project Manager's for the Adult Acute Hospital and New Children's Hospital to develop and provide for the Stage 1 tender package a full clinical briefing pack which will involve user group meetings to review and sign off operational policy and clinical output specifications.

12) Develop ADB room data sheets for key rooms within all departments to be included in Stage 1 bid documentation, reduce number where repetition but all major room types with variations to be developed during this stage. Allow for review with users and update prior to issue with bid documents. ADB format to be used.

13) Attend project launch day, and prepare suitable presentation material, assist with presentations

14) In conjunction with NHS Project Team and Planning Adviser, continue dialogue with Glasgow City Council, Architecture+ Design Scotland and public/private utility bodies to conclude discussion on site wide issues, and conclusion on any outstanding matters on the master plan process.

15) Lead and manage dialogue with providers for power and gas service supplies and establish main supplies for the new facilities and site wide for maintenance of existing estate.

16) Develop and cost a technical solution for a roof top helipad to be included within the ER's for the new Adult and Children's Hospital, directly linked to the A&E trauma reception of both hospitals.

17) At the conclusion of Stage 1A, prepare a progress report by Lead Consultant team, to include a full review of Stage 1A, the progress with exemplar design, tender process, project budget and cost plan, timetable and confirm readiness to proceed to tender. Await approval from Project Director to proceed to next stage.

**Key Team Activities and Tasks for Stage 1 B – Stage One Design and Bid Development and Evaluation, selection of a preferred bidder D&B team.**

1) Produce, print, package and issue Employer's Requirements tender documentation to selected D&B consortia – max 3. During this stage further develop any tender documentation and information for this or next stage that maybe outstanding. Note much of this information will be developed in conjunction with the Board's Project Team and user groups and ongoing development and detail of the project requirements.

2) Generally maintain and update project management documents, schedules, cost plan and programmes to take account of progress and change as project evolves through stage.

3) Manage the interface between the three D&B Consortia and the Board. The process developed by you in Stage 1A should provide a mechanism where by the bid teams can have access to the Board's user groups at intervals throughout the Stage 1 bid development phase to inform design development. This process will require to be carefully managed.

4) Manage all requests for information from the bid consortia during the tender process and provide responses timeously.

5) Attend bidders meetings and presentations throughout stage.

6) Manage the receipt of Stage 1 bids from three D&B Consortia, and commence and manage the full process to evaluate the bids with full involvement of the Board's Project Team and the eventual involvement of user groups perhaps by way of open day presentations by each D&B bid team. Below is a suggested content of a Stage 1 bid response;

- Details of contractor's team and structure.
- Relevant experience & reference sites.
- Key personnel and management structure.
- Legal framework for team, parent company.
- Company financial and commercial information.
- Response to PSC design, high level proposals.
  1:500 phased site plans for duration of works. 1:500 floor plans all levels, 5@ 1:200 floor plans.
- 3-D visualization of design intent.
- Healthcare planning solution.
- Typical specification for building and engineering aspects.
- Approach to building design proposals.
- Commentary on buildability.
- Detailed review and commentary of project cost plan.
- Project risk assessment and management.
- Contractors proposals on quality and lifecycle costs.
- Detailed method statement for delivery of the project.
- Design and procurement timetable.
- Construction timetable.
- Contract management proposals.
- Manpower and resourcing proposals.
- Proposals for low carbon design and sustainable issues.
- Proposals for building commissioning and handover.
- Preliminaries, overheads and profit costs for project
- Priced schedules for any advanced works, and pre-construction services at next stage.
- Fixed % for mark-up on provisional sums for trade works.
- Cost plan at Stage 1.
- Pricing matrix for Stage 1, needs more thought on scoring on cost.
- Contractor's draft tendering protocol.

7) On completion of the evaluation of bids, prepare a full report giving the Project Director a recommendation based on (exact criteria will be confirmed later) value for money, design solution / functionality, healthcare design and technical specifications and systems and all financial and commercial aspects. The report should also include any

significant areas of deviation from the Employer's Requirements and compliance statement and detailed 'technical' and 'user' evaluations.

8) Present recommendations to the Project Director and subject to approval, the Executive Board.

9) End of Stage 1B prepare a progress report by Lead Consultant team, with recommendation for next stage, await approval from Project Director to proceed to next stage.

10) The successful conclusion of this stage will be the selection of a preferred bid team through an equitable process, to progress to the next stage of bid development on a 'open book' basis.

**Key Team Activities and Tasks for Stage 2 – Stage 2 Design and Bid Development, package tender through to agreement of a Guaranteed Maximum Price, Full Business Case preparation and approval and contract sign off.**

1) Complete and issue any further information in respect of the Employers Requirements.

2) Engage with preferred bidder and develop and agree a structured programme to allow the design and work packages to be fully developed for tender issue.

3) Fully manage the process of item 2) above on behalf of the Board, to include detailed negotiations.

4) Respond to D&B Consortia queries and attend briefing meetings with teams throughout Stage 2 bid development stage.

5) Support the Board in the 'user' evaluation of the design proposals as they develop, by developing approaches to enable users to fully understand the design, technical and clinical operational issues implicit in the preferred bidders design proposals.

6) Participate in SGHD stage review and any associated design and environmental review.

7) Participate in review and evaluation of all aspects of Stage 2 bid response, provide clarification as required on all design and technical matters. Prepare technical report on Stage 2 bid submission, including evaluation process and giving recommendation to the Project Director and Executive Board. The report should also include any significant areas of deviation from the output specification and compliance statement and detailed 'technical' and 'user' evaluations.

8) Based on the format/content for Stage 2 tender response, developed by your team and included for information in the Stage 1 tender documents, secure a full Stage 2 tender submission from the D&B consortia. While the detail of this package will be complex we reproduce below a minimum requirement to assist you to prepare your bid. The bulk of this evaluation will be undertaken by your team, and the output included in a formal report to the Project Director.

<u>Content</u>

- By end of stage – full clinical sign off;
- Agreed functional content.
- Agreed and audited schedule of accommodation.
- Agreed audit of communication and circulation areas.
- Audit of Scheme against infection control requirements.
- Audit of actual design versus brief.
- Whole site development control plans (incl. phasing).
- Site analysis of access and transport for design.
- 1:500 departmental relationship drawings and stacking diagrams.
- 1:200 department layout plans for all individual departments and wards.

- 1:200 elevations and sections.
- 1:50 typical room layouts (say 50 rooms in each facility).
- ADB Room data sheets for all departments.
- Equipment lists for all departments.
- Confirmation on all Group I & II equipment related costs.
- Typical construction details for envelope, floors, walls.
- Interior design proposals including sample boards.
- Landscape proposals.
- 3-D design and computer studies.
- Wayfinding strategy.
- Fire evacuation and safety strategy, full fire risk assessment – risk with D&B designer.
- Demonstrate low carbon design strategy.
- Flexibility of design to change.
- Demonstrate FM services have been incorporated into design.
- Integration of sustainable issues, waste management, recycling.
- Demonstrate lifecycle on materials and equipment.
- Schedules for all architectural, building, M&E engineering, C&S engineering and IT infrastructure proposals.
- Details of finishes, components, fixtures, fittings.
- Engineering strategy, specification, schematics and schedules.
- Design programme.
- Programme to secure detailed planning consent.
- Project management and quality management arrangements.
- Construction programme, methodology phasing etc.
- Contractor's overhead and profit percentages (as Stage 1).
- Agreement on LADS.
- Agreement on contract form and willingness to enter into contract.
- Project insurance.
- Finalised tendering protocol
- FBC forms.
- Secure detailed planning consent, prior to contract close.
- Final submission and review of contractor's proposals.
- Agree GMP and cashflow forecast.
- Detailed review of clinical functionality, space, accommodation schedules.
- Detailed review of project specification and quality, detailed review of lifecycle issues.
- Finalise all contract matters, insurance, bonds, warranties etc.
- Finalise and agree all sub contract packages and agree GMP.
- Finalise any enabling / service disconnections.
- Finalise site establishment and layout.
- Finalise FBC, clarify all outstanding contract issues in advance.
- Continue with design development and sign off within cost envelope.

9) Undertake and manage a full technical, financial and commercial review of the preferred bidders final tender submission, provide clarification as required on all technical matters, prepare a full report giving the Project Director a recommendation for approval or otherwise. The report should also include any significant areas of deviation from the Employer's Requirements and detailed 'technical' and 'user' evaluations. Await approval from Project Director to proceed to next stage.

**Key Team Activities and Tasks for Stage 3 – Implementation and Construction, Design Development.**

1) Manage the process to agree all outstanding design matters at contract close which may include the balance of 1:50 detailed layouts, room data sheets and drawings. Liaise with Clinicians and user groups as required to secure sign off.

2) Undertake the role of Employers Agent for the duration of the works contract and manage the interface between the Board and the D&B contractor.

Meetings – the following are an indication of frequency

- Monthly progress meetings on site.
- Monthly technical meetings.
- Frequent design development and package development meetings.
- Monthly cost control meetings with Board.
- Monthly cost control meetings with D&B contractor.
- Frequent design development meetings with Board user groups - room layouts.
- Monthly Project Executive meetings with Board.
- Monthly procurement and Finance Group meetings.
- Monthly Gp. II equipment meetings, as required.

3) On a monthly basis prepare and submit a Lead Consultants technical report on progress on site in respect of programme, cost / cost control, change control and design change / development and other relevant procurement related matters.

4) Actively manage the change and cost control process to ensure that the works remain within budget, advise the Project Director on the implications of change on programme, cost and quality parameters.

5) Manage and administer building contract and associated processes on behalf of the Board.

6) Visit the works on a weekly basis and ensure that the new facilities are being constructed in compliance with all the approved and agreed contract documentation, drawings, specifications, the ER's or CP's, whichever have been confirmed as the basis for the project at contract close.

7) Direct the work of the Site Inspectorate team for the duration of the works contract, incorporate key output from their weekly reports into the Lead Consultants monthly progress report as required.

8) In association with Board technical estates staff, manage the process on behalf of the Board to overview and sign off of the full technical commissioning of the building, building engineering plant and equipment and provide the Board with a full report and recommendation for the acceptance and handover of the building from the D&B contractor to the Board. (Note - due to the scale and technical complexity of the building and engineering services, the Board are receptive to the inclusion of some form of operational management of the facilities by the D&B contracting team for a period of 3-5 years. This will allow NHS staff to shadow and learn operation and function of the buildings systems). This aspect will be further considered by the Board during Stage 1 A for inclusion in the Employer's requirements.

9) Inspect the project at practical completion, agree schedule of outstanding items/defects with D&B contractor, including remedial action. Monitor progress/quality of remedial works.

**Key Activities and Tasks for Stage 4 – Equipping and Operational Commissioning**

1) Participate as an active member of the Board's Commissioning Team to enable migration of staff from old to new facilities. This will involve equipment and logistics, migration plan, orientation of staff to new facilities and keeping staff up to date on progress on a regular basis. This input will be required from mid 2012 for the Children's Hospital through to Summer 2015 by which time most of the moves into the new builds will be complete.

2) Assist the Project Director to develop a fully structured Commissioning Plan for the operational commissioning and equipping of the following projects in chronological order;

- New Laboratory Project
- New Children's Hospital
- New Adult Acute Hospital

This work will involve the setting up of a range of groups by the Board, associated with the management, staffing and operation of the new facilities, groups will include;

- Building Commissioning
- Service Migration

- Clinical Transition
- Clinical Systems/IT
- Equipment Procurement
- Communications
- Human Resources
- Community Engagement
- Operational Management

**Key Activities and Tasks for Stage 5 – Post Project Evaluation and 12 Months Defects Period**

1) Participate in the preparation of PPE documentation for the project, in accordance with the NHS Scottish Capital Investment Manual. This will commence post operational opening of facilities and will be undertaken over a period of 2-3 months, likely to complete circa 9 months after opening.

2) Participate in 12 months defects inspection on behalf of the Board, prepare comprehensive lists and participate in any associated negotiations to conclude. Include an allowance you consider appropriate for this function and an assessment of hours based on date for final inspection.

## LEAD CONSULTANT / PROJECT MANAGER – KEY ROLE AND RESPONSIBILITIES

Key aspects of Project Manager's role:-

- Manage the work and output of your team, and act as main point of contact reporting direct to the Board's Project Director or nominee.
- Represent Technical Advisory Team at all key meetings (e.g. Local Council, NHS, legal, contractor), or as delegated by prior agreement with the Board's Project Director or nominee.
- Development and management of project plan/programme, with regular review and update as required.
- Prepare a full project Execution Plan for the project early in Stage 1A for Project Director approval.
- Develop and manage risk register from start of Stage 1A to completion of works.
- Co-ordinate interface with operational hospital staff, and adjacent works projects as required.
- Resource management of Lead Consultant team through all stages of the project, to ensure proper delivery of service to the Board.
- In discussion with the Boards Project Director, develop lists of key project activities, programme and actively manage each stage of project delivery, advising PD on corrective action as required.
- Prepare monthly progress reports on Lead Consultant team activity, project procurement and works activity, for the Project Director, to be circulated 5 workings days in advance of TA monthly Project Team meetings.
- At the end of each stage, prepare a technical progress report for approval by the Project Director, with recommendations on actions to proceed to next stage, to include comment on timetable, costs, site, estates, facilities, build and construction, planning and design, risk and value management, compliance of contractor's proposals, technical evaluations, site infrastructure, town planning and progress with negotiations prior to contract sign.
- Fully lead, manage and develop works contract change and cost control procedures for approval by the Project Director or his nominee.
- Meet regularly with Project Director to review progress, timetable, costs, design and bid development.
- Lead the preparation and structuring of all key documents for the D&B process to provide a 'designed' published output e.g. it looks like a single document.
- Manage the technical review of D&B bidder proposals during the procurement process for Stage 1 and Stage 2 final bid at Contract Close.
- Carry out and deliver the duties of Employers Agent throughout the construction phase, manage interface with D&B contractor, manage and administer contract and associated processes.
- Collaboratively work with the Board's existing consultant's and other associated organisations such as The Carbon Trust.
- Provide full shadow design team service throughout the duration of the works contract.
- Provide procurement and construction management advice on behalf of the TA team.

## ARCHITECT / SITE MASTERPLANNER – KEY ROLE AND RESPONSIBILITIES

Key aspects of Architects role:-

- Take lead on all matters relative to architectural, building and site master planning, interior design, room layouts, fire engineering, fire escape and fire safety, fabric, components and their life-cycle, phasing and construction.
- Redraw the existing 1:500 departmental relationship drawings.
- Update PSC design through to FBC as required. Initially integrate Board changes to departmental layouts and adapt the 1:500 departmental relationship diagrams.
- Develop a full set of exemplar design drawings for inclusion in the Employer's requirements documentation.
- Develop altemative options for 28 Bed Ward layouts (100% single rooms), layouts to reflect height of building, means of escape and fire compartmentation and escape issues. This work will parallel the development of the brief and Employer's Requirements documentation as part of Stage 1A.
- Review and adapt the current Development Control Plan to incorporate current proposals to retain

additional existing buildings post completion of the new builds in 2014.

- Assist the Board with any design related discussion with Architecture and Design Scotland relative to the PSC design and the designs developed by D&B consortia.
- Lead the preparation and submission to Glasgow City Council of a Site Masterplan document in conjunction with the Board's Town Planning Advisor.
- Actively participate in room layout development and sign off process.
- Assist with preparation of Employer's Requirements documentation, the bid process and evaluation at all stages. Note the Board intend developing a palette of standardised room layouts for as many repeat rooms as possible to reduce the workload at the early stage.
- Manage and lead the AEDET review and any related architectural design led review processes as required at relevant stages.
- Participate and assist with the development of ADB room data sheets for Employer's Requirements document. This is a team responsibility which will be led and managed by the Healthcare Planner.
- Develop a full Building specification and construction requirements for inclusion in the Employer Requirements/Tender document.
- Review bidders proposals at all stages for compliance with Employer's Requirements document, participate in the production of technical reports at the end of each stage, to include aspects on architectural, building construction, healthcare design, interior design, landscape and master planning.
- In conjunction with Project Director or his nominee, take team lead with any discussions with Architecture + Design Scotland.
- Review design proposals developed at OBC/PSC stage, allow for personalisation as and if required.
- Input to reports on bids at various stages of the D&B process and Contract Close stages of the project in respect of healthcare planning solutions, and as required for OBC and FBC submissions by the Board.
- Provide full shadow design team architectural and building service throughout the duration of the works contract.
- In conjunction with Board, manage activities of Board appointed Clerks of Works during construction phase.
- Provide monthly reports on compliance of project with Employer's Requirements.
- Input to the Lead Consultant's monthly reports to the Project Director on architectural design, healthcare design and building related matters.

**HEALTHCARE PLANNER – KEY ROLE AND RESPONSIBILITIES**

Key aspects of Healthcare Planners role:-

- Take lead on all matters relative to clinical design, clinical output specifications, operational policies, functional content, schedules of accommodation, within Technical Advisory Team.
- Review the schedules of accommodation prepared as part of OBC stage, and comment as required. Assist Board to further develop key areas of their current design through briefing stage and through to completion of Employer's Requirements and updated Departmental Relationship drawings and Site Development Control Plan in conjunction with the Architect.
- Lead in development, preparation and review of ADB room data sheets for Employer's Requirements/Tender documentation, to include 1 iteration with user groups. This will assist with the preparation of equipment lists for the Board's internal use. It is the intention to provide RDS/ADB information for all key rooms on basis of standardising rooms to avoid a prolonged exercise.
- Lead on behalf of the TA team and assist the Project Managers for the Adult and Children's Hospitals with the development of Clinical Output Specs / Operational Policies for all departments within the new facilities, working closely with NHS staff to agree and sign off a standard reference document for the Employer's Requirements briefing process and documents. In other words ensure full briefing packs are prepared for all departments to a suitable level for the project.
- Actively participate in design development process between user groups and bidder design teams through the various stages of tender through to contract close.
- Lead in clinical and healthcare planning design reviews from bidders and evaluation meetings at each stage of the process.
- Input to reports on bids at various stages of the D&B process and Contract Close stages of the project in

respect of healthcare planning solutions, and as required for FBC submission by the Board.

- Review bidders proposals at all stages for compliance with Employer's Requirements, participate in the production of technical reports at the end of each stage, to include aspects on healthcare planning and design, good practice, compliance with National healthcare quality, infection control and design standards.
- Provide full shadow design team 'due diligence' service on healthcare planning and design matters throughout the duration of the works contract.

**BUILDING SERVICES ENGINEER – KEY ROLE AND RESPONSIBILITIES**

Key aspects of Services Engineer's role:-

- Take lead on all matters relative to mechanical and electrical engineering services, energy and environmental matters, renewables, carbon neutral design, integration with existing hospital and other main utility services.
- Establish and lead discussions with main utility providers for gas electricity and water
- Assist with the Design Development process and input to the ADB room data and room layout processes by the supply of building engineering information for the sheets to focus on environmental conditions, air changes, room temperatures, humidity any specialist filtration, negative or positive pressure systems. Also review and advise on M&E equipment, including the location of M&E apparatus such as light and power switches, light fitments, air handling grillage, appropriate types of heating systems, powered medical equipment, telecoms and IT.
- Fully participate in the design development/briefing Stages 1&2, assist the Board to prepare a comprehensive Employers Requirements document which fully reflects the Board's desire to reduce lifecycle / running costs by providing high quality specification for/and equipment at outset.
- Provide advice and guidance on the integration of large scale Group II equipment such as specialist imaging, PACS, MRI, CT and any special shielding requirements. Ensure all relevant standards are met.
- Review bidders proposals at all stages for compliance with tender requirements, participate in the production of technical reports at the end of each stage, to include aspects on building services.
- Required to be based in the Board's Project Office at critical stages of project to be determined by the Board.
- Ensure environmental and sustainable design concepts and practices are incorporated into the Boards Employer's Requirements specification and are demonstrated by bidders in their responses through to contract close.
- Provide advice to the Board, to include visits to reference sites to review integrated building management systems suitable to run facilities of this size on a daily basis, linkage with CDM advisor for linkage to as built info and building systems.
- Provide full shadow design team service throughout the duration of the works contract.
- Fully participate in the technical commissioning of the new facilities in conjunction with Board estates staff and the contractor.

**COST CONSULTANT / QUANTITY SURVEYOR – KEY ROLE AND RESPONSIBILITIES**

Key aspects of Cost Consultants role:-

- Provide advice on building and life cycle costs throughout briefing and development of Employer's requirements through to completion of works, and update as required, assist with negotiations with contractors on cost and contract matters.
- Review and fully update the OBC/PSC stage DCAG cost plan and provide the Project Director with a new format to suit you working practice, to take forward for the project. The cost plan was last updated to Dec 2007 cost base, the £842m budget ceiling is inflated to mid build as follows
  New Children's Hospital – 3rd qtr 2011.
  New Adult Acute Hospital – 2nd qtr 2012.
- Review contractors proposals at all stages and benchmark against PSC capital cost plan.
- Continually update Project Cost plan.
- In association with the Lead Consultant, develop a robust cost control and change management

processes for approval by the Project Director, establish regular monitoring and reporting process throughout the life of the project. Reports will be required for the Procurement and Finance Group on a monthly basis at all stages of the project.

- Review bidders programme for construction and any associated works at all stages.
- Provide detailed input on construction management aspects of bidders proposals at all stages.
- Review bidders proposals at all stages for compliance with Employer's Requirements, participate in the production of technical/cost reports at the end of each stage, to include aspects related to capital costs, lifecycle costs and general construction / build management and programme.
- Prepare and maintain a costed risk register for regular review by Project Director.
- Preparation of all cost information to assist with completion of FBC documentation.
- Input to reports on bids at various stages of the D&B process and Contract Close stages of the project in respect of healthcare planning solutions, and as required for OBC and FBC submissions by the Board.
- In conjunction with Lead Consultant, lead negotiations with bidders at all stages regarding all financial and commercial matters. Lead the detailed review and negotiations associated with the Stage II package tenders to secure final agreement on the cost plan within the Board's financial envelope.
- Detailed financial negotiations on costs with bidders at end of each key stage, concluding with negotiation and agreement of GMP pre contract sign.
- Provide risk and value management advice on behalf of the Lead Consultant team. Provide full shadow design team cost management service throughout the duration of the works contract, including monthly valuations and cost control and reporting.
- In conjunction with Board's project staff engage and agree final account with contractor.

**CIVIL AND STRUCTURAL ENGINEER – KEY ROLE AND RESPONSIBILITIES**

Key aspects of Civil and Structural Engineer's role:-

- Take lead on all matters relative to structure, site extemal works, roads, main drainage, drainage and structural fabric connections to existing buildings and demolitions within Lead Consultant team.
- Assist with preparation of Employer's Requirements documentation in respect of Civil and structural engineering matters, during the bid process and evaluation at all stages.
- Develop PSC structural solution further, based on further SI work confirm cost plan requirements.
- Input to reports on bids at various stages of the D&B process and Contract Close stages of the project in respect of healthcare planning solutions, and as required for OBC and FBC submissions by the Board.
- Manage a full site investigation and remediation project to clear the site of debris, review for ground contaminants, and manage the undertaking of a full site investigation of ground conditions across the whole development site to provide a full report for inclusion in the Employer's Requirements documentation and further inform the Board's cost plan. Note cost of surveys will be paid by Board direct to contractor. This work needs to be taken forward as soon as possible and results available for inclusion in the Employer's Requirements.
- The development site is covered with large piles of building debris, old trees, tyres, and concrete. The Board require a package of works to be developed following on from the site investigation results to clear the site. These works should minimise any potential costs for landfill tax, and post crush/grade stock pile materials for re-use for bottoming etc.
- The OBC / PSC design option incorporates a basement over much of the podium area, as well as a subterranean link from the Energy Centre/Service Yard to the new builds. The cost plan includes for 900mm diameter CFA piles on a 7.5m grid, 22.5m long. The site conditions of alluvial soil over rock head some 16-27m below, and a high water table make this solution challenging, and de-watering maybe required during the ground works package. The Engineer will further review the situation during preparation of the Employer's Requirements and undertake further flood / water table studies to inform design solution and cost plan allowance.
- Review bidders proposals at all stages for compliance with Employers Requirements/tender documents, participate in the production of technical reports at the end of each stage, to include all project related aspects of civil and structural engineering, site infrastructure and drainage.

- Provide full shadow design team inspection service throughout the duration of the works contract; manage the work of site based engineering staff employed separately by Board.

**FACILITIES MANAGEMENT DESIGN ADVICE – KEY ROLE AND RESPONSIBILITIES**

Key aspects of this role:-

- The Board require the Lead Consultant team to provide an individual to give detailed input on aspects relative to Hard FM and perhaps Soft FM services throughout the Employers Requirements stage, through to detailed negotiations with bidders. This will be in conjunction with the Board's Facilities Department.
- The adviser will also be actively involved in preparation of specifications, for inclusion in the Employer's Requirements which will incorporate lifecycle and running cost/maintenance issues. In other words the Board wish to incorporate within their specification aspects which will drive down future running and operational costs, for example integration of robotics, lifecycle of materials and building systems and modularisation of construction.
- The Board also wish to investigate the option of including a period of operational maintenance for the new facilities within the bid, say 3-5 years, with incentivisation to provide a bedding in period for their staff , and also to assign the risk of problems with Building Systems to the builder.
- Meetings between Board staff and bidders at all stages.
- Evaluation of bids at all stages.
- Evaluation of buildings and compliance with Employer's Requirements.
- Active participation in building commissioning phase, providing advice on operational issues to the Project Director.

**CDM CO-ORDINATOR – KEY ROLE AND RESPONSIBILITIES**

Key aspects of the CDM Co-ordinator's role:-

- Take lead on all matters relative the CDM Regulations and Health & Safety matters generally within Technical Advisory Team.
- Point of contact with HSE for Technical Advisory Team.
- Assist with the preparation of a robust Employer's Requirements document and tender package in respect of CDM & H/S matters.
- Preparation of H&S pre tender plan.
- Manage all aspects of CDM in partnership with Board. Regularly liaise with Board H&S staff based at the Southern General site, ensure any operational matters / interfaces are raised and satisfactorily dealt with.
- Fully advise the Board on their duties and responsibilities in respect CDM Regulations.
- Ensure full H&S file and related submissions made at conclusion of contract works.
- In conjunction with M&E Engineer, give advice on suitable building management system for estates data to run and manage a building of this size and complexity in daily use by estates staff once complete and operational.
- Provide full site related service during contract works, providing monthly reports on site management operation and safety issues as part of team.

**LANDSCAPE ARCHITECT**

Key aspects of Landscape Architects role:-

- Take lead on all matters relative to landscape architecture, external environment and external works.
- Prepare landscape specification and design for revised site masterplan to be developed as part of Stage 1A, assist Architect with development, and discussions with Glasgow City Council on Masterplan.
- In respect of Outline Planning Condition 3, the Board are required to prepare a landscape and visual impact assessment for the site (Based on Landscape Inst. Guidelines 2002), to feed into work to develop and agree a revised masterplan. This task will probably take 3-4 months to complete, you are asked to detail in your response you view on scope and content.

- Assist with adaptation of the current Development Control Plan to incorporate current proposals to retain additional existing buildings post completion of the new builds in 2014. (e.g. Adapt Option 1 to Option 1A, see site plans in Appendix G).
- Assist with preparation of Employer's Requirements documentation, the bid process and evaluation at all stages.
- Participate in the AEDET review and any related design led review processes as required at relevant stages.
- Develop a full landscape and external works (not roads) specification and construction requirements for inclusion in the Employer Requirements/Tender document.
- Review bidders proposals at all stages for compliance with Employer's Requirements document, participate in the production of technical reports at the end of each stage, to include aspects on architectural, building construction, healthcare design, interior design, landscape and master planning.
- In conjunction with Project Director or his nominee, participate in discussions with Architecture + Design Scotland.
- Review design proposals developed at all stages.
- Provide full shadow design team service throughout the duration of the works contract, including inspection of the works onsite for compliance.
- Input monthly reports on compliance of project with Employer's Requirements on landscape and externals matters.

NHS Greater Glasgow and Clyde
1948-2008 60 years of the NHS

# NEW SOUTH GLASGOW HOSPITALS PROJECT

**Memorandum of Agreement**

**between**

**Currie & Brown UK Limited**

**and**

**Wallace Whittle Limited**

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# Memorandum of Agreement

This part comprises the Memorandum of Agreement between Currie & Brown UK Limited and Wallace Whittle Limited

**Consultancy Service:**

Building Services Engineering & IT infrastructure services for the procurement of hospital facilities utilising public finance and a two stage Design & Build process. The end-user being **Greater Glasgow Health Board** of JB Russell House, Gartnavel Royal Hospital, One thousand and fifty five Great Western Road, Glasgow G12 OXH (hereinafter called the 'Board')

**Memorandum of Agreement**

This agreement is made

between

**CURRIE & BROWN UK LIMITED** a company incorporated under the Companies Acts (Company Number 01300409) and having its registered office at Dashwood House, 69 Old Broad Street, London EC2M 1QS (hereinafter called the 'Lead Consultant') of the one part

and

**Wallace Whittle Limited** and the partners thereof individually and as partners and trustees for said firm, having its principal place of business at 8 Elmbank Gardens, Glasgow G2 4NQ, incorporated under the Companies Acts (Company No. 11930) and having their registered office at 8 Elmbank Gardens, Glasgow G2 4NQ (hereinafter called the 'Consultant') of the other part

WHEREAS

the Board intends to proceed with the New South Glasgow Hospitals Project (the 'Scheme') and has appointed Currie & Brown UK Limited to be their lead consultant and to lead the Technical Advisory Team by performing the Duties in connection with the Scheme.

and the Lead Consultant has employed the Consultant to carry out the Duties in connection with the Scheme.NOW IT IS HEREBY AGREED AS FOLLOWS:

1.1 The Lead Consultant agrees to engage the Consultant and the Consultant agrees to perform the Duties subject to and in accordance with the terms of the Agreement.

1.2 This Memorandum of Agreement, together with Parts A-G of the Appendix shall together constitute the Agreement between the Lead Consultant and the Consultant.

1.3 The Lead Consultant will be the Technical Advisory Team Leader as further amplified in the Memorandum of Agreement.



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1.4 **Payment of Duties**

The fee payable for performance of the duties set out in Part C of the Appendix is set out in the Lead Consultants Fee Proposal in Part D of the Appendix and payment shall be made in accordance with the following.

Payment shall be based on the capped fee bids for each Work Stage, with interim payments based thereon within each Work Stage. Payments shall be due on the issue of the Consultant's account. The final date for payment of the Consultant's account by the Lead Consultant shall be 90 days from the date of issue of the Consultant's account. The Lead Consultant is entitled to render monthly accounts.

There is no obligation for the Board to continue with the Scheme beyond each Work Stage (this includes 1A and 1B as separate Work Stages), and the Lead Consultant shall seek written authority from the Board to proceed to Work Stage 1B duties, and all subsequent Work Stages, before doing so.

If any work is undertaken by the Consultant without the prior knowledge and approval of the Lead Consultant, either within a commissioned Work Stage of the project or as preparatory work for a subsequent Work Stage, there will be no ability to seek to recover that cost on a quantum merit basis should the project change or be aborted.



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All fees set out in this Agreement are exclusive of Value Added Tax, VAT will be recovered at the current prevailing rate.

**IN WITNESS WHEREOF** these presents consisting of this and the preceding Page together with the Appendix (in Parts A – G) are executed as follows:

Subscribed for and on behalf of **Currie & Brown UK Limited** at Maxim Park on 31/5/12 by:-

[redacted] Authorised Signatory

ANDREW A. LOUDON Full name

_____ Authorised Signatory

_____ Full name

before this witness

Douglas Ross Witness

[redacted] Full name

MAXIM PARK Address

_____

Subscribed for and on behalf of **Wallace Whittle Limited** at _____ on 31/5/12 by:-

[redacted] Director/~~Company Secretary~~/~~Authorised Signatory~~

ALVAN McGILL Full name

before this witness.

[redacted] Witness

STEPHEN DHIMISTER Full name

8 ELMBANK GARDENS Address

G2 4NQ

## APPENDIX PART A – CONDITIONS OF APPOINTMENT

### Conditions of Appointment

This part describes the conditions, which normally apply to a consultant's appointment. Different or additional conditions are set out in the Memorandum of Agreement. If there is any discrepancy between the terms of the Memorandum of Agreement and this Part A of the Appendix, the terms of the Memorandum of Agreement shall prevail.

### Generally

**1.1 Duration of commission**

The appointment of the Consultant will commence from the date that the Consultant commenced carrying out the Duties and the commission, unless suspended or terminated, shall be deemed to be completed on the conclusion of the duties by Work Stage, as set out in Part C of the Appendix.

Note this will be a staged appointment, the Lead Consultant reserves the right to terminate the commission at the end of each and every Work Stage from 1A - 5. Progression from one Work Stage to another will be subject to written confirmation by the Board (which may be via the Project Director).

### Objectives and obligations of the Consultant

**1.2 Scope of duties**

The duties to be performed by the Consultant are those listed at Part C of the Appendix, as amplified by the Consultants' Bid Submission, (provided always that where there is a conflict between the duties listed at Part C of the Appendix and deliverables and methodologies contained within the Consultants' Bid Submission that the duties listed at Part C of the Appendix shall prevail) and any Additional Duties.

**1.3 Attendance at meetings**

In performing the Duties, the Consultant shall arrange and attend all meetings necessary to their proper execution, and as a minimum those listed in Clause 1.18 of the Scheme Particulars set out in Part B of the Appendix.

**1.4 Additional Duties**

The Consultant shall not undertake any work, which they consider additional to the Duties listed at Part C of the Appendix without the prior written agreement of the Lead Consultant. Any such approval shall indicate the maximum budget for fees and works where appropriate, which should not be exceeded without further approval having been obtained. These shall be conditions precedent to any payment being due from the Lead Consultant for Additional Duties.

**1.5 Information from the Consultant**

The Consultant shall provide information to the Lead Consultant in accordance with the indicative target dates defined in Clause 1.7 of the Scheme Particulars set out in Part B of the Appendix. The Consultant will be expected to prepare and actively manage a detailed project programme as per Clause 1.12 of these Conditions of Appointment.

**1.6 Duty of care**

The Consultant is to exercise reasonable skill, care and diligence in the discharge of the Duties. Submission of drawings, calculations, specification and other documentation produced by the Consultant for comment by the Lead Consultant and/or Board shall not relieve the Consultant of this responsibility. If in the performance of the Duties the Consultant has discretion exercisable as between the Lead Consultant and any other body the Consultant shall exercise its discretion fairly.

**1.7 Co-ordination of consultant's services**

Co-ordination and integration of the activities of Technical Advisory Team, however employed, shall be the



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responsibility of the Lead Consultant. This includes co-ordination of the works by planning, environmental and transportation consultants.

**1.8 Collaboration between consultants**

The Consultant shall collaborate with other professional consultants employed by the Board.

The Consultant shall procure that its Sub-Consultants appointed pursuant to Clause 1.29 of these Conditions of Appointment shall take account of the role of the Lead Consultant and collaborate with other members of the Technical Advisory Team and with other professional consultants employed by the Board.

**1.9 Changes caused by the Board**

The Consultant shall provide the Lead Consultant with the cost and programme consequences of any material alteration, addition to or omission from the project caused or proposed by the Project Director. This information is to be provided before the Board takes a final decision.

**1.10 Changes not caused by the Board**

The Consultant shall not cause to be made any material alteration, addition to or omission from the approved Project Documentation. The Consultant shall promptly inform the Lead Consultant in writing of anything that the likely effect of which the Consultant believes would be to either vary the Scheme, or to materially change the financial viability, quality or function of the Scheme.

**1.11 Progression between Work Stages**

The Consultant shall obtain approval in writing from the Lead Consultant before proceeding between the Work Stages described in Part C of the Appendix. Only those Work Stages authorised shall be eligible for payment. Without prejudice to clause 1.32, the Lead Consultant reserves the right to terminate the commission at the end of each individual Work Stage.

**1.12 Master Programme**

The Lead Consultant shall prepare and maintain a detailed project programme for (i) each Work Stage and (ii) the overall procurement timetable and programme until appointment of the Contractor (the "Programme"). The Programme shall break down tasks and times for all participants within each Work Stage. The Programme will be submitted to the Project Director for review and approval prior to issue. The Consultant will be responsible for supporting the maintenance of the Programme as requested by the Lead Consultant and to review on a regular basis with the Lead Consultant and the Board to monitor progress and the implementation of any corrective action agreed by the Board.

**1.13 Site Inspection**

From Work Stage 3 the Consultant will be expected to make frequent visits to site during construction stage, suitable accommodation will be provided, as noted below.

**Obligations of the Board**

**1.14 Duties of the Board**

The Board shall nominate a Board, to enable the proper performance of the Duties.

**Construction (Design and Management) Regulations 2007**

**1.15** The Board shall appoint a Principal Contractor, in accordance with the provision of the Construction (Design and Management) Regulations 2007

**Information from the Board**

**1.16** The Project Director will be responsible for providing information and the giving of instructions on behalf


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of the Board under this Agreement. Unless and until the Lead Consultant notifies the Consultant otherwise, the Project Director shall be deemed to have the full authority of the Board under the Agreement and the Board may replace the Project Director from time to time by notice to the Consultant. .

**Provision of site accommodation and facilities during construction stage**

**1.17** The Board will be responsible for the provision of suitable site based accommodation for the Lead Consultant team, for the use of Consultant's staff associated with the Scheme. The provision of these facilities will be for the duration of the works on site and funded through the construction contract.

**Ownership of documents and copyright**

**Copyright entitlement**

**1.18** The copyright and all other intellectual property rights in all drawings, documents reports, specifications, pricing documents, calculations and other documents provided by the Consultant in connection with the Scheme ("Documents") shall be vested in the Consultant. The Consultant hereby grants to the Lead Consultant an irrevocable, royalty-free, non-exclusive licence to copy, use and reproduce all Documents and the designs contained within them (including electronically stored information) prepared or to be prepared by or on behalf of the Consultant (the "Copyright Materials") for any purpose whatsoever related to the Scheme and/or the site of the Scheme (including providing and passing to the Board for their use). The Consultant warrants that no Copyright Materials shall infringe any third party rights whatsoever. The Consultant shall provide to the Lead Consultant such copies of the Copyright Materials as the Lead Consultant may reasonably require. The Consultant hereby waives in favour of the Lead Consultant all moral rights which they might be deemed to possess as authors of the Copyright Materials under the Copyright Designs and Patents Act 1988. For the avoidance of doubt, the provisions of this clause 1.18 shall survive termination of this Agreement or the Consultant's engagement hereunder for any reason whatsoever.

**Documentation provided by the Board**

**1.19** Where the Board provides standard documentation, including drawings, copyright of such documentation and drawings shall remain vested in the Board.

**Consultant's Licence and Restrictions**

**1.21(a)** The Consultant and its Sub-Consultants shall have a licence to copy and use such drawings, reports, specifications, pricing documents, calculations and other information required for performance of the Duties. The Lead Consultant shall not be liable for any such use by the Consultant of any drawings or other documents for any purpose other than for which the same were prepared and provided by the Lead Consultant.

**Consultant's rights of publication**

**1.21(b)** The Consultant shall not communicate with the media or any outside body or publish or display alone or in conjunction with any other person, any articles, photographs or other illustrations relating to the Scheme without prior written consent from the Board, which consent shall not be unreasonably withheld.

**1.21 Board's use of priced documents**
The Board may use priced documents for the Scheme, without prior approval by the Consultant.

**1.22 Freedom of Information**
The Consultant acknowledges that the Board is obliged to comply with the Freedom of Information (Scotland) Act 2002 ("the Act") and any codes of practice applicable from time to time relating to access


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to public authorities' information. The Consultant shall (and shall procure that each of its Sub-Consultants shall) co-operate, facilitate, support and assist the Board to comply with the Act and any codes of practice applicable from time to time relating to access to public authorities' information including by providing documents and other information relating to the Scheme within the timescales necessary to allow the Board to comply with its obligations and duties under the Act and the codes of practice.

All information submitted to the Board may need to be disclosed and/or published by the Board. Without prejudice to the foregoing generality, the Board may disclose information in compliance with the Act, (the decisions of the Board in the interpretation thereof shall be final and conclusive in any dispute, difference or question arising in respect of disclosure under its terms), any other law, or, as a consequence of judicial order, or order by any court or tribunal with the authority to order disclosure. Further, the Board may also disclose all information submitted to them to the Scottish or the United Kingdom Parliament or any other office or agency of Her Majesty's Government in Scotland or the United Kingdom, and their servants or agents. When disclosing such information to either the Scottish Parliament or the United Kingdom Parliament it is recognised and agreed by both parties that the Board shall if they see fit disclose such information but are unable to impose any restriction upon the information that they provide to Members of the Scottish Parliament, or Members of the United Kingdom Parliament; such disclosure shall not be treated as a breach of this Agreement.

The Board acknowledges that it is incumbent upon it to timeously pass on any request for information under the Act to enable the Consultant comply with its obligations under this clause.

**Professional Indemnity insurance**

**1.23 Extent of insurance cover**

The Consultant shall take out and maintain from the date of commencement of the Duties professional indemnity insurance of not less than £10 million pounds in respect of each and every claim. The professional indemnity insurance shall be maintained until the expiration of Twelve (12) years, provided that it can be obtained at reasonable market rates and terms, from the date of completion of the Scheme

For the purposes of Clause 1.23 the claims and financial history of the Consultant shall be disregarded in ascertaining whether or not rates and terms are reasonable.

**1.24 Professional indemnity insurance broker's certificate**

The Consultant shall annually provide to the Lead Consultant a broker's certificate or similar as evidence that professional indemnity insurance is being maintained.

**Certification**

**1.25 Certification generally**

The Consultant shall provide the Lead Consultant with completed certificates issued by the Consultant pursuant to the building contract when required to do so.

**Assignment and sub-contracting**

**1.26 Assignation by the Consultant**

The Consultant shall not assign the whole or part of the benefit or in any way transfer the obligations of this Agreement or any part thereof without the written consent of the Lead Consultant.

**1.27 Assignation by the Board**

The Lead Consultant reserves the right to assign the whole or any part of the benefits or transfer obligations of the Agreement or any part thereof to another party including to a Scottish NHS organisation without the consent of the Consultant.



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**1.28 Sub-contracting**

The Consultant shall not sub-contract any of the Duties without the written consent of the Lead Consultant. The Consultant shall be fully responsible and liable for the performance of the Duties by any Sub-Consultant notwithstanding that the consent of the Lead Consultant has been obtained.

**1.29 Consultant collateral warranty**

The Consultant shall within 5 days of appointment deliver to the Lead Consultant collateral warranty agreements (incorporating step-in rights) (duly executed in a self proving manner by both parties) in favour of the Board in terms of the collateral warranty agreement set out in Appendix F.

**1.30 Commercial Interests**

Any commercial interests held by Partners/Directors/Principals of the Consultant in firms engaged in manufacturing, contracting or commissioning in building and engineering services, other services or construction, shall be declared to the Project Director prior to conclusion of this Agreement, or if appointed without delay should such event occur.

**Variation, extension, suspension or termination**

**1.31 Variation or extension by the Lead Consultant**

The Lead Consultant may vary or extend in time the performance of the whole or part of the agreed Duties by giving reasonable notice in writing to the Consultant. In such notice the Lead Consultant shall specify the Duties affected.

**1.32 Suspension or termination by the Lead Consultant**

The Lead Consultant may suspend or terminate the performance of the whole or part of the Duties by giving reasonable notice in writing to the Consultant. In such notice the Lead Consultant shall specify those of the Duties affected and the reason for suspension or termination. On suspension or termination of Agreement and subject to Clause 1.38 of these Conditions of Appointment payment shall be made in accordance with Clause 1.16 of Part D of the Appendix.

**1.33 Suspension or termination by the Lead Consultant shall be permitted in the following circumstances:**

- the Board has decided to suspend or terminate the Scheme;
- non-performance by the Consultant;
- breach of the provisions of this Agreement by the Consultant;
- the Consultant becoming bankrupt or insolvent;
- the Board has decided to terminate the Agreement at the conclusion of a Work Stage;
- the Board has decided to deploy the Lead Consultant and Technical Team in a varied manner than the fee proposal or duties.

**1.34 Resumption of Duties**

If the Consultant has not been given instruction to resume any work suspended under Clauses 1.32 or 1.33 of these Conditions of Appointment within six months from the date of suspension, the Consultant may make written request for such instructions, which must be given in writing. If these have not been received within 30 days of the date of such request the Consultant shall have the right to treat the Agreement as terminated.

**1.35 Suspension or termination by the Consultant**

The Consultant may suspend or terminate the performance of the Duties on the expiry of reasonable notice given in writing to the Lead Consultant. In such notice the Consultant shall specify the duties affected and the reason for suspension or termination.



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**1.36 Suspension or termination by the Consultant shall be permitted on the following circumstances:**

- the Lead Consultant has not provided an instruction to resume work under Clause 1.34 of these Conditions of Appointment;
- breach of the provisions of this Agreement by the Lead Consultant.

**1.37 Death or incapacity of the Consultant's key personnel**

Should the Consultant through death or incapacity be unable to perform the whole or part of agreed duties, this Agreement shall thereby be terminated.

**1.38 Delivery of documents**

On termination of the performance of the whole or part of the Duties and on satisfactory delivery of all drawings, reports, calculations, production information and any other documentation prepared by or on behalf of the Lead Consultant to the Board, the Lead Consultant shall be paid all due fees and expenses in accordance with Clause 1.16 of Part D of the Appendix.

**Settlement of disputes**

**1.40 Adjudication**

**1.40.1** Any difference or dispute arising out of this Agreement may be referred to an adjudicator.

**1.40.2** The party that is first made aware of the occurrence of the difference or dispute shall give notice to the other party of their intention to refer such dispute or difference to adjudication and shall then refer the dispute to an adjudicator agreed between the parties, or failing agreement within 5 days, appointed by RICS, Scottish Branch. A copy of the notice sent to the Adjudicator shall be sent to the other party. The notice shall specify the matter in dispute and set out all the principal facts and arguments relating to it. Copies of all relevant documentation shall be attached to the notice.

**1.40.3** The parties shall use reasonable endeavors to ensure that the Adjudicator is appointed as soon as possible and in any event within 7 days of the reference to adjudication.

**1.40.4** The Adjudicator shall notify his/her decision to the parties within 28 days from the date of receipt of the notice required under Clause 1.40.2 of these Conditions of Appointment or such longer period agreed by the parties.

**1.40.5** Without prejudice to Clause 1.40.4 the Adjudicator may extend the 28-day period by 14 days, with the consent of the party by whom the dispute was referred.

**1.40.6** The Adjudicator shall be obliged to act impartially in determining any dispute referred to him under Clause 1.40.2 of these Conditions of Appointment and shall be entitled to take the initiative in ascertaining the facts and the law.

**1.40.7** The decision of the Adjudicator on any matter will be binding until the dispute is finally determined by legal proceedings or by agreement.

**1.40.8** The Adjudicator shall not be liable to the parties for breach of duty unless in bad faith.

**1.40.9** Payment of the Adjudicator's fees shall be shared equally between the parties.

**1.40.10** During the process of adjudication the performance of the Duties shall continue as if there were no difference or dispute.

**1.40.11** If the Adjudicator resigns or is unable to act, the parties shall choose a new adjudicator jointly.



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**1.40.12** If the parties have not chosen a new adjudicator jointly within 28 days of the Adjudicator resigning or becoming unable to act, then the President or Vice President of the RICS shall be requested to nominate a new adjudicator.

**Discrimination and Equal Opportunities**

**1.41** The Consultant shall not, and shall take all reasonable steps to ensure that all employees, workers, agents, or Sub-Consultants of the Consultant shall not, unlawfully discriminate within the meaning and scope of the provisions of the following legislation, or any statutory modifications or re-enactment thereof:

- The Equal Pay Act 1970;
- The Sex Discrimination Act 1975;
- The Race Relations Act 1976;
- The Disability Discrimination Act 1995;
- The Employment Equality (Religion or Belief) Regulations 2003;
- The Employment Equality (Sexual Orientation) Regulations 2003;
- The Employment Equality (Age) Regulations 2006 and
- The Equality Act 2010.

**1.42** The Consultant shall observe, and shall take all reasonable steps to ensure that all employees, workers, agents, or sub-contractors of the Consultant shall observe, any relevant codes of practice (and any amended or replacement codes from time to time in place) in respect of employment issued by any of the following bodies:

- The Commission for Racial Equality;
- The Disability Rights Commission; or
- The Equal Opportunities Commission;

or any replacement codes of practice issued by the Commission for Equality and Human Rights.

**Governing laws**

**1.43** The laws of Scotland shall govern the application of these conditions.

**Limitation of Liability**

**1.44** The liability of the Consultant in respect of breach of contract or in delict (including negligence) shall not exceed £10,000,000 in respect of each and every claim, save in respect of any liability relating to: death or personal injury; wilful misconduct and/or fraud.



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## APPENDIX PART B – SCHEME PARTICULARS

### Scheme Particulars

### Scope of Agreement / Scheme

**1.1 Location**
Southern General Hospital
1345 Govan Road
Glasgow G51 4TF

**1.2 General description**
The Duties are required to assist the Board to develop a full brief, tender and all Employer's Requirements documentation to enable engagement in a public finance procurement for the New South Glasgow Hospital Project, to provide the hospital facilities as listed below. The Duties include the management of the Building Contract with a D&B consortia, through to the successful completion of the works, commissioning and equipping, transfer and occupation.

Key elements of the project are (for information):

- Development of an integrated adult acute and children's hospital proving the full range of acute health services.
- Development of a new Laboratory facility including Mortuary and Post-Mortem Services, Biochemistry, Haematology and Blood Transfusion.
- Provision of a rooftop helipad.
- Possible provision of non-clinical services such as Hard FM services to the new facilities by the D&B contractor for an initial 3-5 year period.
- The supply and installation of Group 1 equipment and location and/or fitting of Group 2 equipment supplied by the Board.
- Information Management and Technology (IM&T) – Out with this project, the Board is procuring software and end-use hardware as part of a separate IM&T project.

The Board requires the provision of integrated facilities that are readily adaptable to changing clinical practice and makes the best use of new technologies. The functional content of the project is envisaged to include the following new build accommodation, note there will be some flexibility around the content noted below as the scope of the Scheme is further developed during Work Stage 1A.

**1.3 The New South Glasgow Hospital - Adult Acute**
1109 in-patient beds and 12-bed medical day unit planned within the New South build.

- <u>In Patient Accommodation</u>

435 surgical beds (gen. Surgery, orthopaedics, urology, vascular, ENT, renal); 571 medical beds. ITU/HDU/CCU – 77 beds total. Acute Stroke – 26 beds

- <u>Out Patient Accommodation</u>

Full range of General outpatient clinics including, among others, diabetic unit, respiratory, haematology, urology etc.

- <u>Day Services</u>

12 medical day bed area; 30-stationed dialysis unit

- <u>Treatment & Diagnostic Services</u>

Accident & Emergency, 20 operating theatres, imaging, Endoscopy and rehabilitation.

- <u>Clinical Support Services</u>

Pharmacy dispensary, medical physics, medical illustration. (laboratory services linked to hospital by underground route and pneumatic tube system, aseptic unit within the children's hospital.)


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- Non Clinical Support Services

Main entrance, medical records, administration, chaplaincy, social work, staff changing, switchboard, estates, facilities, security, catering, portering, domestic, management and energy centre.

### 1.4 New Children's Hospital – Acute

There are circa 240 beds planned within the new build. About 20% of the beds will be for day patents and the rest inpatients. The hospital will provide DGH services, tertiary and some national services. Outpatient Accommodation
Full range of Children's outpatient clinics including audiology, general paediatrics, orthopaedics, ENT etc

Day Services
Circa 10 medical day beds; 4 dialysis stations and circa 25 day surgery beds.

Treatment & Diagnostic
Accident and Emergency, minor injuries, Imaging, 7 theatres, rehabilitation

Clinical Support Services
Aseptic unit, pharmacy, medical physics, medical illustration

Non-Clinical Support Services
Facilities, ancillary services, administration, spiritual services, medical records, staff change, staff dining.

### 1.5 New Laboratory Building

This build will be one of two major Laboratory sites in Glasgow. The services planned to be delivered from the new Laboratory build at Southern General Hospital are as follows: Biochemistry, Haematology, Blood Transfusion, mortuary and post mortem services. It is worth noting that the mortuary and post mortem facilities will include the re-provision of the Glasgow City mortuary, which also provides forensic services for the City of Glasgow.

The Board proposes to procure the new laboratory project through a single stage D&B process. The Lead Consultant team will be responsible for developing an exemplar design to 1:200 with user groups for inclusion in a full set of Employers Requirements documentation. The Board will require a separate design team from within the Lead Consultant's team to develop these proposals and provide a full Employer's Agent role during construction phase.

The current planned floor areas are as follows; Haematology 1,800 sq.m, Biochemistry 1,900 sq.m, Mortuary and City Mortuary 1,500 sq.m.

The current timetable for the new Laboratory Block is as follows;

| Milestone/Process | Target Date |
|---|---|
| Appoint Lead Consultant | 1 Sept 2008 |
| User group meetings, brief and design development | Sept / Nov2008 |
| Further Design Development | Dec 2008 / Jan 2009 |
| Prepare Employers Requirements documentation | Oct 2008 / Jan 2009 |
| OJEU – D&B consortia | Nov / Dec 2008 |
| Issue ER's and Tender | February 2009 |
| Tender period | Feb /May 2009 |
| Evaluation | June 2009 |
| Construction – start | July 2009 |
| Construction – complete | Sept 2010 |
| Commission | Oct/Nov 2010 |
| Operational | Dec 2010 |

### 1.6 New Build Floor Areas

As a guide to the extent of the build proposals, the current gross internal floor area for the new build proposals are noted below; these figures include allowances for departmental circulation and building wide communications. Plans also include a remote Energy Centre and Service yard with subterranean link to the basement of the new Adult and Children's Hospital.

| | |
|---|---|
| Adult Acute Hospital | 100,624 sq.m |
| Children's Hospital | 33,007 sq.m |
| Laboratory Facility | 5,200 sq.m |
| **Total** | 138,831 sq.m |

The redevelopment of the campus and clinical services at the Southern General Hospital will most likely be undertaken through a multi phase programme of refurbishment, decant, demolition and new build over a works period of at least 4-5 years. The Board is currently initiating a programme of enabling work over the next 2 years to establish an un-encumbered site for the new hospital development. These works involve the relocation of hospital services, diversion of main hospital M&E services, demolition of redundant buildings and general site clearance and preparation works. These enabling works will be funded from the Board's ordinary capital programme. The Lead Consultant will be required to co-ordinate with design teams delivering these projects to ensure all works are sequenced to meet the desired start date on site of Summer 2010.

### 1.7 Project Target dates

The timetable below indicates the Board's indicative timetable for the procurement. Provisional dates for a two-stage D&B process have been included for information only at this stage.

| Milestone/Process | Target Date |
|---|---|
| Publication of OJEU Notice | 6th May 2008 |
| Deadline for receipt of requests to participate/submission of responses to the Pre-Qualification Questionnaire (PQQ) | 5th June 2008 |
| Issue of Invitation to Tender (ITT) Documentation to selected Applicants | 19th June 2008 |
| Deadline for submission of response to ITT | 31st July 2008 |
| Evaluation of ITT Submissions | 12th August 2008 |
| Appointment of Technical Adviser | 22nd August 2008 |
| Brief Development / Masterplan | September-November 2008 |
| Employers Requirements - Stage 1 | September- December 2008 |
| OJEU Construction Teams | October – Dec 2008 |
| Stage 1 Tender Period | January-May 2009 |
| Stage 1 Evaluation – Selection Preferred Bidder | June 2009 |
| Stage 2 Tender Development - Planning application | July 2009 |
| Stage 2 Evaluation | April 2010 |
| Negotiate GMP, FBC and Contract Close | July 2010 |
| Phase 1 Complete – New Children's Hospital | Ist qtr 2013 |
| Phase 2 Complete – New Adult Acute Hospital | 3rd qtr 2014 |
| Commissioning | 4-5 months |
| 12 Months Defects Period – Acute Hospital | 3rd qtr 2015 |



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**1.8 Estimated cost**

The current estimated capital cost of the new Adult Acute, Children's Hospital and Laboratory Project as of April 2008 is c. £550 million, this cost includes equipment, VAT, and fees but excludes inflation to mid build and contingencies. The split between the Projects of this cost is approximately New Adult and Children's Hospital - £530m; new Laboratory Project £21 m.

**1.9 Programme Sponsor**

Ms Helen Byrne
Director of Acute Services Strategy, Implementation and Planning
NHS Greater Glasgow & Clyde
Acute Services Strategy Implementation and Planning Directorate
Management Building
1345 Govan Road
Glasgow G51 4TF

**1.10 Project Director**

Mr Alan Seabourne
Project Director - New South Glasgow Hospitals Project
Project Office
St Andrew's House
80 Queen Elizabeth Avenue
Hillington
Glasgow
G52 4NQ
[redacted]

**1.11 Board Technical Lead**

Mr Peter Moir
Head of Major Projects
Project Offices
St Andrew's House
80 Queen Elizabeth Avenue
Hillington
Glasgow
G52 4NQ
[redacted]

**1.12 Lead Consultant Team**

It is the Board's intention to appoint the following disciplines as part of the Lead Consultant team. The team will be lead by the Lead Consultant/Project Manager; a single appointment will be made with this company for the whole team. Billing on behalf of the whole team will undertaken by the Lead Consultant, in short fee notes will be from single source and not individual team members.

- Lead Consultant / Project Management
- Employer's Agent role (construction stage)/Contract Administration
- Architectural Design and Site Masterplanning
- Healthcare Planning
- Civil and Structural Engineering
- Building Services Engineering & IT Infrastructure
- Cost Consultant/Quantity Surveying/Lifecycle costing
- CDM Co-ordinator
- Risk and Value Management advice
- Facilities Management advice (soft and hard FM)

- Procurement and Construction Management Advice
- Landscape Architect

The Board will expect the appointed Lead Consultant to work with the established Project network, including all appointed advisers; all Project related documentation, designs and specification, budgets and programmes developed to date as part of Stage 1, subject to any changes agreed with the Project Director or their nominee.

The Board has existing Consultancy agreements for the supply the following services, these appointments have been made and do not form part of this commission. The Lead Consultant team will be expected to work with these advisers, and acceptance of the commission will be conditional on this.

- Legal – Shepherd & Wedderburn LLP.
- Financial – Ernst & Young LLP.
- Town Planning Consultant – Keppie Planning.
- Environmental Consultant– Ironside Farrar.
- Transportation Consultant – JMP Consultants Ltd.
- The Carbon Trust and sub-consultant.

**1.13**

The Board currently proposes the following Contract Strategy, this is subject to Government Gateway review and approval.

- New Adult Acute and Children's Hospital Project – Two stage Design & Build.
- New Laboratory Project – Single stage Design & Build

**1.14 Site Inspection Staff**

It is the Board's intention to make direct appointments for the under-noted roles, some will be made for the duration of the works contract others for particular stages, the appointments will be full-time. The Lead Consultant team will be required to structure and manage the selection and appointment process for all site inspection staff on behalf of the Board, although the contractual and payment arrangements will be between the Board and the respective companies.

- Building Clerk of Works (4)
- M&E Clerk of Works (3)
- Site Engineer (2) – sub-structure, drainage, groundworks and frame.

The Lead Consultant will manage and direct the work of the site inspectorate staff. Site Inspectorate staff will be based on site for the duration of the works contract.

**1.15 Details of documentation**

The Board requires two paper copies of all documents, reports, budgets, programmes, drawings, maps, 3-D graphics and animations, photographs and other documents or reports produced by the Consultant. In addition, all the above must be provided in electronic format as noted below;

| | |
|---|---|
| Cost plan | MS Excel at all stages |
| Text | MS Word, MS Excel, MS Access. |
| Programmes | MS Project. |
| Drawings | Autocad at all stages. |
| 3D / Animations | Various. |

Working documents will require being in base software programme format e.g. not Adobe Acrobat. Consultants may use Adobe Acrobat for working use and for email while providing final versions of documents, drawings etc., in base software as noted above.

**1.16 Board's procedures / requirements**

- NHS GG&C PSC / OBC documentation and OBC Stage Design Report as prepared by others, including all associated drawings, specifications and Project costs.


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- Scottish Capital Investment Manual (SCIM).
- SEHD – Procode V 2.0
- The Board's Design Action Plan
- Health Facilities Scotland – SHPN and/or NHS HBN and HTM's.
- NHS Estates and others guidance documents such as AEDET, NHS NEAT, or BREEAM.
- Government Gateway reviews will be undertaken at various stages (see separate section).
- OGC Guidance on Competitive Dialogue and general project delivery. (use of CD unlikely).
- FBC

### 1.17 OGC Gateway Reviews

The Scheme will be subject to external review by a Gateway Review Panel at various stages of the Scheme and the Lead Consultant team will be expected to assist the Board's Project Team at the following stages;

Gateway Review 0 – Strategy assessment (2 reviews).
Gateway Review 2 – Procurement strategy.
Gateway Review 3 – Investment Decision.
Gateway Review 4 – Readiness for Service.
Gateway Review 5 – Benefits Realisation.

Input from the Lead Consultant will be focused to technical elements associated with each review, and cover matters such as programme, cost management, procurement strategy and structure, project specification and buildability. Each Gateway Review will last approximately 2- 3 days and it is likely that the Lead Consultant will need to prepare a status report on technical elements and be available for interview for 2-3 hours.

### 1.18 Meetings

The Lead Consultant team will be required to attend regular progress and associated briefing meetings at each stage of the Scheme, which are typical for this form of procurement and consultancy service. These meetings will generally be held within one of the Board's project offices within the Glasgow conurbation, costs for attendance at all meetings should be included within your capped lump sum fee proposal.

During key stages of the procurement process the Board will requires some or all of the TA team to be based in the ASR Project Offices at Hillington, to ensure good continuity and communication is maintained at critical times of the programme. During the construction phase, the Board's Project Team will have a presence within the site compound, and suitable project offices accommodation will be provided for key members of the Lead Consultant team as well.

The Lead Consultant will require to be suitably represented at all meetings throughout the duration of the project. Regular meetings will be held throughout the commission, some of the key meetings will be;

- The Lead Consultant will meet at least once a week with the Project Director or their nominee throughout all stages of the project from commencement to completion of the commission.
- Open days and presentations during bidder selection Stage 1A.
- 2-3 meetings a week throughout Stage 1A to develop the Employer's Requirements documentation, note this may run into multiple daily meetings at certain stages.
- Weekly meetings throughout Stage 1A to develop and adapt the current PSC design solution with the Board's Project Team and departmental user groups. This will involve the further development of the existing PSC departmental relationship drawings(1:500) as well as the site master plan (1:500) to reflect changes to the Board's phasing of the overall redevelopment proposals. (See section 6.0)
- Regular meetings during Stage 1B bid process to suit number of bidders (3) to ensure adequately briefed, for design and bid development and for commercial and financial negotiations.
- Regular meetings during Stage 2 process during bid and design development. Again meetings will frequently be held with Project Team, user groups to assist design development with bidder design team, for commercial meetings with bid team
- Regular meetings during Stage 2 preferred bidder stage, and evaluation process to include weekly bidder meetings up to contract close.


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- Weekly in house bid team meeting up to contract close.
- Provide technical input, review and comment and take active involvement in the room layout review and approval process both before and after contract close. Note, room layout drawings will be developed for all room types and variants on a room type.
- Monthly Project Executive and Procurement & Finance meetings for duration of commission, including regular reporting and progress update reports for these meetings.
- Monthly project progress/technical meetings during construction & commissioning phase and one site meeting per month.
- Bi-weekly for 3 months then weekly commissioning team meetings for 12 months prior to completion.
- User consultation/design development meetings, at least weekly during Stage 1 & 2.

Meetings with Planners, Roads Department, Local Authority Flood prevention, SEPA, Scottish Water and Fire Brigade as well as NHS Fire Officer, Health Protection Agency . With the exception of meetings with the Planning Authority, meetings with these individuals should be infrequent.

The team may also be called up to support the Board and Project Team at public presentations out with normal working hours, this should be an infrequent occurrence.

Meetings with the Hospital Manager and Operational Estates staff to confirm operational issues and co-ordinate with site infrastructure.

Presentations to a number of internal stakeholders i.e. Board Members, Clinical Groups, etc.

### 1.19 Continuity with other projects and site operations

The team will be responsible for ensuring the maintenance and safe operation of the hospital site in respect of the various projects they are managing, as well as full co-ordination with any associated works contracts. The team will be responsible for planning and programming of any associated works to maintain access to all areas. All works programmes must be fully consulted with the Project Director or their nominee and approved by same.

### 1.20 Post Project Evaluation (PPE)

The team will actively assist the Board to develop and undertake the PPE process throughout the life of the project, and assist in the preparation and completion of this documentation no later than 9 months post occupation of the new facilities.

### 1.21 Further Development of the Board's OBC/PSC Design Exemplar

The Board have developed a PSC design exemplar through the first stage of a PPP procurement strategy. While this strategy has now changed course towards a public finance route, a good deal of the design and information prepared for OBC is still valid.

As part of the development of the OBC the Board looked at alternative options to re-use some of the existing buildings on the campus for administration and support functions, this was driven by capex cost pressures, although these building may eventually be replaced by new build's at a later date.

The PSC design therefore requires to be revised and updated before it can be used as the design exemplar and form part of the Employers Requirements documentation. Copies of site plans for Option 1 and Option1A (Preferred option) are included in Appendix G, Option 1A will require the redesign of some of the roadways to the main frontage of the planned new hospitals, with resultant impact on the podium footprint. The location of the new Laboratory Project and the design and layout of the Service yard and Energy Centre all require further work before the design exemplar is complete. This work is likely to take 4-5 months from commencement up to the issue of the Stage 1 Employer's Requirements tender, the Board have decided to provide Stage 1 bidders with an exempar design on which to develop their bid proposals.

## 1.22 Masterplan

In drafting the conditional planning report for Committee, Glasgow City Council Planners have made a condition of the first reserved matters application on campus that .....

'a finalised masterplan which re-affirms an overall vision, set within a clear design and development framework, reflecting the strategic design guidance on built form and landscape contained in the South Glasgow Hospitals Campus Development Plan, April 2007 shall be submitted and agreed in writing by the Planning Authority. The submission shall include (i) an audit of the changes between the finalised masterplan and the indicative Campus Plan ref 05017-02-100 Development Option C; identified in the Campus Development Plan and (ii) an assessment of the extent to which the finalised masterplan accords with the Environmental Statement (ES) submitted as part of the outline planning application. Thereafter the Council will determine whether the finalised masterplan accords with the outline consent and whether a reserved matters/full planning application accompanied by an EA is required.

The Board will therefore require the site plan to be updated to incorporate the retention of the Surgical Blocks and re-routing of the main entrance road, and Fastlink routes. This reflects the change from Option 1 to Option 1A referred to above and as indicated on drawings included within Appendix G. For the avoidance of doubt, the Lead Consultant team will be required to revise the site plan to reflect the layout Option 1A which has never been fully developed to scale 1:500.

On completion the team will need to update the Campus Development Plan, the Board are unclear quite when this should be undertaken, as it will need to reflect the final proposals developed by the preferred bidder as they enter the detailed planning process for their Scheme with Glasgow City Council.

## APPENDIX PART C – CONSULTANTS' DUTIES

### Lead Consultant Technical Advisory Team – Scope Of Services

The Lead Consultant / Technical Advisory Team will provide guidance, advice and active input to the Board in the following key area's throughout the duration of the commission, the Lead Consultant team will be expected to manage and direct the process on behalf of the Board. The Team will be responsible for the procurement of;

- The New Adult and Children's Hospital Project – two stage D&B process.
- The New Laboratory Project – single stage D&B process.

The Board require the following consultancy services as a minimum;

- Lead Consultant / Project Manager
- Employer's Agent role (construction stage)/Contract Administration
- Architectural Design and Site Masterplanning
- Healthcare Planning
- Civil and Structural Engineering
- Building Services Engineering & IT Infrastructure
- Cost Consultant/Quantity Surveying/Lifecycle costing
- CDM Co-ordinator
- Procurement and Construction Management advice.
- Landscape Architect.
- Risk and Value Management advice
- Facilities Management advice (soft and hard FM)

**Note: the process described in this section envisages a two stage process, with down selection 3-1 at the end of Stage 1 B. If the review of procurement strategy determines a 3-2-1 process, with 2 bidders fully participating in Stage 2, then Board reserve the right to negotiate the lump sum fees with the Lead Consultant team.**

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**General Duties of the Team**

- Attend relevant meetings of Project Executive & Project Team and support the Board as required. Refer Section 1.18 of the Scheme Particulars set out in Part B of the Appendix.
- Remain up to date and responsive to changes in legislation or guidance on all matters relative to the project.
- Be responsive to demands for input at short notice.
- Advise the Board on general issues of on-going advice on government policy; compliance with SCIM, SEHD, DoH, OGC and Treasury procedures; compliance with Local Council planning procedures. Compliance with legislation and NHS Design Guidance.
- Ensure that advice is consistent with SEHD, DoH, NEC, SOPC4 standard form contract and Treasury Taskforce model contract templates.
- Work closely with other advisors, legal, financial, planning, transportation etc.
- Assist the Board with developing strategies for FM & lifecycle improvements and monitoring on a 1) non PPP contract, 2) installation of Group 2, 3 and 4 equipment, and 3) existing, retained estate and its linkage to the new build projects.
- Participate in SGHD review at various stages throughout the life of the project, teams should anticipate to be involved in:
  - PUK – 3 reviews
  - Gateway – 4 reviews
  - Architecture+Design Scotland – 2 reviews
- Team to familiarise themselves with all existing site data, all project related design and technical data developed during PSC / OBC stage.
- All technical data related to Board funded enabling works which will be underway during period 2008 – 2010. Note the Lead Consultant team will not be delivering these projects, but need to be aware of

them for any impact on NSGH projects.

**Key Team Activities and Tasks for Stage 1A - Preparation of Employers Requirements Documentation**

Preparation of OJEU, PQQ, MOI for D&B consortia; Employers Requirements documentation and full Stage 1 B tender and contract information. Design development of site masterplan and OBC/PSC design exemplar.

1) Manage the compilation and publication of a comprehensive set of Employers Requirements documents for the approval of the Project Director. The contents should include as a minimum the items list below, and the bulk of the work will be undertaken by your team.

- Board's ASR Strategy and clinical strategy.
- Whole SGH site development brief.
- Functional content and schedules of accommodation.
- Whole hospital; clinical and non clinical output specifications.
- ADB room data information. (provide 4 page ADB information for each individual room type).
- Sustainability and low carbon strategy.
- PSC design and other spatial planning drawings at 1:500 @ 1:200 (further developed by your team).
- Project specification – Architectural/ building; Building Services, energy saving / lifecycle / cost in use; structural & civils; externals works/landscaping; other performance parameters;
- Construction and site procedures.
- Requirements for post contract design development.
- Details of commissioning process and requirements for handover, training, H&S file.
- CDM & Health & safety requirements.
- Board's general design requirements/ design action plan.
- Board's PSC Design Solution – as updated by your team Oct-Jan 2009.
- Cost information – amended and updated from OBC by your team.
- Design and Tender Evaluation - The process, criteria and scoring.
- Details of D&B response requirements for Stage 1 and 2.

**General Tender Information**

- Project execution plan.
- Contract conditions and terms.
- Project programme and other works inter dependencies.
- Suggested forms for bonds, warranties, guarantees and other legals.
- Site survey and site investigation reports.
- Preliminaries requirements and pricing structure for Stage 1 B bid response by D&B consortia.
- Stage 1 Design Report – updated by your team to provide exemplar design info for bidders.
- Cost plan prior to tender.
- Copies of statutory approvals secured by Board.
- Health & Safety Plan and questionnaire.
- Pricing schedules for pre-construction services.
- Pricing schedules for profit, overheads.
- Board's FM requirements.
- Board's lifecycle requirements.
- Project insurance arrangements.

2) Develop and manage a process through OJEU to advertise the project (in association with the Board's legal adviser), and then to evaluate and shortlist interested D&B consortia, to include preparation of a PQQ and Information Memorandum. Provide advice and guidance to the Board on all aspects of this process including timetable. The Board hope to engage a maximum of 3 D&B teams in this process. Assist the Board's Project Team with responses to request for further information during pre-qualification process.

3) Prepare full design and financial evaluation process for the Stage One Bid process.



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4) Prepare and submit a review of the contract options to develop the Stage 2 bid process on an open book basis with a single D&B consortia, to include recommendation on contract form and process. This will be for approval by the Project Director, and included within the Stage 1 bid documentation.

5) Review the PSC Cost Plan and associated OBC cost information prepared by others. Update plan to format your team are comfortable working with, but general format to remain same. Continuously update cost plan for the Board throughout this and successive stages. Submit for approval by the Project Director.

6) Develop the Board's existing risk register for the project and assist the Board to review and update on a monthly basis throughout the full project. Manage cost allocated against risk in respect of the project cost plan. Submit for approval by the Project Director.

7) Develop a project Master Programme for the duration of your commission (Sept 2008 – Dec 2015), which may require short term sub programmes to be developed for individual stages. Submit for approval by the Project Director or their nominee.

8) Development of the Board's OBC/PSC design exemplar to produce a workable site masterplan at 1:500 for the campus in light of the retention of some of the hospitals existing building stock. This will also involve the reworking of the floor plans for each level at 1:500, and studies of typical ward layouts at 1:200. This will involve periodic interaction with Glasgow City Council and A+DS to reach agreement on a revised site masterplan, and also provide workable design exemplar for the Employer's requirements package.

9) In conjunction with the Laboratory Project team/users group, develop a project brief, schedules of accommodation and prepare 1:500 departmental relationship drawings for the new build Laboratory Block. In conjunction with this team and the Project Team for the Adult and Children's Hospitals further develop proposals for FM service yard / Energy Centre and agree a structured layout for the site planning of this part of the site. Take account of the block plan design and linkage to main hospital block. Review new build schedules of accommodation for the Laboratory Project as they develop to ensure that space is optimally used and tested to optimise value for money.

10) Develop a process to manage the Stage One design and bid development process and interaction between the Board and the three D&B consortia to ensure that adequate knowledge flows between the parties to ensure

11) Assist the Board's Project Manager's for the Adult Acute Hospital and New Children's Hospital to develop and provide for the Stage 1 tender package a full clinical briefing pack which will involve user group meetings to review and sign off operational policy and clinical output specifications.

12) Develop ADB room data sheets for key rooms within all departments to be included in Stage 1 bid documentation, reduce number where repetition but all major room types with variations to be developed during this stage. Allow for review with users and update prior to issue with bid documents. ADB format to be used.

13) Attend project launch day, and prepare suitable presentation material, assist with presentations

14) In conjunction with NHS Project Team and Planning Adviser, continue dialogue with Glasgow City Council, Architecture+ Design Scotland and public/private utility bodies to conclude discussion on site wide issues, and conclusion on any outstanding matters on the master plan process.

15) Lead and manage dialogue with providers for power and gas service supplies and establish main supplies for the new facilities and site wide for maintenance of existing estate.

16) Develop and cost a technical solution for a roof top helipad to be included within the ER's for the new Adult and Children's Hospital, directly linked to the A&E trauma reception of both hospitals.

17) At the conclusion of Stage 1A, prepare a progress report by Lead Consultant team, to include a full review of Stage 1A, the progress with exemplar design, tender process, project budget and cost plan, timetable and confirm readiness to proceed to tender. Await approval from Project Director to proceed to next stage.

**Key Team Activities and Tasks for Stage 1 B – Stage One Design and Bid Development and Evaluation, selection of a preferred bidder D&B team.**

1) Produce, print, package and issue Employer's Requirements tender documentation to selected D&B consortia – max 3. During this stage further develop any tender documentation and information for this or next stage that maybe outstanding. Note much of this information will be developed in conjunction with the Board's Project Team and user groups and ongoing development and detail of the project requirements.

2) Generally maintain and update project management documents, schedules, cost plan and programmes to take account of progress and change as project evolves through stage.

3) Manage the interface between the three D&B Consortia and the Board. The process developed by you in Stage 1A should provide a mechanism where by the bid teams can have access to the Board's user groups at intervals throughout the Stage 1 bid development phase to inform design development. This process will require to be carefully managed.

4) Manage all requests for information from the bid consortia during the tender process and provide responses timeously.

5) Attend bidders meetings and presentations throughout stage.

6) Manage the receipt of Stage 1 bids from three D&B Consortia, and commence and manage the full process to evaluate the bids with full involvement of the Board's Project Team and the eventual involvement of user groups perhaps by way of open day presentations by each D&B bid team. Below is a suggested content of a Stage 1 bid response;

- Details of contractor's team and structure.
- Relevant experience & reference sites.
- Key personnel and management structure.
- Legal framework for team, parent company.
- Company financial and commercial information.
- Response to PSC design, high level proposals.
  1:500 phased site plans for duration of works. 1:500 floor plans all levels, 5@ 1:200 floor plans.
- 3-D visualization of design intent.
- Healthcare planning solution.
- Typical specification for building and engineering aspects.
- Approach to building design proposals.
- Commentary on buildability.
- Detailed review and commentary of project cost plan.
- Project risk assessment and management.
- Contractors proposals on quality and lifecycle costs.
- Detailed method statement for delivery of the project.
- Design and procurement timetable.
- Construction timetable.
- Contract management proposals.
- Manpower and resourcing proposals.
- Proposals for low carbon design and sustainable issues.
- Proposals for building commissioning and handover.
- Preliminaries, overheads and profit costs for project
- Priced schedules for any advanced works, and pre-construction services at next stage.
- Fixed % for mark-up on provisional sums for trade works.
- Cost plan at Stage 1.
- Pricing matrix for Stage 1, needs more thought on scoring on cost.
- Contractor's draft tendering protocol.

7) On completion of the evaluation of bids, prepare a full report giving the Project Director a recommendation based on (exact criteria will be confirmed later) value for money, design solution / functionality, healthcare design and technical specifications and systems and all financial and commercial aspects. The report should also include any

significant areas of deviation from the Employer's Requirements and compliance statement and detailed 'technical' and 'user' evaluations.

8) Present recommendations to the Project Director and subject to approval, the Executive Board.

9) End of Stage 1B prepare a progress report by Lead Consultant team, with recommendation for next stage, await approval from Project Director to proceed to next stage.

10) The successful conclusion of this stage will be the selection of a preferred bid team through an equitable process, to progress to the next stage of bid development on a 'open book' basis.

**Key Team Activities and Tasks for Stage 2 – Stage 2 Design and Bid Development, package tender through to agreement of a Guaranteed Maximum Price, Full Business Case preparation and approval and contract sign off.**

1) Complete and issue any further information in respect of the Employers Requirements.

2) Engage with preferred bidder and develop and agree a structured programme to allow the design and work packages to be fully developed for tender issue.

3) Fully manage the process of item 2) above on behalf of the Board, to include detailed negotiations.

4) Respond to D&B Consortia queries and attend briefing meetings with teams throughout Stage 2 bid development stage.

5) Support the Board in the 'user' evaluation of the design proposals as they develop, by developing approaches to enable users to fully understand the design, technical and clinical operational issues implicit in the preferred bidders design proposals.

6) Participate in SGHD stage review and any associated design and environmental review.

7) Participate in review and evaluation of all aspects of Stage 2 bid response, provide clarification as required on all design and technical matters. Prepare technical report on Stage 2 bid submission, including evaluation process and giving recommendation to the Project Director and Executive Board. The report should also include any significant areas of deviation from the output specification and compliance statement and detailed 'technical' and 'user' evaluations.

8) Based on the format/content for Stage 2 tender response, developed by your team and included for information in the Stage 1 tender documents, secure a full Stage 2 tender submission from the D&B consortia. While the detail of this package will be complex we reproduce below a minimum requirement to assist you to prepare your bid. The bulk of this evaluation will be undertaken by your team, and the output included in a formal report to the Project Director.

**Content**

- By end of stage – full clinical sign off;
- Agreed functional content.
- Agreed and audited schedule of accommodation.
- Agreed audit of communication and circulation areas.
- Audit of Scheme against infection control requirements.
- Audit of actual design versus brief.
- Whole site development control plans (incl. phasing).
- Site analysis of access and transport for design.
- 1:500 departmental relationship drawings and stacking diagrams.
- 1:200 department layout plans for all individual departments and wards.



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- 1:200 elevations and sections.
- 1:50 typical room layouts (say 50 rooms in each facility).
- ADB Room data sheets for all departments.
- Equipment lists for all departments.
- Confirmation on all Group I & II equipment related costs.
- Typical construction details for envelope, floors, walls.
- Interior design proposals including sample boards.
- Landscape proposals.
- 3-D design and computer studies.
- Wayfinding strategy.
- Fire evacuation and safety strategy, full fire risk assessment – risk with D&B designer.
- Demonstrate low carbon design strategy.
- Flexibility of design to change.
- Demonstrate FM services have been incorporated into design.
- Integration of sustainable issues, waste management, recycling.
- Demonstrate lifecycle on materials and equipment.
- Schedules for all architectural, building, M&E engineering, C&S engineering and IT infrastructure proposals.
- Details of finishes, components, fixtures, fittings.
- Engineering strategy, specification, schematics and schedules.
- Design programme.
- Programme to secure detailed planning consent.
- Project management and quality management arrangements.
- Construction programme, methodology phasing etc.
- Contractor's overhead and profit percentages (as Stage 1).
- Agreement on LADS.
- Agreement on contract form and willingness to enter into contract.
- Project insurance.
- Finalised tendering protocol
- FBC forms.
- Secure detailed planning consent, prior to contract close.
- Final submission and review of contractor's proposals.
- Agree GMP and cashflow forecast.
- Detailed review of clinical functionality, space, accommodation schedules.
- Detailed review of project specification and quality, detailed review of lifecycle issues.
- Finalise all contract matters, insurance, bonds, warranties etc.
- Finalise and agree all sub contract packages and agree GMP.
- Finalise any enabling / service disconnections.
- Finalise site establishment and layout.
- Finalise FBC, clarify all outstanding contract issues in advance.
- Continue with design development and sign off within cost envelope.

9) Undertake and manage a full technical, financial and commercial review of the preferred bidders final tender submission, provide clarification as required on all technical matters, prepare a full report giving the Project Director a recommendation for approval or otherwise. The report should also include any significant areas of deviation from the Employer's Requirements and detailed 'technical' and 'user' evaluations. Await approval from Project Director to proceed to next stage.

**Key Team Activities and Tasks for Stage 3 – Implementation and Construction, Design Development.**

1) Manage the process to agree all outstanding design matters at contract close which may include the balance of 1:50 detailed layouts, room data sheets and drawings. Liaise with Clinicians and user groups as required to secure sign off.

2) Undertake the role of Employers Agent for the duration of the works contract and manage the interface between the Board and the D&B contractor.


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Meetings – the following are an indication of frequency

- Monthly progress meetings on site.
- Monthly technical meetings.
- Frequent design development and package development meetings.
- Monthly cost control meetings with Board.
- Monthly cost control meetings with D&B contractor.
- Frequent design development meetings with Board user groups - room layouts.
- Monthly Project Executive meetings with Board.
- Monthly procurement and Finance Group meetings.
- Monthly Gp. II equipment meetings, as required.

3) On a monthly basis prepare and submit a Lead Consultants technical report on progress on site in respect of programme, cost / cost control, change control and design change / development and other relevant procurement related matters.

4) Actively manage the change and cost control process to ensure that the works remain within budget, advise the Project Director on the implications of change on programme, cost and quality parameters.

5) Manage and administer building contract and associated processes on behalf of the Board.

6) Visit the works on a weekly basis and ensure that the new facilities are being constructed in compliance with all the approved and agreed contract documentation, drawings, specifications, the ER's or CP's, whichever have been confirmed as the basis for the project at contract close.

7) Direct the work of the Site Inspectorate team for the duration of the works contract, incorporate key output from their weekly reports into the Lead Consultants monthly progress report as required.

8) In association with Board technical estates staff, manage the process on behalf of the Board to overview and sign off of the full technical commissioning of the building, building engineering plant and equipment and provide the Board with a full report and recommendation for the acceptance and handover of the building from the D&B contractor to the Board. (Note - due to the scale and technical complexity of the building and engineering services, the Board are receptive to the inclusion of some form of operational management of the facilities by the D&B contracting team for a period of 3-5 years. This will allow NHS staff to shadow and learn operation and function of the buildings systems). This aspect will be further considered by the Board during Stage 1 A for inclusion in the Employer's requirements.

9) Inspect the project at practical completion, agree schedule of outstanding items/defects with D&B contractor, including remedial action. Monitor progress/quality of remedial works.

**Key Activities and Tasks for Stage 4 – Equipping and Operational Commissioning**

1) Participate as an active member of the Board's Commissioning Team to enable migration of staff from old to new facilities. This will involve equipment and logistics, migration plan, orientation of staff to new facilities and keeping staff up to date on progress on a regular basis. This input will be required from mid 2012 for the Children's Hospital through to Summer 2015 by which time most of the moves into the new builds will be complete.

2) Assist the Project Director to develop a fully structured Commissioning Plan for the operational commissioning and equipping of the following projects in chronological order;

- New Laboratory Project
- New Children's Hospital
- New Adult Acute Hospital

This work will involve the setting up of a range of groups by the Board, associated with the management, staffing and operation of the new facilities, groups will include;

- Building Commissioning
- Service Migration



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- Clinical Transition
- Clinical Systems/IT
- Equipment Procurement
- Communications
- Human Resources
- Community Engagement
- Operational Management

**Key Activities and Tasks for Stage 5 – Post Project Evaluation and 12 Months Defects Period**

1) Participate in the preparation of PPE documentation for the project, in accordance with the NHS Scottish Capital Investment Manual. This will commence post operational opening of facilities and will be undertaken over a period of 2-3 months, likely to complete circa 9 months after opening.

2) Participate in 12 months defects inspection on behalf of the Board, prepare comprehensive lists and participate in any associated negotiations to conclude. Include an allowance you consider appropriate for this function and an assessment of hours based on date for final inspection.



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## LEAD CONSULTANT / PROJECT MANAGER – KEY ROLE AND RESPONSIBILITIES

Key aspects of Project Manager's role:-

- Manage the work and output of your team, and act as main point of contact reporting direct to the Board's Project Director or nominee.
- Represent Technical Advisory Team at all key meetings (e.g. Local Council, NHS, legal, contractor), or as delegated by prior agreement with the Board's Project Director or nominee.
- Development and management of project plan/programme, with regular review and update as required.
- Prepare a full project Execution Plan for the project early in Stage 1A for Project Director approval.
- Develop and manage risk register from start of Stage 1A to completion of works.
- Co-ordinate interface with operational hospital staff, and adjacent works projects as required.
- Resource management of Lead Consultant team through all stages of the project, to ensure proper delivery of service to the Board.
- In discussion with the Boards Project Director, develop lists of key project activities, programme and actively manage each stage of project delivery, advising PD on corrective action as required.
- Prepare monthly progress reports on Lead Consultant team activity, project procurement and works activity, for the Project Director, to be circulated 5 workings days in advance of TA monthly Project Team meetings.
- At the end of each stage, prepare a technical progress report for approval by the Project Director, with recommendations on actions to proceed to next stage, to include comment on timetable, costs, site, estates, facilities, build and construction, planning and design, risk and value management, compliance of contractor's proposals, technical evaluations, site infrastructure, town planning and progress with negotiations prior to contract sign.
- Fully lead, manage and develop works contract change and cost control procedures for approval by the Project Director or his nominee.
- Meet regularly with Project Director to review progress, timetable, costs, design and bid development.
- Lead the preparation and structuring of all key documents for the D&B process to provide a 'designed' published output e.g. it looks like a single document.
- Manage the technical review of D&B bidder proposals during the procurement process for Stage 1 and Stage 2 final bid at Contract Close.
- Carry out and deliver the duties of Employers Agent throughout the construction phase, manage interface with D&B contractor, manage and administer contract and associated processes.
- Collaboratively work with the Board's existing consultant's and other associated organisations such as The Carbon Trust.
- Provide full shadow design team service throughout the duration of the works contract.
- Provide procurement and construction management advice on behalf of the TA team.

## ARCHITECT / SITE MASTERPLANNER – KEY ROLE AND RESPONSIBILITIES

Key aspects of Architects role:-

- Take lead on all matters relative to architectural, building and site master planning, interior design, room layouts, fire engineering, fire escape and fire safety, fabric, components and their life-cycle, phasing and construction.
- Redraw the existing 1:500 departmental relationship drawings.
- Update PSC design through to FBC as required. Initially integrate Board changes to departmental layouts and adapt the 1:500 departmental relationship diagrams.
- Develop a full set of exemplar design drawings for inclusion in the Employer's requirements documentation.
- Develop alternative options for 28 Bed Ward layouts (100% single rooms), layouts to reflect height of building, means of escape and fire compartmentation and escape issues. This work will parallel the development of the brief and Employer's Requirements documentation as part of Stage 1A.
- Review and adapt the current Development Control Plan to incorporate current proposals to retain



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additional existing buildings post completion of the new builds in 2014.

- Assist the Board with any design related discussion with Architecture and Design Scotland relative to the PSC design and the designs developed by D&B consortia.
- Lead the preparation and submission to Glasgow City Council of a Site Masterplan document in conjunction with the Board's Town Planning Advisor.
- Actively participate in room layout development and sign off process.
- Assist with preparation of Employer's Requirements documentation, the bid process and evaluation at all stages. Note the Board intend developing a palette of standardised room layouts for as many repeat rooms as possible to reduce the workload at the early stage.
- Manage and lead the AEDET review and any related architectural design led review processes as required at relevant stages.
- Participate and assist with the development of ADB room data sheets for Employer's Requirements document. This is a team responsibility which will be led and managed by the Healthcare Planner.
- Develop a full Building specification and construction requirements for inclusion in the Employer Requirements/Tender document.
- Review bidders proposals at all stages for compliance with Employer's Requirements document, participate in the production of technical reports at the end of each stage, to include aspects on architectural, building construction, healthcare design, interior design, landscape and master planning.
- In conjunction with Project Director or his nominee, take team lead with any discussions with Architecture + Design Scotland.
- Review design proposals developed at OBC/PSC stage, allow for personalisation as and if required.
- Input to reports on bids at various stages of the D&B process and Contract Close stages of the project in respect of healthcare planning solutions, and as required for OBC and FBC submissions by the Board.
- Provide full shadow design team architectural and building service throughout the duration of the works contract.
- In conjunction with Board, manage activities of Board appointed Clerks of Works during construction phase.
- Provide monthly reports on compliance of project with Employer's Requirements.
- Input to the Lead Consultant's monthly reports to the Project Director on architectural design, healthcare design and building related matters.

**HEALTHCARE PLANNER – KEY ROLE AND RESPONSIBILITIES**

Key aspects of Healthcare Planners role:-

- Take lead on all matters relative to clinical design, clinical output specifications, operational policies, functional content, schedules of accommodation, within Technical Advisory Team.
- Review the schedules of accommodation prepared as part of OBC stage, and comment as required. Assist Board to further develop key areas of their current design through briefing stage and through to completion of Employer's Requirements and updated Departmental Relationship drawings and Site Development Control Plan in conjunction with the Architect.
- Lead in development, preparation and review of ADB room data sheets for Employer's Requirements/Tender documentation, to include 1 iteration with user groups. This will assist with the preparation of equipment lists for the Board's internal use. It is the intention to provide RDS/ADB information for all key rooms on basis of standardising rooms to avoid a prolonged exercise.
- Lead on behalf of the TA team and assist the Project Managers for the Adult and Children's Hospitals with the development of Clinical Output Specs / Operational Policies for all departments within the new facilities, working closely with NHS staff to agree and sign off a standard reference document for the Employer's Requirements briefing process and documents. In other words ensure full briefing packs are prepared for all departments to a suitable level for the project.
- Actively participate in design development process between user groups and bidder design teams through the various stages of tender through to contract close.
- Lead in clinical and healthcare planning design reviews from bidders and evaluation meetings at each stage of the process.
- Input to reports on bids at various stages of the D&B process and Contract Close stages of the project in



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respect of healthcare planning solutions, and as required for FBC submission by the Board.

- Review bidders proposals at all stages for compliance with Employer's Requirements, participate in the production of technical reports at the end of each stage, to include aspects on healthcare planning and design, good practice, compliance with National healthcare quality, infection control and design standards.
- Provide full shadow design team 'due diligence' service on healthcare planning and design matters throughout the duration of the works contract.

**BUILDING SERVICES ENGINEER – KEY ROLE AND RESPONSIBILITIES**

Key aspects of Services Engineer's role:-

- Take lead on all matters relative to mechanical and electrical engineering services, energy and environmental matters, renewables, carbon neutral design, integration with existing hospital and other main utility services.
- Establish and lead discussions with main utility providers for gas electricity and water
- Assist with the Design Development process and input to the ADB room data and room layout processes by the supply of building engineering information for the sheets to focus on environmental conditions, air changes, room temperatures, humidity any specialist filtration, negative or positive pressure systems. Also review and advise on M&E equipment, including the location of M&E apparatus such as light and power switches, light fitments, air handling grillage, appropriate types of heating systems, powered medical equipment, telecoms and IT.
- Fully participate in the design development/briefing Stages 1&2, assist the Board to prepare a comprehensive Employers Requirements document which fully reflects the Board's desire to reduce lifecycle / running costs by providing high quality specification for/and equipment at outset.
- Provide advice and guidance on the integration of large scale Group II equipment such as specialist imaging, PACS, MRI, CT and any special shielding requirements. Ensure all relevant standards are met.
- Review bidders proposals at all stages for compliance with tender requirements, participate in the production of technical reports at the end of each stage, to include aspects on building services.
- Required to be based in the Board's Project Office at critical stages of project to be determined by the Board.
- Ensure environmental and sustainable design concepts and practices are incorporated into the Boards Employer's Requirements specification and are demonstrated by bidders in their responses through to contract close.
- Provide advice to the Board, to include visits to reference sites to review integrated building management systems suitable to run facilities of this size on a daily basis, linkage with CDM advisor for linkage to as built info and building systems.
- Provide full shadow design team service throughout the duration of the works contract.
- Fully participate in the technical commissioning of the new facilities in conjunction with Board estates staff and the contractor.

**COST CONSULTANT / QUANTITY SURVEYOR – KEY ROLE AND RESPONSIBILITIES**

Key aspects of Cost Consultants role:-

- Provide advice on building and life cycle costs throughout briefing and development of Employer's requirements through to completion of works, and update as required, assist with negotiations with contractors on cost and contract matters.
- Review and fully update the OBC/PSC stage DCAG cost plan and provide the Project Director with a new format to suit you working practice, to take forward for the project. The cost plan was last updated to Dec 2007 cost base, the £842m budget ceiling is inflated to mid build as follows
  New Children's Hospital – 3rd qtr 2011.
  New Adult Acute Hospital – 2nd qtr 2012.
- Review contractors proposals at all stages and benchmark against PSC capital cost plan.
- Continually update Project Cost plan.
- In association with the Lead Consultant, develop a robust cost control and change management



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processes for approval by the Project Director, establish regular monitoring and reporting process throughout the life of the project. Reports will be required for the Procurement and Finance Group on a monthly basis at all stages of the project.

- Review bidders programme for construction and any associated works at all stages.
- Provide detailed input on construction management aspects of bidders proposals at all stages.
- Review bidders proposals at all stages for compliance with Employer's Requirements, participate in the production of technical/cost reports at the end of each stage, to include aspects related to capital costs, lifecycle costs and general construction / build management and programme.
- Prepare and maintain a costed risk register for regular review by Project Director.
- Preparation of all cost information to assist with completion of FBC documentation.
- Input to reports on bids at various stages of the D&B process and Contract Close stages of the project in respect of healthcare planning solutions, and as required for OBC and FBC submissions by the Board.
- In conjunction with Lead Consultant, lead negotiations with bidders at all stages regarding all financial and commercial matters. Lead the detailed review and negotiations associated with the Stage II package tenders to secure final agreement on the cost plan within the Board's financial envelope.
- Detailed financial negotiations on costs with bidders at end of each key stage, concluding with negotiation and agreement of GMP pre contract sign.
- Provide risk and value management advice on behalf of the Lead Consultant team. Provide full shadow design team cost management service throughout the duration of the works contract, including monthly valuations and cost control and reporting.
- In conjunction with Board's project staff engage and agree final account with contractor.

**CIVIL AND STRUCTURAL ENGINEER – KEY ROLE AND RESPONSIBILITIES**

Key aspects of Civil and Structural Engineer's role:-

- Take lead on all matters relative to structure, site external works, roads, main drainage, drainage and structural fabric connections to existing buildings and demolitions within Lead Consultant team.
- Assist with preparation of Employer's Requirements documentation in respect of Civil and structural engineering matters, during the bid process and evaluation at all stages.
- Develop PSC structural solution further, based on further SI work confirm cost plan requirements.
- Input to reports on bids at various stages of the D&B process and Contract Close stages of the project in respect of healthcare planning solutions, and as required for OBC and FBC submissions by the Board.
- Manage a full site investigation and remediation project to clear the site of debris, review for ground contaminants, and manage the undertaking of a full site investigation of ground conditions across the whole development site to provide a full report for inclusion in the Employer's Requirements documentation and further inform the Board's cost plan. Note cost of surveys will be paid by Board direct to contractor. This work needs to be taken forward as soon as possible and results available for inclusion in the Employer's Requirements.
- The development site is covered with large piles of building debris, old trees, tyres, and concrete. The Board require a package of works to be developed following on from the site investigation results to clear the site. These works should minimise any potential costs for landfill tax, and post crush/grade stock pile materials for re-use for bottoming etc.
- The OBC / PSC design option incorporates a basement over much of the podium area, as well as a subterranean link from the Energy Centre/Service Yard to the new builds. The cost plan includes for 900mm diameter CFA piles on a 7.5m grid, 22.5m long. The site conditions of alluvial soil over rock head some 16-27m below, and a high water table make this solution challenging, and de-watering maybe required during the ground works package. The Engineer will further review the situation during preparation of the Employer's Requirements and undertake further flood / water table studies to inform design solution and cost plan allowance.
- Review bidders proposals at all stages for compliance with Employers Requirements/tender documents, participate in the production of technical reports at the end of each stage, to include all project related aspects of civil and structural engineering, site infrastructure and drainage.



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- Provide full shadow design team inspection service throughout the duration of the works contract; manage the work of site based engineering staff employed separately by Board.

**FACILITIES MANAGEMENT DESIGN ADVICE – KEY ROLE AND RESPONSIBILITIES**

Key aspects of this role:-

- The Board require the Lead Consultant team to provide an individual to give detailed input on aspects relative to Hard FM and perhaps Soft FM services throughout the Employers Requirements stage, through to detailed negotiations with bidders. This will be in conjunction with the Board's Facilities Department.
- The adviser will also be actively involved in preparation of specifications, for inclusion in the Employer's Requirements which will incorporate lifecycle and running cost/maintenance issues. In other words the Board wish to incorporate within their specification aspects which will drive down future running and operational costs, for example integration of robotics, lifecycle of materials and building systems and modularisation of construction.
- The Board also wish to investigate the option of including a period of operational maintenance for the new facilities within the bid, say 3-5 years, with incentivisation to provide a bedding in period for their staff , and also to assign the risk of problems with Building Systems to the builder.
- Meetings between Board staff and bidders at all stages.
- Evaluation of bids at all stages.
- Evaluation of buildings and compliance with Employer's Requirements.
- Active participation in building commissioning phase, providing advice on operational issues to the Project Director.

**CDM CO-ORDINATOR – KEY ROLE AND RESPONSIBILITIES**

Key aspects of the CDM Co-ordinator's role:-

- Take lead on all matters relative the CDM Regulations and Health & Safety matters generally within Technical Advisory Team.
- Point of contact with HSE for Technical Advisory Team.
- Assist with the preparation of a robust Employer's Requirements document and tender package in respect of CDM & H/S matters.
- Preparation of H&S pre tender plan.
- Manage all aspects of CDM in partnership with Board. Regularly liaise with Board H&S staff based at the Southern General site, ensure any operational matters / interfaces are raised and satisfactorily dealt with.
- Fully advise the Board on their duties and responsibilities in respect CDM Regulations.
- Ensure full H&S file and related submissions made at conclusion of contract works.
- In conjunction with M&E Engineer, give advice on suitable building management system for estates data to run and manage a building of this size and complexity in daily use by estates staff once complete and operational.
- Provide full site related service during contract works, providing monthly reports on site management operation and safety issues as part of team.

**LANDSCAPE ARCHITECT**

Key aspects of Landscape Architects role:-

- Take lead on all matters relative to landscape architecture, external environment and external works.
- Prepare landscape specification and design for revised site masterplan to be developed as part of Stage 1A, assist Architect with development, and discussions with Glasgow City Council on Masterplan.
- In respect of Outline Planning Condition 3, the Board are required to prepare a landscape and visual impact assessment for the site (Based on Landscape Inst. Guidelines 2002), to feed into work to develop and agree a revised masterplan. This task will probably take 3-4 months to complete, you are asked to detail in your response you view on scope and content.


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- Assist with adaptation of the current Development Control Plan to incorporate current proposals to retain additional existing buildings post completion of the new builds in 2014. (e.g. Adapt Option 1 to Option 1A, see site plans in Appendix G).
- Assist with preparation of Employer's Requirements documentation, the bid process and evaluation at all stages.
- Participate in the AEDET review and any related design led review processes as required at relevant stages.
- Develop a full landscape and external works (not roads) specification and construction requirements for inclusion in the Employer Requirements/Tender document.
- Review bidders proposals at all stages for compliance with Employer's Requirements document, participate in the production of technical reports at the end of each stage, to include aspects on architectural, building construction, healthcare design, interior design, landscape and master planning.
- In conjunction with Project Director or his nominee, participate in discussions with Architecture + Design Scotland.
- Review design proposals developed at all stages.
- Provide full shadow design team service throughout the duration of the works contract, including inspection of the works onsite for compliance.
- Input monthly reports on compliance of project with Employer's Requirements on landscape and externals matters.

## APPENDIX PART D – LEAD CONSULTANTS FEE PROPOSAL/PROVISION OF FEES AND EXPENSES

**ADULT ACUTE & CHILDREN'S HOSPITAL**

**FEE SUMMARY**

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**ADULT ACUTE & CHILDREN'S HOSPITAL (See separate Fee Proposal for Laboratories)**

**6.5 Apportionment of Fee Stage**

**Summary for CURRIE & BROWN**

**Assumed Start Date of Commission = 1st September 2008**

| Stage | Description | Start | Complete | Weeks | Lump Sum Fees ex VAT (incl. Expenses and inflation) | Hours |
|---|---|---|---|---|---|---|
| 1A | **Preparation of Employers Requirements Documentation** (Preparation of PQQ, OJEU, MOI and Employers Requirements documentation and full Stage 1B tender and contract information, PSC design development) | 1-Sep-08 | 2-Jan-09 | 18 | £714,732 | 9,097 |
| 1B | **Stage One Design and Bid Development** (Issue of ER's design and bid proposals, with 3 D&B consortia, including evaluation and short listing for next stage down selection (3-1) | 5-Jan-09 | 26-Jun-09 | 26 | £306,102 | 3,673 |
| 2 | **Stage Two Design & Bid Development** (Design and bid development with a single D&B consortia based on open book process to design and tender all packages and agree commercial arrangements to conclude a GMP within the Board's cost budget) | 29-Jun-09 | 30-Jul-10 | 57 | £773,301 | 9,025 |
| 3 | **Stage Three - Construction Phase** (Implementation and Construction with continued design development) | 2-Aug-10 | 26-Sep-14 | 217 | £490,026 | 5,751 |
| 4 | **Stage Four - Operational commissioning and equipping** | 1-Oct-12 | 29-May-15 | 139 | £83,258 | 776 |
| 5 | **Stage Five - Post Project Evaluation and Defects** | 29-Sep-14 | 25-Sep-15 | 52 | £28,974 | 290 |
| | | | | **Total** | **£2,396,393** | **28,612** |

**ADULT ACUTE & CHILDREN'S HOSPITAL**

**FEE STAGE BREAKDOWN & DETAILS**

New South Glasgow Hospitals Project - Acute Services Strategy - Phase II
Lead Consultant and Technical Team Fee Proposal

**ADULT ACUTE & CHILDREN'S HOSPITAL (See separate Fee Proposal for Laboratories)**

**6.6 Apportionment of Fee Stage - Frequency of Payment of Staged Fees** **Summary for CURRIE & BROWN**

| Stage | Description | Start | Complete | Weeks | Frequency of Payments | Value of Payments | Number of Payments | Total Value of Payments |
|---|---|---|---|---|---|---|---|---|
| 1A | Preparation of Employers Requirements Documentation (Preparation of PQQ, OJEU, MOI and Employers Requirements documentation and full Stage 1B tender and contract information, PSC design development) | 1-Sep-08 | 2-Jan-09 | 18 | Equal Monthly Payments | £178,683 | 4 | £714,732 |
| 1B | Stage One Design and Bid Development (Issue of ER's design and bid proposals, with 3 D&B consortia, including evaluation and short listing for next stage down selection (3-1) | 5-Jan-09 | 26-Jun-09 | 26 | Equal Monthly Payments | £51,017 | 6 | £306,102 |
| 2 | Stage Two Design & Bid Development (Design and bid development with a single D&B consortia based on open book process to design and tender all packages and agree commercial arrangements to conclude a GMP within the Board's cost budget) | 29-Jun-09 | 30-Jul-10 | 57 | Equal Monthly Payments | £59,485 | 13 | £773,301 |
| 3 | Stage Three - Construction Phase (Implementation and Construction with continued design development) | 2-Aug-10 | 26-Sep-14 | 217 | Equal Monthly Payments | £9,801 | 50 | £490,026 |
| 4 | Stage Four - Operational commissioning and equipping | 1-Oct-12 | 29-May-15 | 139 | Equal Monthly Payments | £2,602 | 32 | £83,258 |
| 5 | Stage Five - Post Project Evaluation and Defects | 29-Sep-14 | 25-Sep-15 | 52 | Single Payment at end of Stage | £28,974 | 1 | £28,974 |
| | | | | | | | Total | £2,396,393 |

New South Glasgow Hospitals Project - Acute Services Strategy - Phase II
Lead Consultant and Technical Team Fee Proposal
ADULT ACUTE & CHILDREN'S HOSPITAL (See separate Fee Proposal for Laboratories)

6.7 LUMP SUM FEE SCHEDULE

STAGE 1A - Preparation of Employers Requirements Documentation

| Start | Complete | Weeks |
|---|---|---|
| 1-Sep-08 | 2-Jan-09 | 18 |

RESOURCE SCHEDULE FOR ALL TEAM MEMBERS FOR THIS STAGE

| Name | Discipline | Grade | Rate/hr | Hours | Total | | |
|---|---|---|---|---|---|---|---|
| Jim Hackett | Project Management | Senior Professional (1) | £101.76 | 202.5 | £20,607 | | |
| Douglas Ross | Commercial Manager | Principal | £121.28 | 40.5 | £4,912 | | |
| David Hall | Project Management | Senior Professional (1) | £101.76 | 202.5 | £20,607 | | |
| Mark Baird | Project Management | Senior Professional (1) | £101.76 | 243.0 | £24,728 | | |
| Alastair Stewart | Project Management | Senior Professional (1) | £101.76 | 6.1 | £624 | | |
| David Scott | Cost Management | Senior Professional (2) | £84.63 | 162.0 | £13,711 | | |
| Gary Stevenson | Cost Management | Senior Professional (1) | £101.76 | 162.0 | £16,485 | | |
| Colin Sunderland | Cost Management | Senior Professional (1) | £101.76 | 0.0 | £0 | | |
| Simon Miller | FM | Senior Professional (2) | £84.63 | 40.5 | £3,428 | | |
| Christine Allan | Transition Manager | Senior Professional (1) | £101.76 | 0.0 | £0 | | |
| Simon Miller | Life Cycle Costing | Senior Professional (2) | £84.63 | 40.5 | £3,428 | | |
| Ian Wyper | Risk Management | Senior Professional (1) | £101.76 | 20.3 | £2,061 | | |
| Paul Fairie | Project Management | Senior Professional (2) | £84.63 | 0.0 | £0 | | |
| David Speirs | Project Management | Professional | £64.42 | 0.0 | £0 | | |
| Not Used | CDM Co-ordinator | Senior Professional (2) | £84.63 | 0.0 | £0 | | |
| Avril Saunders | Transition Manager | Professional | £64.42 | 0.0 | £0 | | |
| Lynne Bradford | Document Manager | Senior Technician | £44.58 | 162.0 | £7,238 | £118,027 | Currie & Brown |
| Leslie Welch | Director | Principal | £110.00 | 50.3 | £5,659 | | |
| Andrew Anderson | Associate | Senior Professional | £90.00 | 356.0 | £32,049 | | |
| Harry Smith | Associate | Senior Professional | £90.00 | 278.2 | £25,039 | | |
| Carole Crane | Healthcare Architect | Professional | £74.00 | 432.4 | £31,995 | | |
| Jo Dorling | Architectural Assistant | Senior Technician | | 336.4 | £0 | | |
| S Grieve Stuart | Director | Principal | £110.00 | 22.8 | £2,511 | | |
| S Scottish Austin | Associate | Senior Professional | £90.00 | 120.5 | £10,845 | | |
| Robert Menzies | Architect | Senior Professional | £90.00 | 160.2 | £14,418 | | |
| Yvonne Wood | Architect | Professional | £74.00 | 185.3 | £13,712 | | |
| John Major | Senior Technician | Senior Technician | £63.00 | 146.2 | £9,083 | | |
| Euro Hapgood | Fire Engineer | Senior Professional | £90.00 | 86.8 | £7,810 | | |
| Simon Hurst | Landscape Architect | Principal | £110.00 | 13.4 | £1,469 | | |
| Les Rice | Landscape Architect | Senior Professional | £90.00 | 219.5 | £19,753 | | |
| Ronald Gilchrist | Landscape Architect | Senior Technician | £63.00 | 4.5 | £260 | | |
| Landscape Technician | Landscape Architect | Technician | £53.00 | 86.8 | £4,599 | £179,414 | HLM + BMI + Hinds |
| Iain Bushen | Healthcare Planner | Principal | £160.00 | 382.1 | £33,958 | | |
| Norman Sutherland | Healthcare Planner | Senior Professional (3) | £141.75 | 492.0 | £69,741 | | |
| Jim Holt | Healthcare Planner | Senior Professional (3) | £141.75 | 210.7 | £29,872 | | |
| Lynn Talbot | Healthcare Planner | Senior Professional (3) | £141.75 | 0.0 | £0 | | |
| Gerry Kennedy | Healthcare Planner | Senior Professional (3) | £131.25 | 412.1 | £54,092 | | |
| Maura Kelly | Healthcare Planner | Senior Professional (3) | £131.25 | 0.0 | £0 | £197,653 | Buchan Assoc |
| John Thomson | Structural Engineer | Senior Professional (1) | £95.15 | 301.0 | £28,635 | | |
| Steve Harris | Structural Engineer | Senior Professional (2) | £73.28 | 264.0 | £19,345 | | |
| Andrew Lindsay | Civil Engineer | Senior Professional (2) | £73.28 | 176.0 | £12,897 | | |
| Iain Clow | Geotechnical Engineer | Senior Professional (2) | £73.28 | 190.1 | £13,929 | | |
| Chris Denton | Structural Engineer | Senior Professional (3) | £56.25 | 145.2 | £8,022 | | |
| Raymond Gubin | Civil Engineer | Senior Professional (3) | £56.25 | 169.2 | £10,453 | | |
| Ramsay Muthead | Ground Engineer | Senior Professional (3) | £56.25 | 101.2 | £5,591 | | |
| Richard McColm | Structural Engineer | Professional (1) | £49.11 | 132.0 | £6,483 | | |
| Colin Sanders | Structural Engineer | Professional (2) | £46.04 | 0.0 | £0 | | |
| Hilary Guernsey | Ground Engineer | Professional (2) | £46.04 | 76.8 | £3,444 | | |
| Dominic Adams | Geotechnical Engineer | Professional (2) | £46.04 | 0.0 | £0 | | |
| Allan Brown | Structural CAD Technician | Senior Technician | £49.11 | 132.0 | £6,483 | | |
| Dougie Frame | Civil CAD Technician | Senior Technician | £49.11 | 140.8 | £6,915 | £122,199 | |
| Jed Murdoch | CDM Co-ordinator | Senior Professional (2) | £73.28 | 39.6 | £2,902 | £131,178 | URS Corporation |
| Michael Glen | CDM Co-ordinator | Professional (1) | £46.04 | 132.0 | £6,077 | | |
| John Bushfield | Director | Principal | £72.45 | 17.1 | £1,239 | | |
| Stewart McKechnie | Director | Principal | £72.45 | 17.1 | £1,239 | | |
| Allan McGill | Director | Principal | £72.45 | 9.9 | £717 | | |
| Kevin Mitchell | Associate | Senior Professional (1) | £60.90 | 441.0 | £26,857 | | |
| Brian Rutherford | Senior Engineer | Professional (2) | £47.25 | 342.0 | £16,160 | | |
| Gary Roger | Engineer | Professional (3) | £42.00 | 30.5 | £1,285 | | |
| Martin Latimer | Graduate Engineer | Senior Technician | £36.75 | 342.0 | £12,569 | | |
| Jan McAuslan | Technician | Technician | £31.50 | 0.0 | £0 | | |
| Les Carroll | Associate | Senior Professional (1) | £60.90 | 127.8 | £7,783 | | |
| Craig Stessor | Associate | Senior Professional (1) | £60.90 | 126.7 | £7,833 | | |
| Gary Meechan | Senior Engineer | Professional (2) | £47.25 | 342.0 | £16,160 | | |
| Mike Mackay | Engineer | Professional (3) | £42.00 | 0.0 | £0 | | |
| Alison Reid | Graduate Engineer | Senior Technician | £36.75 | 0.0 | £0 | | |
| David McMonagle | Senior Technician | Senior Technician | £36.75 | 180.0 | £6,615 | | |
| Neil Robson | Partner | Principal | £72.45 | 0.0 | £0 | | |
| Brian Murray | Associate | Senior Professional (1) | £60.90 | 0.0 | £0 | | |
| Damien Kane | Senior Engineer | Professional (2) | £47.25 | 0.0 | £0 | | |
| Jim Kellachan | Senior Engineer | Professional (2) | £47.25 | 0.0 | £0 | | |
| David Watt | Senior Technician | Senior Technician | £36.75 | 0.0 | £0 | | |
| Lilian Turner | Technician | Technician | £31.50 | 0.0 | £0 | £96,480 | Wallace Whittle + Harley Haddow |
| | | | Total | 9035.9 | £714,732 | | |

SUMMARY OF TASKS AND ACTIONS TO BE COMPLETED AT STAGE: 1A
Please refer to Section 2 of our submission

New South Glasgow Hospitals Project - Acute Services Strategy - Phase II
Lead Consultant and Technical Team Fee Proposal
ADULT ACUTE & CHILDREN'S HOSPITAL (See separate Fee Proposal for Laboratories)

6.7 LUMP SUM FEE SCHEDULE

STAGE 1B - D&B Stage 1 Design & Bid Development (3 to 1)

| Start | Complete | Weeks |
|---|---|---|
| 5-Jun-09 | 26-Jun-09 | 26 |

RESOURCE SCHEDULE FOR ALL TEAM MEMBERS FOR THIS STAGE

| Name | Discipline | Grade | Rate/hr | Hours | Total |
|---|---|---|---|---|---|
| Jim Hacket | Project Management | Senior Professional (1) | £106.85 | 91.7 | £9,793 |
| Douglas Ross | Commercial Manager | Principal | £127.34 | 45.8 | £5,835 |
| David Hall | Project Management | Senior Professional (1) | £106.85 | 183.3 | £19,585 |
| Mark Baird | Project Management | Senior Professional (1) | £106.85 | 183.3 | £19,585 |
| Alastair Stewart | Project Management | Senior Professional (1) | £106.85 | 9.2 | £979 |
| David Scott | Cost Management | Senior Professional (2) | £88.87 | 91.7 | £8,145 |
| Gary Stevenson | Cost Management | Senior Professional (1) | £106.85 | 91.7 | £9,793 |
| Colin Sunderland | Cost Management | Senior Professional (1) | £106.85 | 0.0 | £0 |
| Simon Miller | FM | Senior Professional (2) | £88.87 | 91.7 | £8,145 |
| Christine Allan | Transition Manager | Senior Professional (1) | £106.85 | 0.0 | £0 |
| Simon Miller | Life Cycle Costing | Senior Professional (2) | £88.87 | 91.7 | £8,145 |
| Ian Wyper | Risk Management | Senior Professional (1) | £106.85 | 22.9 | £2,449 |
| Paul Fairie | Project Management | Senior Professional (2) | £88.87 | 0.0 | £0 |
| David Speirs | Project Management | Professional | £67.64 | 0.0 | £0 |
| Not Used | CDM Co-ordinator | Senior Professional (2) | £88.87 | 0.0 | £0 |
| Avril Saunders | Transition Manager | Professional | £67.64 | 0.0 | £0 |
| Lynne Bradford | Document Manager | Senior Technician | £45.91 | 183.3 | £8,599 |
| Leslie Wilson | Director | Principal | £116.50 | 0.0 | £0 |
| Andrew Anderson | Associate | Senior Professional | £94.50 | 125.6 | £12,832 |
| Harry Smith | Associate | Senior Professional | £94.50 | 92.0 | £8,694 |
| Carole Crane | Healthcare Architect | Professional | £77.70 | 34.1 | £2,652 |
| Jo Dolling | Architectural Assistant | Senior Technician | | 9.7 | £0 |
| S Grieve/S Stuart | Director | Principal | £116.50 | 0.0 | £0 |
| S Scott/M Austin | Associate | Senior Professional | £94.50 | 36.8 | £3,478 |
| Robert Menzies | Architect | Senior Professional | £94.50 | 61.3 | £5,773 |
| Yvonne Wood | Architect | Professional | £77.70 | 14.6 | £1,137 |
| John Mailer | Senior Technician | Senior Technician | £66.15 | 4.1 | £274 |
| Ross Hassard | Fire Engineer | Senior Professional | £94.50 | 89.7 | £8,477 |
| Simon Hurst | Landscape Architect | Principal | £116.50 | 6.9 | £797 |
| Les Rice | Landscape Architect | Senior Professional | £94.50 | 92.7 | £8,764 |
| Ronald Gilchrist | Landscape Architect | Senior Technician | £66.15 | 4.6 | £304 |
| Landscape Technician | Landscape Architect | Technician | £55.00 | 0.0 | £0 |
| Ian Buchan | Healthcare Planner | Principal | £116.50 | 197.9 | £23,153 |
| Norman Sutherland | Healthcare Planner | Senior Professional (2) | £141.75 | 130.5 | £18,495 |
| Jon Hall | Healthcare Planner | Senior Professional (2) | £141.75 | 41.4 | £4,701 |
| Lynn Talbot | Healthcare Planner | Senior Professional (2) | £141.75 | 0.0 | £0 |
| Carrie Kennedy | Healthcare Planner | Senior Professional (2) | £131.25 | 55.8 | £7,324 |
| Moira Kelly | Healthcare Planner | Senior Professional (2) | £131.25 | 0.0 | £0 |
| John Thomson | Structural Engineer | Senior Professional (1) | £99.91 | 60.0 | £5,995 |
| Steve Harris | Structural Engineer | Senior Professional (2) | £76.94 | 69.0 | £5,309 |
| Andrew Lindsay | Civil Engineer | Senior Professional (2) | £76.94 | 42.0 | £3,231 |
| Ian Clow | Geotechnical Engineer | Senior Professional (2) | £76.94 | 32.0 | £2,462 |
| Chris Denton | Structural Engineer | Senior Professional (3) | £58.01 | 5.0 | £290 |
| Raymond Quinn | Civil Engineer | Senior Professional (3) | £58.01 | 5.0 | £290 |
| Ramsay Muirhead | Ground Engineer | Senior Professional (3) | £58.01 | 5.0 | £290 |
| Richard McCoim | Structural Engineer | Professional (1) | £51.56 | 10.0 | £516 |
| Colin Sanders | Structural Engineer | Professional (2) | £48.34 | 0.0 | £0 |
| Hilary Guernsey | Ground Engineer | Professional (2) | £48.34 | 0.0 | £0 |
| Dominic Adams | Geotechnical Engineer | Professional (2) | £48.34 | 0.0 | £0 |
| Alan Brown | Structural CAD Technician | Senior Technician | £51.56 | 0.0 | £0 |
| Dougie Frame | Civil CAD Technician | Senior Technician | £51.56 | 0.0 | £0 |
| Jef Murdoch | CDM Co-ordinator | Senior Professional (2) | £76.94 | 130.0 | £10,002 |
| Michael Glen | CDM Co-ordinator | Professional (1) | £48.34 | 120.0 | £5,801 |
| John Bushfield | Director | Principal | £76.07 | 0.0 | £0 |
| Stewart McKedrick | Director | Principal | £76.07 | 0.0 | £0 |
| Alan McGill | Director | Principal | £76.07 | 0.0 | £0 |
| Kevin Mitchell | Associate | Senior Professional (1) | £63.95 | 171.0 | £10,935 |
| Brian Rutherfurd | Senior Engineer | Professional (2) | £49.61 | 400.0 | £19,845 |
| Gary Roger | Engineer | Professional (3) | £44.10 | 0.0 | £0 |
| Martin Lorimer | Graduate Engineer | Senior Technician | £38.59 | 0.0 | £0 |
| Jan McAslan | Technician | Technician | £33.08 | 0.0 | £0 |
| Les Carrol | Associate | Senior Professional (1) | £63.95 | 143.0 | £9,144 |
| Craig Slesser | Associate | Senior Professional (1) | £63.95 | 142.0 | £9,080 |
| Gary Meechan | Senior Engineer | Professional (2) | £49.61 | 0.0 | £0 |
| Mike Mackay | Engineer | Professional (3) | £44.10 | 0.0 | £0 |
| Alison Reid | Graduate Engineer | Senior Technician | £38.59 | 0.0 | £0 |
| David McMenagle | Senior Technician | Senior Technician | £38.59 | 285.0 | £10,997 |
| Neil Robson | Farmer | Principal | £76.07 | 0.0 | £0 |
| Brian Murray | Associate | Senior Professional (1) | £63.95 | 0.0 | £0 |
| Damien Kane | Senior Engineer | Professional (2) | £49.61 | 0.0 | £0 |
| Jim Kellachan | Senior Engineer | Professional (2) | £49.61 | 0.0 | £0 |
| David Watt | Senior Technician | Senior Technician | £38.59 | 0.0 | £0 |
| Ulan Turner | Technician | Technician | £33.08 | 0.0 | £0 |
| | | | | Total | 3672.8 | £306,102 |

£101,052 Currie & Brown

£53,191 HLM + BMJ + Hinds

£57,580 Buchan Assoc.

£18,383

£34,166 URS Corporation

£60,001 Wallace Whittle + Harley Haddow

SUMMARY OF TASKS AND ACTIONS TO BE COMPLETED AT STAGE: 1B

Please refer to Section 2 of our submission

New South Glasgow Hospitals Project - Acute Services Strategy - Phase II
Lead Consultant and Technical Team Fee Proposal
ADULT ACUTE & CHILDREN'S HOSPITAL (See seperate Fee Proposal for Laboratories)

6.7 LUMP SUM FEE SCHEDULE

STAGE 2 - D&B Stage I Design & Bid Development (Open Book to GMP)

| Start | Complete | Weeks |
|---|---|---|
| 29-Jan-09 | 30-Jul-10 | 57 |

RESOURCE SCHEDULE FOR ALL TEAM MEMBERS FOR THIS STAGE

| Name | Discipline | Grade | Rate/hr | Hours | Total | | |
|---|---|---|---|---|---|---|---|
| Jim Hackett | Project Management | Senior Professional (1) | £112.19 | 176.3 | £19,664 | | |
| Douglas Ross | Commercial Manager | Principal | £133.71 | 87.6 | £11,718 | | |
| David Hall | Project Management | Senior Professional (1) | £112.19 | 350.6 | £39,329 | | |
| Mark Baird | Project Management | Senior Professional (1) | £112.19 | 350.6 | £39,329 | | |
| Alastair Stewart | Project Management | Senior Professional (1) | £112.19 | 17.5 | £1,965 | | |
| David Stott | Cost Management | Senior Professional (2) | £93.31 | 438.2 | £40,887 | | |
| Gary Stevenson | Cost Management | Senior Professional (1) | £112.19 | 438.2 | £49,161 | | |
| Colin Sunderland | Cost Management | Senior Professional (1) | £112.19 | 0.0 | £0 | | |
| Simon Miller | FM | Senior Professional (2) | £93.31 | 43.8 | £4,089 | | |
| Christine Allan | Transition Manager | Senior Professional (1) | £112.19 | 0.0 | £0 | | |
| Simon Miller | Life Cycle Costing | Senior Professional (2) | £93.31 | 43.8 | £4,089 | | |
| Ian Wyper | Risk Management | Senior Professional (1) | £112.19 | 43.8 | £4,916 | | |
| Paul Fairie | Project Management | Senior Professional (2) | £93.31 | 0.0 | £0 | | |
| David Speirs | Project Management | Professional | £71.02 | 0.0 | £0 | | |
| Neil Lloyd | CDM Co-ordinator | Senior Professional (2) | £93.31 | 0.0 | £0 | | |
| Avril Saunders | Transition Manager | Professional | £71.02 | 0.0 | £0 | | |
| Lynne Bradford | Document Manager | Senior Technician | £49.26 | 175.3 | £8,634 | £223,781 | Currie & Brown |
| Leslie Welch | Director | Principal | £115.50 | 0.0 | £0 | | |
| Andrew Anderson | Associate | Senior Professional | £94.50 | 328.0 | £30,996 | | |
| Henry Smith | Associate | Senior Professional | £94.50 | 310.0 | £29,295 | | |
| Carole Crane | Healthcare Architect | Professional | £77.70 | 476.4 | £37,016 | | |
| Jo Darling | Architectural Assistant | Senior Technician | | 167.3 | £0 | | |
| S Grieve/G Stuart | Director | Principal | £115.50 | 0.0 | £0 | | |
| S Bodi/M Austin | Associate | Senior Professional | £94.50 | 112.0 | £10,585 | | |
| Robert Menzies | Architect | Senior Professional | £94.50 | 164.9 | £15,496 | | |
| Yvonne Wood | Architect | Professional | £77.70 | 204.2 | £15,866 | | |
| John Maier | Senior Technician | Senior Technician | £56.15 | 71.7 | £4,744 | | |
| Suzy Hansell | Fire Engineer | Senior Professional | £94.50 | 80.0 | £7,560 | | |
| Simon Hurst | Landscape Architect | Principal | £115.50 | 6.2 | £719 | | |
| Lisa Ribe | Landscape Architect | Senior Professional | £94.50 | 187.5 | £17,729 | | |
| Ronald Gilchrist | Landscape Architect | Senior Technician | £56.15 | 4.1 | £271 | | |
| Landscape Technician | Landscape Architect | Technician | £55.55 | 18.6 | £1,027 | £171,862 | HLM + EMU + Hoare |
| Jim Barker | Healthcare Planner | Principal | £115.50 | 295.2 | £34,153 | | |
| Norman Sutherland | Healthcare Planner | Senior Professional (2) | £148.84 | 495.0 | £73,675 | | |
| Jim Hunt | Healthcare Planner | Senior Professional (2) | £148.84 | 59.0 | £8,774 | | |
| Lynn Tullett | Healthcare Planner | Senior Professional (2) | £148.84 | 8.0 | £0 | | |
| Gerry Kennedy | Healthcare Planner | Senior Professional (1) | £137.91 | 297.5 | £40,992 | | |
| Moira Nimmo | Healthcare Planner | Senior Professional (1) | £137.91 | 0.0 | £0 | £127,674 | Sutton Assoc. |
| John Thomson | Structural Engineer | Senior Professional (1) | £102.60 | 162.0 | £16,621 | | |
| Steve Harris | Structural Engineer | Senior Professional (2) | £79.01 | 225.0 | £17,777 | | |
| Andrew Lindsay | Civil Engineer | Senior Professional (2) | £79.01 | 225.0 | £17,777 | | |
| Iain Otw | Geotechnical Engineer | Senior Professional (2) | £79.01 | 118.8 | £9,386 | | |
| Chris Derbon | Structural Engineer | Senior Professional (3) | £59.57 | 55.8 | £3,324 | | |
| Raymond Quinn | Civil Engineer | Senior Professional (3) | £59.57 | 55.8 | £3,324 | | |
| Ramsay Muirhead | Ground Engineer | Senior Professional (3) | £59.57 | 43.2 | £2,573 | | |
| Richard McCann | Structural Engineer | Professional (1) | £52.95 | 36.0 | £1,906 | | |
| Colin Sanders | Structural Engineer | Professional (2) | £49.65 | 9.0 | £447 | | |
| Hilary Guernsey | Ground Engineer | Professional (2) | £49.65 | 4.5 | £223 | | |
| Dominic Adams | Geotechnical Engineer | Professional (2) | £49.65 | 0.0 | £0 | | |
| Allan Brown | Structural CAD Technician | Senior Technician | £52.95 | 13.5 | £715 | | |
| Douglas Frame | Civil CAD Technician | Senior Technician | £52.95 | 0.0 | £0 | £74,075 | |
| Jeff Murdoch | CDM Co-ordinator | Senior Professional (2) | £76.94 | 180.0 | £13,849 | | |
| Michael Glen | CDM Co-ordinator | Professional (1) | £48.34 | 315.0 | £15,227 | £103,151 | URS Corporation |
| John Bushfield | Director | Principal | £76.07 | 16.2 | £1,229 | | |
| Stewart McKechnie | Director | Principal | £76.07 | 16.2 | £1,229 | | |
| Allan McGill | Director | Principal | £76.07 | 0.0 | £0 | | |
| Kevin Mitchell | Associate | Senior Professional (1) | £53.95 | 734.2 | £46,309 | | |
| Brian Rutherford | Senior Engineer | Professional (2) | £49.61 | 466.5 | £23,115 | | |
| Gary Roger | Engineer | Professional (3) | £44.10 | 36.3 | £1,587 | | |
| Martin Lorimer | Graduate Engineer | Senior Technician | £38.59 | 272.0 | £10,496 | | |
| Ian McAuslan | Technician | Technician | £33.06 | 24.7 | £815 | | |
| Les Carrol | Associate | Senior Professional (1) | £53.95 | 36.6 | £2,357 | | |
| Craig Sawyer | Associate | Senior Professional (1) | £53.95 | 35.7 | £2,283 | | |
| Gary Meechan | Senior Engineer | Professional (2) | £49.61 | 425.0 | £21,085 | | |
| Mike Mackay | Engineer | Professional (3) | £44.10 | 0.0 | £0 | | |
| Alison Reid | Graduate Engineer | Senior Technician | £38.59 | 120.7 | £4,656 | | |
| David McKinnagle | Senior Technician | Senior Technician | £38.59 | 121.5 | £4,690 | | |
| Neil Robson | Partner | Principal | £76.07 | 0.0 | £0 | | |
| Brian Murray | Associate | Senior Professional (1) | £53.95 | 0.0 | £0 | | |
| Damien Kane | Senior Engineer | Professional (2) | £49.61 | 0.0 | £0 | | |
| Jim Kellachan | Senior Engineer | Professional (2) | £49.61 | 0.0 | £0 | | |
| David Watt | Senior Technician | Senior Technician | £38.59 | 0.0 | £0 | | |
| Lilian Turner | Technician | Technician | £33.06 | 0.0 | £0 | £116,933 | Wallace Whittle + Harley Haddow |
| | | | | Total | 9026.4 | £773,301 | |

SUMMARY OF TASKS AND ACTIONS TO BE COMPLETED AT STAGE: 2.0
Please refer to Section 2 of our submission

New South Glasgow Hospitals Project - Acute Services Strategy - Phase II
Lead Consultant and Technical Team Fee Proposal
ADULT ACUTE & CHILDREN'S HOSPITAL (See separate Fee Proposal for Laboratories)

6.7 LUMP SUM FEE SCHEDULE

STAGE 3 - Construction Phase

| Start | Complete | Weeks |
|---|---|---|
| 2-Aug-10 | 26-Sep-14 | 217 |

RESOURCE SCHEDULE FOR ALL TEAM MEMBERS FOR THIS STAGE

| Name | Discipline | Grade | Rate/hr | Hours | Total | |
|---|---|---|---|---|---|---|
| Jim Hockett | Project Management | Senior Professional (1) | £123.99 | 244.1 | £30,266 | |
| Douglas Ross | Commercial Manager | Principal | £147.76 | 0.0 | £0 | |
| David Hall | Project Management | Senior Professional (1) | £123.99 | 244.1 | £30,266 | |
| Mark Baird | Project Management | Senior Professional (1) | £123.99 | 0.0 | £0 | |
| Alastair Stewart | Project Management | Senior Professional (1) | £123.99 | 0.0 | £0 | |
| David Scott | Cost Management | Senior Professional (2) | £103.12 | 466.3 | £48,087 | |
| Gary Stevenson | Cost Management | Senior Professional (1) | £123.99 | 466.3 | £60,536 | |
| Colin Sunderland | Cost Management | Senior Professional (1) | £123.99 | 0.0 | £0 | |
| Simon Miller | FM | Senior Professional (2) | £103.12 | 0.0 | £0 | |
| Christine Allan | Transition Manager | Senior Professional (1) | £123.99 | 0.0 | £0 | |
| Simon Miller | Life Cycle Costing | Senior Professional (2) | £103.12 | 0.0 | £0 | |
| Ian Wyper | Risk Management | Senior Professional (1) | £123.99 | 46.8 | £6,054 | |
| Paul Fairie | Project Management | Senior Professional (2) | £103.12 | 466.3 | £50,347 | |
| David Speirs | Project Management | Professional | £78.49 | 466.3 | £36,321 | |
| Not Used | CDM Co-ordinator | Senior Professional (2) | £103.12 | 0.0 | £0 | |
| Avril Saunders | Transition Manager | Professional | £78.49 | 0.0 | £0 | |
| Lynne Bradford | Document Manager | Senior Technician | £54.44 | 244.1 | £13,289 | £279,431 Currie & Brown |
| Lesley Wilson | Director | Principal | £133.71 | 0.0 | £0 | |
| Andrew Anderson | Associate | Senior Professional | £109.40 | 26.2 | £3,851 | |
| Harry Smith | Associate | Senior Professional | £109.40 | 26.4 | £2,888 | |
| Carole Crane | Healthcare Architect | Professional | £89.95 | 351.7 | £31,639 | |
| Jo Dolling | Architectural Assistant | Senior Technician | | 48.0 | £0 | |
| S Graeme Stuart | Director | Principal | £133.71 | 0.0 | £0 | |
| S Scottish Austin | Associate | Senior Professional | £109.40 | 8.8 | £963 | |
| Robert Menzies | Architect | Senior Professional | £109.40 | 17.6 | £1,925 | |
| Yvonne Wood | Architect | Professional | £89.95 | 150.7 | £13,559 | |
| John Major | Senior Technician | Senior Technician | £78.58 | 20.6 | £1,577 | |
| Piers Hopkins | Fire Engineer | Senior Professional | £109.40 | 0.0 | £0 | |
| Simon Hurst | Landscape Architect | Principal | £133.71 | 0.0 | £0 | |
| Les Rae | Landscape Architect | Senior Professional | £109.40 | 95.0 | £10,397 | |
| Russell Gilchrist | Landscape Architect | Senior Technician | £78.58 | 0.0 | £0 | |
| Landscape Technician | Landscape Architect | Technician | £54.42 | 0.0 | £0 | £66,670 HLM + BMJ + Hinds |
| Ian Bramm | Healthcare Planner | Principal | £264.21 | 0.0 | £0 | |
| Norman Sutherland | Healthcare Planner | Senior Professional (3) | £172.30 | 0.0 | £0 | |
| Jim Hill | Healthcare Planner | Senior Professional (3) | £172.30 | 0.0 | £0 | |
| Lynn Talbot | Healthcare Planner | Senior Professional (3) | £172.30 | 0.0 | £0 | |
| Gerry Kennedy | Healthcare Planner | Senior Professional (2) | £108.54 | 0.0 | £0 | |
| Maura Kelly | Healthcare Planner | Senior Professional (1) | £108.58 | 0.0 | £0 | £0 Barton Adam |
| John Thomson | Structural Engineer | Senior Professional (1) | £116.78 | 71.3 | £8,321 | |
| Steve Harris | Structural Engineer | Senior Professional (2) | £89.94 | 80.8 | £7,263 | |
| Andrew Lindsay | Civil Engineer | Senior Professional (2) | £89.94 | 59.9 | £5,383 | |
| Iain Clow | Geotechnical Engineer | Senior Professional (2) | £89.94 | 58.9 | £5,297 | |
| Chris Denton | Structural Engineer | Senior Professional (3) | £67.81 | 71.3 | £4,831 | |
| Raymond Quinn | Civil Engineer | Senior Professional (3) | £67.81 | 47.5 | £3,221 | |
| Ramsay Muirhead | Ground Engineer | Senior Professional (3) | £67.81 | 23.8 | £1,610 | |
| Richard McColm | Structural Engineer | Professional (1) | £60.27 | 71.3 | £4,294 | |
| Colin Sanders | Structural Engineer | Professional (2) | £56.51 | 96.0 | £5,369 | |
| Hilary Guernsey | Ground Engineer | Professional (2) | £56.51 | 47.5 | £2,684 | |
| Dominic Adams | Geotechnical Engineer | Professional (2) | £56.51 | 47.5 | £2,684 | |
| Allan Brown | Structural CAD Technician | Senior Technician | £60.27 | 16.2 | £973 | |
| Dougie Frame | Civil CAD Technician | Senior Technician | £60.27 | 4.8 | £286 | £52,217 |
| Jeff Murdoch | CDM Co-ordinator | Senior Professional (2) | £87.06 | 286.0 | £24,812 | £104,311 URS Corporation |
| Michael Glen | CDM Co-ordinator | Professional (1) | £54.70 | 498.8 | £27,282 | |
| John Bushfield | Director | Principal | £76.07 | 12.4 | £940 | |
| Stewart Mckechnie | Director | Principal | £76.07 | 12.4 | £940 | |
| Allan McGill | Director | Principal | £76.07 | 0.0 | £0 | |
| Kevin Mitchell | Associate | Senior Professional (1) | £63.95 | 81.9 | £5,237 | |
| Brian Rutherford | Senior Engineer | Professional (2) | £49.61 | 185.3 | £9,191 | |
| Gary Roger | Engineer | Professional (3) | £44.10 | 44.2 | £1,949 | |
| Martin Lorimer | Graduate Engineer | Senior Technician | £38.59 | 113.8 | £4,389 | |
| Ian McAuslan | Technician | Technician | £33.06 | 6.5 | £215 | |
| Les Carrol | Associate | Senior Professional (1) | £63.95 | 21.5 | £1,372 | |
| Craig Stewart | Associate | Senior Professional (1) | £63.95 | 21.5 | £1,372 | |
| Gary Meecham | Senior Engineer | Professional (2) | £49.61 | 240.5 | £11,931 | |
| Mike Mackay | Engineer | Professional (3) | £44.10 | 44.2 | £1,949 | |
| Alison Reid | Graduate Engineer | Senior Technician | £38.59 | 0.0 | £0 | |
| David McMonagle | Senior Technician | Senior Technician | £38.59 | 0.0 | £0 | |
| Neil Robson | Partner | Principal | £76.07 | 0.0 | £0 | |
| Brian Murray | Associate | Senior Professional (1) | £63.95 | 0.0 | £0 | |
| Damien Kane | Senior Engineer | Professional (2) | £49.61 | 0.0 | £0 | |
| Jim Kellachan | Senior Engineer | Professional (2) | £49.61 | 0.0 | £0 | |
| David Watt | Senior Technician | Senior Technician | £36.75 | 0.0 | £0 | |
| Lilian Turner | Technician | Technician | £33.06 | 0.0 | £0 | £39,485 Wallace Whittle & Harley Haddow |
| | | | Total | 5761.4 | £490,026 | |

SUMMARY OF TASKS AND ACTIONS TO BE COMPLETED AT STAGE: 3.0
Please refer to Section 2 of our submission

New South Glasgow Hospitals Project - Acute Services Strategy - Phase II
Lead Consultant and Technical Team Fee Proposal
ADULT ACUTE & CHILDREN'S HOSPITAL (See separate Fee Proposal for Laboratories)

6.7 LUMP SUM FEE SCHEDULE

STAGE 4 - Operational Commissioning & Equipping

| Start | Complete | Weeks |
|---|---|---|
| 1-Oct-12 | 29-May-15 | 139 |

RESOURCE SCHEDULE FOR ALL TEAM MEMBERS FOR THIS STAGE

| Name | Discipline | Grade | Rate/hr | Hours | Total |
|---|---|---|---|---|---|
| Jim Hackett | Project Management | Senior Professional (1) | £133.12 | 0.0 | £0 |
| Douglas Ross | Commercial Manager | Principal | £158.65 | 0.0 | £0 |
| David Hall | Project Management | Senior Professional (1) | £133.12 | 0.0 | £0 |
| Mark Baird | Project Management | Senior Professional (1) | £133.12 | 0.0 | £0 |
| Alastair Stewart | Project Management | Senior Professional (1) | £133.12 | 0.0 | £0 |
| David Scott | Cost Management | Senior Professional (2) | £110.72 | 0.0 | £0 |
| Gary Stevenson | Cost Management | Senior Professional (1) | £133.12 | 0.0 | £0 |
| Colin Sunderland | Cost Management | Senior Professional (1) | £133.12 | 0.0 | £0 |
| Simon Miller | FM | Senior Professional (2) | £110.72 | 0.0 | £0 |
| Christine Allan | Transition Manager | Senior Professional (1) | £133.12 | 417.0 | £55,512 |
| Simon Miller | Life Cycle Costing | Senior Professional (2) | £110.72 | 0.0 | £0 |
| Ian Wyper | Risk Management | Senior Professional (1) | £133.12 | 0.0 | £0 |
| Paul Fairie | Project Management | Senior Professional (2) | £110.72 | 0.0 | £0 |
| David Speirs | Project Management | Professional | £84.27 | 0.0 | £0 |
| Not Used | CDM Co-ordinator | Senior Professional (2) | £110.72 | 0.0 | £0 |
| Avril Saunders | Transition Manager | Professional | £84.27 | 206.5 | £17,570 |
| Lynne Bradford | Document Manager | Senior Technician | £58.45 | 0.0 | £0 |
| Leslie Wilson | Director | Principal | £147.41 | 0.0 | £0 |
| Andrew Anderson | Associate | Senior Professional | £120.61 | 0.0 | £0 |
| Harry Smith | Associate | Senior Professional | £120.61 | 0.0 | £0 |
| Carole Crane | Healthcare Architect | Professional | £99.17 | 0.0 | £0 |
| Jo Dering | Architectural Assistant | Senior Technician | | 0.0 | £0 |
| D Calvert-Stuart | Director | Principal | £147.41 | 0.0 | £0 |
| S Scott/M Austin | Associate | Senior Professional | £120.61 | 0.0 | £0 |
| Robert Menzies | Architect | Senior Professional | £120.61 | 0.0 | £0 |
| Yvonne Wood | Architect | Professional | £99.17 | 0.0 | £0 |
| John Mugo | Senior Technician | Senior Technician | £84.43 | 0.0 | £0 |
| Euro Hapgood | Fire Engineer | Senior Professional | £120.61 | 0.0 | £0 |
| Simon Hurst | Landscape Architect | Principal | £147.41 | 0.0 | £0 |
| Lee Rice | Landscape Architect | Senior Professional | £120.61 | 0.0 | £0 |
| Ronald Gilchrist | Landscape Architect | Senior Technician | £84.43 | 0.0 | £0 |
| Landscape Technician | Landscape Architect | Technician | £71.03 | 0.0 | £0 |
| Sara Rezvan | Healthcare Planner | Principal | £214.42 | 0.0 | £0 |
| Norman Sutherland | Healthcare Planner | Senior Professional (2) | £188.91 | 0.0 | £0 |
| Jo Hall | Healthcare Planner | Senior Professional (2) | £188.91 | 0.0 | £0 |
| Lyon Talbot | Healthcare Planner | Senior Professional (2) | £188.91 | 0.0 | £0 |
| Gerry Kennedy | Healthcare Planner | Senior Professional (2) | £167.51 | 0.0 | £0 |
| Moira Kelly | Healthcare Planner | Senior Professional (2) | £167.51 | 0.0 | £0 |
| John Thomson | Structural Engineer | Senior Professional (1) | £126.12 | 0.0 | £0 |
| Steve Harris | Structural Engineer | Senior Professional (2) | £96.36 | 0.0 | £0 |
| Andrew Lindsay | CWI Engineer | Senior Professional (2) | £96.36 | 0.0 | £0 |
| Iain Clow | Geotechnical Engineer | Senior Professional (2) | £96.36 | 0.0 | £0 |
| Chris Denton | Structural Engineer | Senior Professional (3) | £72.65 | 0.0 | £0 |
| Raymond Quinn | CWI Engineer | Senior Professional (3) | £72.65 | 0.0 | £0 |
| Ramsay Muirhead | Ground Engineer | Senior Professional (3) | £72.65 | 0.0 | £0 |
| Richard McCorn | Structural Engineer | Professional (1) | £64.58 | 0.0 | £0 |
| Colin Sanders | Structural Engineer | Professional (2) | £60.54 | 0.0 | £0 |
| Hilary Guernsey | Ground Engineer | Professional (2) | £60.54 | 0.0 | £0 |
| Dominic Adams | Geotechnical Engineer | Professional (2) | £60.54 | 0.0 | £0 |
| Allan Brown | Structural CAD Technician | Senior Technician | £54.58 | 0.0 | £0 |
| Dougie Frame | CWI CAD Technician | Senior Technician | £54.58 | 0.0 | £0 |
| Jeff Murdoch | CDM Co-ordinator | Senior Professional (2) | £96.36 | 25.0 | £2,407 |
| Michael Glen | CDM Co-ordinator | Professional (1) | £61.75 | 125.0 | £7,719 |
| John Bushfield | Director | Principal | £84.07 | 0.0 | £0 |
| Stewart McKechnie | Director | Principal | £84.07 | 0.0 | £0 |
| Alan McGill | Director | Principal | £84.07 | 0.0 | £0 |
| Kevin Mitchell | Associate | Senior Professional (1) | £70.67 | 0.0 | £0 |
| Brian Rutherford | Senior Engineer | Professional (2) | £54.83 | 0.0 | £0 |
| Gary Roger | Engineer | Professional (3) | £48.74 | 0.0 | £0 |
| Martin Lorimer | Graduate Engineer | Senior Technician | £42.64 | 0.0 | £0 |
| Jan McAuslan | Technician | Technician | £36.55 | 0.0 | £0 |
| Les Carrol | Associate | Senior Professional (1) | £70.67 | 0.0 | £0 |
| Craig Stewart | Associate | Senior Professional (1) | £70.67 | 0.0 | £0 |
| Gary Meechan | Senior Engineer | Professional (2) | £54.83 | 0.0 | £0 |
| Mike Mackay | Engineer | Professional (3) | £48.74 | 0.0 | £0 |
| Alison Reid | Graduate Engineer | Senior Technician | £42.64 | 0.0 | £0 |
| David McMonagle | Senior Technician | Senior Technician | £42.64 | 0.0 | £0 |
| Neil Robson | Partner | Principal | £84.07 | 0.0 | £0 |
| Brian Murray | Associate | Senior Professional (1) | £70.67 | 0.0 | £0 |
| Darren Kane | Senior Engineer | Professional (2) | £54.83 | 0.0 | £0 |
| Jim Kelleghan | Senior Engineer | Professional (2) | £54.83 | 0.0 | £0 |
| David Watt | Senior Technician | Senior Technician | £42.64 | 0.0 | £0 |
| Lillian Turner | Technician | Technician | £36.55 | 0.0 | £0 |
| | | | | Total | 775.5 | £53,256 |

£73,082 — Currie & Brown

£0 — HLM + SMJ + Hinds

£0 — Buchan Austin

£0

£10,176 — URS Corporation

£0 — Wallace Whittle + Harley Haddow

SUMMARY OF TASKS AND ACTIONS TO BE COMPLETED AT STAGE: 4.0
Please refer to Section 2 of our submission

New South Glasgow Hospitals Project - Acute Services Strategy - Phase II
Lead Consultant and Technical Team Fee Proposal
ADULT ACUTE & CHILDREN'S HOSPITAL (See separate Fee Proposal for Laboratories)

6.7 LUMP SUM FEE SCHEDULE

STAGE 5 - Post Project Evaluation & Defects

| Start | Complete | Weeks |
|---|---|---|
| 29-Sep-14 | 25-Sep-15 | 52 |

RESOURCE SCHEDULE FOR ALL TEAM MEMBERS FOR THIS STAGE

| Name | Discipline | Grade | Rate/Hr | Hours | Total | | |
|---|---|---|---|---|---|---|---|
| Jim Hackett | Project Management | Senior Professional (1) | £143.19 | 15.6 | £2,234 | | |
| Douglas Ross | Commercial Manager | Principal | £170.65 | 0.0 | £0 | | |
| David Hill | Project Management | Senior Professional (1) | £143.19 | 15.6 | £2,234 | | |
| Mark Baird | Project Management | Senior Professional (1) | £143.19 | 15.6 | £2,234 | | |
| Alastair Stewart | Project Management | Senior Professional (1) | £143.19 | 0.0 | £0 | | |
| David Scott | Cost Management | Senior Professional (2) | £119.09 | 15.6 | £1,858 | | |
| Gary Stevenson | Cost Management | Senior Professional (1) | £143.19 | 0.0 | £0 | | |
| Colin Sunderland | Cost Management | Senior Professional (1) | £143.19 | 0.0 | £0 | | |
| Simon Miller | FM | Senior Professional (2) | £119.09 | 15.6 | £1,858 | | |
| Christine Allan | Transition Manager | Senior Professional (1) | £143.19 | 0.0 | £0 | | |
| Simon Miller | Life Cycle Costing | Senior Professional (2) | £119.09 | 15.6 | £1,858 | | |
| Ian Wyper | Risk Management | Senior Professional (1) | £143.19 | 15.6 | £2,234 | | |
| Paul Fairie | Project Management | Senior Professional (2) | £119.09 | 15.6 | £1,858 | | |
| David Speirs | Project Management | Professional | £90.64 | 0.0 | £0 | | |
| Not Used | CDM Co-ordinator | Senior Professional (2) | £119.09 | 0.0 | £0 | | |
| Avril Saunders | Transition Manager | Professional | £90.64 | 0.0 | £0 | | |
| Lynne Bradford | Document Manager | Senior Technician | £62.87 | 15.6 | £981 | £17,347 | Currie & Brown |
| Leslie Wilson | Director | Principal | £154.78 | 0.0 | £0 | | |
| Andrew Anderson | Associate | Senior Professional | £126.64 | 0.0 | £0 | | |
| Mary Smith | Associate | Senior Professional | £126.64 | 0.0 | £0 | | |
| Carole Crane | Healthcare Architect | Professional | £104.13 | 26.3 | £2,733 | | |
| Jo Dorling | Architectural Assistant | Senior Technician | | 0.0 | £0 | | |
| S Grierson Stuart | Director | Principal | £154.78 | 0.0 | £0 | | |
| S Scott/M Austin | Associate | Senior Professional | £126.64 | 0.0 | £0 | | |
| Robert Menzies | Architect | Senior Professional | £126.64 | 0.0 | £0 | | |
| Yvonne Wood | Architect | Professional | £104.13 | 11.3 | £1,171 | | |
| John Mains | Senior Technician | Senior Technician | £90.64 | 0.0 | £0 | | |
| Buro Happold | Fire Engineer | Senior Professional | £126.64 | 0.0 | £0 | | |
| Simon Hurst | Landscape Architect | Principal | £154.78 | 0.0 | £0 | | |
| Les Rice | Landscape Architect | Senior Professional | £126.64 | 0.0 | £0 | | |
| Harald Gilchrist | Landscape Architect | Senior Technician | £90.65 | 0.0 | £0 | | |
| Landscape Technician | Landscape Architect | Technician | £74.58 | 0.0 | £0 | £3,805 | HLM + BMJ + Hinds |
| Jim Buchan | Healthcare Planner | Principal | £225.14 | 0.0 | £0 | | |
| Narinder Sutherland | Healthcare Planner | Senior Professional (2) | £199.05 | 0.0 | £0 | | |
| Jim Hall | Healthcare Planner | Senior Professional (2) | £199.05 | 0.0 | £0 | | |
| Lynn Talbot | Healthcare Planner | Senior Professional (1) | £199.05 | 0.0 | £0 | | |
| Gerry Kennedy | Healthcare Planner | Senior Professional (1) | £175.89 | 0.0 | £0 | | |
| Alicia Kelly | Healthcare Planner | Senior Professional (1) | £175.89 | 0.0 | £0 | £0 | Buchan Assoc |
| John Thomson | Structural Engineer | Senior Professional (1) | £132.30 | 0.0 | £0 | | |
| Steve Harris | Structural Engineer | Senior Professional (2) | £101.89 | 0.0 | £0 | | |
| Andrew Lindsay | Civil Engineer | Senior Professional (2) | £101.89 | 0.0 | £0 | | |
| Iain Clow | Geotechnical Engineer | Senior Professional (2) | £101.89 | 0.0 | £0 | | |
| Chris Denton | Structural Engineer | Senior Professional (3) | £76.82 | 0.0 | £0 | | |
| Raymond Quinn | Civil Engineer | Senior Professional (3) | £76.82 | 0.0 | £0 | | |
| Ramsay Muirhead | Ground Engineer | Senior Professional (2) | £76.82 | 0.0 | £0 | | |
| Richard McCann | Structural Engineer | Professional (1) | £68.25 | 30.0 | £2,048 | | |
| Colin Sanders | Structural Engineer | Professional (2) | £64.02 | 0.0 | £0 | | |
| Hilary Guernsey | Ground Engineer | Professional (2) | £64.02 | 0.0 | £0 | | |
| Dominic Adams | Geotechnical Engineer | Professional (2) | £64.02 | 0.0 | £0 | | |
| Alan Brown | Structural CAD Technician | Senior Technician | £68.28 | 0.0 | £0 | | |
| Dougie Frame | Civil CAD Technician | Senior Technician | £68.28 | 0.0 | £0 | £2048 | |
| Jeff Murdoch | CDM Co-ordinator | Senior Professional (2) | £103.11 | 10.0 | £1,031 | | |
| Michael Glen | CDM Co-ordinator | Professional (1) | £64.79 | 35.0 | £2,268 | £5,347 | URS Corporation |
| John Bushfield | Director | Principal | £97.09 | 0.0 | £0 | | |
| Stewart McKechnie | Director | Principal | £97.09 | 0.0 | £0 | | |
| Allan McGill | Director | Principal | £97.09 | 0.0 | £0 | | |
| Kevin Mitchell | Associate | Senior Professional (1) | £81.61 | 0.0 | £0 | | |
| Brian Rutherford | Senior Engineer | Professional (2) | £63.32 | 20.0 | £1,266 | | |
| Gary Reger | Engineer | Professional (3) | £56.28 | 0.0 | £0 | | |
| Martin Lorimer | Graduate Engineer | Senior Technician | £49.25 | 0.0 | £0 | | |
| Jan McAuslan | Technician | Technician | £42.21 | 0.0 | £0 | | |
| Les Carrol | Associate | Senior Professional (1) | £81.61 | 0.0 | £0 | | |
| Craig Steptoe | Associate | Senior Professional (1) | £81.61 | 0.0 | £0 | | |
| Gary Meechan | Senior Engineer | Professional (2) | £63.32 | 17.5 | £1,109 | | |
| Mike Mackay | Engineer | Professional (3) | £56.28 | 0.0 | £0 | | |
| Alison Reid | Graduate Engineer | Senior Technician | £49.25 | 0.0 | £0 | | |
| David McMonagle | Senior Technician | Senior Technician | £49.25 | 0.0 | £0 | | |
| Neil Robson | Partner | Principal | £97.09 | 0.0 | £0 | | |
| Brian Murray | Associate | Senior Professional (1) | £81.61 | 0.0 | £0 | | |
| Damien Kane | Senior Engineer | Professional (2) | £63.32 | 0.0 | £0 | | |
| Jim Kelachan | Senior Engineer | Professional (2) | £63.32 | 0.0 | £0 | | |
| David Watt | Senior Technician | Senior Technician | £49.25 | 0.0 | £0 | | |
| Lilian Turner | Technician | Technician | £42.21 | 0.0 | £0 | £2,375 | Wallace Whittle + Haney Haddow |
| | | | | Total | 290.4 | £29,974 | |

SUMMARY OF TASKS AND ACTIONS TO BE COMPLETED AT STAGE: 5.0
Please refer to Section 2 of our submission

**New South Glasgow Hospitals Project - Acute Services Strategy - Phase II**
**Lead Consultant and Technical Team Fee Proposal**

**ADULT ACUTE & CHILDREN'S HOSPITAL (See separate Fee Proposal for Laboratories)**

**6.8 Time charge rates** **Summary for CURRIE & BROWN**

For those duties where fees are payable on a time charge basis, the rates referred to in Clause 4.5 of the Agreement shall be:

| | | | |
|---|---|---|---|
| a. principal (clause 4.5a): | | **£120.00** | per hour |
| b. professional and technical staff (clause 4.6): | | | |
| senior professional | | **£100.00** | per hour |
| professional | (1) | **£74.00** | per hour |
| | (2) | **£63.00** | per hour |
| senior technician | | **£63.00** | per hour |
| technician | (1) | **£53.00** | per hour |
| | (2) | **£48.00** | per hour |
| c additional category | | | |
| medical planner | (1) | **£168.00** | per hour |
| | (2) | **£142.00** | per hour |
| | (3) | **£132.00** | per hour |

Note: every category of the above as entered by the client, is to be completed by the consultant.

Teams are asked to regularise the hourly rates for each grade of staff, and ensure that all staff included within your fee proposal are allocated an appropriate grade as noted above and that this information is include within the team submission

**New South Glasgow Hospitals Project - Acute Services Strategy - Phase II**
**Lead Consultant and Technical Team Fee Proposal  Fee Draw Schedule**  **Summary for CURRIE & BROWN**

**ADULT ACUTE & CHILDREN'S HOSPITAL (See separate Fee Proposal for Laboratories)**

| Stage | Description | 2008 Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | 2009 Jan | Feb | Mar | Total Apr-Mar | C&B Financial Years Total Oct-Sep | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1A | Stage 1A - Preparation of Employer's Requirements Documentation (PQQ, OJEU, MOI and ER documentation) | | | | | | 178,683 | 178,683 | 178,683 | 178,683 | | | | 714,732 | 178,683 | |
| 1B | Stage 1B-D&B Stage 1 Design & Bid Development (3 to 1) | | | | | | | | | | 51,017 | 51,017 | 51,017 | 153,051 | | |
| 2.0 | Stage 2- D&B Stage 2 Design & Bid Development (GMP) | | | | | | | | | | | | | 0 | | |
| 3.0 | Stage 3 - Construction Phase | | | | | | | | | | | | | 0 | | |
| 4.0 | Stage 4 - Operational Commissioning & Equipping | | | | | | | | | | | | | 0 | | |
| 5.0 | Stage 5 - Post Project Evaluation and Defects | | | | | | | | | | | | | 0 | | |
| | Monthly Total | 0 | 0 | 0 | 0 | 0 | 178,683 | 178,683 | 178,683 | 178,683 | 51,017 | 51,017 | 51,017 | | | |
| | | | | | | | | | | | | | Annual 2008/09 Total | 867,783 | 178,683 | Total 2007/08 |

| Stage | Description | 2009 Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | 2010 Jan | Feb | Mar | Total Apr-Mar | Total Oct-Sep | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1A | Stage 1A - Preparation of Employer's Requirements Documentation (PQQ, OJEU, MOI and ER documentation) | | | | | | | | | | | | | 0 | 536,049 | |
| 1B | Stage 1B-D&B Stage 1 Design & Bid Development (3 to 1) | 51,017 | 51,017 | 51,017 | | | | | | | | | | 153,051 | 308,102 | |
| 2.0 | Stage 2 - D&B Stage 2 Design & Bid Development (GMP) | | | | 59,485 | 59,485 | 59,485 | 59,485 | 59,485 | 59,485 | 59,485 | 59,485 | 59,485 | 535,362 | 178,454 | |
| 3.0 | Stage 3 - Construction Phase | | | | | | | | | | | | | 0 | 0 | |
| 4.0 | Stage 4 - Operational Commissioning & Equipping | | | | | | | | | | | | | 0 | 0 | |
| 5.0 | Stage 5 - Post Project Evaluation and Defects | | | | | | | | | | | | | 0 | 0 | |
| | Monthly Total | 51,017 | 51,017 | 51,017 | 59,485 | 59,485 | 59,485 | 59,485 | 59,485 | 59,485 | 59,485 | 59,485 | 59,485 | | | |
| | | | | | | | | | | | | | Annual 2009/10 Total | 688,413 | 1,020,605 | Total 2008/09 |

| Stage | Description | 2010 Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | 2011 Jan | Feb | Mar | Total Apr-Mar | Total Oct-Sep | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1A | Stage 1A - Preparation of Employer's Requirements Documentation (PQQ, OJEU, MOI and ER documentation) | | | | | | | | | | | | | 0 | 0 | |
| 1B | Stage 1B-D&B Stage 1 Design & Bid Development (3 to 1) | | | | | | | | | | | | | 0 | 0 | |
| 2.0 | Stage 2 - D&B Stage 2 Design & Bid Development (GMP) | 59,485 | 59,485 | 59,485 | 59,485 | | | | | | | | | 237,939 | 594,847 | |
| 3.0 | Stage 3 - Construction Phase | | | | | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 78,404 | 19,601 | |
| 4.0 | Stage 4 - Operational Commissioning & Equipping | | | | | | | | | | | | | 0 | 0 | |
| 5.0 | Stage 5 - Post Project Evaluation and Defects | | | | | | | | | | | | | 0 | 0 | |
| | Monthly Total | 59,485 | 59,485 | 59,485 | 59,485 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | | | |
| | | | | | | | | | | | | | Annual 2010/11 Total | 316,343 | 614,448 | Total 2009/10 |

| Stage | Description | 2011 | | | | | | | | | 2012 | | | Total Apr-Mar | Total Oct-Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | | |
| 1A | Stage 1A - Preparation of Employer's Requirements Documentation (PQQ, OJEU, MCI and ER documentation) | | | | | | | | | | | | | 0 | 0 |
| 1B | Stage 1B-D&B Stage 1 Design & Bid Development (3 to 1) | | | | | | | | | | | | | 0 | 0 |
| 2.0 | Stage 2 - D&B Stage 2 Design & Bid Development (GMP) | | | | | | | | | | | | | 0 | 0 |
| 3.0 | Stage 3 - Construction Phase | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 117,606 | 117,606 |
| 4.0 | Stage 4 - Operational Commissioning & Equipping | | | | | | | | | | | | | 0 | 0 |
| 5.0 | Stage 5 - Post Project Evaluation and Defects | | | | | | | | | | | | | 0 | 0 |
| | | | | | | | | | | | | | | | 0 |
| | Monthly Total | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | | |
| | | | | | | | | | | | | | Annual 2011/12 Total | 117,606 | 117,606 |

Total 2010/11

| Stage | Description | 2012 | | | | | | | | | 2013 | | | Total Apr-Mar | Total Oct-Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | | |
| 1A | Stage 1A - Preparation of Employer's Requirements Documentation (PQQ, OJEU, MCI and ER documentation) | | | | | | | | | | | | | 0 | 0 |
| 1B | Stage 1B-D&B Stage 1 Design & Bid Development (3 to 1) | | | | | | | | | | | | | 0 | 0 |
| 2.0 | Stage 2 - D&B Stage 2 Design & Bid Development (GMP) | | | | | | | | | | | | | 0 | 0 |
| 3.0 | Stage 3 - Construction Phase | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 117,606 | 117,606 |
| 4.0 | Stage 4 - Operational Commissioning & Equipping | | | | | | | 2,602 | 2,602 | 2,602 | 2,602 | 2,602 | 2,602 | 15,611 | 0 |
| 5.0 | Stage 5 - Post Project Evaluation and Defects | | | | | | | | | | | | | 0 | 0 |
| | | | | | | | | | | | | | | | 0 |
| | Monthly Total | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 12,402 | 12,402 | 12,402 | 12,402 | 12,402 | 12,402 | | |
| | | | | | | | | | | | | | Annual 2012/13 Total | 133,217 | 117,606 |

Total 2011/12

| Stage | Description | 2013 | | | | | | | | | 2014 | | | Total Apr-Mar | Total Oct-Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | | |
| 1A | Stage 1A - Preparation of Employer's Requirements Documentation (PQQ, OJEU, MCI and ER documentation) | | | | | | | | | | | | | 0 | 0 |
| 1B | Stage 1B-D&B Stage 1 Design & Bid Development (3 to 1) | | | | | | | | | | | | | 0 | 0 |
| 2.0 | Stage 2 - D&B Stage 2 Design & Bid Development (GMP) | | | | | | | | | | | | | 0 | 0 |
| 3.0 | Stage 3 - Construction Phase | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 117,606 | 117,606 |
| 4.0 | Stage 4 - Operational Commissioning & Equipping | 2,602 | 2,602 | 2,602 | 2,602 | 2,602 | 2,602 | 2,602 | 2,602 | 2,602 | 2,602 | 2,602 | 2,602 | 31,222 | 31,222 |
| 5.0 | Stage 5 - Post Project Evaluation and Defects | | | | | | | | | | | | | 0 | 0 |
| | | | | | | | | | | | | | | | 0 |
| | Monthly Total | 12,402 | 12,402 | 12,402 | 12,402 | 12,402 | 12,402 | 12,402 | 12,402 | 12,402 | 12,402 | 12,402 | 12,402 | | |
| | | | | | | | | | | | | | Annual 2013/14 Total | 148,828 | 148,828 |

Total 2012/13

| Stage | Description | 2014 Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | 2015 Jan | Feb | Mar | Total Apr-Mar | Total Oct-Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1A | Stage 1A - Preparation of Employer's Requirements Documentation (PQQ, OJEU, MOI and ER documentation) | | | | | | | | | | | | | 0 | 0 |
| 1B | Stage 1B-D&B Stage 1 Design & Bid Development (3 to 1) | | | | | | | | | | | | | 0 | 0 |
| 2.0 | Stage 2 - D&B Stage 2 Design & Bid Development (GMP) | | | | | | | | | | | | | 0 | 58,803 |
| 3.0 | Stage 3 - Construction Phase | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | 9,801 | | | | | | | 58,803 | 74,414 |
| 4.0 | Stage 4 - Operational Commissioning & Equipping | 2,602 | 2,602 | 2,602 | 2,602 | 2,602 | 2,602 | 2,602 | 2,602 | 2,602 | 2,602 | 2,602 | 2,602 | 31,222 | 15,611 |
| 5.0 | Stage 5 - Post Project Evaluation and Defects | | | | | | | | | | | | | 0 | 0 |
| | | | | | | | | | | | | | | | 74,414 |
| | Monthly Total | 12,402 | 12,402 | 12,402 | 12,402 | 12,402 | 12,402 | 2,602 | 2,602 | 2,602 | 2,602 | 2,602 | 2,602 | | |
| | | | | | | | | | | | | | Annual 2014/15 Total | 90,025 | 148,828 Total 2013/14 |

| Stage | Description | 2015 Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | 2016 Jan | Feb | Mar | Total Apr-Mar | Total Oct-Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1A | Stage 1A - Preparation of Employer's Requirements Documentation (PQQ, OJEU, MOI and ER documentation) | | | | | | | | | | | | | 0 | 0 |
| 1B | Stage 1B-D&B Stage 1 Design & Bid Development (3 to 1) | | | | | | | | | | | | | 0 | 0 |
| 2.0 | Stage 2 - D&B Stage 2 Design & Bid Development (GMP) | | | | | | | | | | | | | 0 | 0 |
| 3.0 | Stage 3 - Construction Phase | | | | | | | | | | | | | 0 | 0 |
| 4.0 | Stage 4 - Operational Commissioning & Equipping | 2,602 | 2,602 | | | | | | | | | | | 5,204 | 20,815 |
| 5.0 | Stage 5 - Post Project Evaluation and Defects | | | | | | 28,974 | | | | | | | 28,974 | 28,974 |
| | | | | | | | | | | | | | | | 0 |
| | Monthly Total | 2,602 | 2,602 | 0 | 0 | 0 | 28,974 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | | | | | | | | | | | | Annual 2015/16 Total | 34,178 | 49,788 Total 2014/15 |

| Stage | Description | 2016 Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | 2017 Jan | Feb | Mar | Total Apr-Mar | Total Oct-Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1A | Stage 1A - Preparation of Employer's Requirements Documentation (PQQ, OJEU, MOI and ER documentation) | | | | | | | | | | | | | 0 | 0 |
| 1B | Stage 1B-D&B Stage 1 Design & Bid Development (3 to 1) | | | | | | | | | | | | | 0 | 0 |
| 2.0 | Stage 2 - D&B Stage 2 Design & Bid Development (GMP) | | | | | | | | | | | | | 0 | 0 |
| 3.0 | Stage 3 - Construction Phase | | | | | | | | | | | | | 0 | 0 |
| 4.0 | Stage 4 - Operational Commissioning & Equipping | | | | | | | | | | | | | 0 | 0 |
| 5.0 | Stage 5 - Post Project Evaluation and Defects | | | | | | | | | | | | | 0 | 0 |
| | | | | | | | | | | | | | | | 0 |
| | Monthly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | | | | | | | | | | | | Annual 2016/17 Total | 0 | 0 Total 2015/16 |
| | | | | | | | | | | | | | TOTAL FEE | 2,396,393 | 2,396,393 TOTAL FEE |

**New South Glasgow Hospitals Project - Acute Services Strategy - Phase II**
**Lead Consultant and Technical Team Fee Proposal**

**ADULT ACUTE & CHILDREN'S HOSPITAL (See separate Fee Proposal for Laboratories)**

**CURRIE & BROWN Grades & Rates**

| Inflation Rate | 5.00% |
|---|---|

| Grade | 2008/09 Rate/hr | 2009/10 Rate/hr | 2010/11 Rate/hr | 2011/12 Rate/hr | 2012/13 Rate/hr | 2013/14 Rate/hr | 2014/15 Rate/hr | 2015/16 Rate/hr | 2016/17 Rate/hr | Not Used Average Rate/hr |
|---|---|---|---|---|---|---|---|---|---|---|
| Principal | £121.28 | £127.34 | £133.71 | £140.39 | £147.41 | £154.78 | £162.52 | £170.65 | £179.18 | £148.58 |
| Senior Professional (1) | £101.76 | £106.85 | £112.19 | £117.80 | £123.69 | £129.88 | £136.37 | £143.19 | £150.35 | £124.67 |
| Senior Professional (2) | £84.63 | £88.87 | £93.31 | £97.97 | £102.87 | £108.02 | £113.42 | £119.09 | £125.04 | £103.69 |
| Professional | £64.42 | £67.64 | £71.02 | £74.57 | £78.30 | £82.21 | £86.33 | £90.64 | £95.17 | £78.92 |
| Senior Technician | £44.68 | £46.91 | £49.26 | £51.72 | £54.31 | £57.02 | £59.87 | £62.87 | £66.01 | £54.74 |
| Technician | £35.19 | £36.94 | £38.79 | £40.73 | £42.77 | £44.91 | £47.15 | £49.51 | £51.99 | £43.11 |

| Name | Discipline/Title | Grade | Total | |
|---|---|---|---|---|
| Jim Hackett | Project Management | Senior Professional (1) | £82,565 | PM |
| Douglas Ross | Commercial Manager | Principal | £22,465 | QS |
| David Hall | Project Management | Senior Professional (1) | £112,023 | PM |
| Mark Baird | Project Management | Senior Professional (1) | £85,876 | PM |
| Alastair Stewart | Project Management | Senior Professional (1) | £3,770 | PM |
| David Scott | Cost Management | Senior Professional (2) | £114,947 | QS |
| Gary Stevenson | Cost Management | Senior Professional (1) | £135,975 | QS |
| Colin Sunderland | Cost Management | Senior Professional (1) | £0 | QS |
| Simon Miller | FM | Senior Professional (2) | £17,519 | FM |
| Christine Allan | Transition Manager | Senior Professional (1) | £55,512 | Trans |
| Simon Miller | Life Cycle Costing | Senior Professional (2) | | LCC |
| Ian Wyper | Risk Management | Senior Professional (1) | £17,712 | Risk |
| Paul Fairie | Project Management | Senior Professional (2) | £52,205 | PM |
| David Speirs | Project Management | Professional | £38,321 | PM |
| Not Used | CDM Co-ordinator | Senior Professional (2) | £0 | CDM |
| Avril Saunders | Transition Manager | Professional | £17,570 | Trans |
| Lynne Bradford | Document Manager | Senior Technician | £38,740 | PM |

| Grade | Stage 3 Average Rate/hr |
|---|---|
| Principal | £147.76 |
| Snr P(1) | £123.99 |
| Snr P (2) | £103.12 |
| Prof | £78.49 |
| Snr Tech | £54.44 |
| Tech | £42.87 |

| Grade | Stage 4 Average Rate/hr |
|---|---|
| Principal | £158.65 |
| Snr P(1) | £133.12 |
| Snr P (2) | £110.72 |
| Prof | £84.27 |
| Snr Tech | £58.45 |
| Tech | £46.03 |

**Total C& B Fee** £795,200

**Total C&B Fee (check calc)** £812,719

**New South Glasgow Hospitals Project - Acute Services Strategy - Phase II**
**Lead Consultant and Technical Team Fee Proposal**

**ADULT ACUTE & CHILDREN'S HOSPITAL (See separate Fee Proposal for Laboratories)**

**HLM+BMJ+Hirsts Grades & Rates**

| Inflation Rate | 5.00% |
|---|---|

| Grade | 2008/09 Rate/hr | 2009/10 Rate/hr | 2010/11 Rate/hr | 2011/12 Rate/hr | 2012/13 Rate/hr | 2013/14 Rate/hr | 2014/15 Rate/hr | 2015/16 Rate/hr | 2016/17 Rate/hr | Not Used Average Rate/hr |
|---|---|---|---|---|---|---|---|---|---|---|
| Principal | £110.00 | £115.50 | £121.28 | £127.34 | £133.71 | £140.39 | £147.41 | £154.78 | £162.52 | £134.77 |
| Senior Professional | £90.00 | £94.50 | £99.23 | £104.19 | £109.40 | £114.87 | £120.61 | £126.64 | £132.97 | £110.27 |
| Professional | £74.00 | £77.70 | £81.59 | £85.65 | £89.95 | £94.44 | £99.17 | £104.13 | £109.33 | £90.66 |
| Senior Technician | £63.00 | £66.15 | £69.46 | £72.93 | £76.58 | £80.41 | £84.43 | £88.65 | £93.08 | £77.19 |
| Technician | £53.00 | £55.65 | £58.43 | £61.35 | £64.42 | £67.64 | £71.03 | £74.58 | £78.31 | £64.93 |

| Name | Discipline/Title | Grade | Total | | |
|---|---|---|---|---|---|
| Leslie Welch | Director | Principal | £5,850 | | |
| Andrew Anderson | Associate | Senior Professional | £79,719 | | |
| Harry Smith | Associate | Senior Professional | £66,486 | | |
| Carole Crane | Healthcare Architect | Professional | £106,037 | | |
| Jo Darling | Architectural Assistant | Senior Technician | £0 | £258,101 | HLM Total |
| S Grier/G Stuart | Director | Principal | £2,511 | | |
| S Scott/M Austin | Associate | Senior Professional | £25,871 | | |
| Robert Menzies | Architect | Senior Professional | £37,614 | | |
| Yvonne Wood | Architect | Professional | £45,444 | | |
| John Major | Senior Technician | Senior Technician | £15,678 | £127,118 | BMJ Total |
| Buro Happold | Fire Engineer | Senior Professional | £23,842 | £23,842 | Fire Eng Total |
| Simon Hurst | Landscape Architect | Principal | £2,976 | | |
| Les Rice | Landscape Architect | Senior Professional | | | |
| Ronald Gilchrist | Landscape Architect | Senior Technician | £890 | | |
| Landscape Technician | Landscape Architect | Technician | £5,626 | £9,457 | Hirst Total |

Total HLM+BMJ+Hirsts Fee £418,519 £418,519

Total HLM+BMJ+Hirsts Fee (check calc) £475,161

**New South Glasgow Hospitals Project - Acute Services Strategy - Phase II**
**Lead Consultant and Technical Team Fee Proposal**

**ADULT ACUTE & CHILDREN'S HOSPITAL (See separate Fee Proposal for Laboratories)**

**Buchan Associates Grades & Rates**

| Inflation Rate | 5.00% |
|---|---|

| Grade | 2008/09 Rate/hr | 2009/10 Rate/hr | 2010/11 Rate/hr | 2011/12 Rate/hr | 2012/13 Rate/hr | 2013/14 Rate/hr | 2014/15 Rate/hr | 2015/16 Rate/hr | 2016/176 Rate/hr | Not Used Average Rate/hr |
|---|---|---|---|---|---|---|---|---|---|---|
| Principal | £168.00 | £176.40 | £185.22 | £194.48 | £204.21 | £214.42 | £225.14 | £236.39 | £248.21 | £805.83 |
| Senior Professional (a) | £141.75 | £148.84 | £156.28 | £164.09 | £172.30 | £180.91 | £189.96 | £199.46 | £209.43 | £173.67 |
| Senior Professional (b) | £131.25 | £137.81 | £144.70 | £151.94 | £159.54 | £167.51 | £175.89 | £184.68 | £193.92 | £160.80 |

| Name | Discipline/Title | Grade | Total |
|---|---|---|---|
| Iain Buchan | Healthcare Planner | Principal | £91,254 |
| Norman Sutherland | Healthcare Planner | Senior Professional (a) | £161,311 |
| Jim Hatt | Healthcare Planner | Senior Professional (a) | £47,347 |
| Lynn Talbot | Healthcare Planner | Senior Professional (a) | £0 |
| Gerry Kennedy | Healthcare Planner | Senior Professional (b) | £102,398 |
| Maura Kelly | Healthcare Planner | Senior Professional (b) | £0 |

**Total Buchan Fee** £402,909

**Total Buchan Fee(check calc)** £402,909

**New South Glasgow Hospitals Project - Acute Services Strategy - Phase I**
**Lead Consultant and Technical Team Fee Proposal**

**ADULT ACUTE & CHILDREN'S HOSPITAL (See separate Fee Proposal for Laboratories)**

**URS Grades & Rates**

| Inflation Rate | 5.00% |
|---|---|

| Grade | 2008/09 Rate/hr | 2009/10 Rate/hr | 2010/11 Rate/hr | 2011/12 Rate/hr | 2012/13 Rate/hr | 2013/14 Rate/hr | 2014/15 Rate/hr | 2015/16 Rate/hr | 2016/17 Rate/hr | Not Used Average Rate/hr |
|---|---|---|---|---|---|---|---|---|---|---|
| Senior Professional (1) | £95.15 | £99.91 | £104.90 | £110.15 | £115.66 | £121.44 | £127.51 | £133.89 | £140.58 | £116.58 |
| Senior Professional (2) | £73.28 | £76.94 | £80.79 | £84.83 | £89.07 | £93.53 | £98.20 | £103.11 | £108.27 | £89.78 |
| Senior Professional (3) | £55.25 | £58.01 | £60.91 | £63.96 | £67.16 | £70.51 | £74.04 | £77.74 | £81.63 | £67.69 |
| Professional (1) | £49.11 | £51.57 | £54.14 | £56.85 | £59.69 | £62.68 | £65.81 | £69.10 | £72.56 | £60.17 |
| Professional (2) | £46.04 | £48.34 | £50.76 | £53.30 | £55.96 | £58.76 | £61.70 | £64.78 | £68.02 | £56.41 |
| Senior Technician | £49.11 | £51.57 | £54.14 | £56.85 | £59.69 | £62.68 | £65.81 | £69.10 | £72.56 | £60.17 |

| Name | Discipline/Title | Grade | Total | | | | |
|---|---|---|---|---|---|---|---|
| John Thomson | Structural Engineer | Senior Professional (1) | £59,573 | Eng | | | |
| Steve Harris | Structural Engineer | Senior Professional (2) | £49,695 | Eng | | | |
| Andrew Lindsay | Civil Engineer | Senior Professional (2) | £39,289 | Eng | | | |
| Iain Clow | Geotechnical Engineer | Senior Professional (2) | £31,075 | Eng | | | |
| Chris Denton | Structural Engineer | Senior Professional (3) | £16,468 | Eng | | | |
| Raymond Quinn | Civil Engineer | Senior Professional (3) | £17,288 | Eng | | | |
| Ramsay Muirhead | Ground Engineer | Senior Professional (3) | £10,065 | Eng | | | |
| Richard McColm | Structural Engineer | Professional (1) | £15,247 | Eng | | | |
| Colin Sanders | Structural Engineer | Professional (2) | £5,815 | Eng | | | |
| Hilary Guernsey | Ground Engineer | Professional (2) | £6,351 | Eng | | | |
| Dominic Adams | Geotechnical Engineer | Professional (2) | £2,684 | Eng | | | |
| Allan Brown | Structural CAD Technician | Senior Technician | | Eng | | | |
| Dougie Frame | Civil CAD Technician | Senior Technician | £7,201 | Eng | £260,752 | Eng Total | |
| Jeff Murdoch | CDM Co-ordinator | Senior Professional (2) | £55,053 | CDM | | | |
| Michael Glen | CDM Co-ordinator | Professional (1) | £64,373 | CDM | £119,427 | CDM Total | |
| | | | | | | | £268,922 |
| | | | | | | | £119,427 |
| | | Total URS Fee | £380,178 | | £380,178 | Total URS Fee (check calc) | £388,349 |

**New South Glasgow Hospitals Project - Acute Services Strategy - Phase II**
**Lead Consultant and Technical Team Fee Proposal**

**ADULT ACUTE & CHILDREN'S HOSPITAL (See separate Fee Proposal for Laboratories)**

**Wallace Whittle + Harley Haddow Grades & Rates**

| Inflation Rate | 5.00% |
|---|---|

| Grade | 2008/09 Rate/hr | 2009/10 Rate/hr | 2010/11 Rate/hr | 2011/12 Rate/hr | 2012/13 Rate/hr | 2013/14 Rate/hr | 2014/15 Rate/hr | 2015/16 Rate/hr | Not Used Average Rate/hr |
|---|---|---|---|---|---|---|---|---|---|
| Principal | £72.45 | £76.07 | £79.88 | £83.87 | £88.06 | £92.47 | £97.09 | £101.94 | £86.48 |
| Senior Professional (1) | £60.90 | £63.95 | £67.14 | £70.50 | £74.02 | £77.73 | £81.61 | £85.69 | £72.69 |
| Professional (2) | £47.25 | £49.61 | £52.09 | £54.70 | £57.43 | £60.30 | £63.32 | £66.49 | £56.40 |
| Professional (3) | £42.00 | £44.10 | £46.31 | £48.62 | £51.05 | £53.60 | £56.28 | £59.10 | £50.13 |
| Senior Technician | £36.75 | £38.59 | £40.52 | £42.54 | £44.67 | £46.90 | £49.25 | £51.71 | £43.87 |
| Technician | £31.50 | £33.08 | £34.73 | £36.47 | £38.29 | £40.20 | £42.21 | £44.32 | £37.60 |

| Name | Discipline/Title | Grade | Total |
|---|---|---|---|
| John Bushfield | Director | Principal | £3,407 |
| Stewart McKechnie | Director | Principal | £3,407 |
| Allan McGill | Director | Principal | £717 |
| Kevin Mitchell | Associate | Senior Professional (1) | £89,336 |
| Brian Rutherford | Senior Engineer | Professional (2) | £66,577 |
| Gary Roger | Engineer | Professional (3) | £4,921 |
| Martin Lorimer | Graduate Engineer | Senior Technician | £27,454 |
| Jan McAuslan | Technician | Technician | £1,030 |
| Les Carrol | Associate | Senior Professional (1) | £20,636 |
| Craig Slessor | Associate | Senior Professional (1) | £20,573 |
| Gary Meechan | Senior Engineer | Professional (2) | £50,285 |
| Mike Mackay | Engineer | Professional (3) | |
| Alison Reid | Graduate Engineer | Senior Technician | £4,658 |
| David McMonagle | Senior Technician | Senior Technician | £22,303 |
| Neil Robson | Partner | Principal | £0 |
| Brian Murray | Associate | Senior Professional (1) | £0 |
| Damien Kane | Senior Engineer | Professional (2) | £0 |
| Jim Kellachan | Senior Engineer | Professional (2) | £0 |
| David Watt | Senior Technician | Senior Technician | £0 |
| Lilian Turner | Technician | Technician | £0 |

**Total Wallace Whittle + Harley Haddow Fee** £315,305

**Total Wallace Whittle + HH Fee (check calc)** £317,254

**New South Glasgow Hospitals Project - Acute Services Strategy - Phase II**
**Lead Consultant and Technical Team Fee Proposal**

**ADULT ACUTE & CHILDREN'S HOSPITAL (See separate Fee Proposal for Laboratories)**

**Summary for CURRIE & BROWN**

| | C&B | HLM/BMJ/ HIRSTS | Buchan | URS | URS CDM | WW+HH | Total |
|---|---|---|---|---|---|---|---|
| Fee | 812,719 | 475,161 | 402,909 | 268,922 | 119,427 | 317,254 | 2,396,393 |
| Check calc | 795,200 | 418,519 | 402,909 | 260,752 | 119,427 | 315,305 | 2,312,112 |
| % | 34% | 20% | 17% | 11% | 5% | 13% | 100% |

| | C & B PM & Support | C & B QS | C & B FM | C & B LCC | C & B Risk Man. | C & B Trans Man. | HLM/BMJ/ HIRSTS | Buchan | URS | URS CDM | WW+HH | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fee | 413,500 | 273,387 | 17,519 | 0 | 17,712 | 73,082 | 418,519 | 402,909 | 260,752 | 119,427 | 315,305 | 2,312,112 |
| Check calc | 413,500 | 273,387 | 17,519 | 0 | 17,712 | 73,082 | 475,161 | 402,909 | 268,922 | 119,427 | 317,254 | 2,378,874 |
| % | 18% | 12% | 1% | 0% | 1% | 3% | 18% | 17% | 11% | 5% | 14% | 100% |

**LABORATORIES**

**FEE SUMMARY**

New South Glasgow Hospitals Project - Acute Services Strategy - Phase II
Lead Consultant and Technical Team Fee Proposal

LABORATORIES (See separate Fee Proposal for Adult Acute & Children's Hospitals)

6.5 Apportionment of Fee Stage

Summary for CURRIE & BROWN

Assumed Start Date of Commission = 1st September 2008

| Stage | Description | Start | Complete | Weeks | Lump Sum Fees ex VAT (incl. Expenses and inflation) | Hours |
|---|---|---|---|---|---|---|
| 1A | Preparation of Employers Requirements Documentation (Preparation of PQQ, OJEU, MOI and Employers Requirements documentation and full Stage 1B tender and contract information, PSC design development) | 1-Sep-08 | 2-Jan-09 | 18 | £101,738 | 1,430 |
| 1B | Design and Bid Development (Issue of ER's design and bid proposals to bidders, tender period, including evaluation and selection of contractor | 5-Jan-09 | 26-Jun-09 | 26 | £42,109 | 502 |
| 2 | THIS STAGE IS NOT APPLICABLE TO THE LABORATORIES | | | | | |
| 3 | Stage Three - Construction Phase (Implementation and Construction with continued design development) | 29-Jun-09 | 1-Oct-10 | 66 | £131,394 | 1,666 |
| 4 | Stage Four - Operational commissioning and equipping | 5-Jul-10 | 26-Nov-10 | 21 | £15,837 | 172 |
| 5 | Stage Five - Post Project Evaluation and Defects | 4-Oct-10 | 7-Oct-11 | 52 | £20,935 | 230 |
| | | | | Total | £312,014 | 4,000 |

New South Glasgow Hospitals Project - Acute Services Strategy - Phase II
Lead Consultant and Technical Team Fee Proposal
LABORATORIES (See separate Fee Proposal for Adult Acute & Children's Hospitals)

**6.7 LUMP SUM FEE SCHEDULE**

**STAGE 1A - Preparation of Employers Requirements Documentation**

| Start | Complete | Weeks |
|---|---|---|
| 1-Sep-08 | 2-Jan-09 | 18 |

**RESOURCE SCHEDULE FOR ALL TEAM MEMBERS FOR THIS STAGE**

| Name | Discipline | Grade | Rate/hr | Hours | Total |
|---|---|---|---|---|---|
| Jim Hackett | Project Management | Senior Professional (1) | £101.76 | 0.0 | £0 |
| Douglas Ross | Commercial Manager | Principal | £121.28 | 0.0 | £0 |
| David Hall | Project Management | Senior Professional (1) | £101.76 | 0.0 | £0 |
| Mark Baird | Project Management | Senior Professional (1) | £101.76 | 0.0 | £0 |
| Alastair Stewart | Project Management | Senior Professional (1) | £101.76 | 0.0 | £0 |
| David Scott | Cost Management | Senior Professional (2) | £84.63 | 0.0 | £0 |
| Gary Stevenson | Cost Management | Senior Professional (1) | £101.76 | 0.0 | £0 |
| Colin Sunderland | Cost Management | Senior Professional (1) | £101.76 | 202.5 | £20,607 |
| Simon Miller | FM | Senior Professional (2) | £84.63 | 0.0 | £0 |
| Christine Allan | Transition Manager | Senior Professional (1) | £101.76 | 0.0 | £0 |
| Simon Miller | Life Cycle Costing | Senior Professional (2) | £84.63 | 0.0 | £0 |
| Ian Wyper | Risk Management | Senior Professional (1) | £101.76 | 0.0 | £0 |
| Paul Farrie | Project Management | Senior Professional (2) | £84.63 | 0.0 | £0 |
| David Speirs | Project Management | Professional | £64.42 | 0.0 | £0 |
| Not Used | CDM Co-ordinator | Senior Professional (2) | £84.63 | 0.0 | £0 |
| Avril Saunders | Transition Manager | Professional | £64.42 | 0.0 | £0 |
| Lynne Bradford | Document Manager | Senior Technician | £44.68 | 0.0 | £0 |
| Leslie Welch | Director | Principal | £110.00 | 0.0 | £0 |
| Andrew Anderson | Associate | Senior Professional | £90.00 | 0.0 | £0 |
| Harry Smith | Associate | Senior Professional | £90.00 | 0.0 | £0 |
| Carole Crane | Healthcare Architect | Professional | £74.00 | 0.0 | £0 |
| Jo Dorling | Architectural Assistant | Senior Technician | £53.00 | 0.0 | £0 |
| S Galen/G Stuart | Director | Principal | £110.00 | 97.0 | £10,670 |
| S Scott/M Austin | Associate | Senior Professional | £90.00 | 199.5 | £17,955 |
| Robert Mercuris | Architect | Senior Professional | £90.00 | 0.0 | £0 |
| Yvonne Wood | Architect | Professional | £74.00 | 54.0 | £3,996 |
| John Major | Senior Technician | Senior Technician | £53.00 | 188.0 | £11,844 |
| Simon Hurst | Landscape Architect | Principal | £110.00 | 0.0 | £0 |
| Les Rice | Landscape Architect | Senior Professional | £90.00 | 0.0 | £0 |
| Ronald Gilchrist | Landscape Architect | Senior Technician | £53.00 | 0.0 | £0 |
| Ian Buchan | Healthcare Planner | Principal | £110.00 | 0.0 | £0 |
| Lynn Talbot | Healthcare Planner | Senior Professional (3) | £130.00 | 0.0 | £0 |
| Merle Odlum | Healthcare Planner | Senior Professional (3) | £130.00 | 0.0 | £0 |
| Sue Kinsella | Healthcare Planner | Senior Professional (3) | £112.00 | 0.0 | £0 |
| Gerry Kennedy | Healthcare Planner | Senior Professional (3) | £112.00 | 0.0 | £0 |
| Moira Kelly | Healthcare Planner | Senior Professional (3) | £112.00 | 0.0 | £0 |
| John Thomson | Structural Engineer | Senior Professional (1) | £95.15 | 5.0 | £476 |
| Steve Harris | Structural Engineer | Senior Professional (2) | £73.28 | 10.0 | £733 |
| Andrew Lindsay | Civil Engineer | Senior Professional (2) | £73.28 | 5.0 | £366 |
| Ian Clow | Geotechnical Engineer | Senior Professional (2) | £73.28 | 0.0 | £0 |
| Chris Denton | Structural Engineer | Senior Professional (3) | £55.25 | 20.0 | £1,105 |
| Raymond Quinn | Civil Engineer | Senior Professional (3) | £55.25 | 15.0 | £829 |
| Ramsay Muirhead | Ground Engineer | Senior Professional (3) | £55.25 | 10.0 | £553 |
| Richard McColm | Structural Engineer | Professional (1) | £49.11 | 10.0 | £491 |
| Colin Sanders | Structural Engineer | Professional (2) | £46.04 | 10.0 | £460 |
| Hilary Guernsey | Ground Engineer | Professional (2) | £46.04 | 10.0 | £460 |
| Dominic Adams | Geotechnical Engineer | Professional (2) | £46.04 | 10.0 | £460 |
| Allan Brown | Structural CAD Technician | Senior Technician | £49.11 | 0.0 | £0 |
| Dougie Frame | Civil CAD Technician | Senior Technician | £49.11 | 0.0 | £0 |
| Jeff Murdoch | CDM Co-ordinator | Senior Professional (2) | £73.28 | 20.0 | £1,466 |
| Michael Glenn | CDM Co-ordinator | Professional (1) | £43.85 | 30.0 | £1,316 |
| John Bushfield | Director | Principal | £72.45 | 0.0 | £0 |
| Stewart McKechnie | Director | Principal | £72.45 | 0.0 | £0 |
| Allan McGill | Director | Principal | £72.45 | 0.0 | £0 |
| Kevin Mitchell | Associate | Senior Professional (1) | £60.90 | 0.0 | £0 |
| Brian Rutherford | Senior Engineer | Professional (2) | £47.25 | 0.0 | £0 |
| Gary Roger | Engineer | Professional (3) | £42.00 | 0.0 | £0 |
| Martin Lorimer | Graduate Engineer | Senior Technician | £36.75 | 0.0 | £0 |
| Jan McAuslan | Technician | Technician | £31.50 | 0.0 | £0 |
| Les Carroll | Associate | Senior Professional (1) | £60.90 | 0.0 | £0 |
| Craig Stessor | Associate | Senior Professional (1) | £60.90 | 0.0 | £0 |
| Gary Meechan | Senior Engineer | Professional (2) | £47.25 | 0.0 | £0 |
| Mike Mackay | Engineer | Professional (3) | £42.00 | 0.0 | £0 |
| Alison Reid | Graduate Engineer | Senior Technician | £36.75 | 0.0 | £0 |
| David McMonagle | Senior Technician | Senior Technician | £36.75 | 0.0 | £0 |
| Neil Robson | Partner | Principal | £72.45 | 12.0 | £869 |
| Scott Andrew | Technical Director | Senior Professional (1) | £60.90 | 271.0 | £16,504 |
| Jim Kellachan | Senior Engineer | Professional (2) | £47.25 | 129.0 | £6,095 |
| John Thomson | Senior Engineer | Professional (2) | £47.25 | 0.0 | £0 |
| Derrick Mackisn | Senior Technician | Senior Technician | £36.75 | 122.0 | £4,484 |
| Jennifer Allan | Technician | Technician | £31.50 | 0.0 | £0 |
| | | | Total | 1430.0 | £101,738 |

£20,607 — Currie & Brown

£44,466 — HLM + BMJ + Hinds

£0 — Buchan Assoc

£5,934

£6,715 — URS Corporation

£27,952 — Wallace Whittle + Harley Haddow

**SUMMARY OF TASKS AND ACTIONS TO BE COMPLETED AT STAGE: 1A**

Please refer to Section 2 of our submission

New South Glasgow Hospitals Project - Acute Services Strategy - Phase II

Lead Consultant and Technical Team Fee Proposal

LABORATORIES (See separate Fee Proposal for Adult Acute & Children's Hospitals)

8.7 LUMP SUM FEE SCHEDULE

STAGE 1B - D&B Design & Bid Development, tender and selection

| Start | Complete | Weeks |
|---|---|---|
| 5-Jan-09 | 26-Jun-09 | 25 |

RESOURCE SCHEDULE FOR ALL TEAM MEMBERS FOR THIS STAGE

| Name | Discipline | Grade | Rate/hr | Hours | Total | |
|---|---|---|---|---|---|---|
| Jim Hackett | Project Management | Senior Professional (1) | £108.65 | 0.0 | £0 | |
| Douglas Ross | Commercial Manager | Principal | £127.84 | 0.0 | £0 | |
| David Hall | Project Management | Senior Professional (1) | £108.65 | 0.0 | £0 | |
| Mark Baird | Project Management | Senior Professional (1) | £108.65 | 0.0 | £0 | |
| Alastair Stewart | Project Management | Senior Professional (1) | £108.65 | 0.0 | £0 | |
| David Scott | Cost Management | Senior Professional (2) | £88.87 | 0.0 | £0 | |
| Gary Stevenson | Cost Management | Senior Professional (1) | £108.65 | 0.0 | £0 | |
| Colin Sunderland | Cost Management | Senior Professional (1) | £108.65 | 97.5 | £10,418 | |
| Simon Miller | FM | Senior Professional (2) | £88.87 | 0.0 | £0 | |
| Christine Allan | Transition Manager | Senior Professional (1) | £108.65 | 0.0 | £0 | |
| Simon Miller | Life Cycle Costing | Senior Professional (2) | £88.87 | 0.0 | £0 | |
| Ian Wyper | Risk Management | Senior Professional (1) | £108.65 | 0.0 | £0 | |
| Paul Fairlie | Project Management | Senior Professional (2) | £88.87 | 0.0 | £0 | |
| David Speirs | Project Management | Professional | £87.84 | 0.0 | £0 | |
| Not Used | CDM Co-ordinator | Senior Professional (2) | £88.87 | 0.0 | £0 | |
| Avril Saunders | Transition Manager | Professional | £87.84 | 0.0 | £0 | £10,418 Currie & Brown |
| Lynne Bradford | Document Manager | Senior Technician | £48.91 | 0.0 | £0 | |
| Leslie Welsh | Director | Principal | £116.60 | 0.0 | £0 | |
| Andrew Anderson | Associate | Senior Professional | £94.50 | 0.0 | £0 | |
| Harry Smith | Associate | Senior Professional | £94.50 | 0.0 | £0 | |
| Carole Crane | Healthcare Architect | Professional | £77.70 | 0.0 | £0 | |
| Jo Darling | Architectural Assistant | Senior Technician | £66.15 | 0.0 | £0 | |
| S Grant Stuart | Director | Principal | £116.60 | 0.0 | £0 | |
| S Smith Austin | Associate | Senior Professional | £94.50 | 161.5 | £15,451 | |
| Robert Menzies | Architect | Senior Professional | £94.50 | 0.0 | £0 | |
| Yvonne Wood | Architect | Professional | £77.70 | 0.0 | £0 | |
| John Major | Senior Technician | Senior Technician | £66.15 | 0.0 | £0 | |
| Simon Hurst | Landscape Architect | Principal | £116.60 | 0.0 | £0 | |
| Lee Rice | Landscape Architect | Senior Professional | £94.50 | 33.0 | £3,119 | |
| Ronald Gilchrist | Landscape Architect | Senior Technician | £66.15 | 0.0 | £0 | £19,992 HLM + BMJ + Hoss |
| Ida Duthie | Healthcare Planner | Principal | £134.60 | 0.0 | £0 | |
| Lynn Talbot | Healthcare Planner | Senior Professional (a) | £123.60 | 0.0 | £0 | |
| Sheila Dillon | Healthcare Planner | Senior Professional (a) | £123.60 | 0.0 | £0 | |
| Sue Knight | Healthcare Planner | Senior Professional (b) | £116.36 | 0.0 | £0 | |
| Gerry Kennedy | Healthcare Planner | Senior Professional (b) | £116.36 | 0.0 | £0 | |
| Moira Kelly | Healthcare Planner | Senior Professional (b) | £116.36 | 0.0 | £0 | £8 Burbo Allen |
| John Thomson | Structural Engineer | Senior Professional (1) | £99.91 | 0.0 | £0 | |
| Steve Harris | Structural Engineer | Senior Professional (2) | £78.94 | 43.0 | £3,308 | |
| Andrew Lindsay | Civil Engineer | Senior Professional (2) | £78.94 | 10.0 | £789 | |
| Ian Clow | Geotechnical Engineer | Senior Professional (2) | £78.94 | 0.0 | £0 | |
| Chris Denton | Structural Engineer | Senior Professional (3) | £58.01 | 0.0 | £0 | |
| Raymond Quinn | Civil Engineer | Senior Professional (3) | £58.01 | 0.0 | £0 | |
| Ramsay Muirhead | Ground Engineer | Senior Professional (3) | £58.01 | 0.0 | £0 | |
| Richard McCann | Structural Engineer | Professional (1) | £51.56 | 0.0 | £0 | |
| Colin Sanders | Structural Engineer | Professional (2) | £48.94 | 0.0 | £0 | |
| Hilary Guernsey | Ground Engineer | Professional (2) | £48.94 | 0.0 | £0 | |
| Dominic Adams | Geotechnical Engineer | Professional (2) | £48.94 | 0.0 | £0 | |
| Allan Brown | Structural CAD Technician | Senior Technician | £51.56 | 0.0 | £0 | |
| Doug's Frame | Civil CAD Technician | Senior Technician | £51.56 | 0.0 | £0 | £4,078 |
| Jeff Murdoch | CDM Co-ordinator | Senior Professional (2) | £78.94 | 20.0 | £1,539 | |
| Michael Glenn | CDM Co-ordinator | Professional (1) | £48.94 | 25.0 | £1,200 | £6,825 URS Corporation |
| John Bushfield | Director | Principal | £76.07 | 0.0 | £0 | |
| Stewart McKechnie | Director | Principal | £76.07 | 0.0 | £0 | |
| Allan McGill | Director | Principal | £76.07 | 0.0 | £0 | |
| Kevin Mitchell | Associate | Senior Professional (1) | £80.95 | 0.0 | £0 | |
| Brian Rutherford | Senior Engineer | Professional (2) | £48.81 | 0.0 | £0 | |
| Gary Regan | Engineer | Professional (3) | £44.10 | 0.0 | £0 | |
| Martin Lorimer | Graduate Engineer | Senior Technician | £36.59 | 0.0 | £0 | |
| Jim McAuslan | Technician | Technician | £33.06 | 0.0 | £0 | |
| Les Carroll | Associate | Senior Professional (1) | £80.95 | 0.0 | £0 | |
| Craig Eleanor | Associate | Senior Professional (1) | £80.95 | 0.0 | £0 | |
| Gary Meechan | Senior Engineer | Professional (2) | £48.81 | 0.0 | £0 | |
| Mike Mackay | Engineer | Professional (3) | £44.10 | 0.0 | £0 | |
| Alison Reid | Graduate Engineer | Senior Technician | £36.59 | 0.0 | £0 | |
| David McMonagle | Senior Technician | Senior Technician | £36.59 | 0.0 | £0 | |
| Neil Robson | Partner | Principal | £76.07 | 0.0 | £0 | |
| Brett Andrew | Technical Director | Senior Professional (1) | £80.95 | 82.0 | £3,066 | |
| Jim Kellachan | Senior Engineer | Professional (2) | £48.81 | 46.0 | £2,233 | |
| John Thomson | Senior Engineer | Professional (2) | £48.81 | 0.0 | £0 | |
| Derrick Mathieson | Senior Technician | Senior Technician | £36.59 | 0.0 | £0 | |
| Jennifer Allan | Technician | Technician | £33.06 | 8.0 | £99 | £8,268 Wallace Whittle + Harley Haddow |
| | | | | Total | 502.0 | £42,109 |

SUMMARY OF TASKS AND ACTIONS TO BE COMPLETED AT STAGE 1B

Please refer to Section 2 of our submission

New South Glasgow Hospitals Project - Acute Services Strategy - Phase II
Lead Consultant and Technical Team Fee Proposal
LABORATORIES (See separate Fee Proposal for Adult Acute & Children's Hospitals)

6.7 LUMP SUM FEE SCHEDULE

STAGE 2 - THIS STAGE IS NOT APPLICABLE TO THE LABORATORIES

| Start | Complete | Weeks |
|---|---|---|
| | | |

RESOURCE SCHEDULE FOR ALL TEAM MEMBERS FOR THIS STAGE

| Name | Discipline | Grade | Rate/hr | Hours | Total | % of Time | |
|---|---|---|---|---|---|---|---|
| Jim Hackett | Project Management | Senior Professional (1) | | | | | |
| Douglas Ross | Commercial Manager | Principal | | | | | |
| David Hall | Project Management | Senior Professional (1) | | | | | |
| Mark Baird | Project Management | Senior Professional (1) | | | | | |
| Alastair Stewart | Project Management | Senior Professional (1) | | | | | |
| David Scott | Cost Management | Senior Professional (2) | | | | | |
| Gary Stevenson | Cost Management | Senior Professional (1) | | | | | |
| Colin Sunderland | Cost Management | Senior Professional (1) | | | | | |
| Simon Miller | FM | Senior Professional (2) | | | | | |
| Christine Allan | Transition Manager | Senior Professional (1) | | | | | |
| Simon Miller | Life Cycle Costing | Senior Professional (2) | | | | | |
| Ian Wyper | Risk Management | Senior Professional (1) | | | | | |
| Paul Fairs | Project Management | Senior Professional (2) | | | | | |
| David Sparks | Project Management | Professional | | | | | |
| Not Used | CDM Co-ordinator | Senior Professional (2) | | | | | |
| Avril Saunders | Transition Manager | Professional | | | | | |
| Lynne Bradford | Document Manager | Senior Technician | | | | 50 | Currie & Brown |
| Leslie Welch | Director | Principal | | | | | |
| Andrew Anderson | Associate | Senior Professional | | | | | |
| Henry Smith | Associate | Senior Professional | | | | | |
| Carola Crone | Healthcare Architect | Professional | | | | | |
| Jo Darling | Architectural Assistant | Senior Technician | | | | | |
| S Gilford Stuart | Director | Principal | | | | | |
| S Scott-M Austin | Associate | Senior Professional | | | | | |
| Robert Menzies | Architect | Senior Professional | | | | | |
| Yvonne Wood | Architect | Professional | | | | | |
| John Major | Senior Technician | Senior Technician | | | | | |
| Simon Hurst | Landscape Architect | Principal | | | | | |
| Les Rice | Landscape Architect | Senior Professional | | | | | |
| Ronald Gilchrist | Landscape Architect | Senior Technician | | | | 50 | HLM + B&I + Hints |
| Iain Buchan | Healthcare Planner | Principal | | | | | |
| Lynn Talbot | Healthcare Planner | Senior Professional (a) | | | | | |
| Made Ogbuu | Healthcare Planner | Senior Professional (a) | | | | | |
| Sue Knight | Healthcare Planner | Senior Professional (b) | | | | | |
| Gary Kennedy | Healthcare Planner | Senior Professional (b) | | | | | |
| Maura Kelly | Healthcare Planner | Senior Professional (b) | | | | 50 | Bonhes Assoc |
| John Thomson | Structural Engineer | Senior Professional (1) | | | | | |
| Steve Harris | Structural Engineer | Senior Professional (2) | | | | | |
| Andrew Lindsay | Civil Engineer | Senior Professional (2) | | | | | |
| Iain Clow | Geotechnical Engineer | Senior Professional (2) | | | | | |
| Chris Denton | Structural Engineer | Senior Professional (3) | | | | | |
| Raymond Quinn | Civil Engineer | Senior Professional (3) | | | | | |
| Ramsay Muirhead | Ground Engineer | Senior Professional (3) | | | | | |
| Richard McCann | Structural Engineer | Professional (1) | | | | | |
| Colin Sanders | Structural Engineer | Professional (2) | | | | | |
| Hilary Guernsey | Ground Engineer | Professional (2) | | | | | |
| Dominic Adams | Geotechnical Engineer | Professional (2) | | | | | |
| Allan Brown | Structural CAD Technician | Senior Technician | | | | | |
| Dougie Fisma | Civil CAD Technician | Senior Technician | | | | | |
| Jeff Murdoch | CDM Co-ordinator | Senior Professional (2) | | | | | |
| Michael Glenn | CDM Co-ordinator | Professional (1) | | | | 50 | URS Corporation |
| John Bousfield | Director | Principal | | | | | |
| Stewart McKendrick | Director | Principal | | | | | |
| Allan McGill | Director | Principal | | | | | |
| Kevin Mitchell | Associate | Senior Professional (1) | | | | | |
| Brian Rutherford | Senior Engineer | Professional (2) | | | | | |
| Gary Roger | Engineer | Professional (3) | | | | | |
| Martin Lorimer | Graduate Engineer | Senior Technician | | | | | |
| Jan McAuliah | Technician | Technician | | | | | |
| Les Carrol | Associate | Senior Professional (1) | | | | | |
| Craig Bisset | Associate | Senior Professional (1) | | | | | |
| Gary Meechan | Senior Engineer | Professional (2) | | | | | |
| Mike Mackay | Engineer | Professional (3) | | | | | |
| Alison Reid | Graduate Engineer | Senior Technician | | | | | |
| David McKonagle | Senior Technician | Senior Technician | | | | | |
| Neil Robson | Partner | Principal | | | | | |
| Scott Andrew | Technical Director | Senior Professional (1) | | | | | |
| Jim Kellachen | Senior Engineer | Professional (2) | | | | | |
| John Thomson | Senior Engineer | Professional (2) | | | | | |
| Derrick MacNab | Senior Technician | Senior Technician | | | | | |
| Jennifer Allen | Technician | Technician | | | | 50 | Wallace White + Harley Haddow |
| | | | Total | 0.0 | £0 | | |

SUMMARY OF TASKS AND ACTIONS TO BE COMPLETED AT STAGE: 2.0

Please refer to Section 2 of our submission

New South Glasgow Hospitals Project - Acute Services Strategy - Phase II

Lead Consultant and Technical Team Fee Proposal

LABORATORIES (See separate Fee Proposal for Adult Acute & Children's Hospitals)

8.7 LUMP SUM FEE SCHEDULE

STAGE 5 - Construction Phase

| Start | Complete | Weeks |
|---|---|---|
| 20-Jun-09 | 1-Oct-10 | 68 |

RESOURCE SCHEDULE FOR ALL TEAM MEMBERS FOR THIS STAGE

| Name | Discipline | Grade | Rate/hr | Hours | Total |
|---|---|---|---|---|---|
| Jim Hackett | Project Management | Senior Professional (1) | £109.52 | 55.7 | £6,099 |
| Douglas Ross | Commercial Manager | Principal | £130.52 | 0.0 | £0 |
| David Hall | Project Management | Senior Professional (1) | £109.52 | 55.7 | £6,099 |
| Mark Baird | Project Management | Senior Professional (1) | £109.52 | 0.0 | £0 |
| Alastair Stewart | Project Management | Senior Professional (1) | £109.52 | 0.0 | £0 |
| David Scott | Cost Management | Senior Professional (2) | £91.09 | 0.0 | £0 |
| Gary Stevenson | Cost Management | Senior Professional (1) | £109.52 | 0.0 | £0 |
| Colin Sunderland | Cost Management | Senior Professional (1) | £109.52 | 222.8 | £24,396 |
| Simon Miller | PM | Senior Professional (2) | £91.09 | 0.0 | £0 |
| Christine Allan | Transition Manager | Senior Professional (1) | £109.52 | 0.0 | £0 |
| Simon Miller | Life Cycle Costing | Senior Professional (2) | £91.09 | 0.0 | £0 |
| Ian Wyper | Risk Management | Senior Professional (1) | £109.52 | 22.3 | £2,440 |
| Paul Fairlie | Project Management | Senior Professional (2) | £91.09 | 222.8 | £20,290 |
| David Speirs | Project Management | Professional | £69.33 | 222.8 | £15,443 |
| Not Used | CDM Co-ordinator | Senior Professional (2) | £91.09 | 0.0 | £0 |
| Avril Saunders | Transition Manager | Professional | £69.33 | 0.0 | £0 |
| Lynne Bradford | Document Manager | Senior Technician | £48.08 | 111.4 | £5,355 |
| Leslie Welch | Director | Principal | £115.50 | 0.0 | £0 |
| Andrew Anderson | Associate | Senior Professional | £94.50 | 0.0 | £0 |
| Harry Smith | Associate | Senior Professional | £94.50 | 0.0 | £0 |
| Carole Crane | Healthcare Architect | Professional | £77.70 | 0.0 | £0 |
| Jo Darling | Architectural Assistant | Senior Technician | £66.15 | 0.0 | £0 |
| S Gilbert Rivett | Director | Principal | £115.50 | 0.0 | £0 |
| S Scott/M Austin | Associate | Senior Professional | £94.50 | 48.0 | £4,536 |
| Robert Menzies | Architect | Senior Professional | £94.50 | 72.0 | £6,804 |
| Yvonne Wood | Architect | Professional | £77.70 | 68.0 | £4,907 |
| John Major | Senior Technician | Senior Technician | £66.15 | 5.0 | £331 |
| Simon Hurst | Landscape Architect | Principal | £115.50 | 0.0 | £0 |
| Les Rice | Landscape Architect | Senior Professional | £94.50 | 30.0 | £2,835 |
| Ronald Gibbing | Landscape Architect | Senior Technician | £66.15 | 0.0 | £0 |
| John Buchan | Healthcare Planner | Principal | £175.34 | 0.0 | £0 |
| Lynn Tabal | Healthcare Planner | Senior Professional (2) | £132.25 | 0.0 | £0 |
| Maggie Gilburn | Healthcare Planner | Senior Professional (2) | £132.25 | 0.0 | £0 |
| Sue Orwell | Healthcare Planner | Senior Professional (1) | £123.44 | 0.0 | £0 |
| Gerry Kennedy | Healthcare Planner | Senior Professional (1) | £123.44 | 0.0 | £0 |
| Moses Ritty | Healthcare Planner | Senior Professional (1) | £123.44 | 0.0 | £0 |
| John Thomson | Structural Engineer | Senior Professional (1) | £102.90 | 0.0 | £0 |
| Steve Harris | Structural Engineer | Senior Professional (2) | £79.25 | 75.0 | £5,944 |
| Andrew Lindsay | CMS Engineer | Senior Professional (2) | £79.25 | 0.0 | £0 |
| Iain Clow | Geotechnical Engineer | Senior Professional (2) | £79.25 | 0.0 | £0 |
| Chris Denton | Structural Engineer | Senior Professional (3) | £69.75 | 15.0 | £936 |
| Raymond Quinn | CMS Engineer | Senior Professional (3) | £69.75 | 10.0 | £696 |
| Ramsay Muirhead | Ground Engineer | Senior Professional (3) | £69.75 | 5.0 | £299 |
| Richard McCann | Structural Engineer | Professional (1) | £53.11 | 20.0 | £1,062 |
| Colin Sanders | Structural Engineer | Professional (2) | £49.79 | 5.0 | £349 |
| Hilary Guernsey | Ground Engineer | Professional (2) | £49.79 | 5.0 | £349 |
| Dominic Adams | Geotechnical Engineer | Professional (2) | £49.79 | 5.0 | £349 |
| Allan Brown | Structural CAD Technician | Senior Technician | £53.11 | 0.0 | £0 |
| Douglas Pearce | CMS CAD Technician | Senior Technician | £53.11 | 0.0 | £0 |
| Jeff Murdoch | CDM Co-ordinator | Senior Professional (2) | £76.14 | 30.0 | £2,308 |
| Michael Glenn | CDM Co-ordinator | Professional (1) | £48.34 | 25.0 | £1,209 |
| John Bushfield | Director | Principal | £76.07 | 0.0 | £0 |
| Stewart McKechnie | Director | Principal | £76.07 | 0.0 | £0 |
| Alan Mottl | Director | Principal | £76.07 | 0.0 | £0 |
| Kevin Mitchell | Associate | Senior Professional (1) | £63.95 | 0.0 | £0 |
| Brian Rutherford | Senior Engineer | Professional (2) | £49.61 | 0.0 | £0 |
| Gary Roger | Engineer | Professional (3) | £44.10 | 0.0 | £0 |
| Martin Lorimer | Graduate Engineer | Senior Technician | £38.99 | 0.0 | £0 |
| Jan McAuslan | Technician | Technician | £33.08 | 0.0 | £0 |
| Lee Carrol | Associate | Senior Professional (1) | £63.95 | 0.0 | £0 |
| Craig Sinclair | Associate | Senior Professional (1) | £63.95 | 0.0 | £0 |
| Gary Meechan | Senior Engineer | Professional (2) | £49.61 | 0.0 | £0 |
| Mike Mackay | Engineer | Professional (3) | £44.10 | 0.0 | £0 |
| Alison Reid | Graduate Engineer | Senior Technician | £38.99 | 0.0 | £0 |
| David McMonagle | Senior Technician | Senior Technician | £38.99 | 0.0 | £0 |
| Neil Robson | Partner | Principal | £76.07 | 27.0 | £2,054 |
| Scott Andrew | Technical Director | Senior Professional (1) | £63.95 | 117.0 | £7,482 |
| Jim Kellachan | Senior Engineer | Professional (2) | £49.61 | 145.0 | £7,194 |
| John Thomson | Senior Engineer | Professional (2) | £49.61 | 28.0 | £1,389 |
| Derrick Mackie | Senior Technician | Senior Technician | £38.99 | 28.0 | £1,092 |
| Jennifer Allan | Technician | Technician | £33.08 | 0.0 | £0 |
| | | | | Total | 1666.3 | £131,394 |

£80,121 Clune & Brown

£19,012 HLM + Elliot + Hinds

£0 Buchan Assoc.

£9,545

£13,052 URS Corporation

£19,199 Wallace Whittle + Harley Haddow

SUMMARY OF TASKS AND ACTIONS TO BE COMPLETED AT STAGE: 5.0

New South Glasgow Hospitals Project - Acute Services Strategy - Phase II

Lead Consultant and Technical Team Fee Proposal

LABORATORIES (See separate Fee Proposal for Adult Acute & Children's Hospitals)

6.7 LUMP SUM FEE SCHEDULE

STAGE 4 - Operational Commissioning & Equipping

| Start | Complete | Weeks |
|---|---|---|
| 5-Jul-10 | 26-Nov-10 | 21 |

RESOURCE SCHEDULE FOR ALL TEAM MEMBERS FOR THIS STAGE

| Name | Discipline | Grade | Rate/hr | Hours | Total | |
|---|---|---|---|---|---|---|
| Jim Hadaill | Project Management | Senior Professional (1) | £112.19 | 0.0 | £0 | |
| Douglas Ross | Commercial Manager | Principal | £133.71 | 0.0 | £0 | |
| David Hall | Project Management | Senior Professional (1) | £112.19 | 0.0 | £0 | |
| Mark Baird | Project Management | Senior Professional (1) | £112.19 | 0.0 | £0 | |
| Alastair Stewart | Project Management | Senior Professional (1) | £112.19 | 0.0 | £0 | |
| David Scott | Cost Management | Senior Professional (2) | £93.31 | 0.0 | £0 | |
| Gary Stevenson | Cost Management | Senior Professional (1) | £112.19 | 0.0 | £0 | |
| Colin Sunderland | Cost Management | Senior Professional (1) | £112.19 | 0.0 | £0 | |
| Simon Miller | FM | Senior Professional (2) | £93.31 | 0.0 | £0 | |
| Christine Allan | Transition Manager | Senior Professional (1) | £112.19 | 94.5 | £10,602 | |
| Simon Miller | Life Cycle Costing | Senior Professional (2) | £93.31 | 0.0 | £0 | |
| Ian Wyper | Risk Management | Senior Professional (1) | £112.19 | 0.0 | £0 | |
| Paul Fairie | Project Management | Senior Professional (2) | £93.31 | 0.0 | £0 | |
| David Spaira | Project Management | Professional | £71.02 | 0.0 | £0 | |
| Not Used | CDM Co-ordinator | Senior Professional (2) | £93.31 | 0.0 | £0 | |
| Avril Saunders | Transition Manager | Professional | £71.02 | 47.5 | £3,356 | |
| Lynne Bradford | Document Manager | Senior Technician | £49.26 | 0.0 | £0 | |
| Leslie Walsh | Director | Principal | £121.28 | 0.0 | £0 | |
| Andrew Anderson | Associate | Senior Professional | £89.23 | 0.0 | £0 | |
| Harry Smith | Associate | Senior Professional | £89.23 | 0.0 | £0 | |
| Carole Crane | Healthcare Architect | Professional | £81.59 | 0.0 | £0 | |
| Jo Darling | Architectural Assistant | Senior Technician | £69.46 | 0.0 | £0 | |
| S Grant O Grant | Director | Principal | £121.28 | 0.0 | £0 | |
| S Smyth Austin | Associate | Senior Professional | £89.23 | 0.0 | £0 | |
| Robert Menzies | Architect | Senior Professional | £89.23 | 0.0 | £0 | |
| Yvonne Wood | Architect | Professional | £81.59 | 0.0 | £0 | |
| John Main | Senior Technician | Senior Technician | £69.46 | 0.0 | £0 | |
| Simon Hurst | Landscape Architect | Principal | £121.28 | 0.0 | £0 | |
| Lee Rice | Landscape Architect | Senior Professional | £81.59 | 0.0 | £0 | |
| Ronald Gilchrist | Landscape Architect | Senior Technician | £69.46 | 0.0 | £0 | £0 HLM + BMJ + Hlms |
| Jim Bathurst | Healthcare Planner | Principal | £136.98 | 0.0 | £0 | |
| Lynn Talbot | Healthcare Planner | Senior Professional(2) | £149.79 | 0.0 | £0 | |
| Maria Odum | Healthcare Planner | Senior Professional(2) | £149.79 | 0.0 | £0 | |
| Sue Kissell | Healthcare Planner | Senior Professional(2) | £136.09 | 0.0 | £0 | |
| Gary Kennedy | Healthcare Planner | Senior Professional(2) | £136.09 | 0.0 | £0 | |
| Moira Kelly | Healthcare Planner | Senior Professional(2) | £136.09 | 0.0 | £0 | £0 Buchan Assoc |
| John Thomson | Structural Engineer | Senior Professional(1) | £104.90 | 0.0 | £0 | |
| Steve Harris | Structural Engineer | Senior Professional(2) | £80.79 | 0.0 | £0 | |
| Andrew Lindsay | Civil Engineer | Senior Professional(2) | £80.79 | 0.0 | £0 | |
| Ian Clow | Geotechnical Engineer | Senior Professional(2) | £80.79 | 0.0 | £0 | |
| Chris Denton | Structural Engineer | Senior Professional(3) | £60.91 | 0.0 | £0 | |
| Raymond Quinn | Civil Engineer | Senior Professional(3) | £60.91 | 0.0 | £0 | |
| Ramsay Midhead | Ground Engineer | Senior Professional(3) | £60.91 | 0.0 | £0 | |
| Richard McColm | Structural Engineer | Professional (1) | £54.14 | 0.0 | £0 | |
| Colin Sanders | Structural Engineer | Professional (2) | £50.76 | 0.0 | £0 | |
| Hilary Guernsey | Ground Engineer | Professional (2) | £50.76 | 0.0 | £0 | |
| Dominic Adams | Geotechnical Engineer | Professional (2) | £50.76 | 0.0 | £0 | |
| Allan Brown | Structural CAD Technician | Senior Technician | £54.14 | 0.0 | £0 | |
| Douglas Frame | Civil CAD Technician | Senior Technician | £54.14 | 0.0 | £0 | £0 |
| Jeff Murdoch | CDM Co-ordinator | Senior Professional (2) | £76.94 | 15.0 | £1,154 | |
| Michael Glenn | CDM Co-ordinator | Professional (1) | £48.34 | 15.0 | £725 | £1,879 URS Corporation |
| John Bushfield | Director | Principal | £84.07 | 0.0 | £0 | |
| Stewart McKechnie | Director | Principal | £84.07 | 0.0 | £0 | |
| Allan McGill | Director | Principal | £84.07 | 0.0 | £0 | |
| Kevin Mitchell | Associate | Senior Professional (1) | £70.87 | 0.0 | £0 | |
| Brian Rutherford | Senior Engineer | Professional (2) | £54.83 | 0.0 | £0 | |
| Gary Roger | Engineer | Professional (3) | £46.74 | 0.0 | £0 | |
| Martin Lorimer | Graduate Engineer | Senior Technician | £42.84 | 0.0 | £0 | |
| Ian McAuslan | Technician | Technician | £36.65 | 0.0 | £0 | |
| Lee Carrol | Associate | Senior Professional (1) | £70.87 | 0.0 | £0 | |
| Craig Bleasor | Associate | Senior Professional (1) | £70.87 | 0.0 | £0 | |
| Gary Meechan | Senior Engineer | Professional (2) | £54.83 | 0.0 | £0 | |
| Mike Mackay | Engineer | Professional (3) | £46.74 | 0.0 | £0 | |
| Alison Reid | Graduate Engineer | Senior Technician | £42.84 | 0.0 | £0 | |
| David McMonagle | Senior Technician | Senior Technician | £42.84 | 0.0 | £0 | |
| Neil Robson | Planner | Principal | £84.07 | 0.0 | £0 | |
| Scott Andrew | Technical Director | Senior Professional (1) | £70.87 | 0.0 | £0 | |
| Jim Kelachan | Senior Engineer | Professional (2) | £54.83 | 0.0 | £0 | |
| John Thomson | Senior Engineer | Professional (2) | £54.83 | 0.0 | £0 | |
| Derrick Manfich | Senior Technician | Senior Technician | £42.84 | 0.0 | £0 | |
| Jennifer Allan | Technician | Technician | £36.65 | 0.0 | £0 | £0 Wallace Wobbe + Hadley Haddow |
| | | | Total | 171.8 | £15,837 | |

Curtis & Brown £13,956

SUMMARY OF TASKS AND ACTIONS TO BE COMPLETED AT STAGE 4.6

Please refer to Section 2 of our submission

New South Glasgow Hospitals Project - Acute Services Strategy - Phase II
Lead Consultant and Technical Team Fee Proposal
LABORATORIES (See seperate Fee Proposal for Adult Acute & Children's Hospitals)

6.7 LUMP SUM FEE SCHEDULE

STAGE 6 - Post Project Evaluation & Defects

| Start | Complete | Weeks |
|---|---|---|
| 4-Oct10 | 7-Oct11 | 52 |

RESOURCE SCHEDULE FOR ALL TEAM MEMBERS FOR THIS STAGE

| Name | Discipline | Grade | Rate/Hr | Hours | Total |
|---|---|---|---|---|---|
| Jim Mackett | Project Management | Senior Professional (1) | £117.80 | 15.6 | £1,838 |
| Douglas Ross | Commercial Manager | Principal | £140.39 | 0.0 | £0 |
| David Hall | Project Management | Senior Professional (1) | £117.80 | 15.6 | £1,838 |
| Mark Baird | Project Management | Senior Professional (1) | £117.80 | 0.0 | £0 |
| Alastair Stewart | Project Management | Senior Professional (1) | £117.80 | 0.0 | £0 |
| David Scott | Cost Management | Senior Professional (2) | £97.97 | 0.0 | £0 |
| Gary Stevenson | Cost Management | Senior Professional (1) | £117.80 | 0.0 | £0 |
| Colin Sunderland | Cost Management | Senior Professional (1) | £117.80 | 15.6 | £1,838 |
| Simon Miller | FM | Senior Professional (2) | £97.97 | 15.6 | £1,528 |
| Christine Allan | Transition Manager | Senior Professional (1) | £117.80 | 0.0 | £0 |
| Simon Miller | Life Cycle Costing | Senior Professional (2) | £97.97 | 15.6 | £1,528 |
| Ian Wyper | Risk Management | Senior Professional (1) | £117.80 | 15.6 | £1,838 |
| Paul Fairie | Project Management | Senior Professional (2) | £97.97 | 15.6 | £1,528 |
| David Speirs | Project Management | Professional | £74.67 | 0.0 | £0 |
| Not Used | CDM Co-ordinator | Senior Professional (2) | £97.97 | 0.0 | £0 |
| Avril Saunders | Transition Manager | Professional | £74.67 | 0.0 | £0 |
| Lynne Bradford | Document Manager | Senior Technician | £51.72 | 15.6 | £807 |
| Leslie Wallis | Director | Principal | £127.34 | 0.0 | £0 |
| Andrew Anderson | Associate | Senior Professional | £104.19 | 0.0 | £0 |
| Harry Smith | Associate | Senior Professional | £104.19 | 0.0 | £0 |
| Carole Crane | Healthcare Architect | Professional | £85.86 | 0.0 | £0 |
| Jo Darling | Architectural Assistant | Senior Technician | £72.90 | 0.0 | £0 |
| S Grant G Stuart | Director | Principal | £127.34 | 0.0 | £0 |
| S Scottish Austin | Associate | Senior Professional | £104.19 | 0.0 | £0 |
| Robert Menzies | Architect | Senior Professional | £104.19 | 0.0 | £0 |
| Yvonne Wood | Architect | Professional | £85.86 | 15.0 | £1,288 |
| John Major | Senior Technician | Senior Technician | £72.90 | 0.0 | £0 |
| Simon Hurst | Landscape Architect | Principal | £127.34 | 0.0 | £0 |
| Lee Rae | Landscape Architect | Senior Professional | £104.19 | 22.5 | £2,344 |
| Ronald Gilchrist | Landscape Architect | Senior Technician | £72.90 | 0.0 | £0 |
| Iain Burton | Healthcare Planner | Principal | £155.39 | 0.0 | £0 |
| Lynn Tallet | Healthcare Planner | Senior Professional (2) | £143.75 | 0.0 | £0 |
| Merle Collins | Healthcare Planner | Senior Professional (2) | £143.75 | 0.0 | £0 |
| Sue Khyatt | Healthcare Planner | Senior Professional (1) | £130.89 | 0.0 | £0 |
| Gerry Kennedy | Healthcare Planner | Senior Professional (1) | £130.89 | 0.0 | £0 |
| Moira Kelly | Healthcare Planner | Senior Professional (1) | £130.89 | 0.0 | £0 |
| John Thomson | Structural Engineer | Senior Professional (1) | £105.84 | 0.0 | £0 |
| Steve Harris | Structural Engineer | Senior Professional (2) | £83.82 | 0.0 | £0 |
| Andrew Lindsay | Civil Engineer | Senior Professional (2) | £83.82 | 0.0 | £0 |
| Iain Clow | Geotechnical Engineer | Senior Professional (2) | £83.82 | 0.0 | £0 |
| Chris Denton | Structural Engineer | Senior Professional (3) | £83.20 | 0.0 | £0 |
| Raymond Quinn | Civil Engineer | Senior Professional (3) | £83.20 | 0.0 | £0 |
| Ramsay Muirhead | Ground Engineer | Senior Professional (3) | £83.20 | 0.0 | £0 |
| Richard McOnim | Structural Engineer | Professional (1) | £56.17 | 10.0 | £562 |
| Colin Sanders | Structural Engineer | Professional (2) | £52.67 | 0.0 | £0 |
| Hilary Guernsey | Ground Engineer | Professional (2) | £52.67 | 0.0 | £0 |
| Dominic Adams | Geotechnical Engineer | Professional (2) | £52.67 | 0.0 | £0 |
| Allan Brown | Structural CAD Technician | Senior Technician | £56.17 | 0.0 | £0 |
| Douglas Frame | Civil CAD Technician | Senior Technician | £56.17 | 0.0 | £0 |
| Jeff Murdoch | CDM Co-ordinator | Senior Professional (2) | £80.74 | 15.0 | £1,211 |
| Michael Glenn | CDM Co-ordinator | Professional (1) | £50.75 | 15.0 | £761 |
| John Bushfield | Director | Principal | £97.08 | 0.0 | £0 |
| Stewart McKechnie | Director | Principal | £97.08 | 0.0 | £0 |
| Allan McGill | Director | Principal | £97.08 | 0.0 | £0 |
| Kevin Mitchell | Associate | Senior Professional (1) | £81.81 | 0.0 | £0 |
| Brian Rutherford | Senior Engineer | Professional (2) | £63.32 | 0.0 | £0 |
| Gary Roger | Engineer | Professional (1) | £56.28 | 0.0 | £0 |
| Martin Lorimer | Graduate Engineer | Senior Technician | £49.25 | 0.0 | £0 |
| Jan McAuslan | Technician | Technician | £42.21 | 0.0 | £0 |
| Lee Carasi | Associate | Senior Professional (1) | £81.81 | 0.0 | £0 |
| Craig Blaser | Associate | Senior Professional (1) | £81.81 | 0.0 | £0 |
| Gary Meehan | Senior Engineer | Professional (2) | £63.32 | 0.0 | £0 |
| Mike Mackay | Engineer | Professional (3) | £56.28 | 0.0 | £0 |
| Alison Reid | Graduate Engineer | Senior Technician | £49.25 | 0.0 | £0 |
| David McKreagle | Senior Technician | Senior Technician | £49.25 | 0.0 | £0 |
| Neil Robson | Partner | Principal | £97.08 | 0.0 | £0 |
| Scott Andrew | Technical Director | Senior Professional (1) | £81.81 | 14.0 | £1,143 |
| Jim Kellachan | Senior Engineer | Professional (2) | £63.32 | 14.0 | £886 |
| John Thomson | Senior Engineer | Professional (2) | £63.32 | 0.0 | £0 |
| Darren Mochlin | Senior Technician | Senior Technician | £49.25 | 0.0 | £0 |
| Jennifer Allan | Technician | Technician | £42.21 | 0.0 | £0 |
| | | | | Total | £20,095 |

| | |
|---|---|
| £12,743 | Currie & Brown |
| £5,829 | H&M + BAU + Hoare |
| £0 | Sutton Acute |
| £562 | |
| £2,534 | URS Corporation |
| £2,028 | Wallace Whittle + Hurley Haddow |

SUMMARY OF TASKS AND ACTIONS TO BE COMPLETED AT STAGE 6.6
Please refer to Section 2 of our submission

**New South Glasgow Hospitals Project - Acute Services Strategy - Phase II**
**Lead Consultant and Technical Team Fee Proposal**

**LABORATORIES (See separate Fee Proposal for Adult Acute & Children's Hospitals)**

**6.8 Time charge rates** **Summary for CURRIE & BROWN**

For those duties where fees are payable on a time charge basis, the rates referred to in Clause 4.5 of the Agreement shall be:

| | | |
|---|---|---|
| a. principal (clause 4.5a): | | £120.00 per hour |
| b. professional and technical staff (clause 4.6): | | |
| senior professional | | £100.00 per hour |
| professional | (1) | £74.00 per hour |
| | (2) | £63.00 per hour |
| senior technician | | £63.00 per hour |
| technician | (1) | £53.00 per hour |
| | (2) | £48.00 per hour |
| c additional category | | |
| medical planner | (1) | £168.00 per hour |
| | (2) | £142.00 per hour |
| | (3) | £132.00 per hour |

Note: every category of the above as entered by the client, is to be completed by the consultant.

Teams are asked to regularise the hourly rates for each grade of staff, and ensure that all staff included within your fee proposal are allocated an appropriate grade as noted above and that this information is include within the team submission

New South Glasgow Hospitals Project - Acute Services Strategy - Phase II
Lead Consultant and Technical Team Fee Proposal Fee Draw Schedule

Summary for CURRIE & BROWN

LABORATORIES (See separate Fee Proposal for Adult Acute & Children's Hospitals)

| Stage | Description | 2008 Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | 2009 Jan | Feb | Mar | Total Apr-Mar | C&B Financial Years Total Oct-Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1A | Stage 1A - Preparation of Employer's Requirements Documentation (PQQ, OJEU, MOI and ER documentation) | | | | | | 25,435 | 25,435 | 25,435 | 25,435 | | | | 101,738 | 25,435 |
| 1B | Stage 1B-D&B Stage 1 Design & Bid Development (3 to 1) | | | | | | | | | | 7,018 | 7,018 | 7,018 | 21,054 | |
| 2.0 | Stage 2- D&B Stage 2 Design & Bid Development (GMP) | | | | | | | | | | | | | 0 | |
| 3.0 | Stage 3 - Construction Phase | | | | | | | | | | | | | 0 | |
| 4.0 | Stage 4 - Operational Commissioning & Equipping | | | | | | | | | | | | | 0 | |
| 5.0 | Stage 5 - Post Project Evaluation and Defects | | | | | | | | | | | | | 0 | |
| | Monthly Total | 0 | 0 | 0 | 0 | 0 | 25,435 | 25,435 | 25,435 | 25,435 | 7,018 | 7,018 | 7,018 | | |
| | | | | | | | | | | | | | Annual 2008/09 Total | 122,793 | 25,435 Total 2007/08 |

| Stage | Description | 2009 Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | 2010 Jan | Feb | Mar | Total Apr-Mar | Total Oct-Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1A | Stage 1A - Preparation of Employer's Requirements Documentation (PQQ, OJEU, MOI and ER documentation) | | | | | | | | | | | | | 0 | 76,304 |
| 1B | Stage 1B-D&B Stage 1 Design & Bid Development (3 to 1) | 7,018 | 7,018 | 7,018 | | | | | | | | | | 21,054 | 42,109 |
| 2.0 | Stage 2 - D&B Stage 2 Design & Bid Development (GMP) | | | | | | | | | | | | | 0 | 0 |
| 3.0 | Stage 3 - Construction Phase | | | | 8,760 | 8,760 | 8,760 | 8,760 | 8,760 | 8,760 | 8,760 | 8,760 | 8,760 | 78,837 | 26,279 |
| 4.0 | Stage 4 - Operational Commissioning & Equipping | | | | | | | | | | | | | 0 | 0 |
| 5.0 | Stage 5 - Post Project Evaluation and Defects | | | | | | | | | | | | | 0 | 0 |
| | Monthly Total | 7,018 | 7,018 | 7,018 | 8,760 | 8,760 | 8,760 | 8,760 | 8,760 | 8,760 | 8,760 | 8,760 | 8,760 | | |
| | | | | | | | | | | | | | Annual 2009/10 Total | 99,891 | 144,691 Total 2008/09 |

| Stage | Description | 2010 Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | 2011 Jan | Feb | Mar | Total Apr-Mar | Total Oct-Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1A | Stage 1A - Preparation of Employer's Requirements Documentation (PQQ, OJEU, MOI and ER documentation) | | | | | | | | | | | | | 0 | 0 |
| 1B | Stage 1B-D&B Stage 1 Design & Bid Development (3 to 1) | | | | | | | | | | | | | 0 | 0 |
| 2.0 | Stage 2 - D&B Stage 2 Design & Bid Development (GMP) | | | | | | | | | | | | | 0 | 0 |
| 3.0 | Stage 3 - Construction Phase | 8,760 | 8,760 | 8,760 | 8,760 | 8,760 | 8,760 | | | | | | | 52,558 | 105,116 |
| 4.0 | Stage 4 - Operational Commissioning & Equipping | | | | 3,167 | 3,167 | 3,167 | 3,167 | 3,167 | | | | | 15,837 | 9,502 |
| 5.0 | Stage 5 - Post Project Evaluation and Defects | | | | | | | | | | | | | 0 | 0 |
| | Monthly Total | 8,760 | 8,760 | 8,760 | 11,927 | 11,927 | 11,927 | 3,167 | 3,167 | 0 | 0 | 0 | 0 | | |
| | | | | | | | | | | | | | Annual 2010/11 Total | 68,395 | 114,618 Total 2009/10 |

| Stage | Description | 2011 | | | | | | | | | 2012 | | | Total Apr-Mar | Total Oct-Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | | |
| 1A | Stage 1A - Preparation of Employer's Requirements Documentation (PQQ, OJEU, MOI and ER documentation) | | | | | | | | | | | | | 0 | 0 |
| 1B | Stage 1B-D&B Stage 1 Design & Bid Development (3 to 1) | | | | | | | | | | | | | 0 | 0 |
| 2.0 | Stage 2 - D&B Stage 2 Design & Bid Development (GMP) | | | | | | | | | | | | | 0 | 0 |
| 3.0 | Stage 3 - Construction Phase | | | | | | | | | | | | | 0 | 0 |
| 4.0 | Stage 4 - Operational Commissioning & Equipping | | | | | | | | | | | | | 0 | 6,335 |
| 5.0 | Stage 5 - Post Project Evaluation and Defects | | | | | | | 20,935 | | | | | | 20,935 | 0 |
| | | | | | | | | | | | | | | | 0 |
| | Monthly Total | 0 | 0 | 0 | 0 | 0 | 0 | 20,935 | 0 | 0 | 0 | 0 | 0 | | |
| | | | | | | | | | | | | | Annual 2011/12 Total | 20,935 | 6,335 Total 2010/11 |

| Stage | Description | 2012 | | | | | | | | | 2013 | | | Total Apr-Mar | Total Oct-Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | | |
| 1A | Stage 1A - Preparation of Employer's Requirements Documentation (PQQ, OJEU, MOI and ER documentation) | | | | | | | | | | | | | 0 | 0 |
| 1B | Stage 1B-D&B Stage 1 Design & Bid Development (3 to 1) | | | | | | | | | | | | | 0 | 0 |
| 2.0 | Stage 2 - D&B Stage 2 Design & Bid Development (GMP) | | | | | | | | | | | | | 0 | 0 |
| 3.0 | Stage 3 - Construction Phase | | | | | | | | | | | | | 0 | 0 |
| 4.0 | Stage 4 - Operational Commissioning & Equipping | | | | | | | | | | | | | 0 | 0 |
| 5.0 | Stage 5 - Post Project Evaluation and Defects | | | | | | | | | | | | | 0 | 20,935 |
| | | | | | | | | | | | | | | | 0 |
| | Monthly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | | | | | | | | | | | | Annual 2012/13 Total | 0 | 20,935 Total 2011/12 |

| Stage | Description | 2013 | | | | | | | | | 2014 | | | Total Apr-Mar | Total Oct-Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | | |
| 1A | Stage 1A - Preparation of Employer's Requirements Documentation (PQQ, OJEU, MOI and ER documentation) | | | | | | | | | | | | | 0 | 0 |
| 1B | Stage 1B-D&B Stage 1 Design & Bid Development (3 to 1) | | | | | | | | | | | | | 0 | 0 |
| 2.0 | Stage 2 - D&B Stage 2 Design & Bid Development (GMP) | | | | | | | | | | | | | 0 | 0 |
| 3.0 | Stage 3 - Construction Phase | | | | | | | | | | | | | 0 | 0 |
| 4.0 | Stage 4 - Operational Commissioning & Equipping | | | | | | | | | | | | | 0 | 0 |
| 5.0 | Stage 5 - Post Project Evaluation and Defects | | | | | | | | | | | | | 0 | 0 |
| | | | | | | | | | | | | | | | 0 |
| | Monthly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | | | | | | | | | | | | Annual 2013/14 Total | 0 | 0 Total 2012/13 |

| Stage | Description | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr-Mar | Oct-Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1A | Stage 1A - Preparation of Employer's Requirements Documentation (PQC, OJEU, MOI and ER documentation) | | | | | | | | | | | | | 0 | 0 |
| 1B | Stage 1B-D&B Stage 1 Design & Bid Development (3 to 1) | | | | | | | | | | | | | 0 | 0 |
| 2.0 | Stage 2 - D&B Stage 2 Design & Bid Development (GMP) | | | | | | | | | | | | | 0 | 0 |
| 3.0 | Stage 3 - Construction Phase | | | | | | | | | | | | | 0 | 0 |
| 4.0 | Stage 4 - Operational Commissioning & Equipping | | | | | | | | | | | | | 0 | 0 |
| 5.0 | Stage 5 - Post Project Evaluation and Defects | | | | | | | | | | | | | 0 | 0 |
| | Monthly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | | | | | | | | | | | | Annual 2014/15 Total | 0 | 0 |

Total 2013/14

| Stage | Description | 2015 | | | | | | | | | 2016 | | | Total Apr-Mar | Total Oct-Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | | |
| 1A | Stage 1A - Preparation of Employer's Requirements Documentation (PQC, OJEU, MOI and ER documentation) | | | | | | | | | | | | | 0 | 0 |
| 1B | Stage 1B-D&B Stage 1 Design & Bid Development (3 to 1) | | | | | | | | | | | | | 0 | 0 |
| 2.0 | Stage 2 - D&B Stage 2 Design & Bid Development (GMP) | | | | | | | | | | | | | 0 | 0 |
| 3.0 | Stage 3 - Construction Phase | | | | | | | | | | | | | 0 | 0 |
| 4.0 | Stage 4 - Operational Commissioning & Equipping | | | | | | | | | | | | | 0 | 0 |
| 5.0 | Stage 5 - Post Project Evaluation and Defects | | | | | | | | | | | | | 0 | 0 |
| | Monthly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | | | | | | | | | | | | Annual 2015/16 Total | 0 | 0 |

Total 2014/15

| Stage | Description | 2016 | | | | | | | | | 2017 | | | Total Apr-Mar | Total Oct-Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | | |
| 1A | Stage 1A - Preparation of Employer's Requirements Documentation (PQC, OJEU, MOI and ER documentation) | | | | | | | | | | | | | 0 | 0 |
| 1B | Stage 1B-D&B Stage 1 Design & Bid Development (3 to 1) | | | | | | | | | | | | | 0 | 0 |
| 2.0 | Stage 2 - D&B Stage 2 Design & Bid Development (GMP) | | | | | | | | | | | | | 0 | 0 |
| 3.0 | Stage 3 - Construction Phase | | | | | | | | | | | | | 0 | 0 |
| 4.0 | Stage 4 - Operational Commissioning & Equipping | | | | | | | | | | | | | 0 | 0 |
| 5.0 | Stage 5 - Post Project Evaluation and Defects | | | | | | | | | | | | | 0 | 0 |
| | Monthly Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | | | | | | | | | | | | Annual 2016/17 Total | 0 | 0 |

Total 2015/16

| | | |
|---|---|---|
| TOTAL FEE | 312,014 | 312,014 TOTAL FEE |

**New South Glasgow Hospitals Project - Acute Services Strategy - Phase II**
**Lead Consultant and Technical Team Fee Proposal**

**LABORATORIES (See separate Fee Proposal for Adult Acute & Children's Hospitals)**

**CURRIE & BROWN Grades & Rates**

| Inflation Rate | 5.00% |
|---|---|

| Grade | 2008/09 Rate/hr | 2009/10 Rate/hr | 2010/11 Rate/hr | 2011/12 Rate/hr | 2012/13 Rate/hr | 2013/14 Rate/hr | 2014/15 Rate/hr | 2015/16 Rate/hr | 2016/17 Rate/hr | Not Used Average Rate/hr |
|---|---|---|---|---|---|---|---|---|---|---|
| Principal | £121.28 | £127.34 | £133.71 | £140.39 | £147.41 | £154.78 | £162.52 | £170.65 | £179.18 | £148.58 |
| Senior Professional (1) | £101.76 | £106.85 | £112.19 | £117.80 | £123.69 | £129.88 | £136.37 | £143.19 | £150.35 | £124.67 |
| Senior Professional (2) | £84.63 | £88.87 | £93.31 | £97.97 | £102.87 | £108.02 | £113.42 | £119.09 | £125.04 | £103.69 |
| Professional | £64.42 | £67.64 | £71.02 | £74.57 | £78.30 | £82.21 | £86.33 | £90.64 | £95.17 | £78.92 |
| Senior Technician | £44.68 | £46.91 | £49.26 | £51.72 | £54.31 | £57.02 | £59.87 | £62.87 | £66.01 | £54.74 |
| Technician | £35.19 | £36.94 | £38.79 | £40.73 | £42.77 | £44.91 | £47.15 | £49.51 | £51.99 | £43.11 |

| Name | Discipline/Title | Grade | Total | |
|---|---|---|---|---|
| Jim Hackett | Project Management | Senior Professional (1) | £7,937 | PM |
| Douglas Ross | Commercial Manager | Principal | £0 | QS |
| David Hall | Project Management | Senior Professional (1) | £7,937 | PM |
| Mark Baird | Project Management | Senior Professional (1) | £0 | PM |
| Alastair Stewart | Project Management | Senior Professional (1) | £0 | PM |
| David Scott | Cost Management | Senior Professional (2) | £0 | QS |
| Gary Stevenson | Cost Management | Senior Professional (1) | £0 | QS |
| Colin Sunderland | Cost Management | Senior Professional (1) | £57,258 | QS |
| Simon Miller | FM | Senior Professional (2) | £1,528 | FM |
| Christine Allan | Transition Manager | Senior Professional (1) | £10,802 | Trans |
| Simon Miller | Life Cycle Costing | Senior Professional (2) | £1,528 | LCC |
| Ian Wyper | Risk Management | Senior Professional (1) | £4,277 | Risk |
| Paul Fairie | Project Management | Senior Professional (2) | £21,818 | PM |
| David Speirs | Project Management | Professional | £15,443 | PM |
| Not Used | CDM Co-ordinator | Senior Professional (2) | £0 | CDM |
| Avril Saunders | Transition Manager | Professional | £3,356 | Trans |
| Lynne Bradford | Document Manager | Senior Technician | £8,162 | PM |

| Grade | Stage 3 Average Rate/hr |
|---|---|
| Principal | £130.52 |
| Snr P(1) | £109.52 |
| Snr P (2) | £91.09 |
| Prof | £69.33 |
| Snr Tech | £48.08 |
| Tech | £37.87 |

Total C& B Fee £137,846

Total C&B Fee (check calc) £137,846

**New South Glasgow Hospitals Project - Acute Services Strategy - Phase II**
**Lead Consultant and Technical Team Fee Proposal**

**LABORATORIES (See separate Fee Proposal for Adult Acute & Children's Hospitals)**

**HLM+BMJ+Hirsts Grades & Rates**

| Inflation Rate | 5.00% |
|---|---|

| Grade | 2008/09 Rate/hr | 2009/10 Rate/hr | 2010/11 Rate/hr | 2011/12 Rate/hr | 2012/13 Rate/hr | 2013/14 Rate/hr | 2014/15 Rate/hr | 2015/16 Rate/hr | 2016/17 Rate/hr | Not Used Average Rate/hr |
|---|---|---|---|---|---|---|---|---|---|---|
| Principal | £110.00 | £115.50 | £121.28 | £127.34 | £133.71 | £140.39 | £147.41 | £154.78 | £162.52 | £134.77 |
| Senior Professional | £90.00 | £94.50 | £99.23 | £104.19 | £109.40 | £114.87 | £120.61 | £126.64 | £132.97 | £110.27 |
| Professional | £74.00 | £77.70 | £81.59 | £85.66 | £89.95 | £94.44 | £99.17 | £104.13 | £109.33 | £90.65 |
| Senior Technician | £63.00 | £66.15 | £69.46 | £72.93 | £76.58 | £80.41 | £84.43 | £88.65 | £93.08 | £77.19 |
| Technician | £53.00 | £55.65 | £58.43 | £61.35 | £64.42 | £67.64 | £71.03 | £74.58 | £78.31 | £64.93 |

| Name | Discipline/Title | Grade | Total | |
|---|---|---|---|---|
| Leslie Welch | Director | Principal | £0 | |
| Andrew Anderson | Associate | Senior Professional | £0 | |
| Harry Smith | Associate | Senior Professional | £0 | |
| Carole Crane | Healthcare Architect | Professional | £0 | |
| Jo Dorling | Architectural Assistant | Senior Technician | £0 | £0 HLM Total |
| S Grier/G Stuart | Director | Principal | £10,670 | |
| S Scott/M Austin | Associate | Senior Professional | £37,942 | |
| Robert Menzies | Architect | Senior Professional | £8,804 | |
| Yvonne Wood | Architect | Professional | £9,788 | |
| John Major | Senior Technician | Senior Technician | £12,175 | £77,378 BMJ Total |
| Simon Hurst | Landscape Architect | Principal | £0 | |
| Les Rice | Landscape Architect | Senior Professional | £8,298 | |
| Ronald Gilchrist | Landscape Architect | Senior Technician | £0 | £8,298 Hirsts Total |

**Total HLM+BMJ+Hirsts Fee** £85,676 £85,676 **Total HLM+BMJ+Hirsts Fee (check calc)** £85,676

**New South Glasgow Hospitals Project - Acute Services Strategy - Phase II**
**Lead Consultant and Technical Team Fee Proposal**

**LABORATORIES (See separate Fee Proposal for Adult Acute & Children's Hospitals)**

**Buchan Associates Grades & Rates**

| Inflation Rate | 5.00% |
|---|---|

| Grade | 2008/09 Rate/hr | 2009/10 Rate/hr | 2010/11 Rate/hr | 2011/12 Rate/hr | 2012/13 Rate/hr | 2013/14 Rate/hr | 2014/15 Rate/hr | 2015/16 Rate/hr | 2016/17 Rate/hr | Not Used Average Rate/hr |
|---|---|---|---|---|---|---|---|---|---|---|
| Principal | £168.00 | £176.40 | £185.22 | £194.48 | £204.21 | £214.42 | £225.14 | £236.39 | £248.21 | £205.83 |
| Senior Professional (a) | £141.75 | £148.84 | £156.28 | £164.09 | £172.30 | £180.91 | £189.96 | £199.46 | £209.43 | £173.67 |
| Senior Professional (b) | £131.25 | £137.81 | £144.70 | £151.94 | £159.54 | £167.51 | £175.89 | £184.68 | £193.92 | £160.80 |

| Name | Discipline/Title | Grade | Total |
|---|---|---|---|
| Iain Buchan | Healthcare Planner | Principal | £0 |
| Lynn Talbot | Healthcare Planner | Senior Professional (a) | £0 |
| Merle Odlum | Healthcare Planner | Senior Professional (a) | £0 |
| Sue Kingett | Healthcare Planner | Senior Professional (b) | £0 |
| Gerry Kennedy | Healthcare Planner | Senior Professional (b) | £0 |
| Maura Kelly | Healthcare Planner | Senior Professional (b) | £0 |

**Total Buchan Fee** £0

**Total Buchan Fee(check calc)** £0

**New South Glasgow Hospitals Project - Acute Services Strategy - Phase II**
**Lead Consultant and Technical Team Fee Proposal**

**LABORATORIES (See separate Fee Proposal for Adult Acute & Children's Hospitals)**

**URS Grades & Rates**

| Inflation Rate | 5.00% |
|---|---|

| Grade | 2008/09 Rate/hr | 2009/10 Rate/hr | 2010/11 Rate/hr | 2011/12 Rate/hr | 2012/13 Rate/hr | 2013/14 Rate/hr | 2014/15 Rate/hr | 2015/16 Rate/hr | 2016/17 Rate/hr | Not Used Average Rate/hr |
|---|---|---|---|---|---|---|---|---|---|---|
| Senior Professional (1) | £95.15 | £99.91 | £104.90 | £110.15 | £115.66 | £121.44 | £127.51 | £133.89 | £140.58 | £116.58 |
| Senior Professional (2) | £73.28 | £76.94 | £80.79 | £84.83 | £89.07 | £93.53 | £98.20 | £103.11 | £108.27 | £89.78 |
| Senior Professional (3) | £55.25 | £58.01 | £60.91 | £63.96 | £67.16 | £70.51 | £74.04 | £77.74 | £81.63 | £67.69 |
| Professional (1) | £49.11 | £51.57 | £54.14 | £56.85 | £59.69 | £62.68 | £65.81 | £69.10 | £72.56 | £60.17 |
| Professional (2) | £46.04 | £48.34 | £50.76 | £53.30 | £55.96 | £58.76 | £61.70 | £64.78 | £68.02 | £56.41 |
| Senior Technician | £49.11 | £51.57 | £54.14 | £56.85 | £59.69 | £62.68 | £65.81 | £69.10 | £72.56 | £60.17 |

| Name | Discipline/Title | Grade | Total |
|---|---|---|---|
| John Thomson | Structural Engineer | Senior Professional (1) | £476 |
| Steve Harris | Structural Engineer | Senior Professional (2) | £9,985 |
| Andrew Lindsay | Civil Engineer | Senior Professional (2) | £1,136 |
| Iain Clow | Geotechnical Engineer | Senior Professional (2) | £0 |
| Chris Denton | Structural Engineer | Senior Professional (3) | £2,001 |
| Raymond Quinn | Civil Engineer | Senior Professional (3) | £1,426 |
| Ramsay Muirhead | Ground Engineer | Senior Professional (3) | £851 |
| Richard McColm | Structural Engineer | Professional (1) | £2,115 |
| Colin Sanders | Structural Engineer | Professional (2) | £709 |
| Hilary Guernsey | Ground Engineer | Professional (2) | £709 |
| Dominic Adams | Geotechnical Engineer | Professional (2) | £709 |
| Allan Brown | Structural CAD Technician | Senior Technician | £0 |
| Dougie Frame | Civil CAD Technician | Senior Technician | £0 |
| Jeff Murdoch | CDM Co-ordinator | Senior Professional (2) | £7,678 |
| Michael Glenn | CDM Co-ordinator | Professional (1) | £5,219 |

| | | | |
|---|---|---|---|
| | £20,118 | Eng Total | |
| | £12,897 | CDM Total | £12,897 |
| | | | £20,118 |
| Total URS Fee £33,015 | £33,015 | | Total URS Fee (check calc) £33,015 |

**New South Glasgow Hospitals Project - Acute Services Strategy - Phase II**
**Lead Consultant and Technical Team Fee Proposal**

**LABORATORIES (See separate Fee Proposal for Adult Acute & Children's Hospitals)**

**Wallace Whittle + Harley Haddow Grades & Rates**

| Inflation Rate | 5.00% |
|---|---|

| Grade | 2008/09 Rate/hr | 2009/10 Rate/hr | 2010/11 Rate/hr | 2011/12 Rate/hr | 2012/13 Rate/hr | 2013/14 Rate/hr | 2014/15 Rate/hr | 2015/16 Rate/hr | Not Used Average Rate/hr |
|---|---|---|---|---|---|---|---|---|---|
| Principal | £72.45 | £76.07 | £79.88 | £83.87 | £88.06 | £92.47 | £97.09 | £101.94 | £86.48 |
| Senior Professional (1) | £60.90 | £63.95 | £67.14 | £70.50 | £74.02 | £77.73 | £81.61 | £85.69 | £72.69 |
| Professional (2) | £47.25 | £49.61 | £52.09 | £54.70 | £57.43 | £60.30 | £63.32 | £66.49 | £56.40 |
| Professional (3) | £42.00 | £44.10 | £46.31 | £48.62 | £51.05 | £53.60 | £56.28 | £59.10 | £50.13 |
| Senior Technician | £36.75 | £38.59 | £40.52 | £42.54 | £44.67 | £46.90 | £49.25 | £51.71 | £43.87 |
| Technician | £31.50 | £33.08 | £34.73 | £36.47 | £38.29 | £40.20 | £42.21 | £44.32 | £37.60 |

| Name | Discipline/Title | Grade | Total |
|---|---|---|---|
| John Bushfield | Director | Principal | £0 |
| Stewart McKechnie | Director | Principal | £0 |
| Allan McGill | Director | Principal | £0 |
| Kevin Mitchell | Associate | Senior Professional (1) | £0 |
| Brian Rutherford | Senior Engineer | Professional (2) | £0 |
| Gary Roger | Engineer | Professional (3) | £0 |
| Martin Lorimer | Graduate Engineer | Senior Technician | £0 |
| Jan McAuslan | Technician | Technician | £0 |
| Les Carrol | Associate | Senior Professional (1) | £0 |
| Craig Slessor | Associate | Senior Professional (1) | £0 |
| Gary Meechan | Senior Engineer | Professional (2) | £0 |
| Mike Mackay | Engineer | Professional (3) | £0 |
| Alison Reid | Graduate Engineer | Senior Technician | £0 |
| David McMonagle | Senior Technician | Senior Technician | £0 |
| Neil Robson | Partner | Principal | £2,023 |
| Scott Andrew | Technical Director | Senior Professional (1) | £29,093 |
| Jim Kellachan | Senior Engineer | Professional (2) | £16,408 |
| John Thomson | Senior Engineer | Professional (2) | £1,389 |
| Derrick MacNish | Senior Technician | Senior Technician | £5,564 |
| Jennifer Allan | Technician | Technician | £99 |

**Total Wallace Whittle + Harley Haddow Fee** £55,476

**Total Wallace Whittle + HH Fee (check calc)** £55,476

**New South Glasgow Hospitals Project - Acute Services Strategy - Phase II**
**Lead Consultant and Technical Team Fee Proposal**

**LABORATORIES (See separate Fee Proposal for Adult Acute & Children's Hospitals)**

**Summary for CURRIE & BROWN**

| | C & B | HLM/BMJ/ HIRSTS | Buchan | URS | URS CDM | WW+HH | Total |
|---|---|---|---|---|---|---|---|
| Fee | 137,846 | 85,676 | 0 | 20,118 | 12,897 | 55,476 | 312,014 |
| Check calc | 137,846 | 85,676 | 0 | 20,118 | 12,897 | 55,476 | 312,014 |
| % | 44% | 27% | 0% | 6% | 4% | 18% | 100% |

| | C & B PM & Support | C & B QS | C & B FM | C & B LCC | C & B Risk Man. | C & B Trans Man. | HLM/BMJ/ HIRSTS | Buchan | URS | URS CDM | WW+HH | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fee | 59,297 | 57,258 | 1,528 | 1,528 | 4,277 | 13,958 | 85,676 | 0 | 20,118 | 12,897 | 55,476 | 312,014 |
| Check calc | 59,297 | 57,258 | 1,528 | 1,528 | 4,277 | 13,958 | 85,676 | 0 | 20,118 | 12,897 | 55,476 | 312,014 |
| % | 19% | 18% | 0% | 0% | 1% | 4% | 27% | 0% | 6% | 4% | 18% | 100% |

**Provision of Fess and Expenses**

**Provision of Fee and Expenses**

This part defines fees in relation to the Lead Consultant and describes the methods of payment for the consultant's services and expenses.

**1.1 Lump Sum Fees**

Lump sum fees will be payable on a staged basis as agreed at date of the Agreement, and as set out in Sections 6.5-6.7 of the Lead Consultants Fee Proposal set out in this Appendix.

Time charge fees will be based on rates supplied and agreed at date of the Agreement, and as set out in Section 6.8 of the Lead Consultants Fee Proposal set out in this Appendix. Time charge work should not be undertaken without the prior written agreement of the Project Director or their nominee.

**Payment for duties**

**1.2 Methods of payment**

The fees, except for those on a time-charge basis, shall be deemed to include the provision of all services necessary to perform the duties listed in Part C of the Appendix (Consultant's Duties).

**1.3 Payment on a lump sum basis**

Where payable on a lump sum basis, the fees shall be calculated for each work stage in accordance with the apportionment recorded in Section 6.6 of the Lead Consultants Fee Proposal set out in this Appendix. The lump sum bid will be fixed and capped for each stage in respect of this Agreement.

**1.4 Payment on a time-charge basis**

Where payment is on a time-charge basis the scale of charges shall be set out as below. The Consultant team will regularise their hourly rates across the team to the effect that all similar grades have the same hourly rates across all respective disciplines in the team.

**Principals - hourly rates:**

a) where a principal is specifically nominated by the Project Director or nominee to perform the duties, the principal's time shall be reimbursed at the rate per hour quoted in Section 6.8a of the Lead Consultants Fee Proposal set out in this Appendix, or at such other rate as may be agreed between the Project Director or nominee and the consultant. Hourly rates should include allowance for travel time within the Greater Glasgow conurbation.

b) principals doing work which they consider would normally be done by another member of staff shall be reimbursed at the rate per hour quoted in Section 6.8b of the Lead Consultants Fee Proposal set out in this Appendix or such other rate as may be agreed between the Project Director or nominee and the consultant. For the purposes of this Clause, the rate for a principal's time shall be calculated at the rate applicable to a senior professional member of staff in the firm. Hourly rates should include allowance for travel time within the Greater Glasgow conurbation.

**1.5 Professional and technical staff – hourly rates**

Professional and technical staff time shall be reimbursed at the rate per hour quoted by the consultant in Section 6.8b of the Lead Consultants Fee Proposal set out in this Appendix in the categories stated or such other rate as may be



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agreed between the Project Director or nominee and the consultant. The rate per hour shall include salary, payroll and other costs of employment. Hourly rates should include allowance for travel time within the Greater Glasgow conurbation.

### 1.6 Travelling Time

Time spent by principals, professional and technical staff on travelling in connection with the duties set out in Part C of the Appendix shall include allowance for travel time to the Greater Glasgow conurbation from the consultants place of work, or travel within the Glasgow area.

### 1.7 Supervisory duties

The supervisory duties of a principal shall be deemed to be included in the rate per hour quoted by the consultant in Section 6.8b of the Lead Consultants Fee Proposal set out in this Appendix.

### 1.8 Secretarial and administrative staff

Time charges rates shall include the cost of providing secretarial staff or staff engaged on general accountancy or administrative staff.

### 1.9 Consultant's records

The consultant shall maintain records of time spent on services performed on a time-charge basis. The consultant shall make such records available to the Project Director upon request.

### 1.10 Travelling, subsistence and other expenses

Travelling, subsistence and other expenses shall be deemed to be included within lump sum fee shall be deemed to include the cost of:

a) telex, facsimile and telephone calls;

b) postage and similar delivery charges;

c) travelling, hotel and other similar expenses;

d) all printing, reproduction and purchase of all documentation, drawings, maps, photographs, manuals needed by the consultant and other members of the design team insofar as they are produced by the consultant for the proper performance of the duties relating to this particular commission;

e) the cost of all office equipment and site related protective clothing.

### 1.11 Additional expenses

The consultant shall be reimbursed for all expenses properly incurred in connection with the following:

a. advertising for tenders and site staff;
b. disbursements required by the Board, such as planning and building warrant fees, special surveys by third parties instructed by the Board.
c. travel out with the Greater Glasgow conurbation on business agreed in advance with the Project Director or nominee.

**Payment for additional duties**

### 1.12 Fees for additional duties required by the Board

For additional duties not normally necessary such as those in connection with prolonged contractor's claims and all similar duties where the Project Director specifically instructs the consultant in writing pursuant to Clause 1.32 of the Conditions of Appointment, the charges shall be an agreed lump sum in accordance with the scale of charges as described in Section 6.8 of the Lead Consultants Fee Proposal set out in this Appendix.

**Use of computer and/or special equipment**

**1.13 Computers and/or other special equipment – where no extra fees are payable**

Where the Consultant in performing its duties decides to use a computer and/or other special equipment it shall be at no extra charge to the Board unless the Project Director or nominee has specifically requested the development and/or use of special programs.

**1.14 Where extra fees are payable**

No extra fees will be incurred by the Consultant without the prior written agreement of the Project Director or their nominee.

**Statutory fees**

**1.15 Payment of statutory fees**

The Board shall pay all fees in respect of applications under planning and other statutory requirements.

**Suspension, resumption and termination**

**1.16 Fees on suspension or termination**

On suspension or termination of the Lead Consultant's appointment under Clauses 1.33, 1.34, 1.36 or 1.37 of the Conditions of Appointment set out in Part A of the Appendix, the consultant shall be entitled to fees for all work completed at the date of suspension or termination.

**1.17 Reimbursement during suspension**

During any period of suspension the consultant shall be reimbursed by the Board for costs necessarily incurred under the Agreement up to the date of resumption or termination, always with prior agreement with the Project Director or their nominee.

**1.18 Fees on resumption**

On resumption within six months of suspension, previous payments shall be regarded as payments on account towards the total fee.

**1.19 Reimbursement on termination by the Board**

Where the Lead Consultant's appointment is terminated by the Board under Clause 1.33 or 1.34 of the Conditions of Appointment set out in Part A of the Appendix, the Lead Consultant shall be reimbursed by the Board for costs, excluding loss of profit, necessarily incurred in connection with work up to the date of termination or arising as a result of the termination.

**1.20 Fees where the Scheme does not proceed beyond Stage 1A**

Where the Scheme does not proceed beyond Stage 1A, the Lead Consultant shall be paid in accordance with Clause 1.4 of the Memorandum of Agreement.

### 1.21 Reimbursement on termination by the Consultant

Where the Lead Consultant terminates the Appointment under Clause 1.36 or 1.37 of the Conditions of Appointment set out in Part A of the Appendix, the Board shall be responsible for costs necessarily incurred by the Consultant arising as a result of the termination.

**Payment of accounts**

### 1.22 Submission of accounts and documentary evidence

Accounts for payment of fees and/or expenses and disbursements shall be submitted to the Project Director or their nominee at the intervals stated in Section 6.6 of the Lead Consultants Fee Proposal set out in this Appendix. Interim payments of fees shall be proportionate to the extent to which the commissioned duties have been discharged. Accounts for time-charge based duties and/or travelling, subsistence and other expenses shall be accompanied by documentary evidence of the time and expenses incurred. Such time charges and/or travelling, subsistence and other expenses shall be in respect of the whole of the period since the preceding interim payment.

### 1.23 Payment of accounts

All sums due from the Board to the Lead Consultant under the Agreement shall be paid by the due date, which is 45 days from submission by the Lead Consultant of his account to the Project Director.

Where the Lead Consultant sub-contracts any of the duties forming part of this Agreement there shall be included in the Conditions of Appointment of the sub-contractor a term which requires that payment be made to the sub-contractor within a period not exceeding 45 days from receipt of a fee account by the consultant from the sub-contractor.

The Board shall give notice not later than 5 days after the date on which payment becomes due to the consultant, or would have become due if:-

(a) the Lead Consultant has carried out his obligations under the Agreement; and
(b) no set off or abatement was permitted by sequence to any sum claimed to be due under one or more other agreements, specifying the amount of the payment made or proposed to be made and the basis on which the amount was calculated.

The Board shall not withhold payment after its due date for payment of a sum due under the Agreement, unless the Board has given notice of intention to withhold payment.
A notice of intention to withhold payment shall specify:

a) the amount proposed to be withheld, and the ground for withholding payment; or
b) if there is more than one ground, each ground and the amount attributable to it; and must be give not later than 7 days before the due date for payment of the relevant sum.

**Value Added Tax - in relation to fees and expenses**

All fees and expenses set out in this Agreement are exclusive of Value Added Tax, the amount of which, at the rate and in the manner prescribed by law, shall be paid by the Board to the Lead Consultant.

## APPENDIX PART E – DEFINITIONS

### Definitions

This part contains a list of terms used throughout this Agreement and in understanding this Agreement the following expressions shall have the meaning hereby assigned to them except where the context otherwise requires.

**Activity data**

Information sheets describing:

a. tasks and activities performed in health buildings and having planning significance;

b. environmental and spatial requirements;

c. the equipment and engineering terminals required.

**Additional Duties**

Means any duties additional to those listed at Part C of the Appendix instructed by the Project Director or their nominee pursuant to Clause 1.4 of the Conditions of Appointment.

**Ad hoc departments**

Health building departments without a Scottish Hospital Planning Note or Health Building Note and associated cost allowance.

**Adjudicator**

The individual agreed between the consultant and the Board to whom all disputes in connection with this Agreement shall be referred until completion of the commission.

**Agreement**

This agreement shall comprise the following parts:

Memorandum of Agreement;
Appendix Part A - Conditions of Appointment;
Appendix Part B – Scheme Particulars;
Appendix Part C - Consultants Duties;
Appendix Part D – Lead Consultants Fee Proposal / Provision of Fees and Expenses;
Appendix Part E – Definitions;
Appendix Part F – Collateral Warranty for Sub-Consultants; and
Appendix Part G – Site Masterplan

**Approved sum**

The overall capital sum for construction work on a Scheme (including main contract, enabling and preliminary work necessary to bring planned facilities into use) approved by the Board NHSiS body at work stage 3B prior to agreeing contract and approved in Full Business Case. This sum will be calculated on the basis of tenders received or prices negotiated. Once the contract is let, the approved sum should not be increased without further fresh approval obtained in accordance with a NHSiS body's standing orders/instructions. The approved sum is exclusive of fluctuations allowable under the contract and Value Added Tax.

**Architect**

The person, partnership, company or firm appointed by the Lead Consultant to act as

the architect for the Scheme described in the Memorandum of Agreement.

**Asset register**

A record of data on each capital asset or group of capital assets (for example, land, buildings, fixed plant and other assets). The register consists of a number of structured records, each of which holds details of an asset.

**Board**

The NHSiS body named in the Memorandum of Agreement.

**Brief**

a) *Consultant's Brief*

A document issued to consultants containing information about the Scheme, the Board's procedure etc to enable them to understand exactly the extent of the service they are required to provide.

6) *Appraisal Brief*

A document containing guidelines, instructions and information to act as a basis for the appraisal of options and the outline business case submission at stage 0.

c) *Initial 6rief*

A document prepared at stage 0 or 1, which shall include the following:

I. objectives of the Scheme;

II. cost parameters;

III. outline requirements for the Scheme including content, accommodation, location and town planning statement;

IV. management control plan;

V. procurement strategy;

VI. full business case submission;

VII. any additional information about the site which has become available since stage 0;

VIII. functional content.

d) *Full Brief*

A document containing instructions to the design team at stage 2A stating the essential detailed requirements of the Board that the Scheme must meet, including the following:

confirmation of any changes to the parameters set down in the Scheme brief, especially

regarding programme, planning operational and cost criteria; detailed design briefing;

any updating of the initial brief.

e) *Commissioning Brief*

The operational concomitant to the full brief, containing the essential operational/implementation, programming and budgeting requirements for bringing the Scheme into operation.

**Budget cost**

An estimated cost of the whole of the anticipated capital expenditure

and value added tax for the project, including:

a. departmental costs;

b. on-costs;

c. work costs (total of departmental and on-costs);

d. location adjustment;

e. fees;

f. non-work costs;

g. equipment; and

h. contingencies.

Once approved within the full business case submission the total of these costs become the "Approved Budget Cost". In order to estimate the total outturn cost for the project the Scottish Executive Health Department will add an additional amount for inflation.

**Building surveyor**

The person, partnership, company or firm appointed by the Lead Consultant to act as the building surveyor for the Scheme described in the Memorandum of Agreement.

**Capital budget**

The capital costs component of the budget cost.

**CDM Co-ordinator**

The firm, professional discipline or individual appointment by the Lead Consultant to perform the duties ascribed to the CDM Co-ordinator in the Construction (Design Management) Regulations.

**CDM Regulations**

The Construction (Design and Management Regulations 2007 and the Approved Code of Practice and any industry guidance issued thereunder by the Health and Safety Executive all as may be amended, replaced., modified re-enacted or extended from time to time and are current at the time of provision of the Services.

**Commissioning**

**brief** See "Brief".

**Commissioning officer**

The individual responsible for the overall management, supervision and co-ordination of commissioning by the Board who is accountable to NHSiS body management.

**Commissioning team**

A team comprising a core of officers responsible to the commissioning officer, and concerned with the management and supervision of commissioning for the Board necessary to being the Scheme into effective and efficient operation, representatives of those responsible for managing and running services may be co-opted into the commissioning team.

**Consultants Bid Submission**

Means the document entitled NHS Greater Glasgow & Clyde, New South Glasgow Hospitals Project Acute Services Strategy – Phase 2, Submission for the Appointment of a Lead Consultant and a Technical Team, dated August 2008.

**Contract administrator**

The consultant with particular additional responsibilities for administering the building contract.

**Contract Strategy**

The method by which the Scheme is to be achieved, determining:

The relations between the Board, the Lead Consultant and the Technical Advisory Team;

The methods of financing and management; and

The form of construction contract.

**Contractor**

Any person or persons, firm or company under contact to the Board to perform work and/or supply goods in connection with the Scheme.

**Contractor's proposals**

That part of the tender documents submitted by a contractor detailing the proposals to meet the employer's requirements.

**Contract sum analysis**

That part of a design and build tender detailing the breakdown of costs as specified by the Board in the employer's requirements.

**Co-ordination of design**

i. *Of design generally - means:*

The production of a complete and integrated design solution that provides a satisfactory standard of accommodation and accords with the full brief.

ii. *Of user outlets and terminals - means the following activities:*

a. Provision by the architect/building surveyor of drawings, either at 1:50 or appropriate larger scale, showing the location of all fixtures, furniture and equipment together with all user outlets both in plan and in elevation.

b. Provision by the architect/building surveyor of general and, if necessary, particular information relating to the location of all terminals. This will cover unacceptable locations and may be in the form of drawn or written guidance.

c. Where the public health services are designed by the architect/building surveyor or other independent designer, inclusion by the architect/building surveyor under b. above, details of restrictions on all terminals which relate to services.

d. The examination of the drawings supplied by the architect/building surveyor and comments on them by the services engineer. These comments will refer not only to location, but where appropriate will indicate dimensions and support requirements. The comments supplied will be on the basis of preferred solutions.

e. Examination by the architect/building surveyor of the services engineer's comments and relocation of all terminals as indicated or the initiation of discussions with the services engineer to agree and record an acceptable alternative solution as necessary. Issue by the architect/building surveyor of the total final agreement with the services engineer on co-ordination of user outlets and all terminals so that the latter may complete his designs and undertake the preparation of the production drawings and other documentation.

iii. *Of engineering design - means:*

a. The process of arranging the engineering service works such that each individual item can be physically installed, operated and subsequently maintained.

b. Showing such arrangements on building and engineering services production information so that the objectives of a. can be achieved and to enable detailed structural provision to be made for the engineering works.

iv. *Of the Lead Consultant and other members of the design team - means:*

a. Co-ordinating and integrating the activities of all the other consultants.

b. The production of a complete and integrated design solution that provides a satisfactory standard of accommodation and accords with the design brief.

**Cost analysis**

An analysis of the accepted tender using a form of cost analysis for health building work suitable for the requirements of the Scottish Capital Investment Manual.

**Cost checking**

An estimate of the probable cost of the developing design in comparison with the cost included in the cost plan.

**Cost management**

A continuous process of cost management throughout the duration of the project or Scheme from initial brief to payment of the final certificate to enable expenditure to match specific defined cost targets. It can be considered in two parts:

pre-contract cost management during design/preparation of employer's requirements, the object of which is to obtain a tender within the updated budget costs; post-contract cost management during execution, the object of which is to obtain a final account within the approved sum (excluding fluctuations).

**Cost plan**

A statement of the cost of the proposals prepared by the professional design team, presented in elemental format in accordance with NHS in Scotland guidance.

**Cost planning**

The process of assisting the design team to produce a cost effective solution and controlling the cost of the Scheme within the sum approved by the Board during all stages up to the placing of the contract.

**Defects liability period**

The period of time stated in the contract and starting from the date of practical completion of the works, during which the contractor is liable for making good defects attributable to workmanship or materials not having been made in accordance with the contract.

**Departmental Cost Allowance Guides (DCAG's)**

The guidance on capital sums calculated for the provision of a defined amount of functional accommodation. DCAG's are produced by the Scottish Executive Health Department. Cost allowance guides may be reduced or exceeded where an investment appraisal has demonstrated that within the context of an economical and efficient overall design, further running cost savings and/or measurable service benefits may be obtained from the decreased or increased capital provision.

**Departmental cost**

The capital sum allowed for functional provisions based on (or derived from) Scottish Office cost allowance guides. Where cost allowances are not appropriate, the costs for individual departments should be justified on the basis of similar accommodation in other schemes.

**Design/cost reports**

Reports on design development and cost consequences to demonstrate fulfillment of the design brief and

adherence to the budget cost. Costs must be reported at a known cost datum.

**Design team**

A team comprising consultants or an NHSiS body's design staff responsible for design of the Scheme, inspection of its construction, adjustment of accounts and the issue of the final certificate.[1]

**Development Control Plan**

A series of drawings comprising site plans with contours (or spot levels), schematic plans and sections of buildings, showing existing properties and proposed cycle of site development, identifying individual schemes, outline of engineering service networks, functional relationships and main communications within and between buildings. The development control plan should not pre-empt the appraisal of options at stages 0 and 7 and may be revised as a consequence of Full Business Case approval for the Scheme.

**Duties**

Means the duties to be performed by the Consultant listed at Part C of the Appendix, as amplified by the Consultants Bid Submission, provided always that where there is a conflict between the duties listed at Part C of the Appendix and any deliverables and methodologies contained within the Consultants Bid Submission that the duties listed at Part C of the Appendix shall prevail, and any Additional Duties.

**Employer's agent**

The consultant with the particular responsibility for administration of the contract when using a design and building contract strategy.

**Employer's requirements**

A document prepared by the Board, Lead Consultant / Project Manager and consultants for obtaining tenders when using a design and building contract strategy.

**Engineering services commissioning**

Bringing the entire engineering service works together into full normal working condition and handing over the whole to the Board a an operating entity capable of meeting the levels of load and/or performance specified.

**Engineering services works**

The engineering services in connection with which the Board has engaged the services engineer to perform the professional duties.

**Equipment**

Equipment is classified into four groups:

| | |
|---|---|
| Group 1: | items usually supplied and fixed by the contractor; |
| Group 2: | items, having a significant effect on space or structural requirements, which are supplied by the NHSiS body and fixed by the contractor; |
| Group 3: | items, having a significant effect on space or structural requirements, which are supplied by the NHSiS body and put into position by them or their agents outside the general contract (for example includes x-ray equipment, linear accelerators and other medical equipment); |
| Group 4: | small items, usually storage items, supplied and put |

into position by the NHSiS body.

**Final account**

The document to arrive at the total remuneration due to the contractor under the terms of the contract.

**Full business case submission**

A document whose objective is to confirm in detail the viability of the preferred option for the project and make recommendations as to the methods to be used to deliver the project on time, cost and quality. This document is used to obtain final approval to the funding of the project.

**Functional content**

The service/departmental capacity of a health building scheme expressed in terms of functional units.

**Functional unit**

A unit for measuring the capacity of health building accommodation in terms of service related content.

For example, the functional unit for measuring the capacity of wards is the bed.

**Health and safety file**

This is the document referred to in the Construction (Design and Management) Regulations which contains information on the design of the Scheme together with information added during construction to provide "as built" records. The information contained in the file is handed to the project director and is used to assist any persons carrying out work on the Scheme after its completion (eg maintenance, extensions, refurbishment, demolition).

**Lead Consultant**

The consultant member of the Technical Advisory Team appointed by the Board to act as

the Lead Consultant for the Scheme described in the Memorandum of Agreement.

**Management Control Plan**

The overall programme and plan of work for the execution and commissioning of a scheme. The plan must take account of Scottish Capital Investment Manual activities and a scheme's requirements in terms of resources and timing. It will normally be expressed in a diagrammatic form (network or bar chart) and will be updated regularly to reflect progress made.

**Management staff categories**

For the purpose of time charge rates, the definitions of the project management staff grades listed in Article 6.8 Schedule 2 of the Memorandum of Agreement are: Senior professional: a person who has held corporate membership of a professional body recognised by the NHSiS body for a period of at least five years. Professional: a person who has held corporate membership of a professional body recognised by the NHSiS body.

*Senior technician*: a person not holding corporate membership of a professional body with ten years or more relevant work experience. Technician: a person not holding corporate membership of a professional body with less than ten years relevant work experience.

**Material(s) - (in relation to copyright)**

Any document, item, material or the work produced for the purpose of the Scheme or in connection with the Scheme by the consultant, any of its employees or any third party engaged by the consultant or working under the direction or supervision of the consultant.



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**NHSiS Body**

This includes Scottish NHS Trusts, Health Board and

any other centrally funded bodies.

**On-costs**

Capital costs arising from the interaction between the functional departmental units and the total building and site complex (for example the cost of communications between departments, external works and services, additional energy saving measures, auxiliary buildings and abnormals).

**Operating manuals**

Sets of documentation which shall include the operating instructions, servicing and maintenance instructions, spare parts lists and test reports dealing with the building and engineering systems provided under the commission. The manuals shall cover in an orderly fashion each item of equipment and each system in the works.

**Outline business case submission**

A document whose objective is to demonstrate the viability of the project (this includes investigation and evaluation of strategic planning, service planning and capital planning) and obtain initial approval to funding of the preferred option, subject to confirmation of viability in the full business case submission. The preparation of the outline business case submission involves a systematic analysis of the relative advantages and disadvantages of alternative options in meeting specific health objectives. Both monetary and non-monetary consequences are considered.

**Outline plans**

Drawings prepared by the architect/building surveyor to a scale of not less than 1:100 of the layouts of the departments for the purposes of consultation with external local interests, other consultants and the Board.

**Participant**

A person, partnership, company or firm involved in the Scheme and making a contribution to its completion, operation or occupation.

**Post-contract changes (stage 4 onwards)**

The alteration or modification of the design, quality or quantity of the work shown on the contract drawings and described by or referred to in the contract bills, priced documents or other production information for main and sub-tender; the addition, alteration or omission of any obligations or restrictions imposed by the Board in the contract bills or priced documents.

**Practical completion (certificate of)**

Document certifying that a scheme or specified part of a scheme has in the opinion of the contract administrator/employer's agent achieved practical completion of the works in accordance with the contract, the date of this certificate marks the commencement of the defects liability period (maintenance period) and of the period of final measurement for the purposes of the final account.

**Principal**

Member of firm generally in overall charge of the policy and conduct of the firm's

business who is able to commit the firm to undertake commissions.

**Principal contractor**

The contractor appointed by the Board to perform the roles and responsibilities of the Principle Contractor under the Construction (Design and Management) Regulations 2007.

**Production information**

The co-ordinated drawings, specification/employer's requirements, schedules and bills of quantities or priced

documents needed for tendering, co-ordination and construction of the building and its services.

**Professional advisor**

An individual or firm appointed by the project director to provide advice on:

a) actions, decisions and approvals from the NHSiS body;

b) interpretation or reports and recommendations submitted by the Project Manager and advice on when, and what action is needed as a result;

c) the adequacy and contents of the project execution plan; and

d) internal NHSiS body matters affecting the project.

**Project**

The complete cycle of development work envisaged for an individual hospital or NHSiS site. A project may include a number of building schemes.

**Project director**

The individual, usually an employee of the Board, who represents, and has the authority of the Board in respect of the specific scheme. All instructions given by the project director are deemed to be given by the Board. All advice given to the project director is deemed to have been given to the Board. More detailed information is provided in the Scottish Capital Investment Manual; Project Organisation.

**Project Documentation**

Means any documentation produced by or on behalf of the Consultant, which has been approved by the Board for use in the Scheme.

**Project execution plan**

A manual prepared by the Project Manager and agreed with the project sponsor, acting as a common control document for the Scheme including, inter alia, the following subjects:

a) management and organisational structure;

b) identification of all participants;

c) summary of duties of all participants;

d) responsibilities of all participants;

e) delegated authority limits of all participants;

f) lines of communications;

g) administrative procedures;

h) Board/project director approval/instruction procedures;

i) progress procedures;

j) reporting procedures and formats (including cost control and reporting);

k) financial procedures (including risk and sensitivity analysis, change and cost management procedures);

l) meetings structure;

m) quality assurance/control;

n) construction procedures;

o) technical and operational commissioning procedures;

p) post project evaluation procedures.

**Post information manuals**

Sets of documentation, which shall include all essential information about the construction of the building, together with all the necessary sources of information for its proper maintenance, for example, information regarding safety and fire integrity.

**Project Manager**

The person, partnership, company or firm named in the Memorandum of Agreement and appointed by the Board to act as the project manager for the Scheme described in the Memorandum of Agreement.[2]

**Quantity surveyor**

The person, partnership, company or firm appointed by the Lead Consultant to act as the quantity surveyor for the Scheme described in the Memorandum of Agreement.

**Record drawings**

Drawings showing the building and service installation as erected at the date of practical completion.

**Revenue/running costs**

The annual operational costs element of the outline/full business case submission, for example, maintenance and staffing costs.

**Scheme**

All planning, design and construction work and commissioning activity necessary to bring planned facilities into use (including essential preliminary and enabling works) referred to in the Memorandum of Agreement.

**Scottish Capital Investment Manual**

The document published by the Scottish Executive Health Department in the version current at the date of this Agreement. It comprises the following sections:

- Overview
- Project Organisation
- Business Case Guide
- Private Finance Guide
- Management of the Construction Project
- Commissioning a Health Care Facility
- IM & T Guidance
- Post-Project Evaluation

**Services engineer**

The person, partnership, company or firm appointed by the Lead Consultant to act as the services engineer for the Scheme described in the Memorandum of Agreement.

**Shop drawings**

Drawings and documentation prepared by the contractor or sub-contractor or suppliers to supplement the production information for use in manufacturing of components or installation or on-site assemblies.

**Site inspection staff**

Staff resident on site on a full or part-time basis to inspect the progress and quality of the work and to determine that the works are being executed in accordance with the contract documents.

**Stage payments**

Payments made on completion of pre-determined stages of the work.

**Structural engineer**

The person, partnership company or firm appointed by the Lead Consultant to act as the structural engineer for the Scheme described in the Memorandum of Agreement.

**Structural engineering works**

Those works for which the structural engineer is require to prepare calculations and generality give advice and otherwise perform professional duties.

**Sub-consultant**

Any person, partnership, company or firm appointed by the Lead Consultant to perform and / or supply goods and / or services in connection with the Scheme.

**Sub-consultant Agreement**

An agreement entered or to be entered into between the Lead Consultant and a Sub-Consultant appointed to perform work and / or supply goods and / or services in connection with the Scheme, in substantially equivalent terms to the Agreement.

**Sub-contractor**

Any person, partnership, company or firm under contract to the contractor to perform work and/or supply goods and/or services in connection with the Scheme.

**Sub-programme**

Detail programme based on the constraints of the management control plan, relating to a particular stage or part of the Scheme.

**Technical Advisory Team**

Means the team of consultants appointed by the Lead Consultant to deliver the Duties required by the Board in connection with the Scheme.

**Tender documents**

All the documents used to invite tenders for the execution of the works.

**User panel**

A group representing the end users of the Scheme comprising representatives of the NHSiS body's finance department, medical staff and those responsible for operating the various ancillary services.

These representatives will be authorised to define their department's needs and to renew and to review and agree how those needs will be met whilst ensuring that the Scheme remains financially viable. The user panel will communicate its requirements and decisions to the Project Manager through the project director.

**Works**

The construction works relative to the Scheme.

**Work Stage**

Means the discreet stages of work from 1A – 5 identified in Part C of the Appendix.

## APPENDIX PART F – DRAFT COLLATERAL WARRANTY FOR SUB-CONSULTANTS

**(attached separately)**

**APPENDIX PART G – SITE MASTERPLAN**

**Option 1**

**Option 1A – preferred option**



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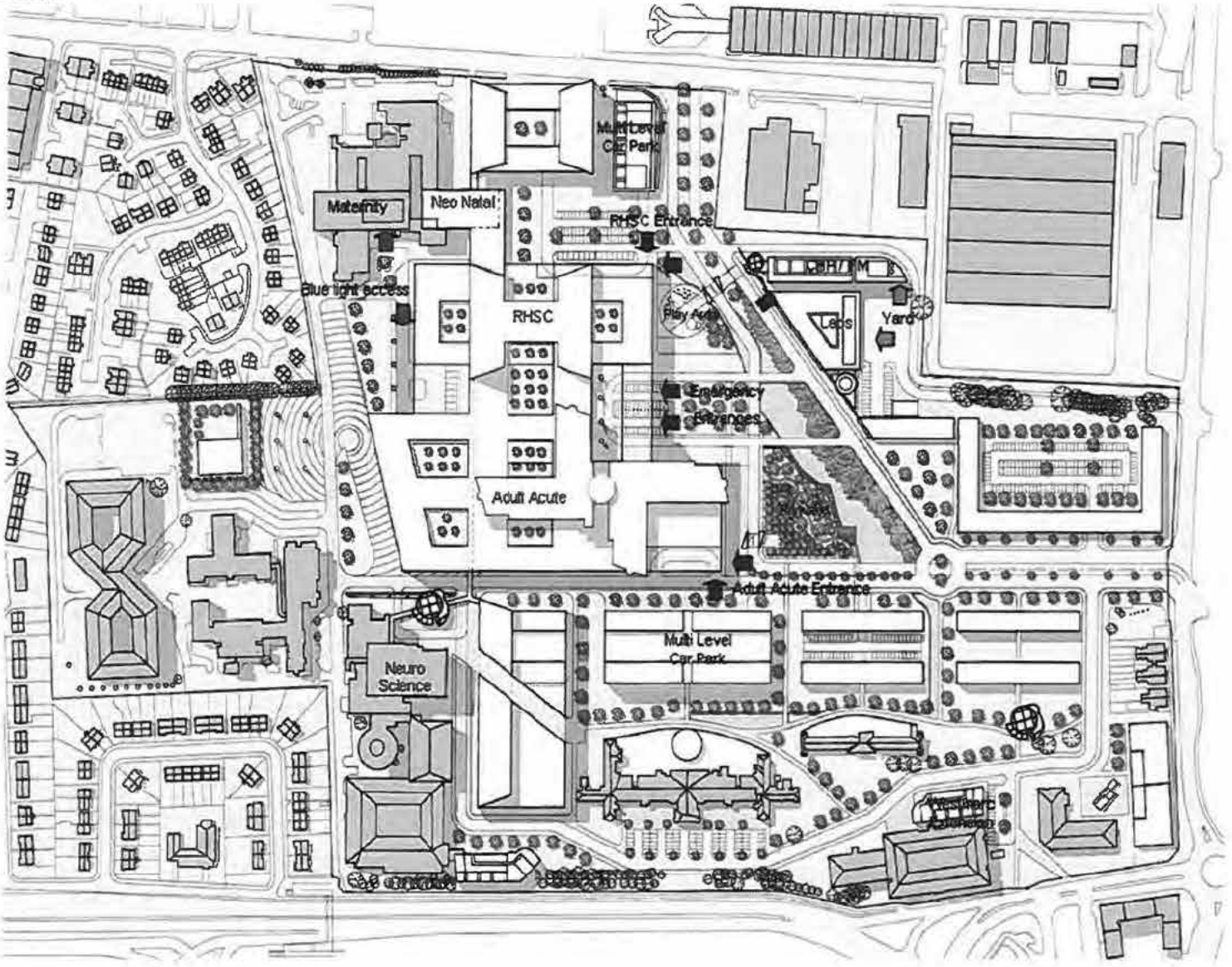
'TION 1




December 2006

avanti architects

OBC Scheme Proposed Campus Master Plan

New South Glasgow Hospitals

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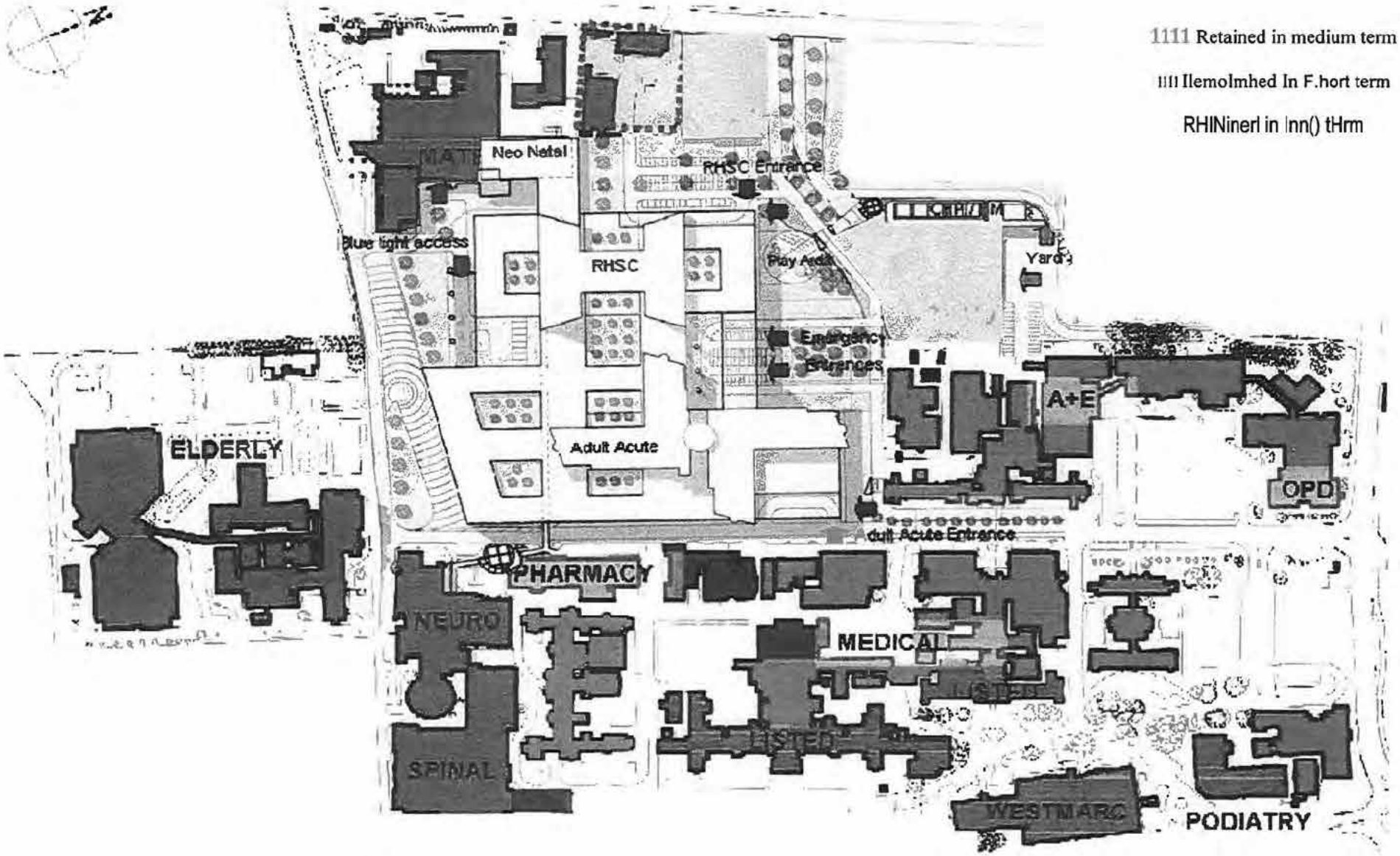


Option 1a Single phased integrated Adult and Children's Hospital with 1100 and 240 beds respectively. Fast link access.

**New South Glasgow Hospitals**
**Technical / ER's Meeting – Friday 30 January 2009 (Offices of HLM)**

**MINUTE of MEETING**

**Attendees:** Peter Moir (PM) NHSGG&C, Steve Allan (SA) HLM, Graham Annandale (GA) URS, John Bushfield (JB) and Stewart McKechnie (SM) Wallace Whittle, Bob Menzies (BM) BMJ, David Hall (DH) and Mark Baird (MGB)

**Apologies:** Harry Smith and Andy Anderson, HLM

**Circulation:** Attendees + Apologies + Jim Hackett + Douglas Ross + Scott Grier

| Item | Agenda | Status/Purpose | Minute/Action | Action |
|---|---|---|---|---|
| 1.0 | Gateway Update | C&B to give an update on the Gateway outcome and report to the team. | C&B confirmed that Gateway 2 was concluded and the project had successfully passed the review with a limited number of 'amber' notifications. | |
| 2.0 | Clarification of importance and standing of ERs | Clarification of bidding and appointment process and use of the ERs. | The process to appointment of the contractor and site operations was re-stated to the team. This confirmed that the prequalification process will run to 20 March 2009, with the bid period (using competitive dialogue) running from 14 April 2009 for 18 weeks. The contract award will then take place in October 2009 comprising design and construction of the laboratories concurrent with design development of the Adult and Children's hospital.<br><br>The importance of the Employer's Requirements (ERs) being generated by the team was stressed. These (the ERs) will require to capture all of the requirements of the Board and all relevant standards to be met and will be the output basis to be met by the developing design. Robust ERs are therefore essential for each area of design/input.<br><br>The target price comprising three priced activity schedules was also explained to the team.<br><br>**Action: C&B to meet with the Board and present the NEC/Target Price approach, w/c 02 February 2009.** | C&B |

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| 3.0 | Previous Actions | Review actions from last meeting. | Outstanding actions from the previous meeting (not covered by other agenda items) are:<br><br>**Landscaping** – updated landscaping proposals to be provided, this to be an amplification of the list of headings/areas provided by Hirsts.<br>**Information due:** included in next ER update from HLM.<br><br>**Appendices** – all to review appendix list and consider extent and coverage of proposed items. Feedback to C&B views (either coverage fine or items to be added). **Information due:** prior to next ER meeting. | HLM<br><br>All |
| 4.0 | Compliance (SHTMs/HTMs) | Concur that list is currently 'complete' – seek client views and approval. Agree requirement to close out HLM narrative items. | Updated design team list of derogations provided by HLM and circulated to client + team.<br><br>**Action:** Board to review listing and provide comments and approvals as necessary. Concluded listing requires to be signed off. Particular consideration of areas with narrative on HLM listing (see 'Key Ergonomic Space Standards').<br><br>**Information/sign-off due:** prior to next ER/Technical Meeting, 13 February 2009.<br><br>**Action:** Board to arrange for copies of the under noted to be circulated, as discussed, plus provide clarification on the status of SHTM 61 Flooring - this document was circulated recently for comment/consultation but is not listed on the HFS website. Can the Board (via HFS) confirm the status/likely date of publication of this document?<br><br>* SHPN 06 Part 2: Facilities for diagnostic imaging;<br><br>* SHPN 23: Hospital accommodation for children and young people;<br><br>* SHPN 28: Facilities for cardiac services; and<br><br>* SHPN 57: Facilities for critical care.<br><br>**Information due**: w/c 02 February 2009. | Board<br><br>Board |

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| 5.0 | Other documents and standards + information captures. | RDS and 1:50 layouts – status and content.<br><br>Environmental conditions matrix – status and content.<br><br>Naming of manufacturers and 'kit'.<br><br>Achieving relevant quality and performance standards. | Dates being programmed for RDS and 1:50 meetings.<br><br>WW to provide draft of environmental matrix.<br><br>Except in very particular circumstances naming of manufacturers not allowed (see attached briefing note from the Board's legal advisors).<br><br>This to be drafted into ERs to assist in the physical build, to give provision for the Board supervisor and team to act and to assist in the quality of product and commissioning. | <br><br>WW |
| 6.0 | Planning | C&B to update following recent presentation (incl S75 update). Agree planning matrix and current + ongoing/future team actions and owners. | **Action:** Planning matrix generated. This to be updated and issued by C&B for next ER meeting. | C&B |
| 7.0 | Utilities | WW to update on status and actions – discuss impacts on project/ER drafting/time/cost. | WW advise that the current draft narrative will be turned into a 'storyboard' for each area and incorporated into the ERs. In order to complete this exercise meetings are required with several Board reps, including Voice/Data, Medical Gases, Pneumatic systems.<br><br>**Action:** DHall and WW to meet separately w/c 02 February 2009 to update Queries List and also identify meetings required. | <br><br>C&B/WW |
| 8.0 | Fire | Update on BH inputs and actions arising from joint HLM/BH/WW meeting.<br><br>Clarifications of inputs and process to ensure design and ERs inputs are achieved. | HLM confirmed that they have queries from Buro Happold and that the overall fire strategy work was progressing. This would involve ensuring that the podium layout 'works' in evacuation terms and working up the fire requirements.<br><br>**Action:** Buro queries to be issued by HLM and fire section of ERs updated for next issue of ERs. | <br><br>HLM |
| 9.0 | Sustainability/BREEAM / Energy / Carbon Trust | URS to update on SWater meeting – SUDS etc.<br>BREEAM roles to be considered (inputs identified).<br>Update from all on tracker actions and discuss + agree what to be incorporated in ERs (incl energy targets). | URS confirmed initial meetings with SWater, but that further meeting required to progress matters. **Action:** URS to issue note of subsequent meetings to advise on progress.<br><br>BREEAM bids due for return on 20 February 2009.<br><br>**Action**: update from all to C&B on tracker actions to allow further progress on energy and targets etc. Information to be provided by 09 February 2009. | URS<br><br><br><br>All |

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| 10.0 | Robotics | How are we incorporating this into ERs, what has been included in masterplan/floorplates? | Gordon Beattie, Head of Procurement at the Board taking robotics issue forward.<br><br>**Action:** C&B to query with Gordon as to progress as well as requirements for other 'new' or leading edge equipment and systems. | <br><br>C&B |
| 11.0 | Acoustics | HLM to advise of status. | Board agree that an acoustics input and overview will be of benefit.<br><br>**Action:** Scope/brief and potential providers to be provided by HLM and WW to allow consideration and award. | <br><br>HLM/WW |
| 12.0 | Carbon Trust | C&B to update re tracker – concur re requirements on team and clarify what is to be included in ERs. | See item 9.0, above. | |
| 13.0 | Helipad | WW have provided M&E inputs/considerations, HLM to advise of status and other design/information requirements to conclude. | Board advised that a previous Emergency planning type report had considered rooftop provision.<br>**Action:** this document to be provided by the Board.<br><br>**Action:** C&B to re-issue HBN 15:03: Hospital Helipads and seek CAA contact for designers to liaise with.<br><br>**Action:** URS to provide costed design information on the provision of a rooftop helipad. | Board<br><br>C&B<br><br>URS |
| 14.0 | Loading Bays | Are these sized appropriately. | URS confirmed that this issue was in-hand and would be reviewed and appropriately concluded. | |
| 15.0 | Sealed/Non-Sealed Building | Concur around what we are saying in this regard and knock-on implications and impacts (incl environmental conditions matrix – treatment of temperatures and upper temperatures etc). | It was noted that a double skinned provision is being considered, this to create an environmentally controlled situation.<br><br>Designers considered that the only other building types to have double skin approach are offices.<br><br>WW noted that they are retesting the assumptions around air quality and it was agreed that a sample area of double skin scenario would be modelled/tested.<br><br>**Action**: WW to feedback on progress and outcome of further analysis at next ER/Tech meeting. | <br><br><br><br><br><br>WW |

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| 16.0 | Bariatrics | What requires to be included in the ERs to address this requirement? | **Action:** Board to advise what specific requirements are to be included in the ERs (e.g. mortuary and other equipment sizing/spacing). | Board |
| 17.0 | Resilience | Comments from circulated document. | **Action:** all to review and comment on consultation copy of SHPN 00-07: Resilience planning for the healthcare estate. Comments to identify areas for consideration/input to ERs as well as implications (cost/area etc) of adopting proposals.<br>Board to specifically identify areas of resilience planning and emergency planning that the hospital requires to incorporate, e.g. chemical, biological incidents, hyperbaric chamber facilities (this via Alan Doran at the Board).<br><br>**Information due:** comments from designers due prior to next ER meeting, 13 Feb 2009.<br><br>**Post Meeting Note:** Board have confirmed no hyperbaric chamber facilities are required. | Contact with Alan Doran by C&B<br><br>All |
| 18.0 | Queries Log | Clarification meetings with client to conclude ER drafting. | This to be addressed separately with C&B and WW to allow updating and then circulation. | C&B |
| 19.0 | ER document sections | Comments and status of each section to be considered. | Updated sections confirmed as being worked on by all designers.<br><br>**Post Meeting Note**: confirmed at TA Board meeting of 06 February 2009 that updated drafts to be issued to C&B by noon on 11 February 2009 with 'finalised' ER sections from each designer by 27 February 2009. Appreciated that 'finalised' draft may have some info gaps to be slotted in, but the document to be concluded with all sections and information loaded up with spacing for any confirmations or concluded info to slot in. | All |
| 20.0 | Return Bid Requirements | Discuss what will be returned with action to be taken from meeting for team to provide list of requirements. | **Action:** all to consider what they will request in return bid (end of 18 week bid period) as well as for completion of FBC stage. Attached pro-forma to be filled in with this information and provided to C&B by 20 February 2009. | All |

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| 21.0 | AOCB | | Control of Infection: confirmed that CoI have been reviewing and inputing to work to date. Board confirmed that there will be a CoI sign-off prior to the bid being issued.<br><br>Liaison with Strathclyde Police to be commenced.<br><br>**Action:** C&B to engage via architectural department contact at the Police. | Board<br><br><br><br>C&B |
| 22.0 | Subsequent Meetings | Friday 13 February 2009;<br>Friday 27 February 2009;<br>Friday 13 March 2009;<br>Friday 27 March 2009;<br>Friday 10 April 2009. | For information only. | |

**Post Meeting Notes:**

A) Board to provide copy of site boundary provided by CLO. – **Board to provide.**

B) Discussed and agreed with the Board that a site walk-round is necessary to agree definitive boundary lines and highlight + agree specific areas of sensitivity with the SGH users as well as other interested parties. This will require the CLO boundary to be available to firstly cross-check against the drawn boundary. Areas of particular consideration are the Maternity/Neo-natal blue light route and access (also considering that the build will have to extend into the zone between neo-natal and the new hospital to provide the physical link) and the facilities drop-off/access at the rear of Surgical Block. C&B to contact Frances Wrath to arrange attendance by Jim McFadden (Estates), Ronnie Clinton (Facilities) and Gibby Donnelly (Fire Officer). HLM to lead TA team input to inform masterplanning/ER layouts on 'blue-light' and other essential routes/areas. Once Board/TA team position is agreed, Strathclyde Fire and Rescue and Scottish Ambulance Service to be taken through proposals for agreement. – **C&B to initiate, HLM to lead.**

**New South Glasgow Hospitals**
**Technical / ER's Meeting – Friday 13 February 2009**

**MINUTE of MEETING**

**Attendees:** Hugh McDerment (HM) NHS GG&C (part), Steve Allan (SA) HLM, Graham Annandale (GA) URS, John Bushfield (JB), Wallace Whittle, David Hall (DBH) and Mark Baird (MGB)

**Apologies:** Peter Moir (PM) NHSGG&C, Bob Menzies (BM) BMJ, Stewart McKechnie (SM) WW.

**Circulation:** Attendees + Apologies + Jim Hackett + Douglas Ross + Scott Grier + Harry Smith + Andy Anderson

| Item | Agenda | Status/Purpose | Minute/Action of 30 Jan | Action | 13 February 2009 Minute | Action |
|---|---|---|---|---|---|---|
| 1.0 | Gateway Update | C&B to give an update on the Gateway outcome and report to the team. | C&B confirmed that Gateway 2 was concluded and the project had successfully passed the review with a limited number of 'amber' notifications. | | | |
| 2.0 | Clarification of importance and standing of ERs | Clarification of bidding and appointment process and use of the ERs. | The process to appointment of the contractor and site operations was re-stated to the team. This confirmed that the prequalification process will run to 20 March 2009, with the bid period (using competitive dialogue) running from 14 April 2009 for 18 weeks. The contract award will then take place in October 2009 comprising design and construction of the laboratories concurrent with design development of the Adult and Children's hospital.<br><br>The importance of the Employer's Requirements (ERs) being generated by the team was stressed. These (the ERs) will require to capture all of the requirements of the Board and all relevant standards to be met and will be the output basis to be met by the developing design. Robust ERs are therefore essential for each area of design/input.<br><br>The target price comprising three priced activity schedules was also explained to the team.<br><br>**Action: C&B to meet with the Board and present the NEC/Target Price approach, w/c 02 February 2009.** | <br><br><br>

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| 4.0 | Compliance (SHTMs/HTMs) | Concur that list is currently 'complete' – seek client views and approval. Agree requirement to close out HLM narrative items. | Updated design team list of derogations provided by HLM and circulated to client + team.<br><br>**Action:** Board to review listing and provide comments and approvals as necessary. Concluded listing requires to be signed off. Particular consideration of areas with narrative on HLM listing (see 'Key Ergonomic Space Standards').<br><br>**Information/sign-off due:** prior to next ER/Technical Meeting, 13 February 2009.<br><br>**Action:** Board to arrange for copies of the under noted to be circulated, as discussed, plus provide clarification on the status of SHTM 61 Flooring - this document was circulated recently for comment/consultation but is not listed on the HFS website. Can the Board (via HFS) confirm the status/likely date of publication of this document?<br><br>* SHPN 06 Part 2: Facilities for diagnostic imaging;<br><br>* SHPN 23: Hospital accommodation for children and young people;<br><br>* SHPN 28: Facilities for cardiac services; and<br><br>* SHPN 57: Facilities for critical care.<br><br>**Information due**: w/c 02 February 2009. | Board<br><br>Board | HTM/SHTM list discussed and highlighted that Board are aware of the 16.5sqm versus 19sqm issue in relation to bedroom sizing but that the current drawn requirement (which is greater than 16.5) complies with the required standard, has been approved by the Users and is affordable.<br><br>Board to review Compliance list and raise any queries or confirm/approve by end of w/c 16 February 2009.<br><br>HLM to issue post-meeting the listing of allowances and allocations in the current exemplar design and highlight any conflict with the potential new HBN on ergonomics.<br><br>WW to issue post-meeting the narrative on particular M&E related SHTM/HTMs (this was previously issued to the Board but not the design/TA team).<br><br>Board to issue the requested consultation draft SHPNs and provide clarification on SHTM61 (Flooring).<br><br>HLM to liaise with the Board to close out the Compliance (SHTM/HTM etc) aspect of the ERs asap, this also to allow their schedule of minimum standards for corridor widths, ceiling heights etc (incl treatment of handrails, bump protection and the like) to be completed and provided to C&B.<br><br>Agreed that the Compliance list will be issued in the ERs with no mention or request for derogations. | <br><br>Board<br><br>HLM<br><br>WW<br><br>Board<br><br>HLM/Board |
| 5.0 | Other documents and standards + information captures. | RDS and 1:50 layouts – status and content.<br><br>Environmental conditions matrix – status and content.<br><br>Naming of manufacturers and 'kit'.<br><br>Achieving relevant quality and performance standards. | Dates being programmed for RDS and 1:50 meetings.<br><br>WW to provide draft of environmental matrix.<br><br>Except in very particular circumstances naming of manufacturers not allowed (see attached briefing note from the Board's legal advisors).<br><br>This to be drafted into ERs to assist in the physical build, to give provision for the Board supervisor and team to act and to assist in the quality of product and commissioning. | WW | HLM to confirm post meeting that the listing of meetings has been concluded and issued back to Mairi and Heather at the Board. The programme of meetings to be circulated by HLM.<br><br>WW to provide draft of environmental matrix, this to identify room temperature requirements. To be provided w/c 17/02. (Treatment of room temperatures to be discussed thereafter: C&B/WW/Board).<br><br>As manufacturers and suppliers are not able to be listed, any specific requirements to be raised with the Board for consideration and agreement. For relevant items, specific specification requirements will require to be drafted and included in the ERs – e.g. imaging equipment – that will steer the bidders to a particular product/range.<br><br>**Post Meeting Note**: List of any such items/equipment to be circulated by CoP 19 Feb to allow discussion with the Board.<br><br>The relevant quality and performance standards are to be incorporated into the ERs by the design team where relevant. | HLM<br><br>WW<br><br>HLM/WW/ URS<br><br>HLM/WW/ URS |
| 6.0 | Planning | C&B to update following recent presentation (incl S75 update). Agree planning matrix and current + ongoing/future team actions and owners. | **Action:** Planning matrix generated. This to be updated and issued by C&B for next ER meeting. | C&B | Updated matrix issued at the meeting.<br><br>Comments by return from the Board and TA team by CoP 18/02 to C&B. | <br><br>All/Board |

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| 7.0 | Utilities | WW to update on status and actions – discuss impacts on project/ER drafting/time/cost. | WW advise that the current draft narrative will be turned into a 'storyboard' for each area and incorporated into the ERs. In order to complete this exercise meetings are required with several Board reps, including Voice/Data, Medical Gases, Pneumatic systems.<br><br>**Action:** DHall and WW to meet separately w/c 02 February 2009 to update Queries List and also identify meetings required. | C&B/WW | C&B advised that a Utilities meeting/discussion was required with the Board and that this would be Thurs 19/02 [or Fri 20/02 (tbc)]. This to review strategy and decisions + assumptions to allow Utilities to be closed out.<br><br>It was noted that meetings have been requested with the Board in relation to Voice/Data, the Medical Gases information and requirements provided by Frances Wrath had been included in the updated ERs and that no info had been received as yet with regard to pneumatic systems. Meetings and confirmations of information from the relevant Board reps is urgently required to allow these areas to be informed and closed out.<br><br>**Post Meeting Note**: Jane Gibb may be Board rep re pneumatic requirements (she is handling present queries on ACAD scheme) – Board to confirm.<br><br>WW confirmed that they had visited the Manchester Royal site, although the Board reps who were to attend unfortunately called off. WW have notes and recommendations from the visitation and shall issue these for digestion and Board approval where necessary. WW advised their view remains that the FM control room be housed in the FM building and not remote from the site. Relevant information to be circulated by CoP 17/02. | C&B<br><br>Board<br><br>Board<br><br>WW |
| 8.0 | Fire | Update on BH inputs and actions arising from joint HLM/BH/WW meeting.<br><br>Clarifications of inputs and process to ensure design and ERs inputs are achieved. | HLM confirmed that they have queries from Buro Happold and that the overall fire strategy work was progressing. This would involve ensuring that the podium layout 'works' in evacuation terms and working up the fire requirements.<br><br>**Action:** Buro queries to be issued by HLM and fire section of ERs updated for next issue of ERs. | HLM | HLM confirmed that they had received the list of BH queries back from C&B and would update this and re-issue as necessary.<br><br>It was noted that the fire consultation, checks and output drafting requires to move progressively to be aligned with the developing podium/masterplan work and this was acknowledged by HLM.<br><br>Fire co-ordination and lead with HLM – update on progress and confirmation to be provided to C&B. | HLM |
| 9.0 | Sustainability/BREEAM / Energy / Carbon Trust | URS to update on SWater meeting – SUDS etc.<br>BREEAM roles to be considered (inputs identified).<br>Update from all on tracker actions and discuss + agree what to be incorporated in ERs (incl energy targets). | URS confirmed initial meetings with SWater, but that further meeting required to progress matters. **Action:** URS to issue note of subsequent meetings to advise on progress.<br><br>BREEAM bids due for return on 20 February 2009.<br><br>**Action**: update from all to C&B on tracker actions to allow further progress on energy and targets etc. Information to be provided by 09 February 2009. | URS<br><br>All | URS provided a verbal update of the recent meeting with Scottish Water and this confirmed that SW were considering the hospital plans and would revert to URS with any specific comments or requirements. Write up of position to be issued by URS by CoP 17/02.<br><br>C&B expressed the need for a continued focus around the SW/drainage issue, with URS to pursue a joint SW/GCC/SEPA discussion to purge out any potential problems/views/requirements from the combined group.<br><br>Confirmed that the energy targets for the building have now been set following the carbon trust discussions.<br><br>C&B to confirm the coverage of sustainability issues in the ERs – URS sustainability resource/team to provide inputs to ER drafting. | URS<br><br>URS<br><br>C&B/URS |
| 10.0 | Robotics | How are we incorporating this into ERs, what has been included in masterplan/floorplates? | Gordon Beattie, Head of Procurement at the Board taking robotics issue forward.<br><br>**Action:** C&B to query with Gordon as to progress as well as requirements for other 'new' or leading edge equipment and systems. | C&B | Agreed that Board require to confirm robotics requirement by end of w/c 16 Feb 09.<br><br>Potential for variant bid outlook, however requirement of Board for robotics needed in any event. | Board |

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| 11.0 | Acoustics | HLM to advise of status. | Board agree that an acoustics input and overview will be of benefit.<br><br>**Action:** Scope/brief and potential providers to be provided by HLM and WW to allow consideration and award. | HLM/WW | HLM confirmed that they have acoustics consultant attending their office w/c 16 Feb 09 to assess requirement and proposal.<br><br>**Post Meeting Note**: HLM to liaise with WW re requirement and provide C&B with costed proposal by CoP 20/02 to allow issue to the Board for approvals. | <br><br>HLM |
| 12.0 | Carbon Trust | C&B to update re tracker – concur re requirements on team and clarify what is to be included in ERs. | See item 9.0, above. | | | |
| 13.0 | Helipad | WW have provided M&E inputs/considerations, HLM to advise of status and other design/information requirements to conclude. | Board advised that a previous Emergency planning type report had considered rooftop provision.<br>**Action:** this document to be provided by the Board.<br><br>**Action:** C&B to re-issue HBN 15:03: Hospital Helipads and seek CAA contact for designers to liaise with.<br><br>**Action:** URS to provide costed design information on the provision of a rooftop helipad. | Board<br><br>C&B<br><br>URS | Report to be provided by the Board.<br><br>Document issued, Tony Eagles was original CAA contact, he has passed to Kevin Payne (01293 57 3696). HLM to co-ordinate and lead helipad feasibility.<br><br>URS to provide costed structural proposals for options on helipad structure to (i) manage the air-ambulance and (ii) manage the air sea rescue provision. | Board<br><br>HLM<br><br>URS |
| 14.0 | Loading Bays | Are these sized appropriately. | URS confirmed that this issue was in-hand and would be reviewed and appropriately concluded. | | Confirmed by URS as WiP. C&B re-confirmed concern about this area of the planning presently – URS to provided updated plans w/c 16/02 to reflect the elements of the masterplan that have been updated, this to demonstrate the turning circles, logistics etc. | URS |
| 15.0 | Sealed/Non-Sealed Building | Concur around what we are saying in this regard and knock-on implications and impacts (incl environmental conditions matrix – treatment of temperatures and upper temperatures etc). | It was noted that a double skinned provision is being considered, this to create an environmentally controlled situation.<br><br>Designers considered that the only other building types to have double skin approach are offices.<br><br>WW noted that they are retesting the assumptions around air quality and it was agreed that a sample area of double skin scenario would be modelled/tested.<br><br>**Action**: WW to feedback on progress and outcome of further analysis at next ER/Tech meeting. | <br><br><br><br><br><br>WW | HLM and WW to liaise and identify the sealed/non-sealed proposal. This to consider the pros and cons of the double-skinned consideration, with particular attention and clarification around air quality (incl modelling) and cross-talk checks.<br><br>Information and proposals to be provided to C&B for discussion with the Board by end of w/c 16/02. | HLM/WW |
| 16.0 | Bariatrics | What requires to be included in the ERs to address this requirement? | **Action:** Board to advise what specific requirements are to be included in the ERs (e.g. mortuary and other equipment sizing/spacing). | Board | Board to advise. | Board |
| 17.0 | Resilience | Comments from circulated document. | **Action:** all to review and comment on consultation copy of SHPN 00-07: Resilience planning for the healthcare estate. Comments to identify areas for consideration/input to ERs as well as implications (cost/area etc) of adopting proposals.<br>Board to specifically identify areas of resilience planning and emergency planning that the hospital requires to incorporate, e.g. chemical, biological incidents, hyperbaric chamber facilities (this via Alan Doran at the Board).<br><br>**Information due:** comments from designers due prior to next ER meeting, 13 Feb 2009.<br><br>**Post Meeting Note:** Board have confirmed no hyperbaric chamber facilities are required. | Contact with Alan Doran by C&B<br><br>All | Board to confirm with Alan Doran both any particular aspects of the consultation draft that are to be adopted as well as the position with regard to any specific current and future Majax or emergency and contingent planning requirements.<br><br>Noted none received to date. List of comments and observations require to be issued to C&B by CoP 17/02. | Board<br><br>All |

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| 18.0 | Queries Log | Clarification meetings with client to conclude ER drafting. | This to be addressed separately with C&B and WW to allow updating and then circulation. | C&B | C&B to issue updated log and pursue Board items. | C&B |
| 19.0 | ER document sections | Comments and status of each section to be considered. | Updated sections confirmed as being worked on by all designers.<br><br>**Post Meeting Note**: confirmed at TA Board meeting of 06 February 2009 that updated drafts to be issued to C&B by noon on 11 February 2009 with 'finalised' ER sections from each designer by 27 February 2009. Appreciated that 'finalised' draft may have some info gaps to be slotted in, but the document to be concluded with all sections and information loaded up with spacing for any confirmations or concluded info to slot in. | All | See item 2.0, above. | |
| 20.0 | Return Bid Requirements | Discuss what will be returned with action to be taken from meeting for team to provide list of requirements. | **Action:** all to consider what they will request in return bid (end of 18 week bid period) as well as for completion of FBC stage. Attached pro-forma to be filled in with this information and provided to C&B by 20 February 2009. | All | Stage C+ position to be considered in terms of design information to be returned.<br><br>The importance of requesting information to be returned in the bids that allows assessment of coverage and compliance with the ERs was highlighted. This to extend to and include, but not be limited to, the listing of manufacturers, kit, materials etc in order that a quality/compliance type assessment can be made.<br><br>Date for return of pro-forma to C&B remains by 20/02. | All |
| 21.0 | AOCB | | Control of Infection: confirmed that CoI have been reviewing and inputing to work to date. Board confirmed that there will be a CoI sign-off prior to the bid being issued.<br><br>Liaison with Strathclyde Police to be commenced.<br><br>**Action:** C&B to engage via architectural department contact at the Police. | Board<br><br>C&B | Actual sign-off coverage and process to be agreed by C&B and the Board.<br><br>Alan Seabourne advised 11/02 that he had the list of SP personnel and would contact the relevant Superintendent (arch liaison?)<br><br>Meeting Schedule issued to all by C&B.<br><br>Other parties who may require to be consulted prior to tender issue to be considered by all in order that pre-warning is provided where possible. E.g. Strathclyde Fire and Rescue. Any other bodies/individuals to be listed to C&B (incl coverage of matters for discussion with them) by end of w/c 16/02.<br><br>Noted that some aspects of roads into the site may require to be formed to access the labs and install utilities/comms – this to be monitored and re-assessed when roads updated by URS in the coming week.<br><br>URS confirmed roads to be constructed to adoptable standards.<br><br>URS to check if any of the current boreholes are over roadway areas, this will be a consideration/feature for adoption (sub-strata).<br><br>Request for access to the SAS site to visually assess workshop, tanks, fuel storage etc to be made.<br><br>The cross-reference checking/reading of the Clinical Output Specifications by the designers was highlighted. Also a system for checking the technical standards noted in the CoS are covered by the ERs, are appropriate and then (only then) the technical standards (e.g. SHTM/HTM references) | C&B/Board<br><br>Board<br><br>All<br><br>C&B/URS<br><br>URS<br><br>C&B<br><br>HLM |

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| | | | | | removed from the CoS to be agreed between HLM and IBuchAssoc.<br><br>AEDET of exemplar design and facilitation of this to be considered. HLM to have internal discussion on this and ASPECT and report back to C&B 18/19 Feb. | HLM |
| 22.0 | Subsequent Meetings | Friday 13 February 2009;<br>Friday 27 February 2009;<br>Friday 13 March 2009;<br>Friday 27 March 2009;<br>Friday 10 April 2009. | For information only. | | | |

**Post Meeting Notes (from meeting of 30 Jan):**

A) Board to provide copy of site boundary provided by CLO. – **Board to provide.**

B) Discussed and agreed with the Board that a site walk-round is necessary to agree definitive boundary lines and highlight + agree specific areas of sensitivity with the SGH users as well as other interested parties. This will require the CLO boundary to be available to firstly cross-check against the drawn boundary. Areas of particular consideration are the Maternity/Neo-natal blue light route and access (also considering that the build will have to extend into the zone between neo-natal and the new hospital to provide the physical link) and the facilities drop-off/access at the rear of Surgical Block. C&B to contact Frances Wrath to arrange attendance by Jim McFadden (Estates), Ronnie Clinton (Facilities) and Gibby Donnelly (Fire Officer). HLM to lead TA team input to inform masterplanning/ER layouts on 'blue-light' and other essential routes/areas. Once Board/TA team position is agreed, Strathclyde Fire and Rescue and Scottish Ambulance Service to be taken through proposals for agreement. – ~~**C&B to initiate, HLM to lead.**~~ **Frances Wrath will provide diary date(s) for Board attendees, TA team to then confirm which date is suitable.**

**Post Meeting Note (from meeting of 13 Feb):**

C) The benefit of selecting areas/rooms for appraisal and coverage in respect of various aspects of design detail and HAI~Scribe compliance was discussed. This resulted in the agreement that a bedroom and theatre layout will both be considered at the next ER/Technical meeting in order that areas of detailing can be discussed, agreed and written up. This to include joints, junctures etc and treatment and protection of surfaces – e.g. coving, skirting, bump rails etc.
**Action: HLM to liaise with WW as necessary and prepare layout/log for consideration and agreement on 27 Feb 09.**

**New South Glasgow Hospitals**
**Technical / ER's Meeting – Friday 27 February 2009**

**MINUTE of MEETING**

**Attendees:** Peter Moir (PM) NHS GG&C, Stewart McKechnie (SM) WW (part), John Bushfield (JB) WW, Graham Annandale (GA) URS, Bob Menzies (BM) BMJ, Steve Allan (SA) HLM, David Hall (DBH) C&B, Mark Baird (MGB) C&B

**Apologies:** Hugh McDerment NHS GG&C

**Circulation:** Attendees + Apologies + Jim Hackett + Douglas Ross + Scott Grier + Harry Smith + Andy Anderson

| Item | Agenda | Status/Purpose | 13 February 2009 Minute | Action | 27 February 2009 Minute | Action |
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| 1.0 | Gateway Update | C&B to give an update on the Gateway outcome and report to the team. | | | | |
| 2.0 | Clarification of importance and standing of ERs | Clarification of bidding and appointment process and use of the ERs. | Civils and Structural updated sections received 12 February 2009.<br><br>M&E handed over at meeting – electronic copy to be issued post meeting.<br><br>HLM update (incl fire and landscaping) to be issued post-meeting.<br><br>Final versions of ER text for 27 February 2009 was re-confirmed to the technical team, that along with the importance of the robustness of the documents to capture all output requirements and provide the standards for design to be assessed against and to achieve during the design development stage.<br><br>It is appreciated that some sections of the ERs may have info to be concluded to complete at 27/02, all headings and sections to be drafted as far as possible with [identification] where reference/x-ref/item of information is to be added to conclude. Also, some aspects that have not yet been concluded may be captured in an appendix – e.g. ergonomics (corridor widths etc) from HLM – by agreement with C&B.<br><br>HLM to issue the matrix of room types versus RDS type headings to WW, URS and C&B. This to allow each design discipline to complete the relevant information for bid purposes. | <br><br>WW<br><br>HLM<br><br>All<br><br>All<br><br>HLM – all to complete | <br><br>C&B and WW meeting Monday 02 March 2009 to discuss and review ERs + close out.<br><br>HLM reported that liaison with Buro Happold continues and that HLM intend to have the relevant drawings to BH to allow written ER info from w/c 09 March 2009 with any drawn info to follow from BH thereafter.<br><br>Post Meeting Note: C&B and HLM in ADB and room coding discussions – to revert to the Board. | <br><br>C&B/WW<br><br>BH<br><br>C&B/HLM |
| 3.0 | Previous Actions | Review actions from last meeting. | Landscaping to be included in HLM updated section (see item 2.0 above).<br><br>Feedback on Appendix list awaited from all. To be provided by close of play Tuesday 17 February 2009.<br><br>Appendices to be added to capture specific items (see item 2.0, above).<br><br>Agreed no tolerance on bedroom size and dimensions needs to be enforced (other than positive movement). Location and coverage of tolerance (design + BS) in document to be confirmed by C&B. | HLM<br><br>All<br><br>C&B | C&B have fed comments on latest landscaping section – HLM to co-ordinate update in next ER draft.<br><br>Received from WW and HLM, awaited from URS and the Board. | HLM<br><br>URS/Board |

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| 4.0 | Compliance (SHTMs/HTMs) | Concur that list is currently 'complete' – seek client views and approval. Agree requirement to close out HLM narrative items. | HTM/SHTM list discussed and highlighted that Board are aware of the 16.5sqm versus 19sqm issue in relation to bedroom sizing but that the current drawn requirement (which is greater than 16.5) complies with the required standard, has been approved by the Users and is affordable.<br><br>Board to review Compliance list and raise any queries or confirm/approve by end of w/c 16 February 2009.<br><br>HLM to issue post-meeting the listing of allowances and allocations in the current exemplar design and highlight any conflict with the potential new HBN on ergonomics.<br><br>WW to issue post-meeting the narrative on particular M&E related SHTM/HTMs (this was previously issued to the Board but not the design/TA team).<br><br>Board to issue the requested consultation draft SHPNs and provide clarification on SHTM61 (Flooring).<br><br>HLM to liaise with the Board to close out the Compliance (SHTM/HTM etc) aspect of the ERs asap, this also to allow their schedule of minimum standards for corridor widths, ceiling heights etc (incl treatment of handrails, bump protection and the like) to be completed and provided to C&B.<br><br>Agreed that the Compliance list will be issued in the ERs with no mention or request for derogations. | <br><br><br><br><br>Board<br><br><br>HLM<br><br><br>WW<br><br><br>Board<br><br><br>HLM/Board | PM gave comments on planning note 004 (key ergonomics) to HLM post masterplan meeting of 20 feb 2009.<br><br>PM advised that he is meeting Estates in relation to several matters related to the Project.<br><br>Post Meeting Note: as at 04 March 2009 – list to be re-issued for review. HLM checking to allow issue.<br><br>HLM to provide overall building measure as well as confirm allowances and allocations (e-mail MGB to SA 04 March 2009 clarifies requirement).<br><br>WW have provided notice, but this does not make clear any particular cost or area or other implications that need to be considered by the Board.<br><br>Post Meeting Note: received by the Board 03 March 2009 and circulated to designers. Comments from all required by CoP 06 March 2009.<br><br>Agreed by all that a 'watch-list' or 'lessons learned' sheet would be generated to highlight and close off issues that have been problematic or challenging on previous projects.<br><br>Pro-forma for watchlist issued by C&B 02 March 2009 – to be returned by CoP 04 March 2009. | <br><br><br><br><br>HLM<br><br><br>HLM<br><br><br>WW<br><br><br>All<br><br><br><br><br>All |
| 5.0 | Other documents and standards + information captures. | RDS and 1:50 layouts – status and content.<br><br>Environmental conditions matrix – status and content.<br><br>Naming of manufacturers and 'kit'.<br><br>Achieving relevant quality and performance standards. | HLM to confirm post meeting that the listing of meetings has been concluded and issued back to Mairi and Heather at the Board. The programme of meetings to be circulated by HLM.<br><br>WW to provide draft of environmental matrix, this to identify room temperature requirements. To be provided w/c 17/02. (Treatment of room temperatures to be discussed thereafter: C&B/WW/Board).<br><br>As manufacturers and suppliers are not able to be listed, any specific requirements to be raised with the Board for consideration and agreement. For relevant items, specific specification requirements will require to be drafted and included in the ERs – e.g. imaging equipment – that will steer the bidders to a particular product/range.<br><br>**Post Meeting Note**: List of any such items/equipment to be circulated by CoP 19 Feb to allow discussion with the Board.<br><br>The relevant quality and performance standards are to be incorporated into the ERs by the design team where relevant. | HLM<br><br><br><br>WW<br><br><br><br>HLM/WW/ URS<br><br><br><br><br><br>HLM/WW/ URS | HLM to provide the list prioritised to show the 120 in green (any others amber/red) to identify the list we are to progress with – URGENTLY REQUIRED.<br><br>Received.<br><br>PM mentioned that Ironside Farrah may be required to reappraise aspects of the masterplan.<br><br>None received as at 04 March 2009 (WW picking up in meetings with the Board – IT dept etc – to be arranged by the Board). | HLM<br><br><br><br><br>Board<br><br><br><br><br><br>HLM/URS/ Board |
| 6.0 | Planning | C&B to update following recent presentation (incl S75 update). Agree planning matrix and current + ongoing/future team actions and owners. | Updated matrix issued at the meeting.<br><br>Comments by return from the Board and TA team by CoP 18/02 to C&B. | <br><br>All/Board | Comments required from all.<br><br>C&B have prepared a planning matrix to identify the status and responsibility of each condition for incorporation in the ERs. A 'clean' copy of the outline planning doc is required from the Board. | All<br><br><br>Received 03 March 2009. |

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| 7.0 | Utilities | WW to update on status and actions – discuss impacts on project/ER drafting/time/cost. | C&B advised that a Utilities meeting/discussion was required with the Board and that this would be Thurs 19/02 [or Fri 20/02 (tbc)]. This to review strategy and decisions + assumptions to allow Utilities to be closed out.<br><br>It was noted that meetings have been requested with the Board in relation to Voice/Data, the Medical Gases information and requirements provided by Frances Wrath had been included in the updated ERs and that no info had been received as yet with regard to pneumatic systems. Meetings and confirmations of information from the relevant Board reps is urgently required to allow these areas to be informed and closed out.<br><br>**Post Meeting Note**: Jane Gibb may be Board rep re pneumatic requirements (she is handling present queries on ACAD scheme) – Board to confirm.<br><br>WW confirmed that they had visited the Manchester Royal site, although the Board reps who were to attend unfortunately called off. WW have notes and recommendations from the visitation and shall issue these for digestion and Board approval where necessary. WW advised their view remains that the FM control room be housed in the FM building and not remote from the site. Relevant information to be circulated by CoP 17/02. | C&B<br><br>Board<br><br>Board<br><br>WW | Noted that this meeting had not yet been able to be arranged with IT – WW would be including certain guestimates and considerations in the ERs, but a meeting to go through their queries and close out issues remains urgent – the Board acknowledged this and are endeavouring to get meeting dates.<br><br>WW confirmed that other utilities/site type items incl gases and pneumatics were being addressed via Frances Wrath.<br><br>WW further confirmed that a presentation/meeting with Satchwell re BMS was to be arranged. Post Meeting Note: 13 March 2009 at 2pm (post Technical/ERs meeting) is proposed. | Board<br><br>C&B/WW/ Board |
| 8.0 | Fire | Update on BH inputs and actions arising from joint HLM/BH/WW meeting.<br><br>Clarifications of inputs and process to ensure design and ERs inputs are achieved. | HLM confirmed that they had received the list of BH queries back from C&B and would update this and re-issue as necessary.<br><br>It was noted that the fire consultation, checks and output drafting requires to move progressively to be aligned with the developing podium/masterplan work and this was acknowledged by HLM.<br><br>Fire co-ordination and lead with HLM – update on progress and confirmation to be provided to C&B. | HLM | HLM co-ordinating and confirmed on target for drawing release and BH inputs to ERs – see also item 2.0, above. | HLM |
| 9.0 | Sustainability/BREEAM / Energy / Carbon Trust | URS to update on SWater meeting – SUDS etc.<br>BREEAM roles to be considered (inputs identified).<br>Update from all on tracker actions and discuss + agree what to be incorporated in ERs (incl energy targets). | URS provided a verbal update of the recent meeting with Scottish Water and this confirmed that SW were considering the hospital plans and would revert to URS with any specific comments or requirements. Write up of position to be issued by URS by CoP 17/02.<br><br>C&B expressed the need for a continued focus around the SW/drainage issue, with URS to pursue a joint SW/GCC/SEPA discussion to purge out any potential problems/views/requirements from the combined group.<br><br>Confirmed that the energy targets for the building have now been set following the carbon trust discussions.<br><br>C&B to confirm the coverage of sustainability issues in the ERs – URS sustainability resource/team to provide inputs to ER drafting. | URS<br><br>URS<br><br>C&B/URS | Updated ERs section from URS to capture and identify progressed status on all areas now due.<br><br>DH confirmed that the Carbon Trust would be reviewing ER items on 18 March 2009.<br><br>URS advised that SEPA now want a joint Swater/SEPA/GCC meeting – URS/Board to liaise once date set re attendance of the Board.<br><br>The GCC flood risk assessment aspect of the masterplan requires to be concluded – the masterplan storage provision to be identified also.<br><br>PM confirmed that Swater had issued an e-mail stating that they have no objections 'in principle' to the land provision to the NHS. NHS Property Advisors to discuss with Swater as well as provide for the necessary wayleave (potential) for Swater pipes over the new access road to Govan Road (the boulevard).<br><br>Board taking Swater forward, agenda requires to include the provision of a new mobile mast | URS<br><br>URS/Board<br><br>URS<br><br>Board<br><br>Board |

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| 10.0 | Robotics | How are we incorporating this into ERs, what has been included in masterplan/floorplates? | Agreed that Board require to confirm robotics requirement by end of w/c 16 Feb 09.<br><br>Potential for variant bid outlook, however requirement of Board for robotics needed in any event. | Board | PM confirmed that he is meeting with Gordon Beattie on Wednesday 04 March 2009 and would update on progress/requirement etc.<br><br>PM confirmed that robotics are definitely required in some fashion, and that a Board Policy (requirement) would be generated.<br><br>PM advised that the Board had some videos and drawings of robot provision elsewhere and would make that available to the team.<br><br>WW/HLM require to consider and prepare a notional x-section of the tunnel. | Board<br><br>Board<br><br>Board<br><br>WW/HLM |
| 11.0 | Acoustics | HLM to advise of status. | HLM confirmed that they have acoustics consultant attending their office w/c 16 Feb 09 to assess requirement and proposal.<br><br>**Post Meeting Note**: HLM to liaise with WW re requirement and provide C&B with costed proposal by CoP 20/02 to allow issue to the Board for approvals. | <br><br>HLM | Noted that Martin Butterfield of Arup Acoustics is proposed to carry out the work. Understood that Martin wrote the relevant HTM.<br><br>HLM to provide a costed proposal to the Board for consideration and approval to carry out this work – URGENTLY REQUIRED. | HLM |
| 12.0 | Carbon Trust | C&B to update re tracker – concur re requirements on team and clarify what is to be included in ERs. | | | | |
| 13.0 | Helipad | WW have provided M&E inputs/considerations, HLM to advise of status and other design/information requirements to conclude. | Report to be provided by the Board.<br><br>Document issued, Tony Eagles was original CAA contact, he has passed to Kevin Payne (01293 57 3696). HLM to co-ordinate and lead helipad feasibility.<br><br>URS to provide costed structural proposals for options on helipad structure to (i) manage the air-ambulance and (ii) manage the air sea rescue provision. | Board<br><br>HLM<br><br>URS | PM advised that he has to meet Alan Doran and will provide the necessary report on emergency planning.<br><br>HLM confirmed that they are progressing and co-ordinating this aspect. To discuss headline CAA requirements and views and provide ER inputs. Board to provide contact at Bond helicopters. Air Sea Rescue to also be contacted.<br><br>URS to provide this information. | Board<br><br>HLM<br><br>Board<br><br>URS |
| 14.0 | Loading Bays | Are these sized appropriately. | Confirmed by URS as WiP. C&B re-confirmed concern about this area of the planning presently – URS to provided updated plans w/c 16/02 to reflect the elements of the masterplan that have been updated, this to demonstrate the turning circles, logistics etc. | URS | Noted that this items interacts with the labs work to an extent.<br><br>C&B requested that this aspect of design/validation is progressed urgently. | <br><br>URS |
| 15.0 | Sealed/Non-Sealed Building | Concur around what we are saying in this regard and knock-on implications and impacts (incl environmental conditions matrix – treatment of temperatures and upper temperatures etc). | HLM and WW to liaise and identify the sealed/non-sealed proposal. This to consider the pros and cons of the double-skinned consideration, with particular attention and clarification around air quality (incl modelling) and cross-talk checks.<br><br>Information and proposals to be provided to C&B for discussion with the Board by end of w/c 16/02. | HLM/WW | The ER provision for this item was discussed. WW explained the outlook that they are developing a mixed mode type narrative with 'reasoning' as to how and why this is considered. Any departure or alternatives will therefore require to address the same areas and facets of design and operation and explain those in terms of the alternative – this should allow assessment and evaluation. | WW |
| 16.0 | Bariatrics | What requires to be included in the ERs to address this requirement? | Board to advise. | Board | Board to confirm. | Board |
| 17.0 | Resilience | Comments from circulated document. | Board to confirm with Alan Doran both any particular aspects of the consultation draft that are to be adopted as well as the position with regard to any specific current and future Majax or emergency and contingent planning requirements. | Board | Noted that the Board had previously advised that the building was to be considered/classified as a terrorist target, and that the application of the adjacent car parking and underground car parking was acceptable. Reconfirmed that 'airport' style bollards are to be provided to prevent direct vehicle access/proximity to entrances – HLM/Hirst to consider. | HLM/Hirst |

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| | | | Noted none received to date. List of comments and observations require to be issued to C&B by CoP 17/02. | All | PM confirmed that he is to meet Alan Doran. Majax type information as well as emergency and contingent planning requirements to be provided from the Board (this to consider the future planning requirements – i.e. Southern and GRI will be the only 2 A&E depts for the city). | Board |
| 18.0 | Queries Log | Clarification meetings with client to conclude ER drafting. | C&B to issue updated log and pursue Board items. | C&B | Meetings to be arranged with IT to conclude. | Board |
| 19.0 | ER document sections | Comments and status of each section to be considered. | See item 2.0, above. | | PM provided some initial comments and advised that he will send through further comments. (Further comments received 03 March 2009 – additional comments may follow also.) | Board |
| 20.0 | Return Bid Requirements | Discuss what will be returned with action to be taken from meeting for team to provide list of requirements. | Stage C+ position to be considered in terms of design information to be returned.<br><br>The importance of requesting information to be returned in the bids that allows assessment of coverage and compliance with the ERs was highlighted. This to extend to and include, but not be limited to, the listing of manufacturers, kit, materials etc in order that a quality/compliance type assessment can be made.<br><br>Date for return of pro-forma to C&B remains by 20/02. | <br><br><br><br><br><br>All | Bid return information provided by WW and HLM.<br><br>Urgently required from URS. | <br><br>URS |
| 21.0 | AOCB | | Actual sign-off coverage and process to be agreed by C&B and the Board.<br><br>Alan Seabourne advised 11/02 that he had the list of SP personnel and would contact the relevant Superintendent (arch liaison?)<br><br>Meeting Schedule issued to all by C&B.<br><br>Other parties who may require to be consulted prior to tender issue to be considered by all in order that pre-warning is provided where possible. E.g. Strathclyde Fire and Rescue. Any other bodies/individuals to be listed to C&B (incl coverage of matters for discussion with them) by end of w/c 16/02.<br><br>Noted that some aspects of roads into the site may require to be formed to access the labs and install utilities/comms – this to be monitored and re-assessed when roads updated by URS in the coming week.<br><br>URS confirmed roads to be constructed to adoptable standards.<br><br>URS to check if any of the current boreholes are over roadway areas, this will be a consideration/feature for adoption (sub-strata).<br><br>Request for access to the SAS site to visually assess workshop, tanks, fuel storage etc to be made.<br><br>The cross-reference checking/reading of the Clinical Output Specifications by the designers was highlighted. Also a system for checking the technical standards noted in the | C&B/Board<br><br>Board<br><br><br>All<br><br>C&B/URS<br><br>URS<br><br>C&B<br><br>HLM | This requires to be agreed.<br><br>Board to progress.<br><br>None noted.<br><br>Running utilities along the new Govan road access (the boulevard) was discussed. The combination of road, tram, pedestrian, traffic and utilities was debated. URS and WW to consider and provide a notional section for the roadway to show the various requirements and the potential location(s) of utilities.<br><br>URS gave an update on the SI situation. The SI is on programme, with the areas over the site being carried out first of all. This has provided initial information that the boulder clay may by higher than originally thought. Information to be sought from Nuttal re roads as they have carried out some SI work in relation to the car parking etc.<br><br>PM confirmed that he is meeting SAS w/c 02 March and would advise if approach for access was OK. | Board / C&B<br><br>Board<br><br><br>URS / WW<br><br><br>URS<br><br>Board |

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| | | | CoS are covered by the ERs, are appropriate and then (only then) the technical standards (e.g. SHTM/HTM references) removed from the CoS to be agreed between HLM and IBuchAssoc.<br><br>AEDET of exemplar design and facilitation of this to be considered. HLM to have internal discussion on this and ASPECT and report back to C&B 18/19 Feb. | <br><br>HLM | HLM will action this.<br><br>AEDET with some limitations agreed as route forward – further discussion on ASPECT required. | HLM<br><br>C&B / HLM / Board |
| 22.0 | Subsequent Meetings | Friday 13 February 2009;<br>Friday 27 February 2009;<br>Friday 13 March 2009;<br>Friday 27 March 2009;<br>Friday 10 April 2009. | | | | |

**Post Meeting Notes (from meeting of 30 Jan):**

A) Board to provide copy of site boundary provided by CLO. – ~~**Board to provide.**~~ **Received from PM – forwarded to HLM. To be utilised with meeting on site: see item B, below.**

B) Discussed and agreed with the Board that a site walk-round is necessary to agree definitive boundary lines and highlight + agree specific areas of sensitivity with the SGH users as well as other interested parties. This will require the CLO boundary to be available to firstly cross-check against the drawn boundary. Areas of particular consideration are the Maternity/Neo-natal blue light route and access (also considering that the build will have to extend into the zone between neo-natal and the new hospital to provide the physical link) and the facilities drop-off/access at the rear of Surgical Block. C&B to contact Frances Wrath to arrange attendance by Jim McFadden (Estates), Ronnie Clinton (Facilities) and Gibby Donnelly (Fire Officer). HLM to lead TA team input to inform masterplanning/ER layouts on 'blue-light' and other essential routes/areas. Once Board/TA team position is agreed, Strathclyde Fire and Rescue and Scottish Ambulance Service to be taken through proposals for agreement. – ~~**C&B to initiate, HLM to lead.**~~ **Frances Wrath will provide diary date(s) for Board attendees, TA team to then confirm which date is suitable. Meeting dates required – urgent to inform site boundary conclusion.**

**Post Meeting Note (from meeting of 13 Feb):**

C) The benefit of selecting areas/rooms for appraisal and coverage in respect of various aspects of design detail and HAI~Scribe compliance was discussed. This resulted in the agreement that a bedroom and theatre layout will both be considered at the next ER/Technical meeting in order that areas of detailing can be discussed, agreed and written up. This to include joints, junctures etc and treatment and protection of surfaces – e.g. coving, skirting, bump rails etc.
**Action: HLM to liaise with WW as necessary and prepare layout/log for consideration and agreement on 27 Feb 09. Date to be arranged as aspect of ER close out.**

**Post Meeting Notes (from meeting of 27 February 2009):**

D) Potential dates for meetings with Facilities – 13 March and 20 March – as part of Technical/ER sessions.

**New South Glasgow Hospitals**
**Technical / ER's Meeting – Friday 13 March 2009**

**RUNNING AGENDA and ACTIONS**

**Attendees:** Peter Moir (PM) NHSGG&C, Bob Menzies (BM) BMJ, Steve Allan (SA) HLM, Graham Annandale (GA) URS, John Bushfield (JB) WW, Stewart McKechnie (SW) WW, Simon Miller (SM) C&B, David Hall (DBH) C&B, Mark Baird (MGB) C&B.

**Apologies:** Alan Seabourne, Hugh McDerment (both NHS GG&C)

**Circulation:** Attendees + Apologies + Jim Hackett + Douglas Ross + Scott Grier + Harry Smith + Andy Anderson

| Item | Agenda Point | Remaining Action | Action | Minute 13 March 2009 | Action |
|---|---|---|---|---|---|
| 1.0 | Gateway Update | | | | |
| 2.0 | Clarification of importance and standing of ERs | ADB room coding and equipment scheduling – to be concluded between HLM/C&B and the Board. | HLM / C&B / Board | Discussed post meeting. Content and coverage debated and agreed. Costed proposal to be issued to the Board by C&B. | C&B |
| 3.0 | Previous Actions | Board to provide comments on the list of Appendices once the updated list is provided to them. To be provided early w/c 16 March 2009. | C&B / Board | Updated list to be issued early w/c 16 March 2009. | C&B |
| 4.0 | Compliance (SHTMs/HTMs) | Feedback from Board in relation to meeting(s) with Estates.<br><br>Updated SHTM/HTM list attached to Agenda – to be reviewed by all with any comments to be provided to C&B by CoP Wed 18 March 2009.<br><br>Clarity on SHTM/HTM items provided by WW where there is potential area/cost impact to be issued to support review of overall SHTM/HTM listing.<br><br>HLM to provide overall building measure as well as confirm allowances and allocations for key ergonomics. To be measured upon completion of dwgs 13 March 2009.<br><br>Comments on consultation draft documents received (HLM to confirm) – to be issued for review and Board consideration. C&B will issue early w/c 16 March 2009.<br><br>'Lessons learned' watchlists require to be provided by Board and WW. | Board<br><br>All<br><br>WW<br><br>HLM<br><br>C&B<br><br>WW / Board | PM has arranged meetings w/c 16 March 2009, DBH from C&B will attend.<br><br>Issued post meeting – deadline for response CoP Tues 17 March 2009.<br><br>WW clarified that their recommendation is that the newer HTM are prioritised in the ERs per their listing. (Therefore no cost/area/other impacts specifically raised by WW). WW have produced Ventilation and Electrical Distribution Schematics reflecting the updated standards and are to provide to the Board for review.<br><br>As 'Remaining Action' – to be provided asap w/c 16 March 2009.<br><br>Table to be issued for review and agreement/action as necessary.<br><br>Current watchlist attached to Minute. Board to review and add their items by CoP Wed 18 March. C&B to review and progress responses and actions. | <br><br>All<br><br>WW<br><br>HLM<br><br>C&B<br><br>Board / C&B |
| 5.0 | Other documents and standards + information captures. | Agreement of 50/50 rooms for 1:50s and RDS.<br><br>Ironside Farrah to reappraise aspects of the masterplan (environmental impacts)?<br><br>Specific discussions required to 'scope-up' the MRI and other relevant Imaging areas as well as similar aspects/requirements where we do not know the kit that will be purchased at this stage but we need to make suitable provision in the building. This to include, for example, coverage of fit out by the Board, interaction with structure re location, quench pipes, chillers etc as well as cooling requirements (endoscopy for example) and volume requirements where relevant. This requires to also consider the provision of perf specs that replicate 'named' systems or manufacturers. | HLM<br><br>Board<br><br>All | Discussed post meeting: Harry Smith (HLM) advised that a number of common rooms to both hospitals have been agreed and the with then individual rooms to each hospital. This therefore provides for more room coverage than the original arrangement. HLM to finalise list with HG and MM Friday 13 or Monday 16 March at the latest.<br><br>Jim Miller (Ironside F) will agree inputs and review with the Board.<br><br>Principles of MRI 'packaging' discussed and agreed to follow ACAD route in this regard. C&B will provide further briefing for design team and Board input.<br><br>Post Meeting Note: Other items/areas/departments for this type of analysis and detailing to be highlighted to C&B by CoP Wed 18 March 2009. | HLM<br><br>Board<br><br>C&B<br><br>All |

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| | | | | WW updated re outcomes from the renal meeting – this included that the Renal Institute spec was to be utilised (not the HTM) that Stewart Campbell (Board) would provide feedback and requirements (taking lessons learned from ACADs), that proprietary panels were required and that a lay-by/access is required for renal chemicals. It was proposed that a dual purpose lay-by to accommodate hardstanding for renal as well as drop-offs for GP referrals to ED would be considered across from new carpark/existing neurosciences area. PM noted that flow rates for clean water require to be checked – 800l/m was not sufficient – 1,400 l/m may be required. | Designers to including in ERs and masterplan |
| 6.0 | Planning | Comments received on planning matrix. Update discussion required as well as 'ordering' of planning risks as element of overall risk profiling. | All | DBH meeting planners 20 March 2009. | |
| 7.0 | Utilities | Meeting with Board IT representative to be arranged.<br><br>Update on progress on utilities, gases, pneumatics etc – any residual information requirements?<br><br>BMS presentation – date to be discussed and agreed – 20 March 2009? | Board<br><br>WW<br><br>All | Board hoping to arrange for w/c 16 March 2009. Fall-back position is review of WW draft spec and agreement on a 'coverage' allowance in specification/requirement terms.<br><br>WW advised that meeting requires to be arranged with Frances Wrath to close out gases, pneumatics etc. SPower have identified the route for their service, a quote will be c3months from now – middle of bid period when this is therefore anticipated. Gas have provided a quotation and water loads have been provided.<br><br>C&B to co-ordinate BMS date/time – this to be at Hilington, Jim McFadden to be invited along with others from his staff. | Board<br><br>WW<br><br>C&B |
| 8.0 | Fire | HLM co-ordinating – drawing release to Buro Happold 13 March 2009. | HLM | Confirmed that BH have provided some queries and have been in liaison with HLM. Drawings to be provided to BH to allow progression of fire strategy requirements. | HLM/BH |
| 9.0 | Sustainability/BREEAM / Energy / Carbon Trust | Confirmed that the Carbon Trust will be reviewing ER items on 18 March 2009.<br><br>Progress update from URS required on SEPA joint meeting requirement as well as GCC flood risk assessment aspect of the masterplan.<br><br>Board property advisor taking forward Scottish Water land take as well as mobile mast relocation – update? | C&B<br><br>URS<br><br>Board | Proposed that this follows on from the Facilities meeting. Post Meeting Note: timing of Facilities meeting extended – check timing for Carbon Trust. HLM and URS sections on sustainability to be provided to sit alongside the WW section and the WRAP information.<br><br>PM advised that he had a meeting with GCC and it was agreed that URS would take the lead on contact with the Council in relation to drainage issues (Scott Wilson therefore to feed into URS with any relevant aspects/items etc). Noted that planning will be required to carry out any work to the culvert. This to be considered re Masterplan (condition to masterplan perhaps?).<br><br>URS advised that the previous Halcrow information addressed flood risk from the Clyde etc, whereas a requirement of the Council is for the 1 in 1000 year occurrence to be studied and submitted.<br><br>PM advised that the Scottish Water and mobile mast issues are being taken forward by Moira Anderson from the Board. | C&B/HLM/URS<br><br>URS<br><br>Board |
| 10.0 | Robotics | PM confirmed that he is meeting with Gordon Beattie on Wednesday 04 March 2009 and would update on progress/requirement etc.<br><br>PM confirmed that robotics are definitely required in some fashion, and that a Board Policy (requirement) would be generated.<br><br>PM advised that the Board had some videos and drawings of robot provision elsewhere and would make that available to the team.<br><br>WW/HLM require to consider and prepare a notional x-section of the tunnel. | Board<br><br>Board<br><br>Board<br><br>WW/HLM | PM advised that the group have been on a visitation to France to view robotics provision. Awaits feedback and will distribute to the technical team.<br><br>To be provided.<br><br>Noted that BMJ have been provided with information regarding Birmingham hospital robotics, including drawings and a DVD. To be distributed.<br><br>The B'ham information to support production of this information. PM queried route for the tunnel, under the road or under the building?<br>Views that tunnel should not be under the road to be considered by design team and concluded. | Board<br><br>Board<br><br>BMJ<br><br>HLM/WW/URS |
| 11.0 | Acoustics | Noted that Martin Butterfield of Arup Acoustics is proposed to carry out the work. Understood that Martin wrote the relevant HTM. Costed proposal required from AA via HLM. | HLM | Anticipated 13 March 2009 | HLM |
| 12.0 | Carbon Trust | See item 9.0. | | | |

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| 13.0 | Helipad | PM advised that he has to meet Alan Doran and will provide the necessary previous report that included helipads. Board to note previous Bond helicopters contact.<br><br>HLM are including helipad drafting in updated ERs (due Monday 16 March 2009). CAA confirmed to HLM that they (CAA) had heavily inputted to the relevant HBN and that document was the brief to follow – HLM confirmed that they made CAA aware of proximity to Glasgow Airport.<br><br>URS have provided structural considerations of helipad options (12 March) C&B to assess costs. | Board<br><br>HLM<br><br>C&B | Meeting 3pm Friday 13 March 2009 at Dalian House.<br><br>URS confirmed the helipad sizing requirements for the pad itself – Board request that the provision for the larger helicopter is progressed such that this can be assessed (technical requirement, structural implications and cost). URS to provide impact to core structure information to support costing. WW have noted services considerations.<br><br>Feasibility of helipad in 'open space' adjacent to the new hospital to be considered (area where fastlink comes in). | Board/C&B<br><br>URS/C&B<br><br>HLM |
| 14.0 | Loading Bays | Meeting with FM next week to take forward? – discuss status. | URS | Ongoing in tandem with laboratory development. To be reviewed post meeting via lab work from BMJ. Lay down space to be considered – is there sufficient provision in the immediacy of drop off to hold before storage/movement when considered with level/volume of deliveries? | All |
| 15.0 | Sealed/Non-Sealed Building | WW have provided their addendum document regarding this topic. Currently being reviewed and relevant options/decisions for the Board arising will be tailored and addressed. (incl environmental conditions matrix and treatment of temperatures and upper temperatures). | C&B/WW | Options/reasoning to be explained in architectural terms to compliment the M&E narrative. | HLM |
| 16.0 | Bariatrics | PM e-mail of 05 March 2009 attachment from HFS was not appended – to be provided and Board requirement to be established. | Board | PM will re-issue. | Board |
| 17.0 | Resilience | Noted that the Board had previously advised that the building was <u>not</u> to be considered/classified as a terrorist target, and that the application of the adjacent car parking and underground car parking was acceptable. Reconfirmed that 'airport' style bollards are to be provided to prevent direct vehicle access/proximity to entrances – HLM including in ERs.<br><br>(Note: this narrative has been restated in this agenda as the previous document stated that the building was to be considered a terrorist target, that should have read, per the attached under lined 'not' at terrorist target).<br><br>PM confirmed that he is to meet Alan Doran. Majax type information as well as emergency and contingent planning requirements to be provided from the Board (this to consider the future planning requirements – i.e. Southern and GRI will be the only 2 A&E depts for the city). | HLM/Hirst<br><br>Board | Meeting 3pm Friday 13 March 2009 at Dalian House. | |
| 18.0 | Queries Log | Meetings to be arranged with IT to conclude. | Board | See item 7.0, above. | |
| 19.0 | ER document sections | PM provided some initial comments and advised that he will send through further comments. (Further comments received 03 March 2009 – additional comments may follow also.) | Board | PM would prefer to see a more progressed combined document to review. | |
| 20.0 | Return Bid Requirements | Bid return requirements from URS to be assimilated into the overall bid return document – to be distributed for approvals and weighted for Volume 3 inclusion. | URS/C&B | URS to provide. | URS |
| 21.0 | AOCB | Infection Control sign-off requires to be agreed.<br><br>Board to contact Strathclyde Police (architectural liaison).<br><br>Section through new Govan Road access ('the Boulevard') prepared by URS and tabled + discussed at TA Board meeting w/e 06 March 2009. To be issued electronically by URS. | Board / C&B<br><br>Board<br><br>URS | <br><br>Board to contact police. Not considered that a police space/room is presently included. May be required, with space in A&E.<br><br>URS to issue current drawings to all. | Board/C&B<br><br>Board/HLM<br><br>URS |

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| | | Current site investigation covers some road areas, but not all. Roads will be designed to GCC guidelines which caters for items such as capping layers (thickness etc). URS have confirmed that they have enough SI information to complete exemplar design/ERs. | | Confirmed by URS. | |
| | | PM confirmed that he is meeting SAS w/c 02 March and would advise thereafter if approach for access for the technical team (to consider potential for fuel or other contaminants from the present workshop use) would be acceptable. | Board | PM confirmed that he is seeking a meeting with Graham Kirkland of SAS. Understood that Operations are moving out of the building, but perhaps Risk and Resilience moving in? PM will advise status once he has had the meeting with GK of SAS. | |
| | | HLM will liaise with B+A and action the CoS x-check. | HLM | Confirmed by HLM. | |
| | | AEDET with some limitations agreed as route forward – further discussion on ASPECT required. | C&B / HLM / Board | Considered that this should take place, May date? – C&B to consider date. PM noted that an A+DS review would be forthcoming. | |
| 22.0 | Subsequent Meetings | Friday 27 March 2009<br><br>Friday 10 April 2009<br><br>Consider moving 10/04 date as that is Good Friday and add additional specific close out dates/sessions. | | | |

**Post Meeting Notes (from meeting of 30 Jan):**

A) Board to provide copy of site boundary provided by CLO. – ~~**Board to provide.**~~ **Received from PM – forwarded to HLM. To be utilised with meeting on site: see item B, below.**

B) Discussed and agreed with the Board that a site walk-round is necessary to agree definitive boundary lines and highlight + agree specific areas of sensitivity with the SGH users as well as other interested parties. This will require the CLO boundary to be available to firstly cross-check against the drawn boundary. Areas of particular consideration are the Maternity/Neo-natal blue light route and access (also considering that the build will have to extend into the zone between neo-natal and the new hospital to provide the physical link) and the facilities drop-off/access at the rear of Surgical Block. C&B to contact Frances Wrath to arrange attendance by Jim McFadden (Estates), Ronnie Clinton (Facilities) and Gibby Donnelly (Fire Officer). HLM to lead TA team input to inform masterplanning/ER layouts on 'blue-light' and other essential routes/areas. Once Board/TA team position is agreed, Strathclyde Fire and Rescue and Scottish Ambulance Service to be taken through proposals for agreement. – ~~**C&B to initiate, HLM to lead.**~~ **Frances Wrath will provide diary date(s) for Board attendees, TA team to then confirm which date is suitable. Meeting dates required – urgent to inform site boundary conclusion.**

**Post Meeting Note (from meeting of 13 Feb):**

C) The benefit of selecting areas/rooms for appraisal and coverage in respect of various aspects of design detail and HAI~Scribe compliance was discussed. This resulted in the agreement that a bedroom and theatre layout will both be considered at the next ER/Technical meeting in order that areas of detailing can be discussed, agreed and written up. This to include joints, junctures etc and treatment and protection of surfaces – e.g. coving, skirting, bump rails etc.
**Action: HLM to liaise with WW as necessary and prepare layout/log for consideration and agreement on 27 Feb 09. Date to be arranged as aspect of ER close out.**

**Post Meeting Notes (from meeting of 27 February 2009):**

D) Potential dates for meetings with Facilities – 13 March and 20 March – as part of Technical/ER sessions. **18 and 20 March 2009 – to be confirmed, with times and locations.**

Dates confirmed as:

**Meeting 1 = 18 March 0830hrs to 1300hrs – C&B to confirm location and agenda – WW to provide list of key items PM of 13 March.**

**Meeting 2 = 20 March 1430hrs to 1700hrs – FM routes in buildings – location and attendees to be advised.**

**Meeting 3 = 26 March 0900hrs to 1145hrs – follow up to Meeting # 1.**

The under noted are the current listing of Board Actions arising from the ongoing Technical / ER meetings.

The ‘Item’ numbering refers to the original agenda item the action arises from.

**Item 3.0** – Board to provide feedback on the list of Appendices to the ERs.
**Response:** (C&B) – this to be actioned by the Board once the updated list of Contents and Appendices is issued.

**Item 4.0** – meeting with Estates in relation to technical matters – feedback to be provided to the technical team.
**Response:**

**Item 4.0** – Board to provide their inputs to the ‘lessons learned’ watchlist of issues that have arisen on previous projects (pro-forma attached for reference).
**Response:**

**Item 5.0** – Ironside Farrah to re-appraise aspects of the Masterplan.
**Response:**

**Item 7.0** – Meeting with Board IT dept to be arranged.
**Response:**

**Item 7.0** – Meetings to conclude utilities type issues as well as gases and pneumatics to be progressed with the Board (Frances Wrath). BMS presentation with Satchwell to be arranged.
**Response:** (C&B) – status and actions/areas to conclude to be discussed with technical team.

**Item 9.0** – Joint SWater/SEPA/GCC meeting to be arranged – potential Board attendance.
**Response:** (C&B) – status and actions/areas to conclude to be discussed with technical team.

**Item 9.0** – Board property advisors to progress SWater land take requirement, as well as wayleave requirement and reprovision of mobile mast.
**Response:**

**Item 10.0** – Meeting with Gordon Beattie on 04 March 2009 – to update on thereafter on progress with regard to robotics requirements.
**Response:**

**Item 10.0** – A Board Policy on scope and functionality (of robotics) to be generated and provided to the technical team.
**Response:**

**Item 10.0** – Video footage and drawings of robot provision on other sites to be provided to the technical team.
**Response:**

**Item 13.0** – Meeting with Alan Doran – copy of previous report on helipad/helicopter landings to be provided to the technical team.
Response:

**Item 13.0** – contact at Bond helicopters familiar with Board/site to be provided.
**Response:**

**Item 16.0** – requirement for bariatrics to be provided (PM e-mail of 05 March 2009 to Peter Henderson re HSE document Bariatric Patient Handling did not have document attached). Board to confirm their requirements.
**Response:**

**Item 17.0** – Meeting with Alan Doran – contingency planning and Majax requirements to be identified and provided to the technical team (this to consider the future planning requirements – i.e. Southern and GRI will be the only 2 A&E depts for the city).
**Response:**

**Item 19.0** – draft ER sections – initial comments received, further comments to be provided.
**Response:**

**Item 21.0** – Infection Control sign-off to be agreed,
**Response:** (C&B) – to be discussed C&B/Board to conclude.

**Item 21.0** – Board to contact relevant Strathclyde Police Superintendent (architectural liaision).
**Response:**

**Item 21.0** – meeting Scottish Ambulance Service w/c 02 March – post meeting to advise if approach from technical team re access to the SAS site is acceptable (technical team wish to consider potential for fuel or other contaminants from the present workshop use).
**Response:**

**Post Meeting Note B** – site walk round to agree definitive boundary + treatment of sensitive areas (e.g. blue light zones, 24hr access to maternity, proximity of MRI, loading back to rear of Surgical Block [AL]) – potential dates to be arranged by Frances Wrath and proposed to technical team.
**Response:**

[Complete: 11 March 2009]

**APPENDIX D – Request for Information Pro-Forma**

| Ref No: **038** Date Raised: 05/06/09 |
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(Must be sequential)

| Topic: | | | | | |
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| | Technical | X | Administration | | |
| | Legal | | Commercial | | |
| | Financial | | Other | | |
| | Clinical | | | | |

Clarification required on AHU plant and distribution strategy:

Appendix M&E 3 - 2.4.2 states "Each hospital department is to contain its own dedicated air handling plant". We would propose that, subject to size, location and function of departments, that like type accommodation would be served from common AHU plant. Please confirm this is an acceptable strategy.

**Response**

Not acceptable. Please comply with M&E 3.

| Please deliver response via: BUILDONLINE | Letter | | E-mail | |
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| Raised on behalf of BB by Robin Wyborn |
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**For Board use**

| Board Ref No: | | Date Received: | |
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| Passed to | | | | | | |
|---|---|---|---|---|---|---|
| | Board Financial | | External Legal | | Scot Gov | |
| | Board Clinical | | External Technical | | Other | |
| | Board Technical | | External Financial | | | |

**Numbering of RFIs:** Every RFI issued by a bidder must be issued by the nominated contact (or the seconder) and shall be cross-referenced by sequential number issue = e.g. Bidder A RFI 001, Bidder A RFI 002, Bidder C RFI 0003…and so on. No differentiator in numbering shall be required for Topic.

# New South Glasgow Hospitals (NSGH) Project

## Dialogue Meeting Agenda – Bidder B

## Date: 27th May 2009

## Time: 1330 - 1630

## Venue: Glynhill Hotel

**Workstream:** Design/Site | Logistics | Laboratories/FM | Commercial

NHS Greater Glasgow & Clyde Attendees: [Complete at Meeting]

Brookfield Europe Attendees:

Paul Serkis (apologies)

1 Ross Ballingall BE
2.Chris Lovejoy BE
3.John Ko BE
4.Neil Murphy NA
5.Kieran Morgan NA
6. Emma White NA
7.Paul Britton Tribal
8.Pete Dunbar WSP
9.Steve Wardell Gillespies
10. Alastair Leighton Gillespies
11.Matthew Carter AL
12.Tom Allen D&S
13. Steve Pardy ZBP
14. Michael Frain ZBP

| Proposed Meeting Agenda | Objectives |
|---|---|
| **1.0 General Group Session – General Agenda Items** | Powerpoint Presentation by Bidder B to demonstrate the work completed thus far during the Initial Concept Design Stage.<br><br>- Analysis of Exemplar Design, Bidder B 'Added Value' Opportunities (estimated time allocation approx 1hr) |
| 1.1 Site Circulation & Wayfinding | |
| 1.2 Car Parking | |
| 1.3 Greenspace | |
| 1.4 Entrances | |
| 1.5 Infrastructure | |
| 1.6 Helipad | |
| 1.7 Science/FM | |
| 1.8 Energy Centre | |
| 1.9 Daylight (Single Beds/Lightwells) | |
| 1.10 BREEAM (Excellent/Build Form) | |
| 1.11 FM | |
| 1.12 Substation/Services | |
| 1.13 Clinical Planning/Flexibility | |
| 1.14 Building Form/Flexibility | |
| 1.15 Site Handover/Condition | |
| 1.16 Opportunities | |
| 1.17 Summary of General Items | |

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| **2.0 Design/Site Sub Groups** | (estimated time allocation approx 1hr) |
| Bidder B proposes to combine the Healthcare Planning and Design Sub Groups into one session for Design Dialogue Meeting 2. | |
| 2.1 Healthcare Planning (see agenda items below)<br><br>*Healthcare planning sub-group objectives and individual queries* | Detailed analysis of Bidder B 'Added Value' Opportunities |
| 2.2 Design/FM through Hospital Building | Detailed analysis of Bidder B 'Added Value' Opportunities<br>Masterplan<br>Single Bedroom Layout<br>Ward Analysis<br>Tower and Podium Analysis |
| 2.3 M&E (see sub group items below) | |
| 2.4 Landscaping (see sub group items below) | |
| 2.5 Structure & Civils (see sub group below) | |
| | |
| **3.0 General Group Session** | (estimated time allocation approx 1hr) |
| 3.1 Summary of Healthcare Planning/Design Sub Group Meeting | |
| 3.2 Summary of M&E Sub Group Meeting | |
| 3.3 Overall Summary of Dialogue Meeting 2 | |

# Proposed Meeting Query List in Support of Agenda Items

## 2.1 Health Planning (Tribal)

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| Agenda Item 2.1<br><br>Query 1 | • Review of Adult Acute Hospital adjacency / flows diagram to ensure our understanding of the model of care and healthcare planning objectives [departmental adjacencies / relationships and flows (clinical, visitor, FM) between and within departments]<br>• Specific individual queries to support this agenda item include the following:<br>o Identification of the Adult Outpatient services located on levels 01 and 02 of the adult hospital design exemplar and discussion of any perceived advantages / disadvantages of these locations<br>o Is there any scope to split adult and paediatric Nuclear Medicine to facilitate clinical planning opportunities for both Adult and Children's Hospitals (or is this prohibitive in terms of space and staffing implications?)<br>o Is there any scope to split pharmacy dispensing between adult and paediatric hospitals to facilitate clinical planning opportunities for both Adult and Children's Hospitals (or is this prohibitive in terms of space and staffing implications?)<br>o Staff change policy for the hospital: would it be possible to centralise staff changing currently located within the shared ward accommodation to an appropriate location within the hospital?<br>o Is there a fixed requirement for a link between the new adult hospital and the existing Neurosciences building? If so, what is the purpose of this link (patient transfer, staff transfer, both?)<br>o Is a dedicated entrance to Acute Assessment wards required?<br>o Is there any further clarification regarding the debate on 100% single bedrooms in Critical Care?<br>o Is there any further clarification regarding on the number of isolation bedrooms required in adult inpatient wards?<br>o Would it be acceptable if the required essential adjacencies between imaging and inpatients can be achieved via appropriate vertical links?<br>o Opportunities / preferences for flexible use of functional content (Theatres, Imaging etc) between Adult and Children's hospitals<br><br>• Review of Children's Hospital adjacency / flows diagram to ensure our understanding of the model of care and healthcare planning |

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| | objectives [departmental adjacencies / relationships and flows (clinical, visitor, FM) between and within departments]<br>• Specific individual queries to support this agenda item include the following:<br>o Identification of the Children's Outpatient services located on levels 00 and 01 of the children's hospital design exemplar and discussion of any perceived advantages / disadvantages of these locations<br>o Is there a fixed requirement for a link between the new children's hospital and the existing Neonatal / Maternity departments building? If so, what is the purpose of this link (patient transfer, staff transfer, both?)<br>o Parent access to Children's Observation ward. Is access via the Children's Emergency department a requirement or can access be via another route that does not pass through other clinical areas?<br>o Preferred level location for the Dept of Child Forensic Psychology<br>o Discuss the Boards policy / strategy for FM processes within clinical areas. Board overview of existing practice and discussion around opportunities to integrate supporting FM services in line with best practice |

## Proposed Meeting Query List in Support of Agenda Items

## 2.3 M&E (ZBP)

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| Agenda Item 2.3<br><br>Query 1 | Sustainability and Energy<br><br>Discussions of our proposals and views of Board |
| Agenda Item 2.3<br><br>Query 2 | Energy targets/strategy<br><br>Review of targets, incorporation of LZC solutions and effect on 'site' energy usage |
| Agenda Item 2.3<br><br>Query 3 | Approach to BREEAM<br><br>Review of daylighting to exemplar building in general and daylighting levels in single bed wards |
| Agenda Item 2.3<br><br>Query 4/1 | Energy centre strategy<br><br>Intention of two energy centre option and preferred approach. |

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| Query 4/2 | Clarification on dealing with existing site energy loads, re-provision of existing boilerhouse and extent of building served from new energy centre(s) |
| Agenda Item 2.3<br><br>Query 5/1<br><br>Query 5/2 | Distribution principles / resilience / redundancy. Discussion of ERs eg:<br><br>Requirement for N+1 redundancy on **all** M&E plant and dual distribution paths for **all** M&E systems.<br><br>Discussion on apparent requirement for services to be configured to ensure isolation can be carried out in **each** room without taking other rooms out of use. (RFI raised) |
| Agenda Item 2.3<br><br>Query 6/1<br><br>Query 6/2<br><br>Query 6/3 | Mechanical and Electrical Flexibility (base loads)<br><br>We will seek guidance on the make up of M&E base loads eg: do the electrical loads in Appendix M&E2 include or exclude the required 25% growth?<br><br>HTM06-01 states that electrical loads in hospitals are growing by 3% to 6% per year. At 6% growth the spare capacity would be used within 5 years. Does the Board have a view on whether the allowance of 25% for future growth is adequate? (RFI raised)<br><br>General discussion on allowance for future flexibility |
| Agenda Item 2.3<br><br>Query 7/1 | Thermal comfort<br><br>Statement on 26degC / 28degC target. |
| Agenda Item 2.3<br><br>Query 8/1<br><br>Query 8/2<br><br>Query 8/2 | Miscellaneous issues<br><br>Discussion of the definition of “Clinical Areas” from an M&E perspective eg:<br><br>ERs prohibit luminaires from protruding below the ceiling in “clinical areas”.<br><br>ERs require manual override of automatic lighting control in “clinical areas”. |

| **Proposed Meeting Agenda**<br>**2.4 Landscaping (Gillespies)** | **Objectives** |
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| 2.4. Masterplan<br><br>• Review of key elements and decisions which define the basic form of the masterplan, including roads<br>• Opportunities associated with alternative masterplan layout(s)<br>• Response to listed buildings (including scale and future use)<br>• Value of defining within the masterplan the potential for *future expansion* of the children's & acute buildings (& potentially also FM) – where possible. Is this a material consideration at this point?<br>• Future expansion options within the full extent of the masterplan site – exploration of potential<br>• Redevelopment potential for the northern boundary<br>• Parking provision associated with (potential) future education centre<br>• Site entrances<br>• Open space priorities & optimisation of potential<br><br>Circulation/Wayfinding<br><br>• Orientation related to public access to the site and the visibility of the discrete building entrances<br>• Site entrances and designation of key movement routes<br>• Vehicle movements and car parking<br>• Hierarchy of public spaces<br>• Optimisation of public wayfinding and site access<br><br>Car Parking<br><br>• Rationalisation of vehicle movements<br>• Opportunities for consideration following further peer review<br>• Car parking locations in response to masterplan opportunities<br><br>Green Spaces<br><br>• Character of green spaces<br>• Future management intentions for green space<br>• Importance of green spaces as a location for hospital events (if any)<br>• Potential for recreational open spaces for | |

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| use by staff (such as jogging route, trim trail [noted within employer's requirements], ball court etc) – in the interests of creating a high quality working environment is there considered to be any demand for this, or any value in this kind of provision<br>• Where would green spaces for informal use by staff ideally be located in the future? | |

# Proposed Meeting Query List in Support of Agenda Items 2.5 Structure and Civils (WSP)

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| Agenda Item 2.5 | Site Drainage |
| Query 1/1 | Clarification as to the scope of drainage on-site and whether the surface drainage scheme is to include for the entire site or for elements within the “red-line” of the contract. |
| Query 1/2 | Hydraulic Model of the Linthouse Burn – has this been undertaken? |
| Query 1/3 | What discussions have taken place with Scottish Water regards capacity? |
| Query 1/4 | What discussions have taken place with SEPA in connection with the existing culverted watercourses through the site? |
| Query 1/5 | Scottish Water are quoted as undertaking a detailed Drainage Strategy Report – can this be provided? |
| Agenda Item 2.5 | Fire Strategies |
| Query 2/1 | Can copies of the existing fire strategies be provided? |
| Query 2/2 | What are the drivers for the new fire strategy to mirror the existing. |
| Agenda Item 2.5 | Demolition & Site Clearance |
| Query 3/1 | Can you confirm the extent of grubbing-up being undertaken within the site clearance and demolition? |
| Query 3/2 | Will the site clearance include the Japanese Knotweed on-site? |
| Query 3/3 | Will the demolition include the removal of all underground structures and services, including redundant drainage etc? |
| Query 3/4 | Will the demolition and site clearance include removal of all material from site? |

**Commercial Competitive Dialogue – Action List**
**Update from CD Session Nr 2 5th June 2009**
**Bidder B**

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 1-1 | Action | Board | 22/5/9 | Overview of £590M budget given, BE to review and provide commentary on any perceived issues by next meeting. Initial view is budget is robust.<br><br>4/6/09 Update: BE provided outline cost plan. Flagged concern over area of new hospitals and cost allowance for new Labs. Budget under pressure, but with control of area and design issues, budget generally achievable. | BE | 02/06/09 | Complete |
| 1-2 | Action | Board | 22/5/9 | BE to provide indicative cashflow based on £590M. This is to provide additional view to Board in assessing and discussing with Scottish Government likely drawdown of committed funds<br><br>4/6/09 Update: BE provided indicative cashflow. Board will review and consider for any discussion with Scottish Government. | BE | 02/06/09 | Complete |
| 1-3 | Action | BE | 22/5/9 | BE queried the £2m threshold for sub-contractors and the application of NEC3 open book principles. Board stressed want principles to flow through supply chain where it will deliver best value. BE to provide alternative proposals for next meeting. | BE | 26/06/09 | |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| | | | | 4/6/09 Update: BE tabled proposal to limit to Designers and Key Sub-Contractors. Proposal generally acceptable. Final list to be issued for next meeting. | | | |
| 1-4 | Action | BE | 22/5/9 | Pain / Gain proposals to be considered and likely bid approach / submission tabled for review at final CD session.<br><br>4/6/09 Update: Ongoing, principle clear, values to be provided in advance of next CD session. | BE | 06/07/09 | |
| 1-5 | Action | Board | 22/5/9 | BE to consider the handover of Laboratories and implications on Energy Centre plant handover / defects.<br><br>4/6/09 Update: Ongoing as part of programme development. | BE | 26/06/09 | |
| 1-6 | Action | BE | 22/5/9 | BE to consider and propose how off site areas will be treatment as part of NEC3 defined "Working Area" for treatment of cost recovery.<br><br>4/6/09 Update: Sites adjacent to works for Temporary Accommodation, material storage will be part of working area. Off-site fabrication facilities will not be working areas. Defined cost when delivered to working area. | BE | 02/06/09 | Complete |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 1-7 | Action | Board | 22/5/9 | BE to consider and submit proposals on level of Delay Damages. Balance of protecting Boards loss v's potential excessive cost premium to cover for risk.<br><br>4/6/09 Update: BE indicated 0.1 – 0.15% of contract value would generally be acceptable figure. Board to consider and advise Bidders of Section amounts. | BE | 02/06/09 | Complete |
| 1-8 | Action | Board | 22/5/9 | Extended defects provisions were reviewed. BE to provide commentary on provisions and process to comply with requirements.<br><br>4/6/09 Update: BE noted likely cost premium of providing extended warranties. May look to limit to key areas. BE highlighted potential benefits of linkage to long term maintenance packages. BE to provide further details. | BE | 26/06/09 | |
| 1-9 | Action | Board | 22/5/9 | BE to submit RFI with marked up commentary of contract. Contract discussions to take place out with meeting, with key points brought to meeting for resolution.<br><br>4/6/09 Update: Legal Teams to meet separately. Key issues brought to CD session for review. | BE | 02/06/09 | Ongoing |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 1-10 | Action | BE | 22/5/9 | BMJ Appointment for Laboratories to be issued a.s.a.p. Scope of service to be issued in advance. Bidders to consider scope and make provision in bid submission for any additional duties required to deliver project.<br><br>4/6/09 Update: Board to action: BE noted that additional service / fee to be included in Bid. | Board | 19/06/09 | |
| 1-11 | Action | Board | 22/5/9 | BE to provide commentary on Performance Bond and likely costs of providing Bond.<br><br>4/6/09 Update: BE noted historical costs in order of 1.5%. Recent Bond was 2.5%. BE proposed stopping Bond at handover and potential option of Sureguard insurance for sub-contract packages. BE to provide details.<br><br>Post-Meeting Note – No Bond required for Stage 2, Stage 1 Bond required on appointment, Stage 3 Bond required at start of Stage 3. | BE | 19/06/09 | |
| 1-12 | Action | BE | 22/5/9 | BE queried format for Activity Schedules. Board confirmed no set format. BE to propose format that suits their needs for linkage to programme.<br><br>4/6/09 Update: Format awaited from BE. | BE | 19/06/09 | |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 1-13 | Action | BE | 22/5/9 | BE queried unlimited cap on liability. BE to consider and provide comments.<br><br>4/6/09 Update: To be covered in Legal discussions. | BE | 02/06/09 | Ongoing |
| 1-14 | Action | Board | 22/5/9 | BE to consider Clause X17 Performance Damages and provide comment on acceptable items and potential level of damages e.g. energy performance, defects correction periods.<br><br>4/6/09 Update: Proposal / comment awaited. | BE | 19/06/09 | |
| 1-15 | Action | Board | 22/5/9 | Risk Register will be key focus of next session. Agreed that first part of meeting will review actions / outstanding issues, remainder of meeting will be risk review led by BE. BE to submit first pass risk register prior to next meeting for Board review and input.<br><br>4/6/09 Update: Risk review took place. Bidder to forward Risk Register. | BE | 16/06/09 | |
| 1-16 | Action | Board | 22/5/9 | BE to consider and propose alternative Key Performance Indicators.<br><br>4/6/09 Update: Proposals awaited. | BE | 16/06/09 | |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 1-17 | Action | BE | 22/5/9 | BE tested Board approach to spend to save life cycle issues / maintenance contract benefits e.g. lift maintenance contract as part of capital purchase could realise benefits. Board confirmed willing to consider initiatives, subject to being affordable within the £590m budget.<br><br>4/6/09 Update: BE to consider and feed items through Design CD sessions. | BE | | Ongoing |
| 1-18 | Action | BE | 22/5/9 | Board to consider post contract management structure / Supervisor role and issue initial thoughts before last CD session.<br><br>4/6/09 Update: Ongoing. | Board | 06/07/09 | |
| 1-19 | Action | BE | 22/5/9 | It was confirmed to BE that only BMJ novated over to successful contractors (Other consultants under BMJ "umbrella". | | | Complete |
| 1-20 | Action | BE | 4/6/9 | BE proposed alternative payment procedure. Pre-agreed cashflow payments reconciled with actual costs at agreed intervals. BE to submit proposal outlining process including reconciliations and adjustments for programme changes. | | 19/06/09 | |

**Commercial Competitive Dialogue – Action List**
**Update from CD Session** No. 3 - 14 July 2009
**Bidder B**

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 1-1 | Action | Board | 22/5/9 | Overview of £590M budget given, BE to review and provide commentary on any perceived issues by next meeting. Initial view is budget is robust.<br><br>4/6/09 Update: BE provided outline cost plan. Flagged concern over area of new hospitals and cost allowance for new Labs. Budget under pressure, but with control of area and design issues, budget generally achievable.<br><br>15/7/9 Update: BE provided further cost update. Positive statements on affordability of hospitals, issue over Labs /FM cost, but working to resolve | BE | 02/06/09 | Complete |
| 1-2 | Action | Board | 22/5/9 | BE to provide indicative cashflow based on £590M. This is to provide additional view to Board in assessing and discussing with Scottish Government likely drawdown of committed funds<br><br>4/6/09 Update: BE provided indicative cashflow. Board will review and consider for any discussion with Scottish Government. | BE | 02/06/09 | Complete |
| 1-3 | Action | BE | 22/5/9 | BE queried the £2m threshold for sub-contractors and the application of NEC3 open book principles. Board stressed want principles to flow | BE | 26/06/09 | Complete |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| | | | | through supply chain where it will deliver best value. BE to provide alternative proposals for next meeting.<br><br>4/6/09 Update: BE tabled proposal to limit to Designers and Key Sub-Contractors. Proposal generally acceptable. Final list to be issued for next meeting.<br><br>15/7/9 Update: Board confirm expectation that Designers and Key Major Sub-Contractors should follow the principles of NEC3. | | | |
| 1-4 | Action | BE | 22/5/9 | Pain / Gain proposals to be considered and likely bid approach / submission tabled for review at final CD session.<br><br>4/6/09 Update: Ongoing, principle clear, values to be provided in advance of next CD session.<br><br>15/7/9 Update: BE outlined proposal for graduated scale of pain / gain. Principle generally acceptable to Board. Bid to provide detailed proposals | BE | 06/07/09 | Complete |
| 1-5 | Action | Board | 22/5/9 | BE to consider the handover of Laboratories and implications on Energy Centre plant handover / defects.<br><br>4/6/09 Update: Ongoing as part of programme development. | BE | 26/06/09 | Complete |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 1-6 | Action | BE | 22/5/9 | BE to consider and propose how off site areas will be treatment as part of NEC3 defined "Working Area" for treatment of cost recovery.<br><br>4/6/09 Update: Sites adjacent to works for Temporary Accommodation, material storage will be part of working area. Off-site fabrication facilities will not be working areas. Defined cost when delivered to working area. | BE | 02/06/09 | Complete |
| 1-7 | Action | Board | 22/5/9 | BE to consider and submit proposals on level of Delay Damages. Balance of protecting Boards loss v's potential excessive cost premium to cover for risk.<br><br>4/6/09 Update: BE indicated 0.1 – 0.15% of contract value would generally be acceptable figure. Board to consider and advise Bidders of Section amounts.<br><br>15/07/9 Update: Board confirmed proposals (to be ratified by Executive Board and included in final draft contract)<br>Labs - £50,000 week or part thereof<br>Hospitals - £62,500 per week 1st 4 weeks, £125,000 weeks 5-8, £187,500 weeks 9-12 >12 weeks, £250,000<br>Stage 3A to be confirmed.<br>BE proposal on use of Sub-guard insurance was | BE | 02/06/09 | Complete |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
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| | | | | reviewed. Generally acceptable subject to providing at least same coverage as Performance bond over Main Contactor default and insolvency | | | |
| 1-8 | Action | Board | 22/5/9 | Extended defects provisions were reviewed. BE to provide commentary on provisions and process to comply with requirements.<br><br>4/6/09 Update: BE noted likely cost premium of providing extended warranties. May look to limit to key areas. BE highlighted potential benefits of linkage to long term maintenance packages. BE to provide further details.<br><br>15/7/9 Update: Board confirmed proposals to amend defects requirement to 24 months for all elements. | BE | 26/06/09 | |
| 1-9 | Action | Board | 22/5/9 | BE to submit RFI with marked up commentary of contract. Contract discussions to take place out with meeting, with key points brought to meeting for resolution.<br><br>4/6/09 Update: Legal Teams to meet separately. Key issues brought to CD session for review.<br><br>15/7/9 Update: Subject to ratification of proposals raised at meeting, and ongoing discussions to Close of Dialogue, an updated contract will be uploaded to BIW. This is to form basis of Bidders' Tenders. | BE | 02/06/09 | Complete |
| 1-10 | Action | BE | 22/5/9 | BMJ Appointment for Laboratories to be issued | Board | 19/06/09 | Complete |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| | | | | a.s.a.p. Scope of service to be issued in advance. Bidders to consider scope and make provision in bid submission for any additional duties required to deliver project.<br><br>4/6/09 Update: Board to action: BE noted that additional service / fee to be included in Bid.<br><br>15/7/9 Update: Scope of service and Draft Appointment to be uploaded to BIW. The amount of fee for post-contract design services will be advised at ITSFB. | | | |
| 1-11 | Action | Board | 22/5/9 | BE to provide commentary on Performance Bond and likely costs of providing Bond.<br><br>4/6/09 Update: BE noted historical costs in order of 1.5%. Recent Bond was 2.5%. BE proposed stopping Bond at handover and potential option of Sureguard insurance for sub-contract packages. BE to provide details.<br><br>Post-Meeting Note – No Bond required for Stage 2, Stage 1 Bond required on appointment, Stage 3 Bond required at start of Stage 3.<br><br>15/7/9 Update: Board confirmed proposals (to be ratified by Executive Board and included in final draft contract). Stage 2 – 5% bond during construction, stops at handover, Stage 2 no bond, Stage 3 – 5% bond during construction, stops at handover,<br>Stage 3A – 5% bond during construction, stops | BE | 19/06/09 | Complete |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| | | | | at handover. | | | |
| 1-12 | Action | BE | 22/5/9 | BE queried format for Activity Schedules. Board confirmed no set format. BE to propose format that suits their needs for linkage to programme.<br><br>4/6/09 Update: Format awaited from BE.<br><br>15/7/9 Update: Activity Schedules to be completed to demonstrate critical activities and linkage to cashflow. | BE | 19/06/09 | Complete |
| 1-13 | Action | BE | 22/5/9 | BE queried unlimited cap on liability. BE to consider and provide comments.<br><br>4/6/09 Update: To be covered in Legal discussions.<br><br>15/7/09 Update: Board confirmed no Cap on general liability | BE | 02/06/09 | Complete |
| 1-14 | Action | Board | 22/5/9 | BE to consider Clause X17 Performance Damages and provide comment on acceptable items and potential level of damages e.g. energy performance, defects correction periods.<br><br>4/6/09 Update: Proposal / comment awaited.<br><br>15/7/9 Update: Board confirmed proposals (to be ratified by Executive Board and included in final draft contract). No performance damages. Any building performance failures will be defects and remedies sought under contract terms. Board will also review potential for tie-in of maintenance | BE | 19/06/09 | Complete |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
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| | | | | agreements as part of Capital Proposals. | | | |
| 1-15 | Action | Board | 22/5/9 | Risk Register will be key focus of next session. Agreed that first part of meeting will review actions / outstanding issues, remainder of meeting will be risk review led by BE. BE to submit first pass risk register prior to next meeting for Board review and input.<br><br>4/6/09 Update: Risk review took place. Bidder to forward Risk Register.<br><br>15/7/9 Update: Board are reviewing outputs from risk session and will provide a list of accepted Board risks. Bidders to price on this basis. | BE | 16/06/09 | Complete |
| 1-16 | Action | Board | 22/5/9 | BE to consider and propose alternative Key Performance Indicators.<br><br>4/6/09 Update: Proposals awaited.<br><br>15/7/9 Update: KPI's of Client Satisfaction, Cost Predictability, Time Predictability, Safety, Defects at Handover generally acceptable. To be detailed in Bid submission | BE | 16/06/09 | Complete |
| 1-17 | Action | BE | 22/5/9 | BE tested Board approach to spend to save life cycle issues / maintenance contract benefits e.g. lift maintenance contract as part of capital purchase could realise benefits. Board confirmed willing to consider initiatives, subject to being affordable within the £590m budget. | BE | | Closed |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| | | | | 4/6/09 Update: BE to consider and feed items through Design CD sessions. | | | |
| 1-18 | Action | BE | 22/5/9 | Board to consider post contract management structure / Supervisor role and issue initial thoughts before last CD session.<br><br>4/6/09 Update: Ongoing.<br><br>15/7/9 Update: Board will review a structure following submission of Bids. | Board | 06/07/09 | Complete |
| 1-19 | Action | BE | 22/5/9 | It was confirmed to BE that only BMJ novated over to successful contractors (Other consultants under BMJ "umbrella". | | | Complete |
| 1-20 | Action | BE | 4/6/9 | BE proposed alternative payment procedure. Pre-agreed cashflow payments reconciled with actual costs at agreed intervals. BE to submit proposal outlining process including reconciliations and adjustments for programme changes.<br><br>15/7/9 Update: Payment process will follow principles of contract with accruals allowed. Board proposal for payment periods (to be ratified by Executive Board and included in final draft contract) will be 2 Week Assessment Period, 4 Week Payment Period. | | 19/06/09 | Complete |
| 1-21 | Action | Board | 14/7/9 | Board to review Vol. 1 Appendix K FBC Design Deliverables | Board | 7/8/9 | Complete – Will be uploaded to |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| | | | | | | | BIW |
| 1-22 | Info | BE | 14/7/9 | Design Approval Periods – Bidder to review required timescales to support delivery of FBC etc and propose periods and process as part of Bid Deliverables. | BE | | Complete |
| 1-23 | Info | BE | 14/7/9 | Board confirmed separate Risk Registers will be required for each Stage. | BE | | Complete |
| 1-24 | Info | BE | 14/7/9 | Inflation: Board confirmed Bidders to make assessment of inflation over contract period and include in Bid. Assumptions should be clearly stated. Board will accept risk over bid allowances. Board indicated that 2% per annum within target and additional 0.5% in maximum may be scenario to consider. | BE | | Complete |

# New South Glasgow Hospitals (NSGH) Project

## Dialogue Meeting Agenda – Bidder B

## Date: 15 June 2009

## Time: 1100 – 1300hrs

## Venue: Glynhill Hotel

**Workstream:** Design # 3.5

NHS Greater Glasgow & Clyde Attendees: [Complete at Meeting]

[Bidder Name] Attendees: [Complete at Meeting]

| Proposed Meeting Agenda | Objectives |
|---|---|
| Additional Design Dialogue Session | To support developing design proposals. |
| | |
| | |
| | |
| | |
| | |
| | |

## Proposed Meeting Query List in Support of Agenda Items

| | |
|---|---|
| Agenda Item 2.2<br><br>Query 1 | |
| Agenda Item 2.2<br><br>Query 1<br><br>Query 2<br><br>Query 3<br><br>Query 4<br><br>Query 5 | |
| Agenda Item 2.2<br><br>Query 1<br><br>Query 2<br><br>Query 3<br><br>Query 4<br><br>Query 5 | |
| Agenda Item 2.2<br><br>Query 1<br><br>Query 2 | |
| Agenda Item 2.2<br>Query 1 | |

**Minutes from NHS Greater Glasgow & Clyde Meeting**

**Workstream: Design # 3.5 Bidder: B**

Date: 15 June 2009 at 1100hrs to 1300hrs

Venue Glynhill Hotel

| **Attendees** | |
|---|---|
| Bidder B | |
| Ross Ballingall<br>Neil Murphy<br>Paul Britton | Cary Howard<br>Johnathan Hendry<br>Ricard Mazuch |
| NHS Greater Glasgow & Clyde Attendees | |
| Stephen Gallacher | David Hall |
| Peter Moir | Harry Smith |
| Morgan Jamieson | Bob Menzies |
| Mairi Macleod | Iain Buchan |
| Heather Griffin | Mark Baird |
| Fiona McCluskey | |
| Annette Rankin | |

Apologies: Alan Seabourne, Alex McIntyre, Kieren Morgan

Minutes from Design Meeting # 3.5 on 15 June (Bidder B)

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Own | Date | |
|---|---|---|---|---|---|---|---|
| 3-1 | Info | n/a | n/a | **Children's**<br><br>Updated children's ward block plan tabled with narrative of approach and ethos explained. | n/a | n/a | n/a |
| 3-2 | Query | Bidder | 15/06/09 | Bidder Query: is reception before entry to children's ward (per bubble diagram for ward entry) required?<br><br>Board Response: noted that the wards are three eight bedded units within a ward. Noted that there is no 'reception' as such – the staff base will carry out this function with 'buzzer'/video entry from the ward entry door (it is noted that the children's visiting is not restricted to the set times as the adult ward regime, with parents coming and going at varied times of day and night to children's wards). | | | |
| 3-3 | Action | Bidder | 15/06/09 | Bidder Query: Do the Board require the two isolation rooms in each ward to be adjacent to each other? | Board | 23/06/09 | |
| 3-4 | Action | Bidder | 15/06/09 | Bidder Query: Touch-down proposals – large or a higher number of smaller spaces to be considered by the Board. | Board | 23/06/09 | |
| 3-5 | Info | n/a | n/a | Cardio and CCU adjacency noted by the Board as important for potential expansion. | n/a | n/a | n/a |
| 3-6 | Info | n/a | n/a | CCU/Radiolology/Theatres links and flows are noted by the Board as important. Clear separation and no cross-over between adult and children Critical Care depts noted by the Board (due to physical adjacency of accommodation on plan). | n/a | n/a | n/a |
| 3-7 | Info | n/a | n/a | Emergency department to radiology flow noted by the Board as important and may require more focus as the design develops. | n/a | n/a | n/a |
| 3-8 | Info | n/a | n/a | Updated proposals for main entrance space, use and environment tabled. This noted amenity of space for meeting, gathering, waiting in a less | n/a | n/a | n/a |

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| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Own | Date | |
|---|---|---|---|---|---|---|---|
| | | | | institutional setting.<br><br>The Board noted that the approach and consideration for this space is appropriate. | | | |
| 3-9 | Info | n/a | n/a | Confirmed that first floor links are present to both neuro and neo-natal. | n/a | n/a | n/a |
| 3-10 | Info | n/a | n/a | Acute<br><br>Identified that the dining area is moved to first floor. | n/a | n/a | n/a |
| 3-11 | Info | n/a | n/a | Option presented where lift access from helipad direct to resus tabled. This gives a more direct helipad access but less direct AAU to resus outcome. It was noted that the AAU to resus link could be used frequently and the layout should be reviewed to enable rapid access. | n/a | n/a | n/a |
| 3-12 | Info | n/a | n/a | Noted by bidder that clean/dirty solution and routes will progress with developing design of theatres. | n/a | n/a | n/a |
| 3-13 | Action | Bidder | 15/06/09 | Comments on 1:200 ward layout include that no reception distant from ward required, staff base with satellite touch-down spaces required (ratio of 1 touch-down per 4 or 6 beds) – Board to confirm ratio. | Board | 25/06/09 | |
| 3-14 | Action | Board | 15/06/09 | FM flows (clean in~dirty out) to be illustrated to the Board for generic wards. | Bidder | DD#4 | |
| 3-15 | Info | n/a | n/a | The bidder identified some development work around 4-bed clusters for children's accommodation as well as potential proposals for bed-spaces, fold-down parent beds/easy chair and similar innovation that they would like to introduce to the scheme. | n/a | n/a | n/a |
| 3-16 | Info | n/a | n/a | Noted that in acute setting 2-generic grouped together would be possible, but all specialist areas must be attached to allow flexibility. | n/a | n/a | n/a |
| 3-17 | Info | Bidder | | Children's Renal areas could be located within free-form space in central core. | n/a | n/a | n/a |

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- Bidder B
- New South Glasgow Hospitals
- Design Dialogue Meeting 4

# Design Dialogue Meeting Agenda Proposals

## Bidder B

### DDM 1

**Design Dialogue Meeting Agenda Proposals**

**Design Dialogue Meeting 1**

Present Proposals for Design Dialogue Meeting (DDM) Format

Proposal of Concurrent separate Workstreams through each DDM

**1.1 Design**
**1.2 Technical**

### DDM 2

**Design Dialogue Meeting Agenda Proposals**

**Design Dialogue Meeting 2**
INITIAL CONCEPT DESIGN STAGE

**Design**
Review Exemplar Design
Review Masterplan Options
Single Bed Ward Options
Tower & Podium Options
Initial 1:500 Concept Plans
Initial 3D Site Massing

**Technical**
As Agenda

### DDM 3

**Design Dialogue Meeting Agenda Proposals**

**Design Dialogue Meeting 3**

**Design**
Masterplan
1:500 Concept Plans
1:200 Ward Tower Module, Single Bedroom
3D Site Massing Development
Indicative elevational treatment concepts

**Technical**
M&E Design Strategy Review
Structural Design Strategy Review
Cladding Design Strategy Review
Fire Strategy Review
Acoustic Strategy Review
Equipment Strategy Review

### DDM 4

**Design Dialogue Meeting Agenda Proposals**

**Design Dialogue Meeting 4**

**Design**
Masterplan
Architectural Concept

**Whole Hospital 1:500 Concept**

**1:200 Ward Plans**

**Single Bed Ensuites**

**Adult Hospital 1:200 Department Design**
Accident & Emergency
Adult Theatres
Adult Assessment Ward
Adult Radiology
Adult Critical Care

**Childrens Hospital 1:200 Department Design**
Childrens Ward
Childrens Accident & Emergency
Childrens Radiology
Children's Observation Ward
Children's Theatres

**Technical**
Sustainability
Energy Centre
Resilience
Security
Fire
Acoustics
Facilities Management

### DDM 5

**Design Dialogue Meeting Agenda Proposals**

**Design Dialogue Meeting 5**
DETAILED DESIGN STAGE

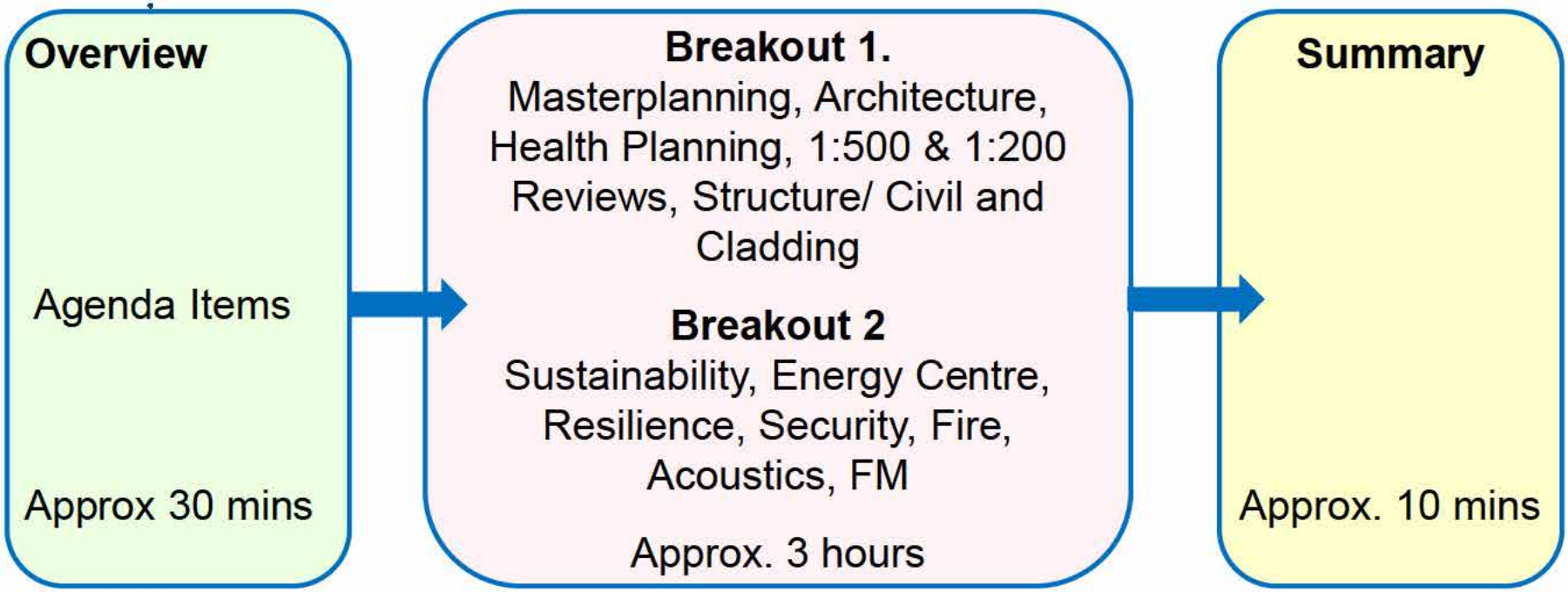
**Design**
**External Envelope Detailed Design**
Elevations
Sections
3D modelling

**Interiors Detailed Design**
1:50 Standard Rooms

Interior Design & Wayfinding Strategy
Main Entrance & Public Areas

**Technical**
M&E Detail Design
Structural Detail Design
Cladding Detail Design
Fire Strategy Detail Design
Acoustic Strategy Review
Equipment Detail Design

# Agenda


Overview
Agenda Items
Approx 30 mins
Breakout 1.
Masterplanning, Architecture, Health Planning, 1:500 & 1:200 Reviews, Structure/ Civil and Cladding
Breakout 2
Sustainability, Energy Centre, Resilience, Security, Fire, Acoustics, FM
Approx. 3 hours
Summary
Approx. 10 mins

# Design Dialogue Meeting 4

## Design Dialogue Meeting Agenda Proposals

**Design Dialogue Meeting 4**
DETAILED DESIGN STAGE

**Design**
Masterplan
Architectural Concept

**Whole Hospital 1:500 Concept**

**1:200 Ward Plans**

**Single Bed Ensuites**

**Adult Hospital 1:200 Department Design**
Accident & Emergency
Adult Theatres
Adult Assessment Ward
Adult Radiology
Adult Critical Care

**Childrens Hospital 1:200 Department Design**
Childrens Ward
Childrens Accident & Emergency
Childrens Radiology
Children's Observation Ward
Children's Theatres

**Technical**
Sustainability
Energy Centre
Resilience
Security
Fire
Acoustics
Facilities M anagement

# Masterplanning & Landscape Design

Master Plan Concept Plan

Transport/ Pedestrian movement routes

Options for the Western Car Park

The Arrival Square

The Children's Park

Landscape Scale and Character

Existing Site Ecology and Landscape

Roof Gardens

# Masterplan & Landscape

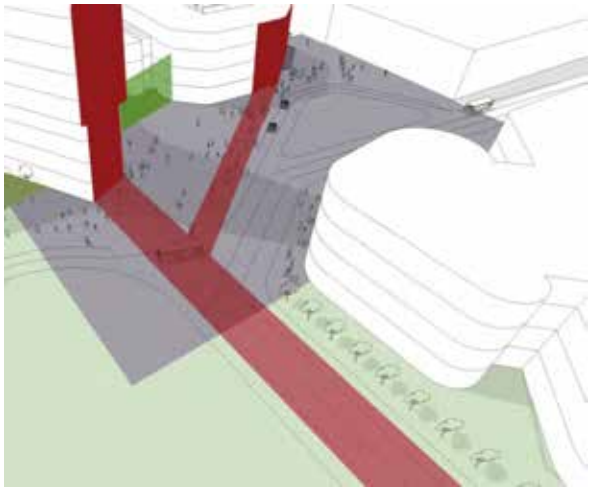
## Brief Process Review

Development of two defined options for traffic circulation

Retention of core principles related to wayfinding & orientation

Central point of arrival serving separate entrances for Acute & Children's Hospitals

Masterplan structure



NHS Greater Glasgow and Clyde

DD3
Review

# Draft Masterplan Option 1

NHS Greater Glasgow and Clyde

# Draft Masterplan Option 2

DD3 Review

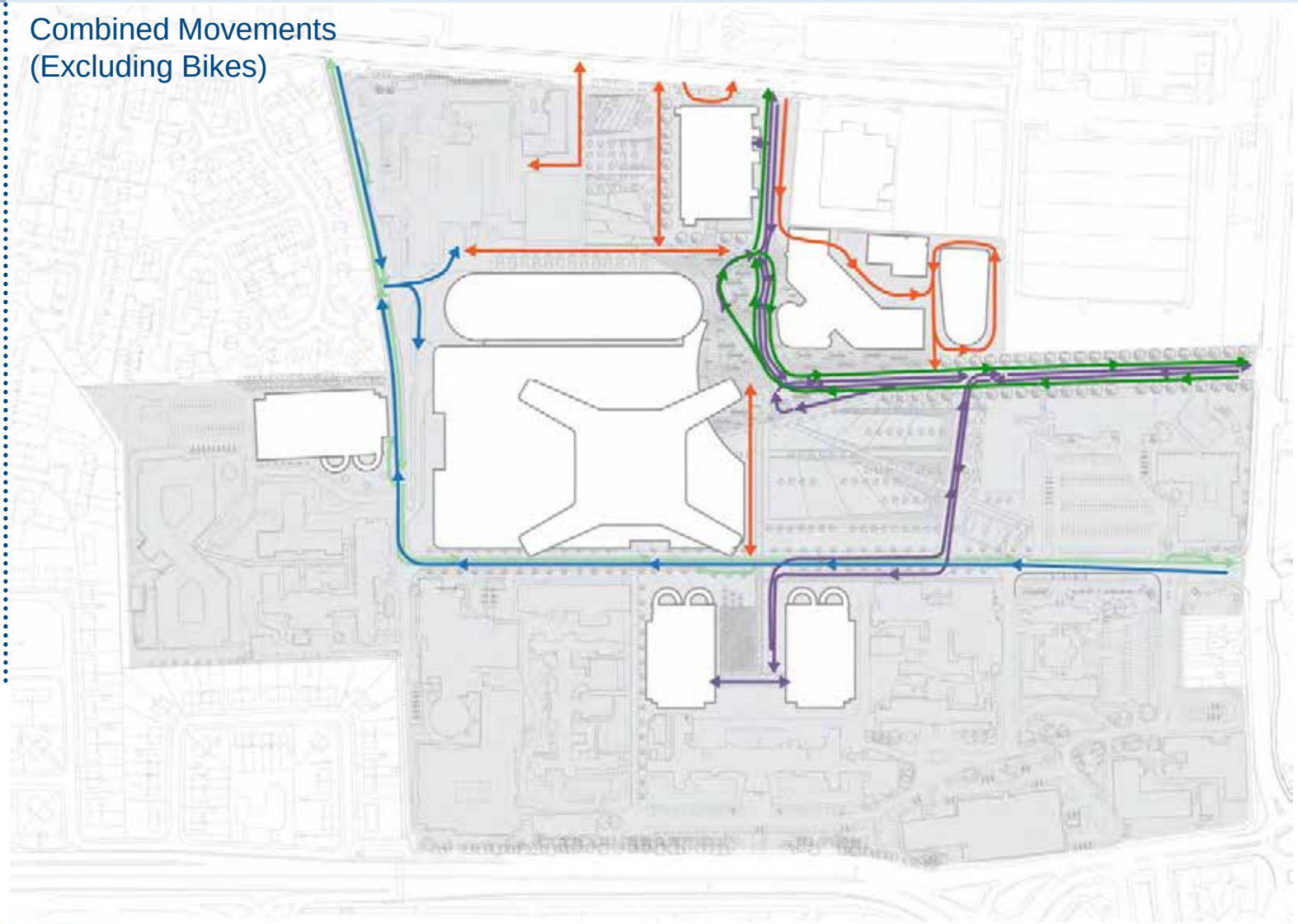
# Masterplan

# Movement & Function

## Clear Wayfinding & Orientation – Main Entrance route Govan Road

# Movement & Function

## Combined Movements (Excluding Bikes)



# Masterplan

## Central Area Plan – Access & Connections

# Masterplan

## Clear Wayfinding & Orientation – Pedestrian Route to main entrance space

# Masterplan

## Arrival Square

# Architecture and Health Planning

Architectural Concept

1:500 Concept Plans

1:200 Adult and Children's Ward Plans

Single Bed Ensuites

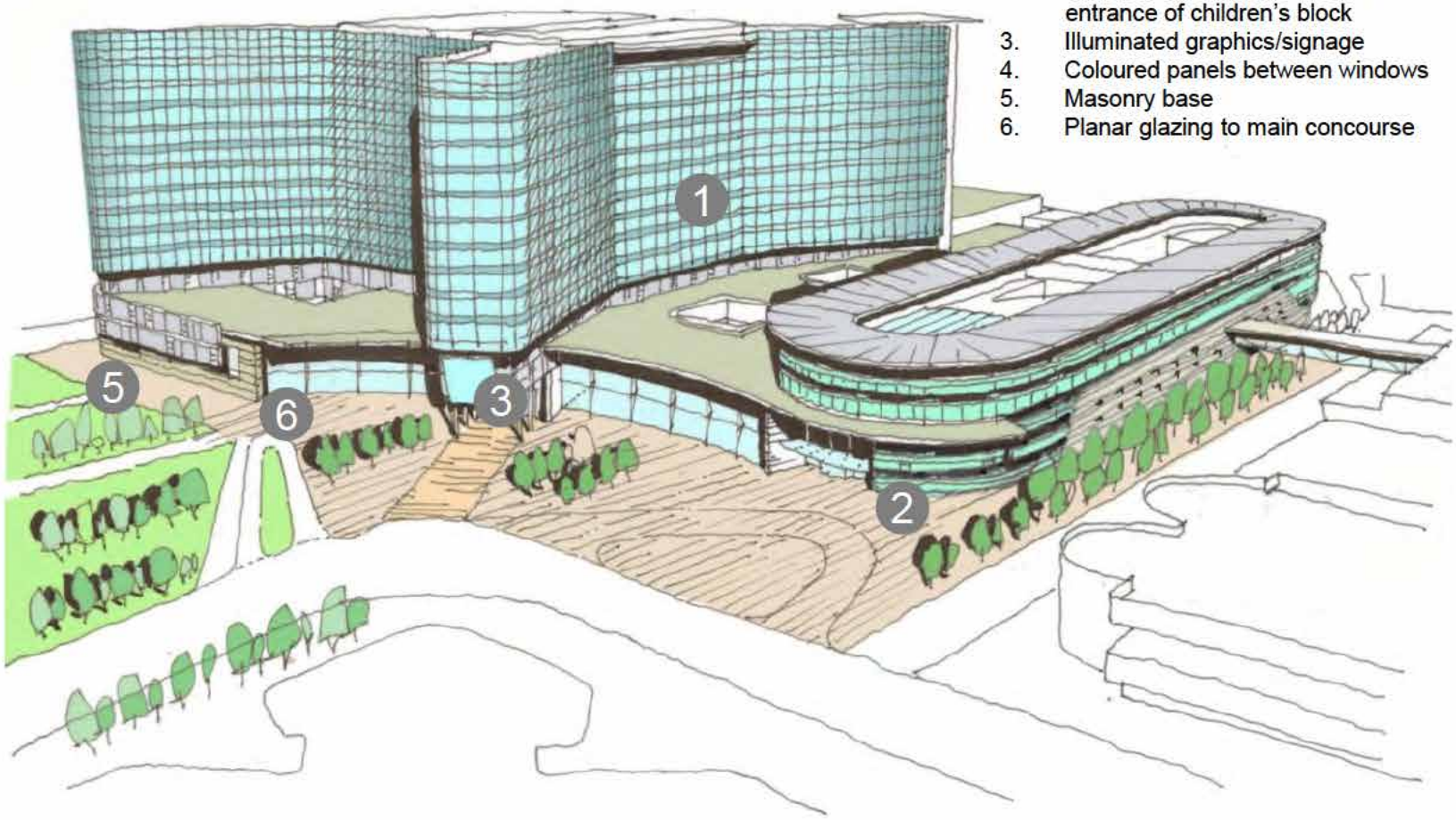
Children's Hospital 1:200 Departmental Layouts

Adults Hospital 1:200 Departmental Layouts

# Sketch Aerial Perspective



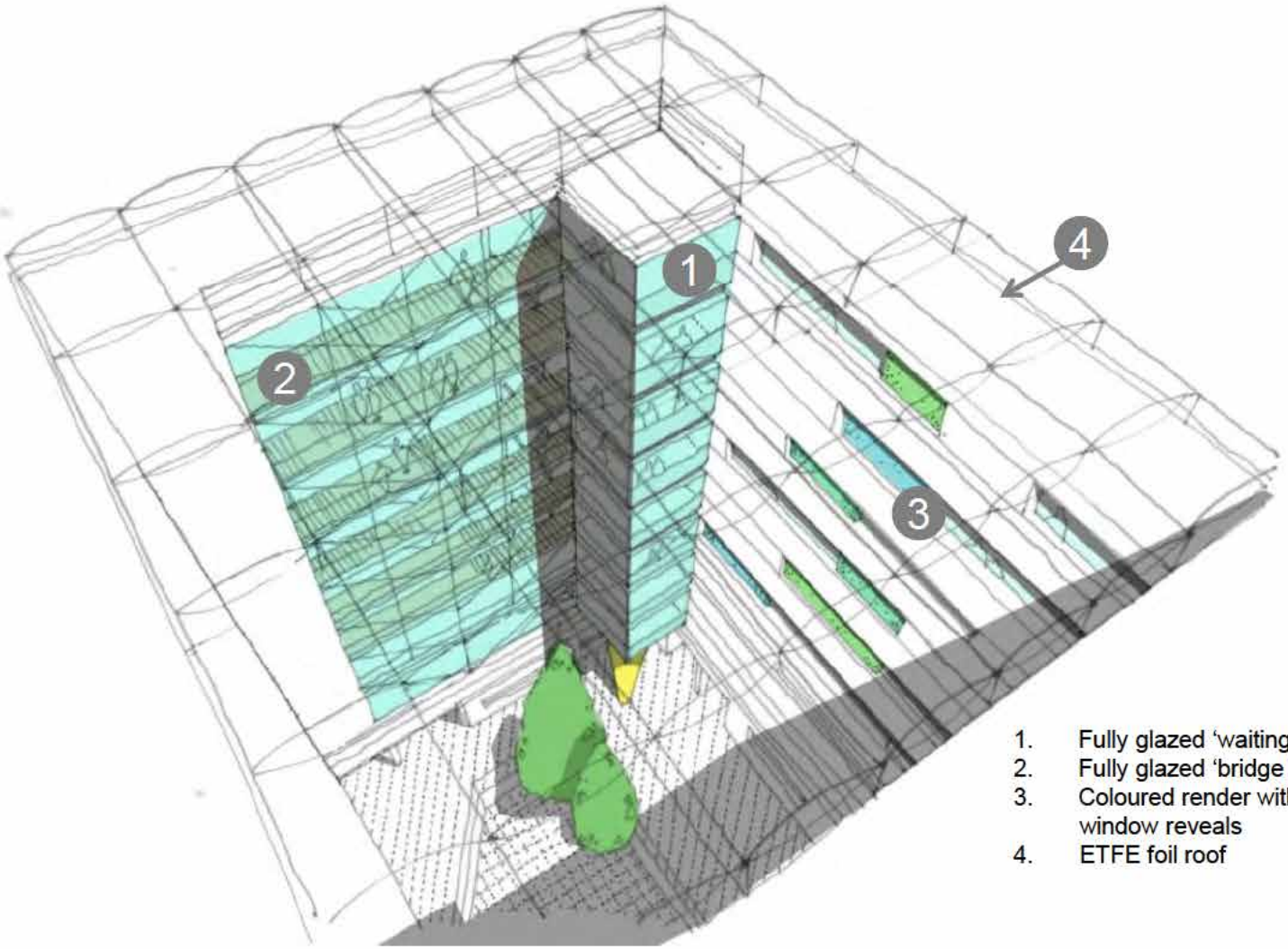
1. Unitised curtain walling
2. Pre-patinated copper cladding to entrance of children's block
3. Illuminated graphics/signage
4. Coloured panels between windows
5. Masonry base
6. Planar glazing to main concourse



# View of Main Concourse from Dining Area

# View of Tower Atrium

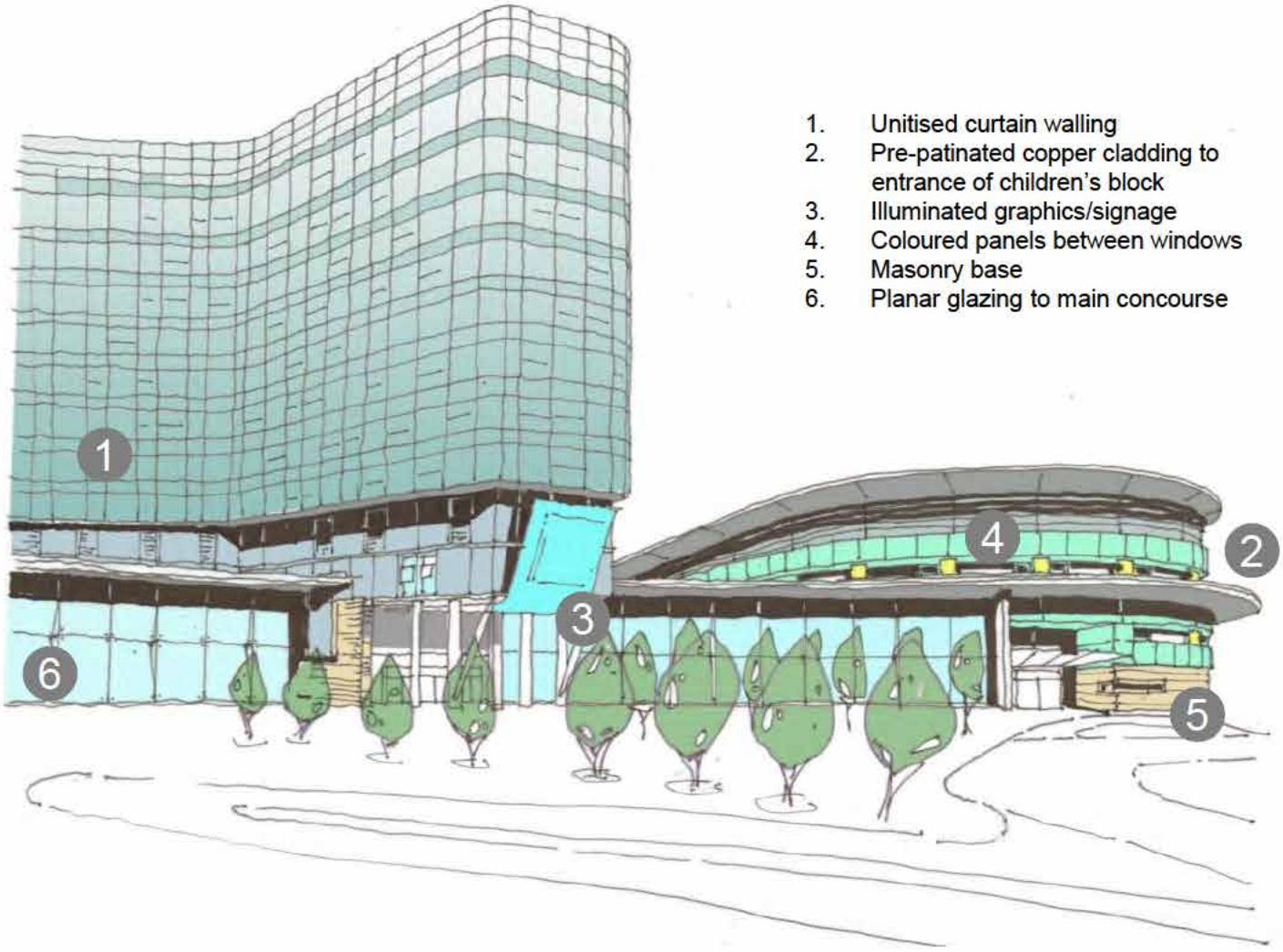





1. Fully glazed 'waiting pod'
2. Fully glazed 'bridge link'
3. Coloured render within window reveals
4. ETFE foil roof

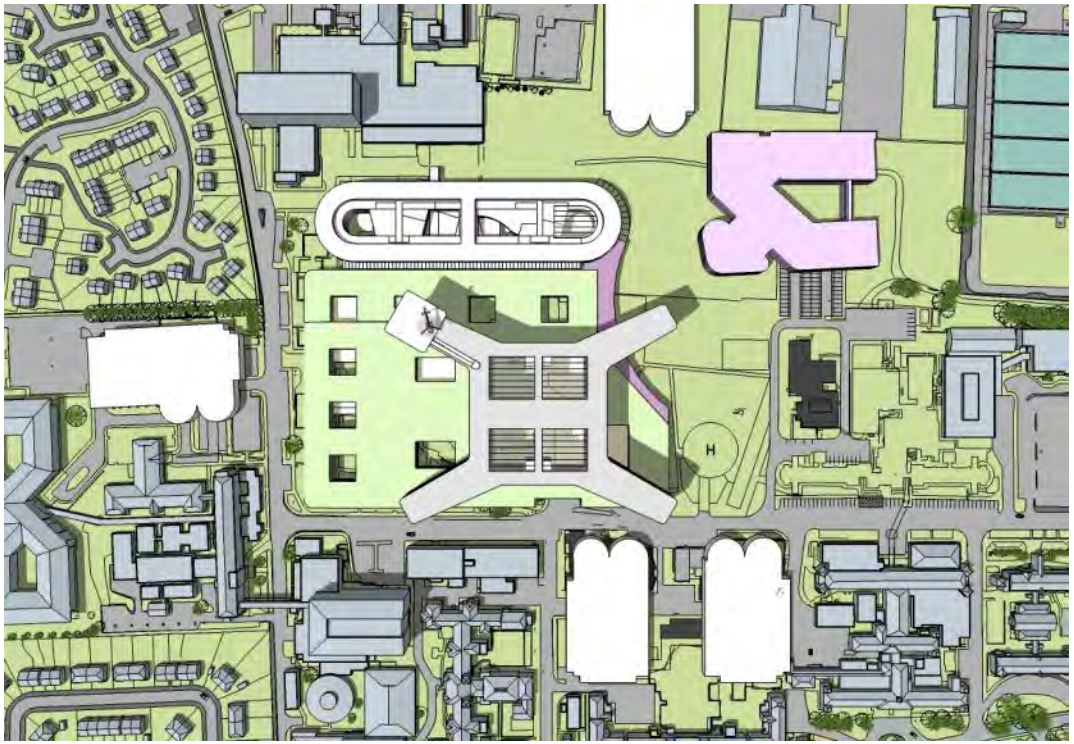
# Sketch View of Main Entrance



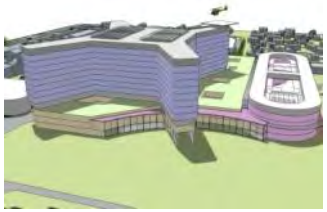



1. Unitised curtain walling
2. Pre-patinated copper cladding to entrance of children's block
3. Illuminated graphics/signage
4. Coloured panels between windows
5. Masonry base
6. Planar glazing to main concourse

# Proposed Design



Master Plan



Main Entrance

Children's Entrance

Isometric

Ground Floor

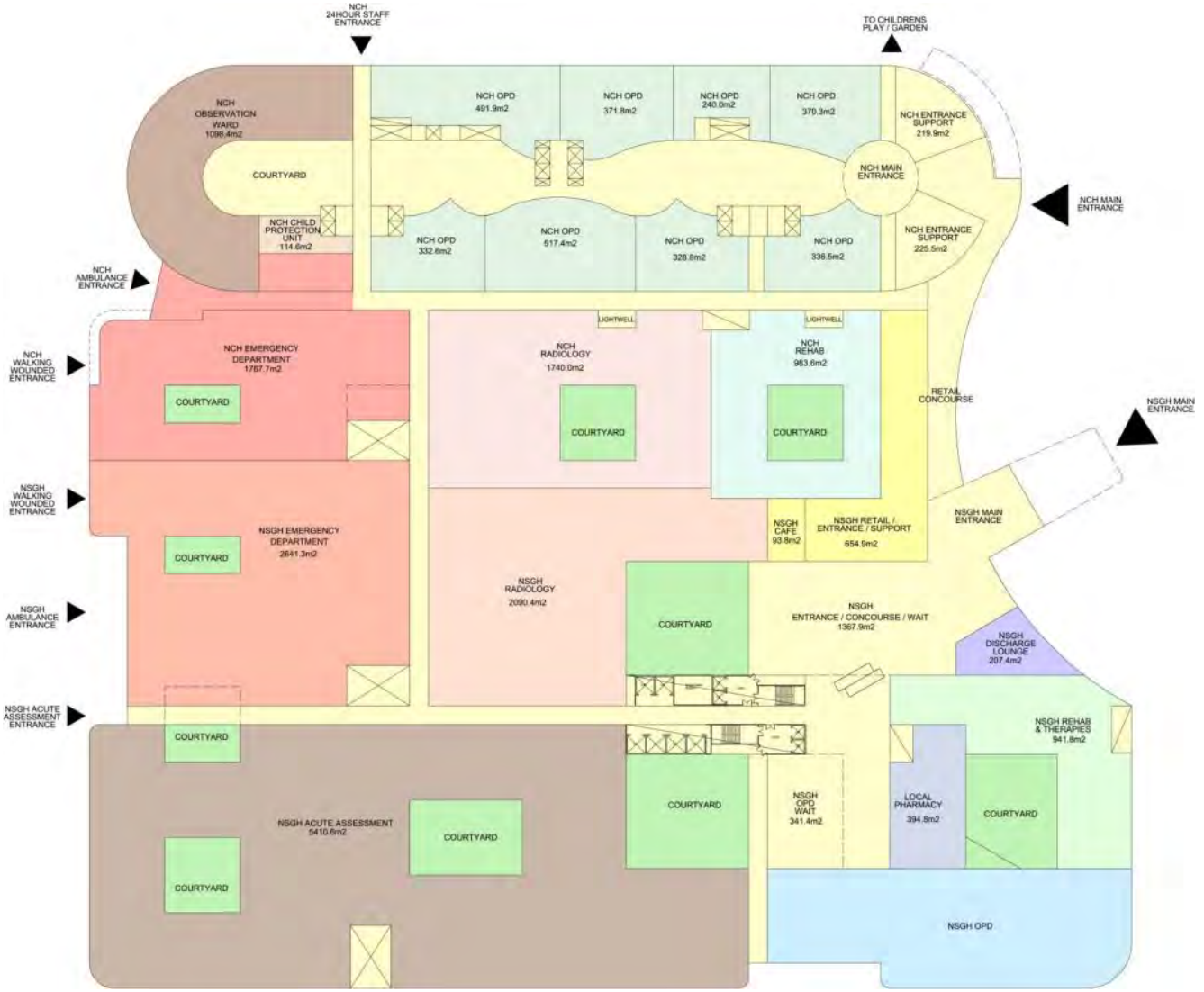
First Floor

Second Floor

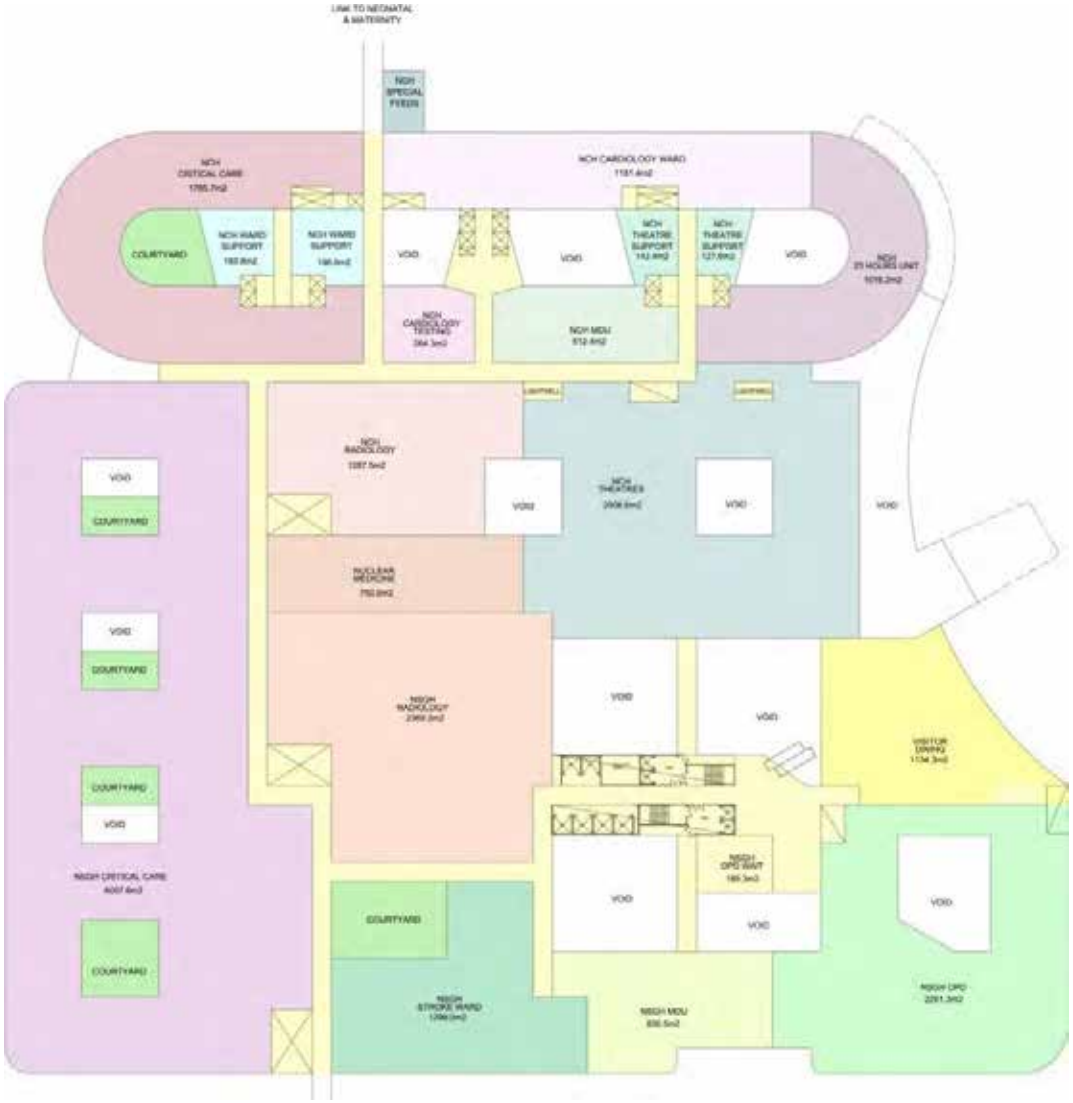
Third Floor

Fourth Floor

# 1:500 – Ground Floor

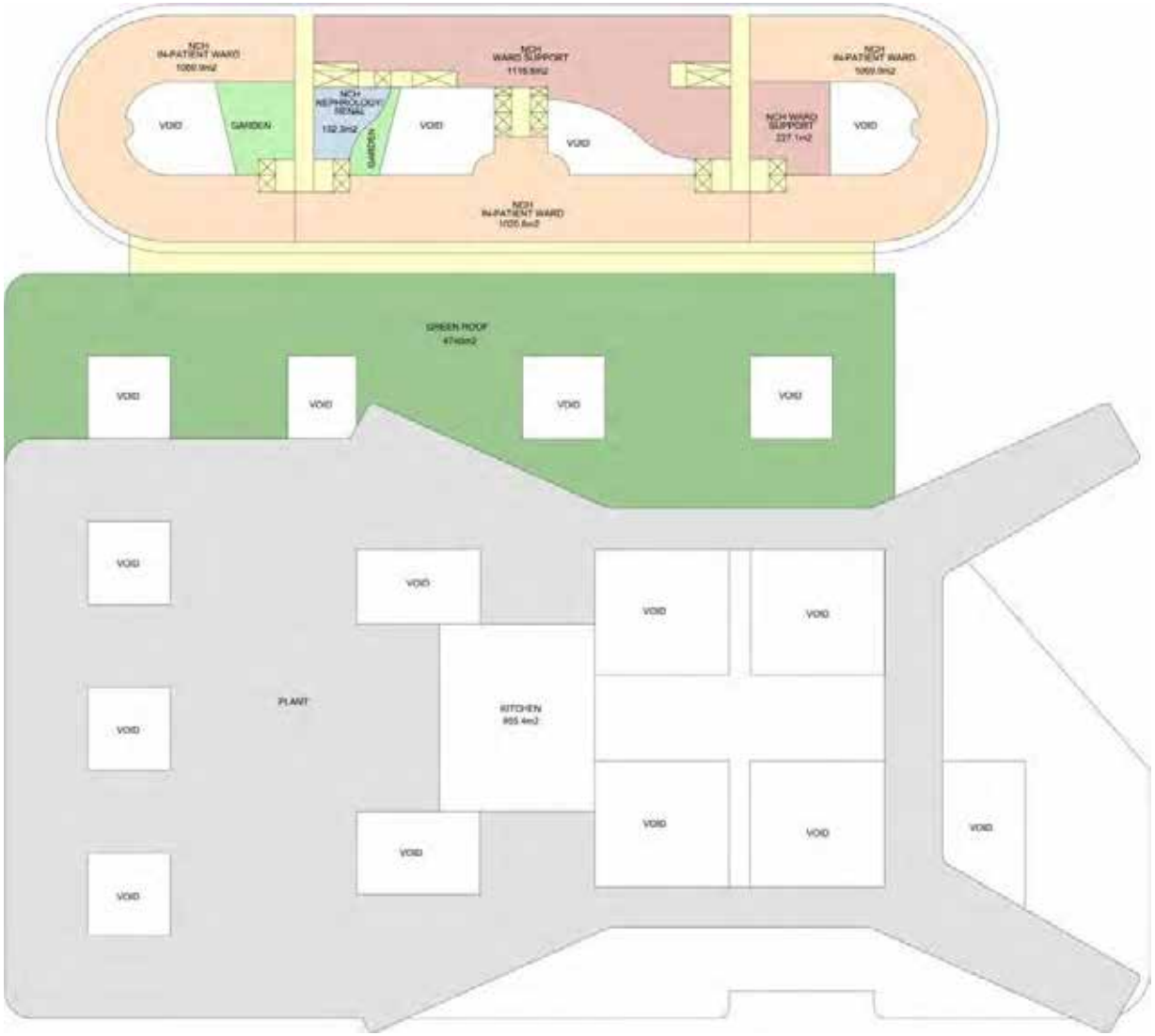


# 1:500 – First Floor

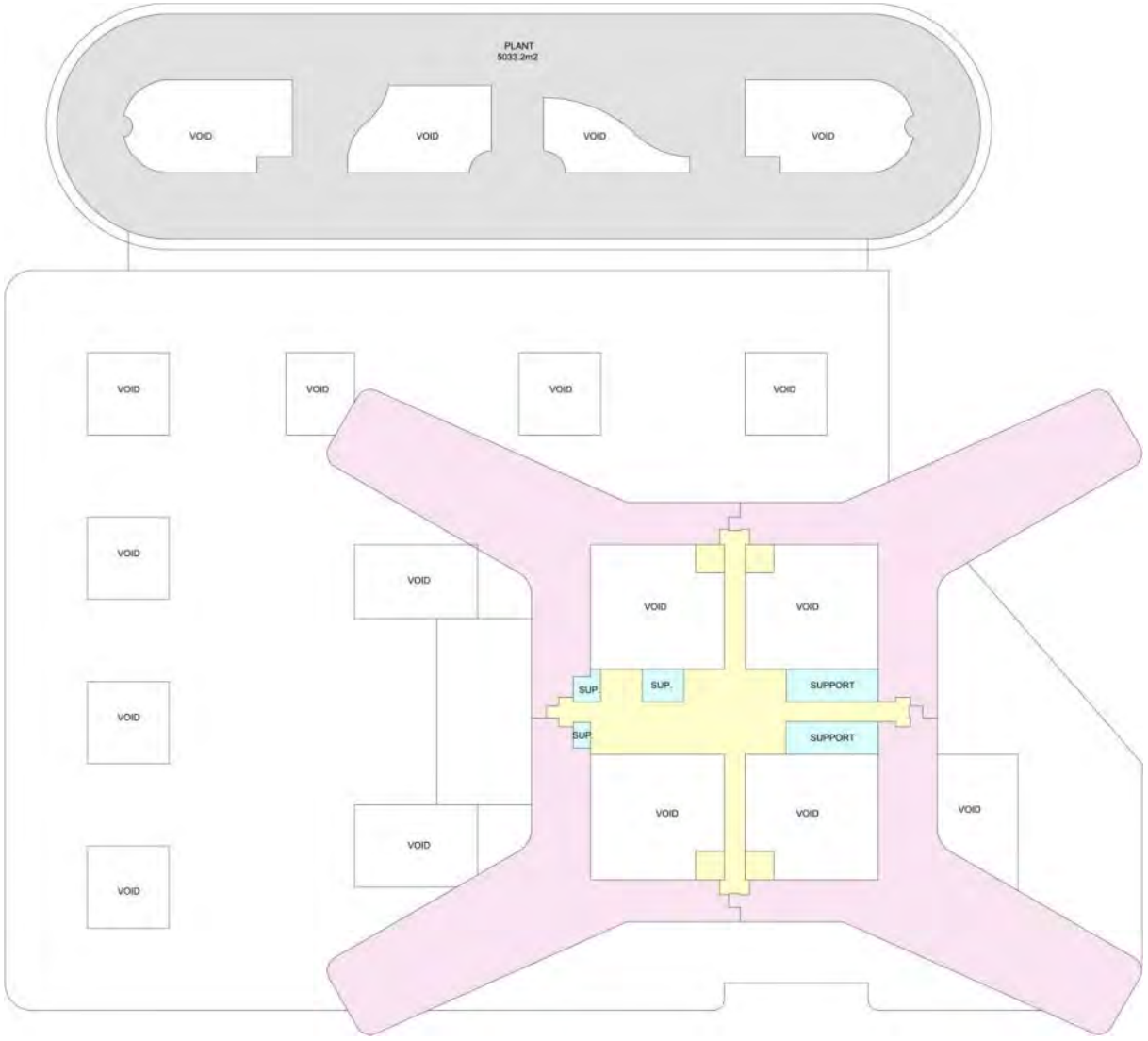


# 1:500 – Second Floor

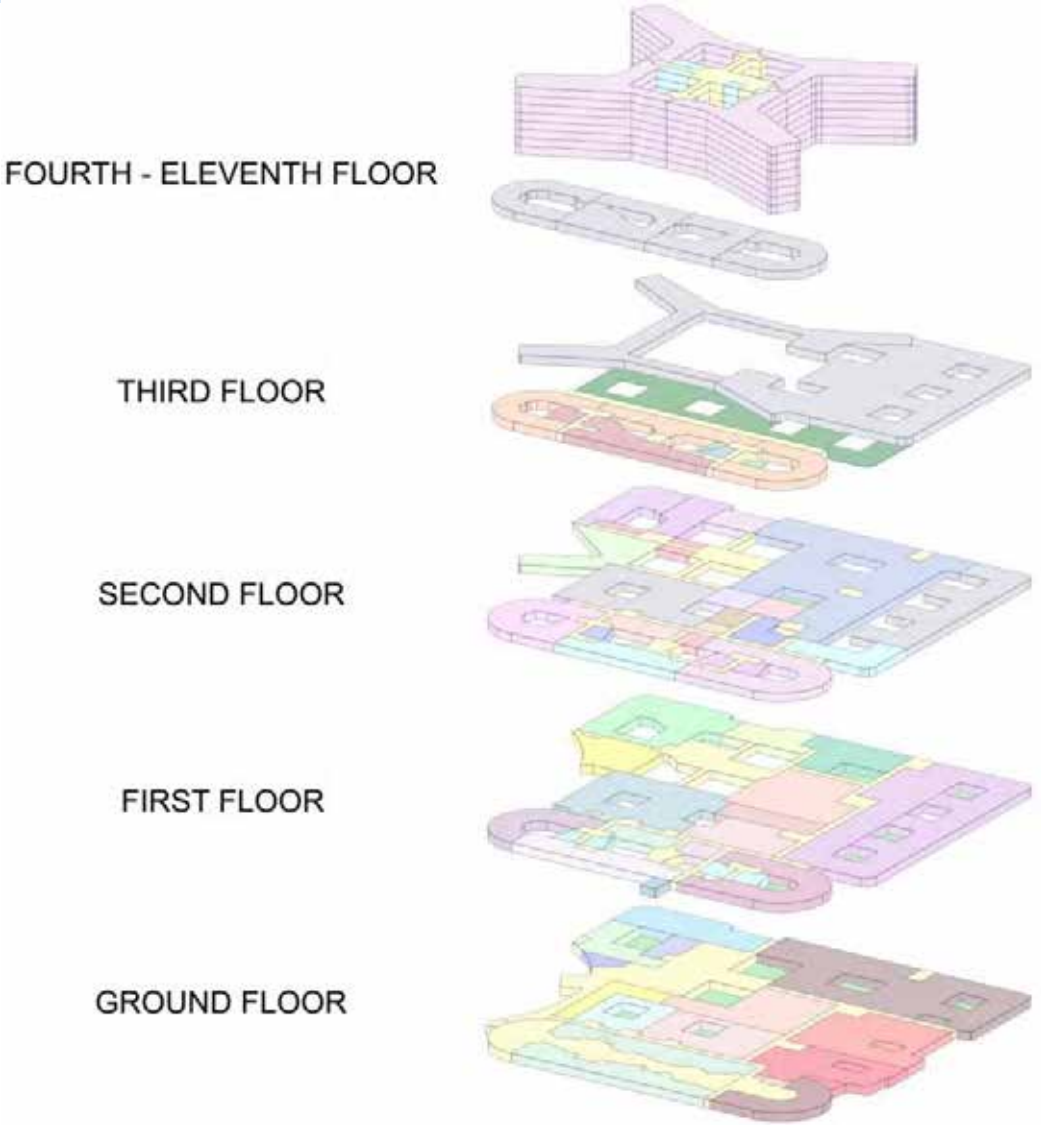
# 1:500 – Third Floor



# 1:500 – Fourth Floor

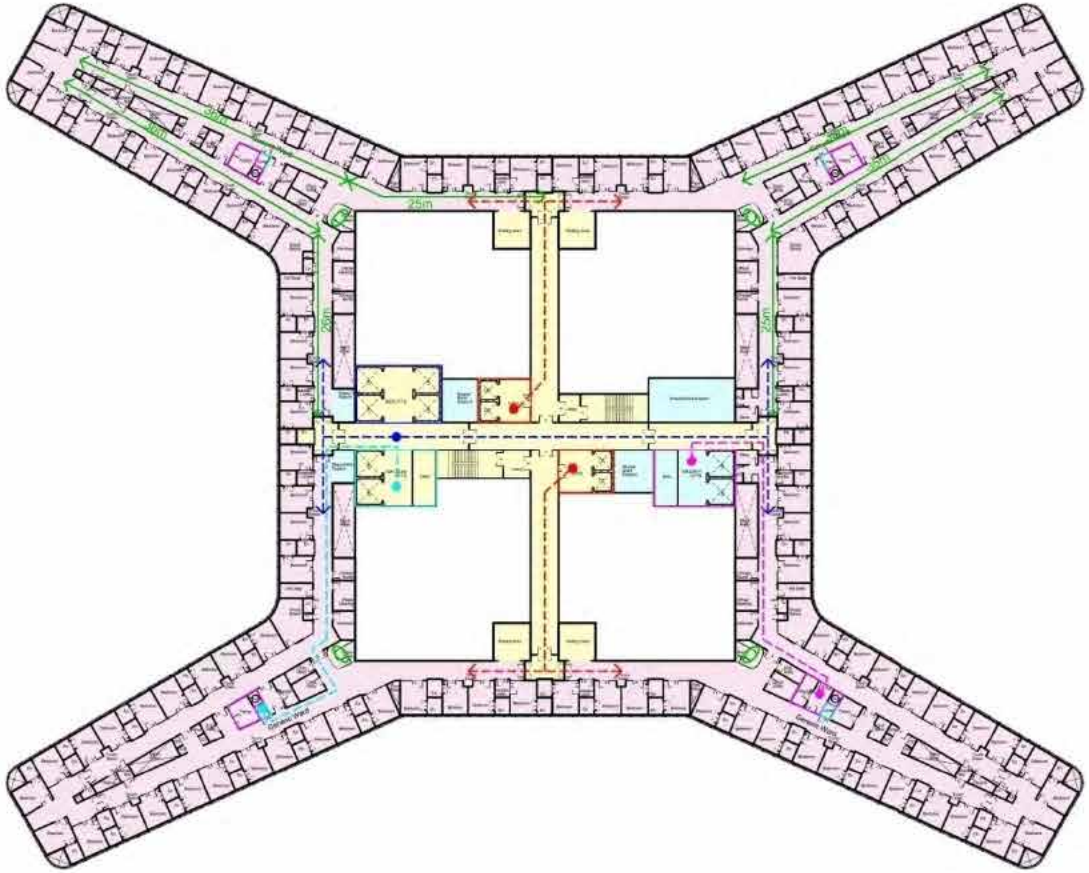


# Stacking Diagram

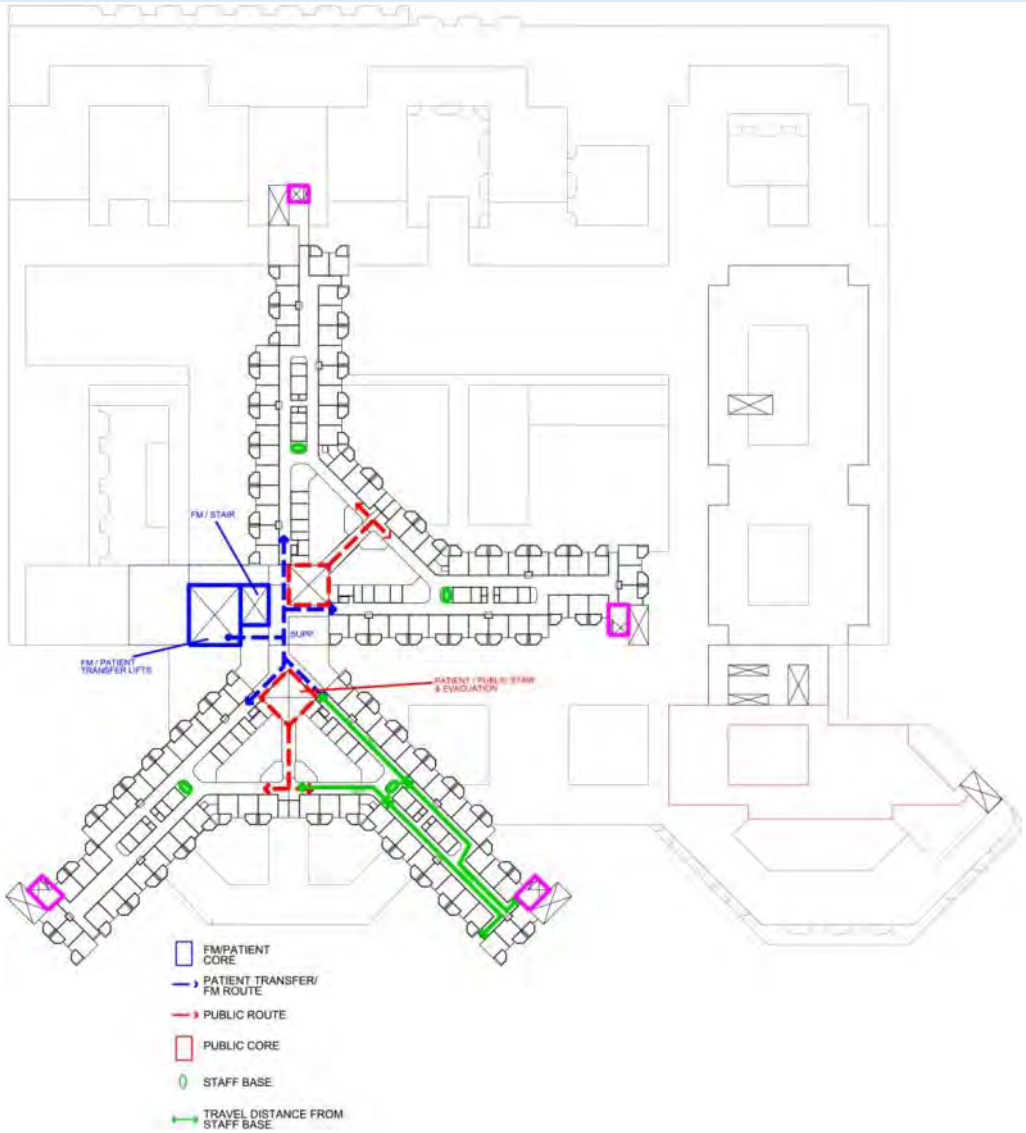


# 1:200 Adult Ward Analysis

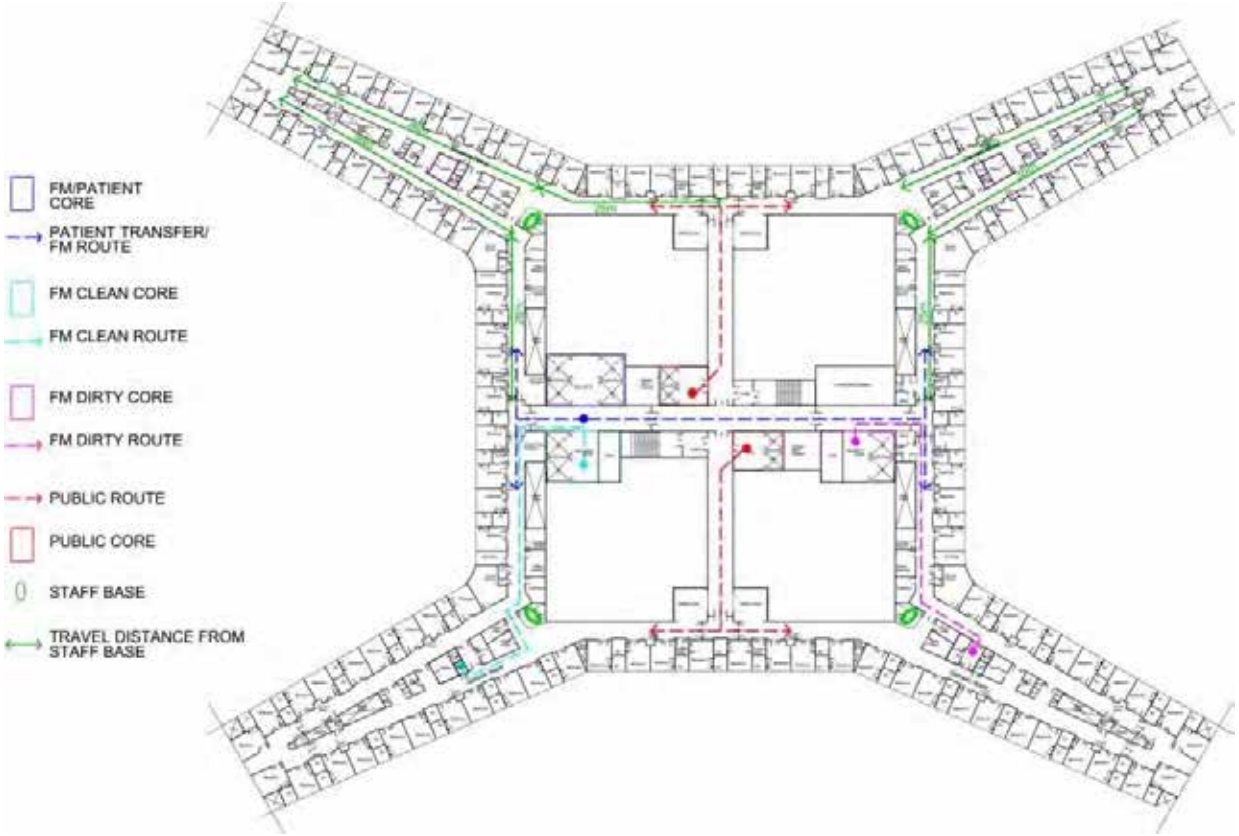




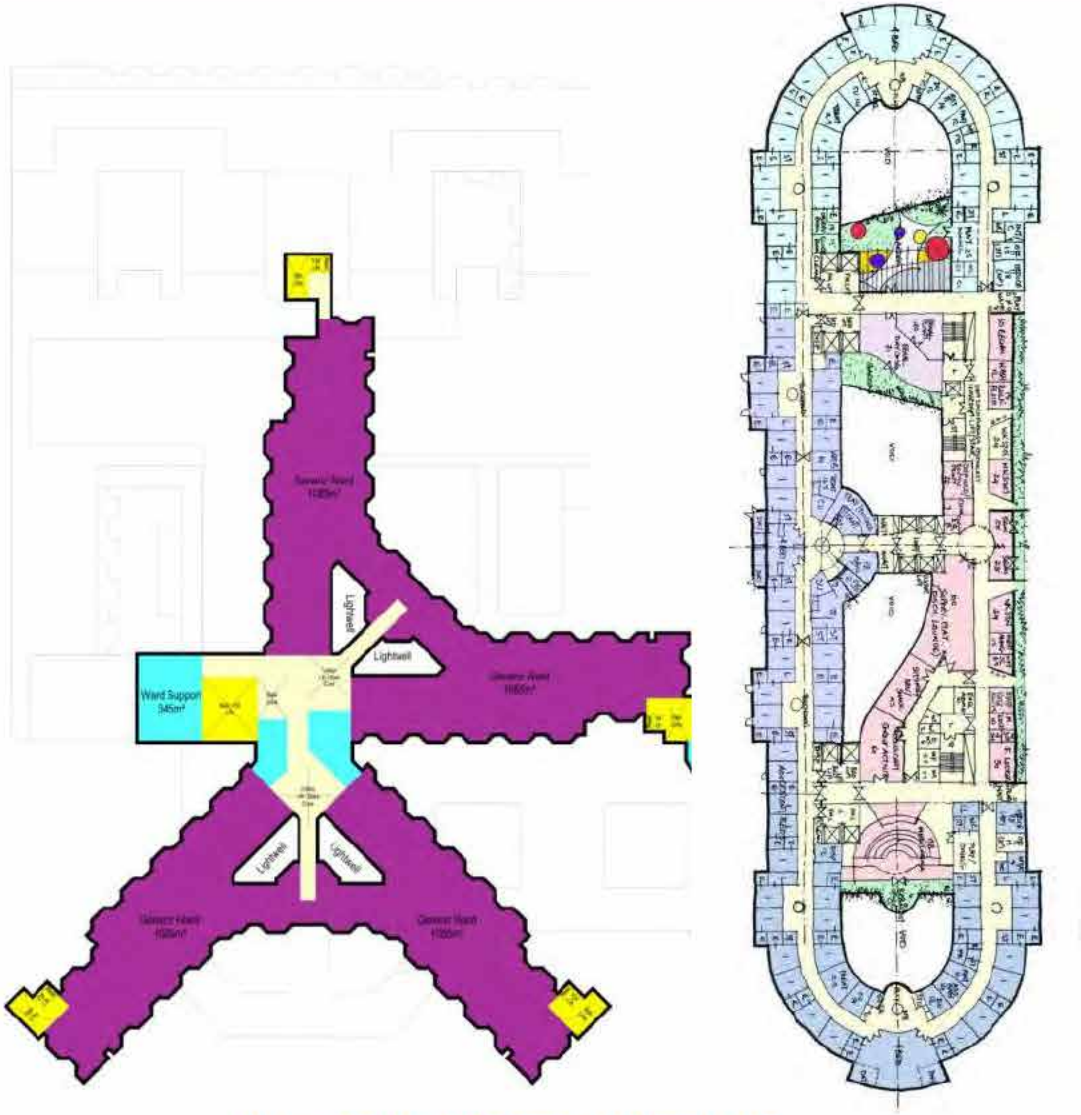
# 1:200 Adult Ward Exemplar Flow Diagram



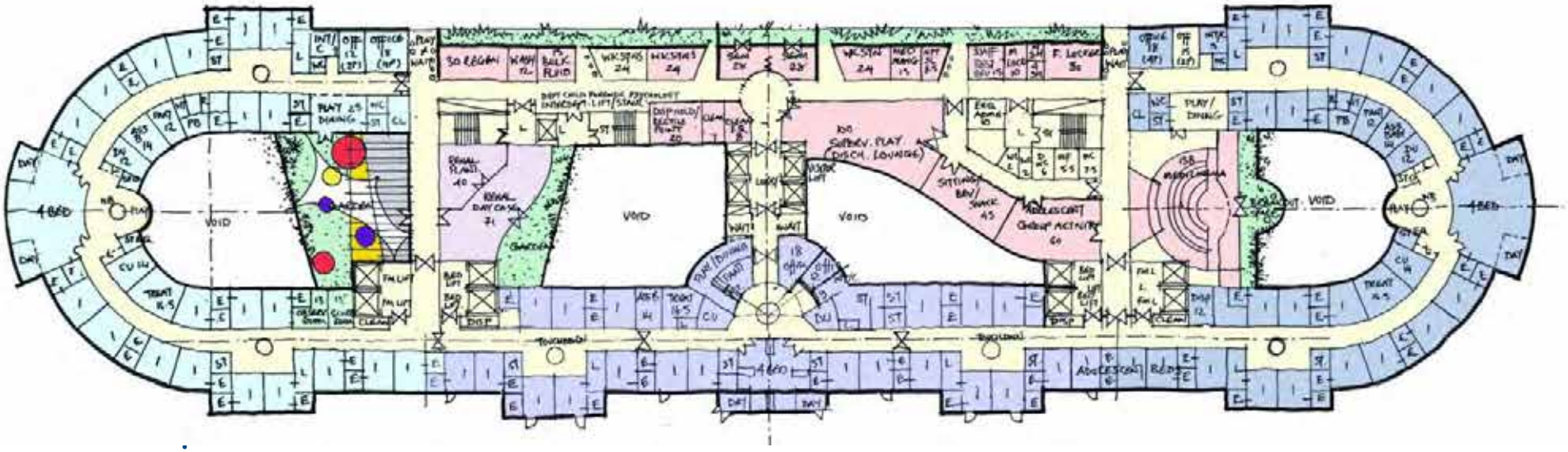
# 1:200 Adult Ward Opportunity E - Flow Diagram



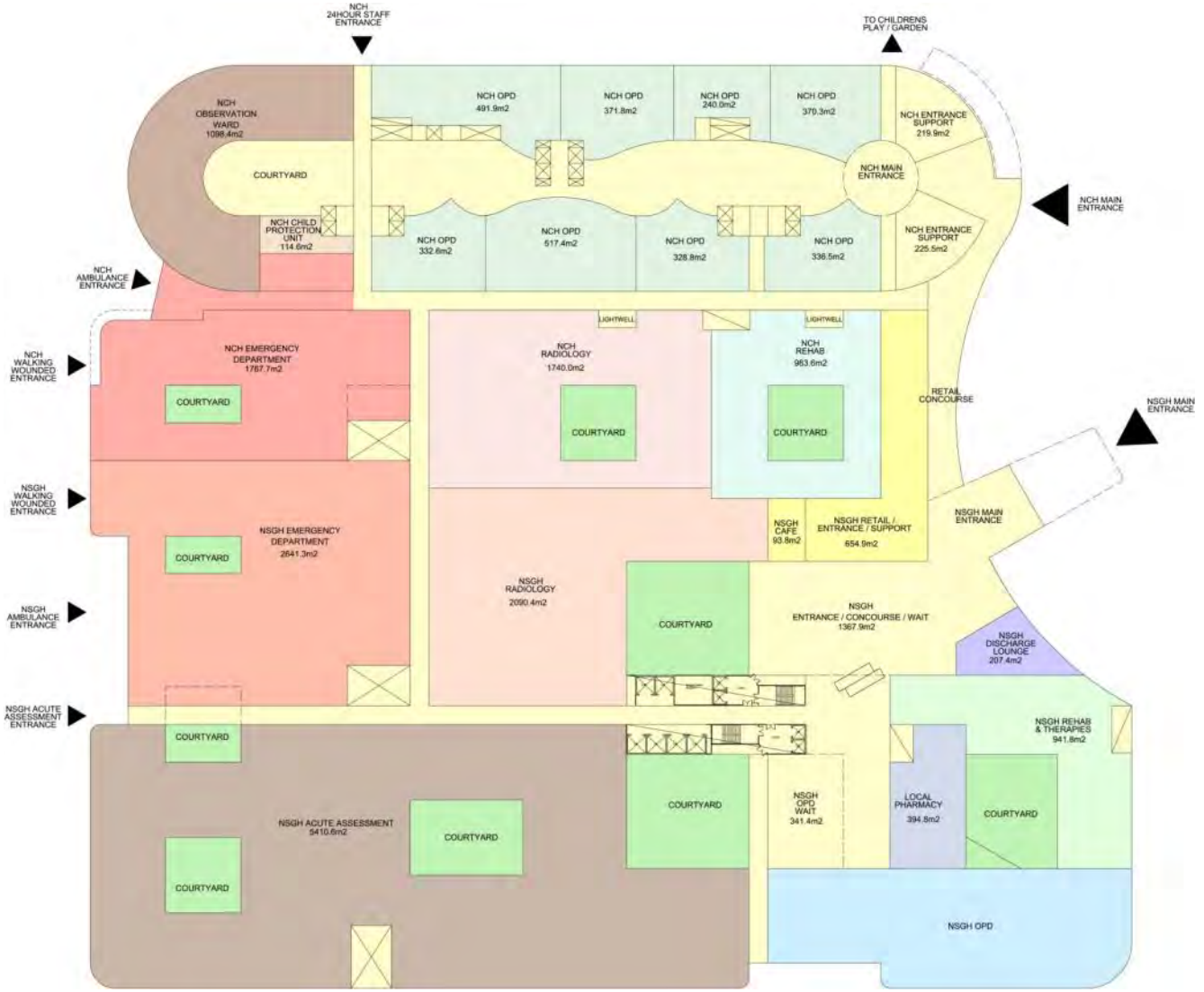
# 1:200 Children's Ward Analysis



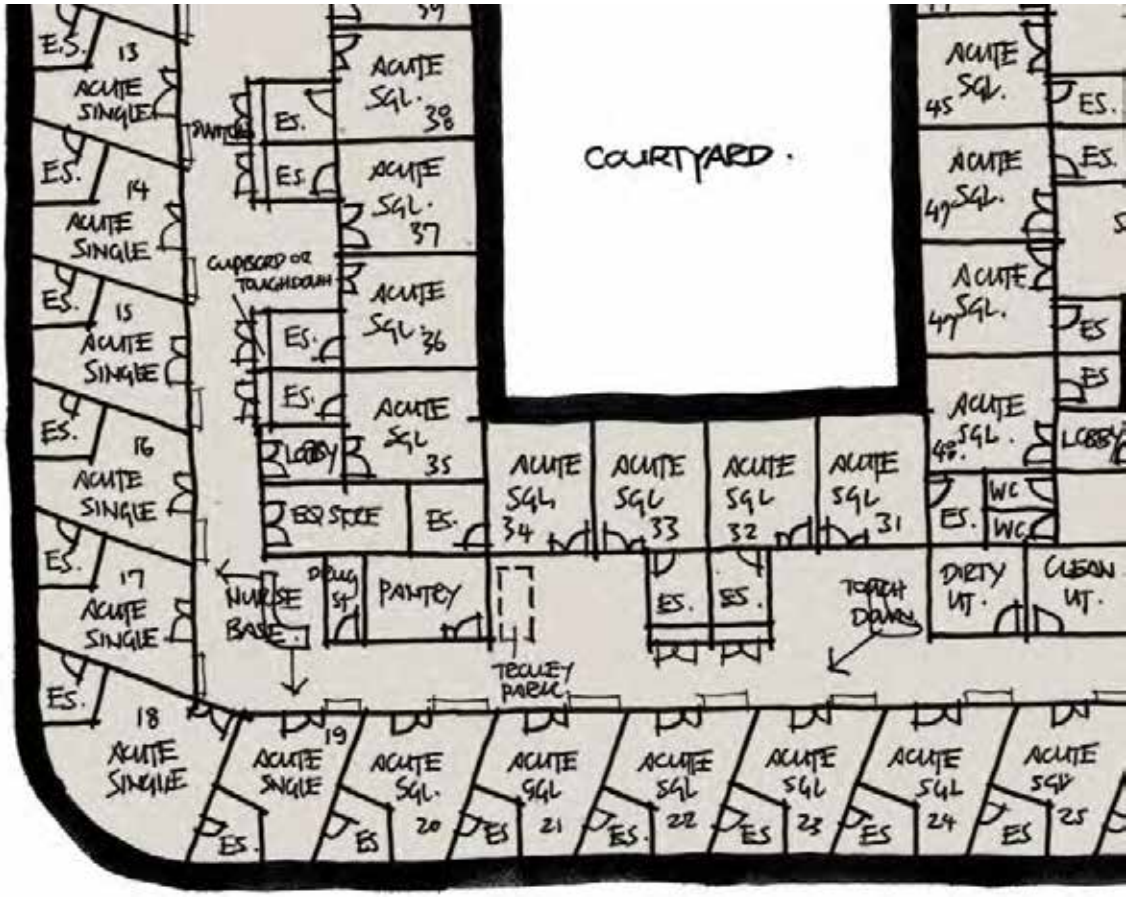
# 1:200 Children's Ward Opportunity E



# Ensuite Proposals- Acute Assessment Ward



# Ensuite Proposals – Acute Assessment Ward



# Ensuite Proposals – Children`s Observation Wards

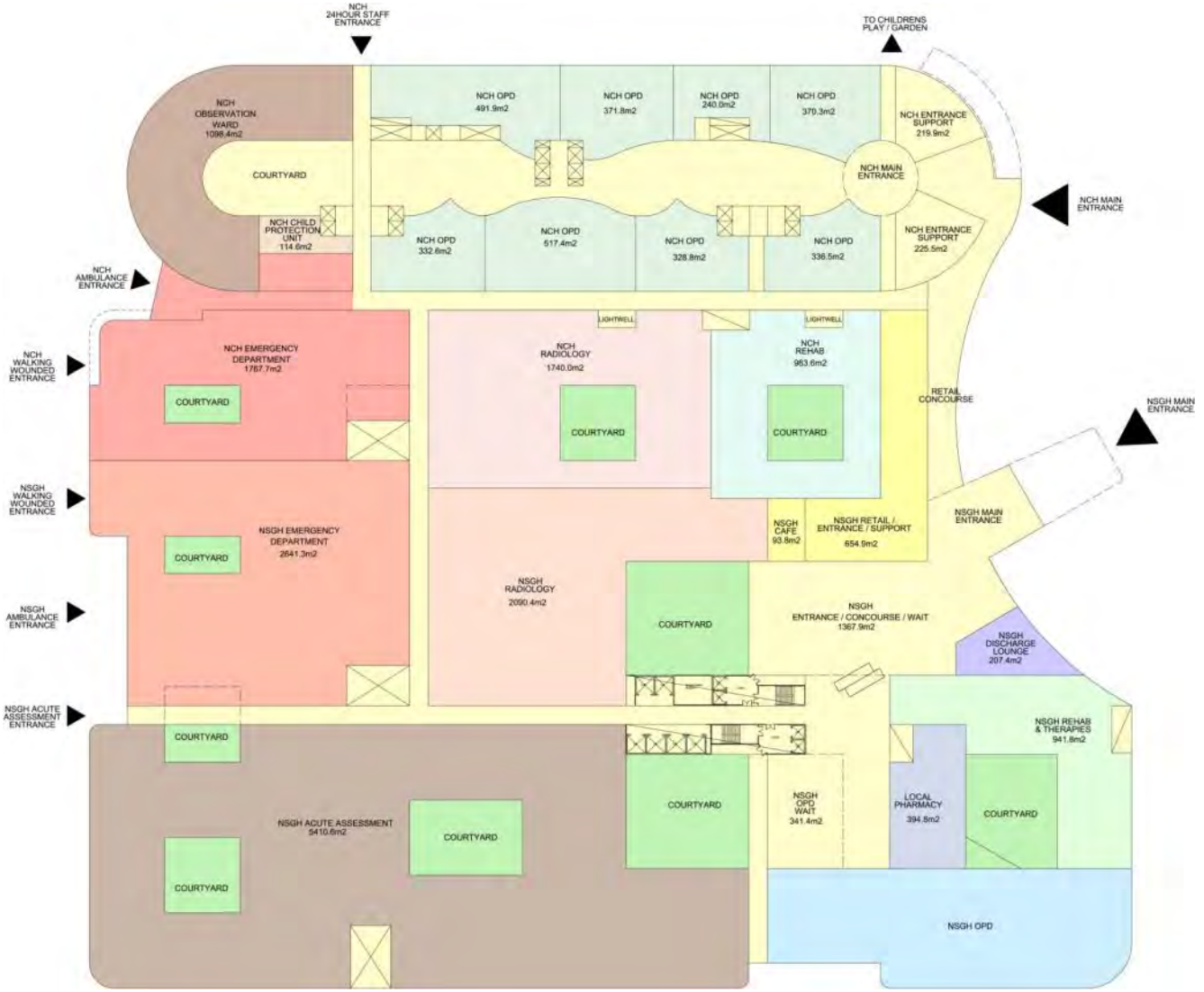
Core Bed Space

Ensuite Shower Room

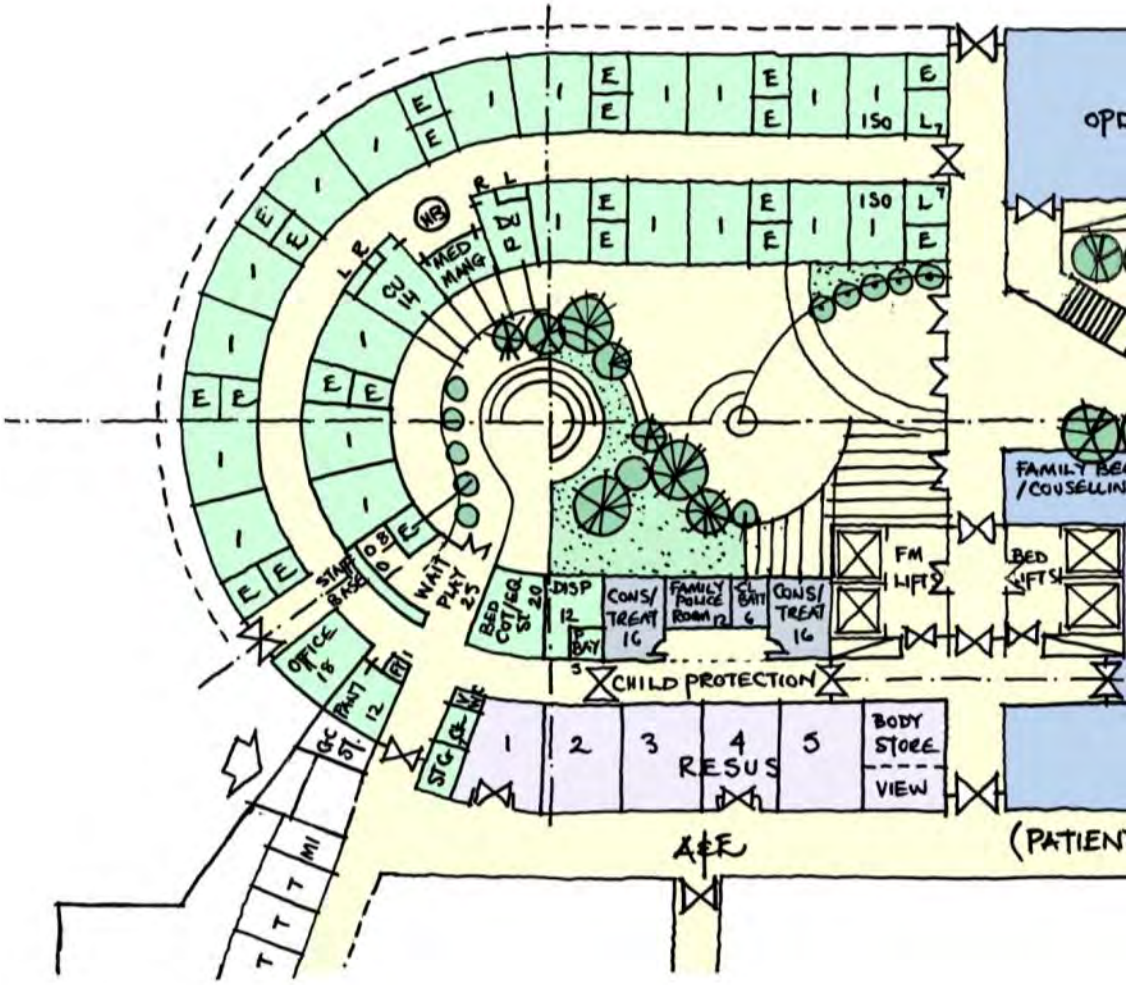
Clinical Support Zone

Social (Family) Support Zone

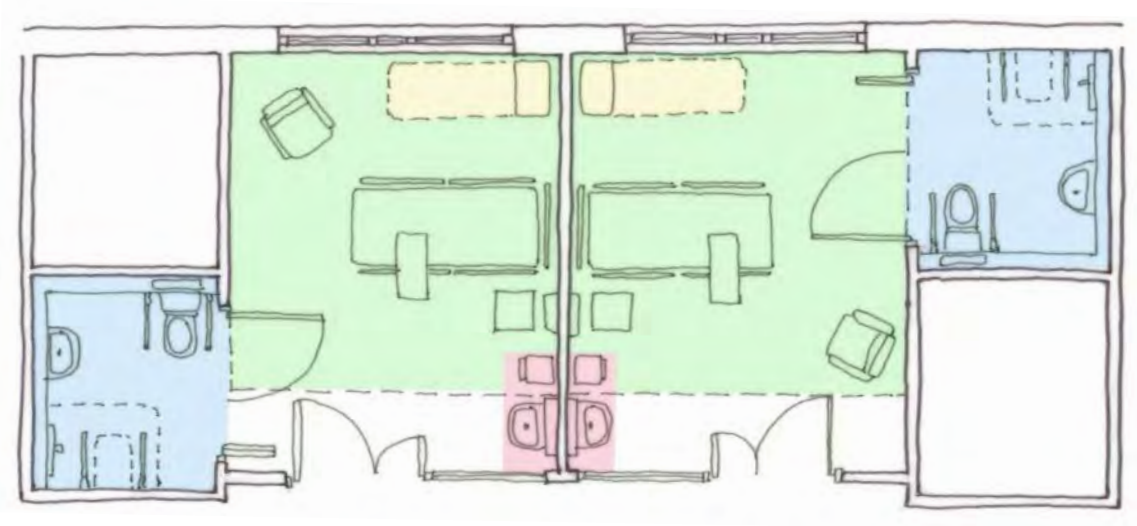
# Children's Observation Ward



# Children's Observation Ward



# Ensuite Proposals – Children's Observation Ward

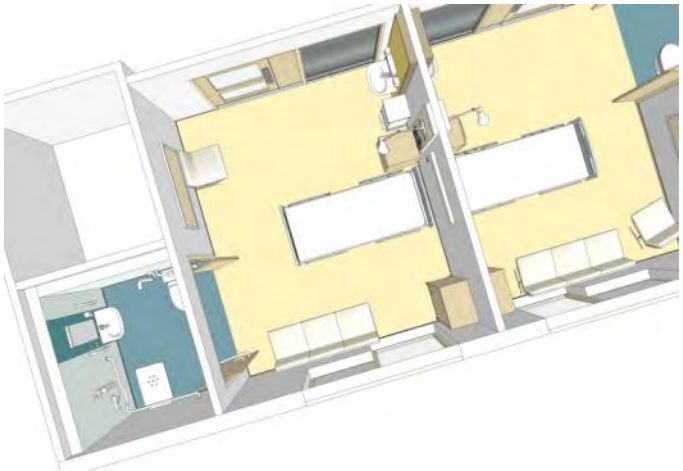


Core Bed Space

Ensuite Shower Room

Clinical Support Zone

Social (Family) Support Zone



# Break Out Meetings

# Masterplan & Landscape

## Contents

## Masterplan update

Western Car Park - Options Study [process of determining location]

Transport & pedestrian movement routes

Design Development

External character & function – Arrival Square/Children's Park/Central Park

Review of arrival square/ transport hub

Children's Hospital – entrance/park/play

Existing site plan & ecological character – as a base for enhancement

Roof gardens – overview [work in progress]

# Western Car Park

## Options Study

Based upon required capacity of 1,028 spaces

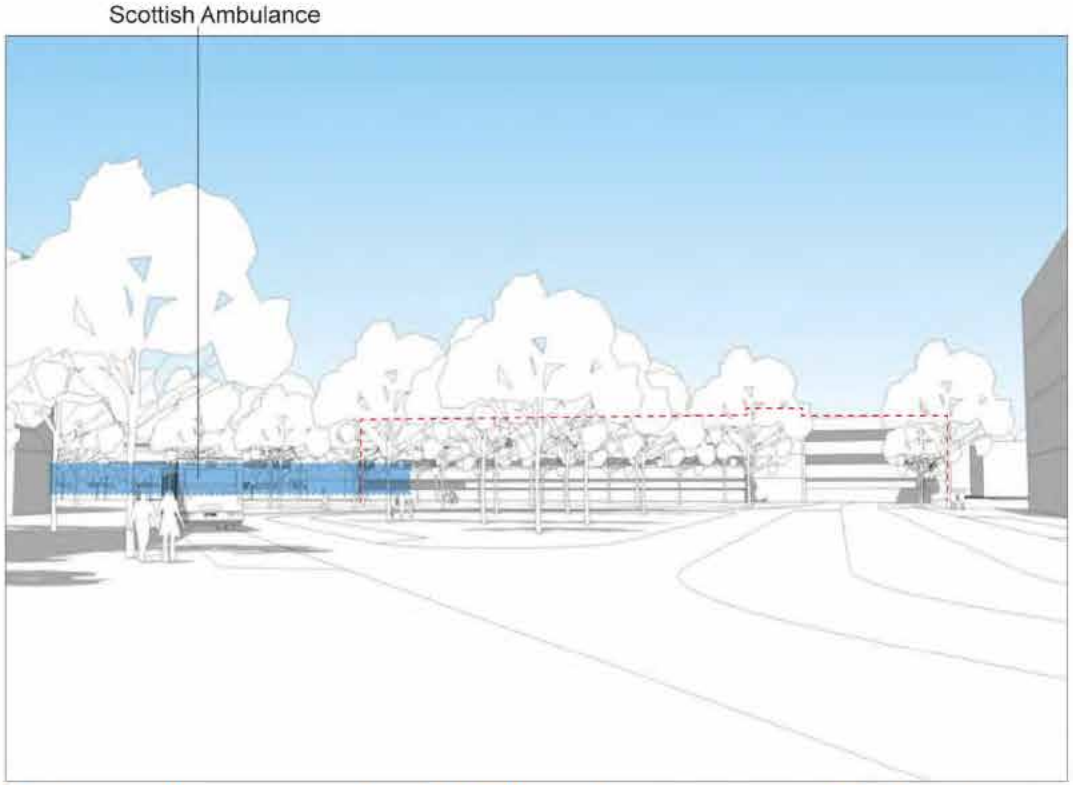
Option A - with minimum height (and extended footprint)

Option B – with minimum footprint (and increased height)

Reviewed for efficiency and impact of building massing adjacent to entrances

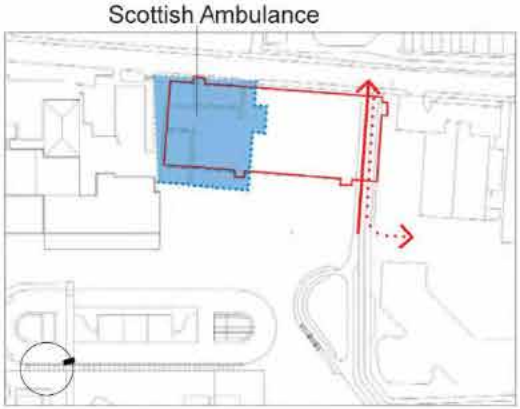
# Western Car Park

## Options Study




### A01

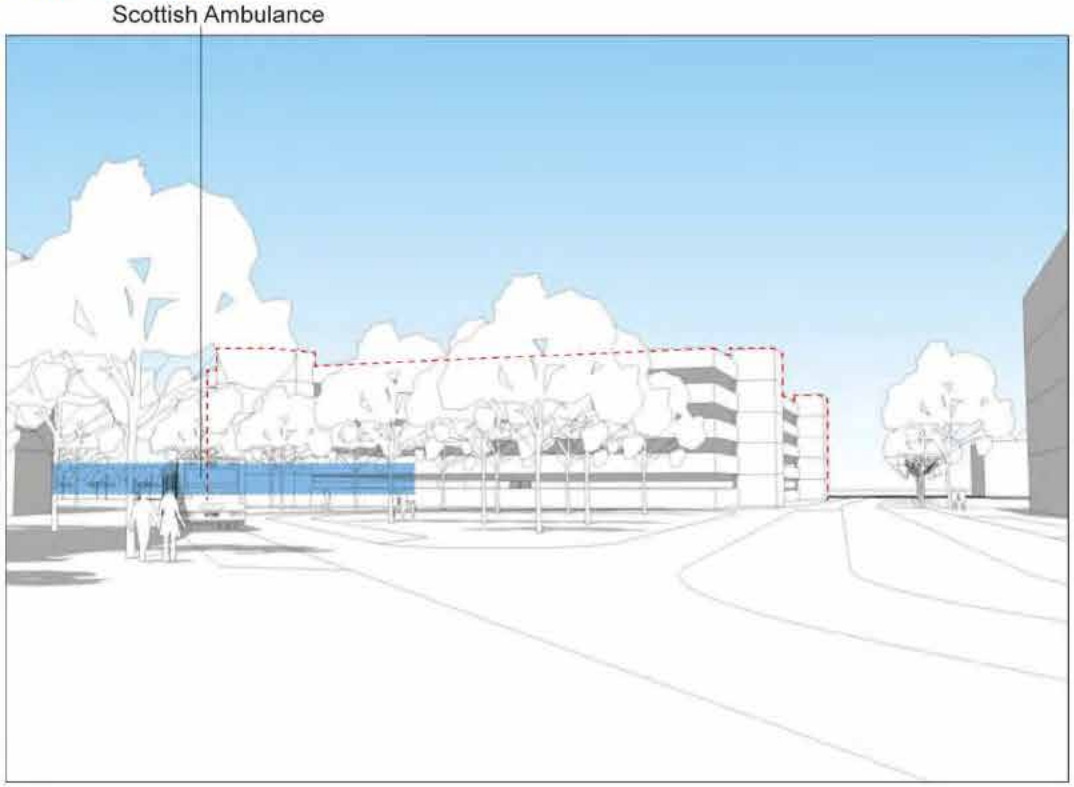
4 lane road
4 floors
12m height




Option with minimum height & therefore maximum footprint
4 traffic lanes required through structure (incl. FM access)
Occupies significant footprint including extensive Scottish Ambulance land
Extends along full extent of western boundary

# Western Car Park

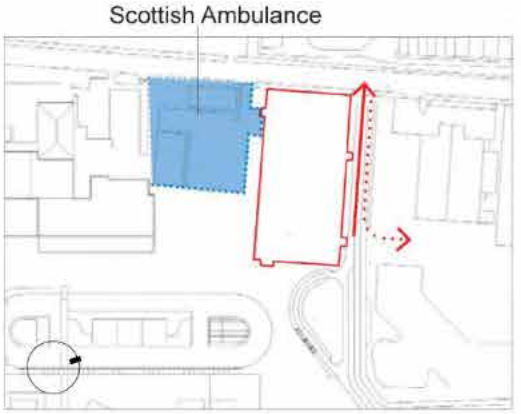
## Options Study




## A02

5 floors

15m height




5 floor option – allowing 20% reduction in footprint

No traffic through structure, which is much closer to Children's entrance

Rotation avoids Scottish Ambulance land

Less containment of arrival square – road runs through

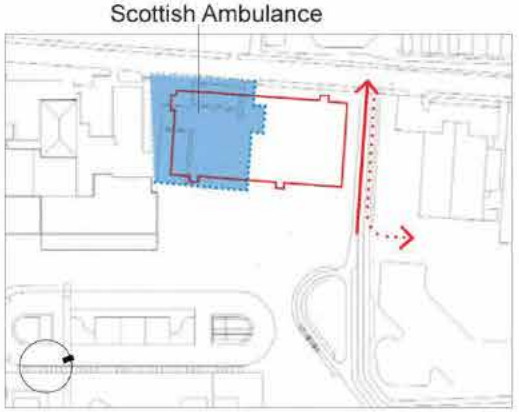
# Western Car Park

## Options Study

## A03

5 floors

15m height




5 floor option – allowing 20% reduction in footprint

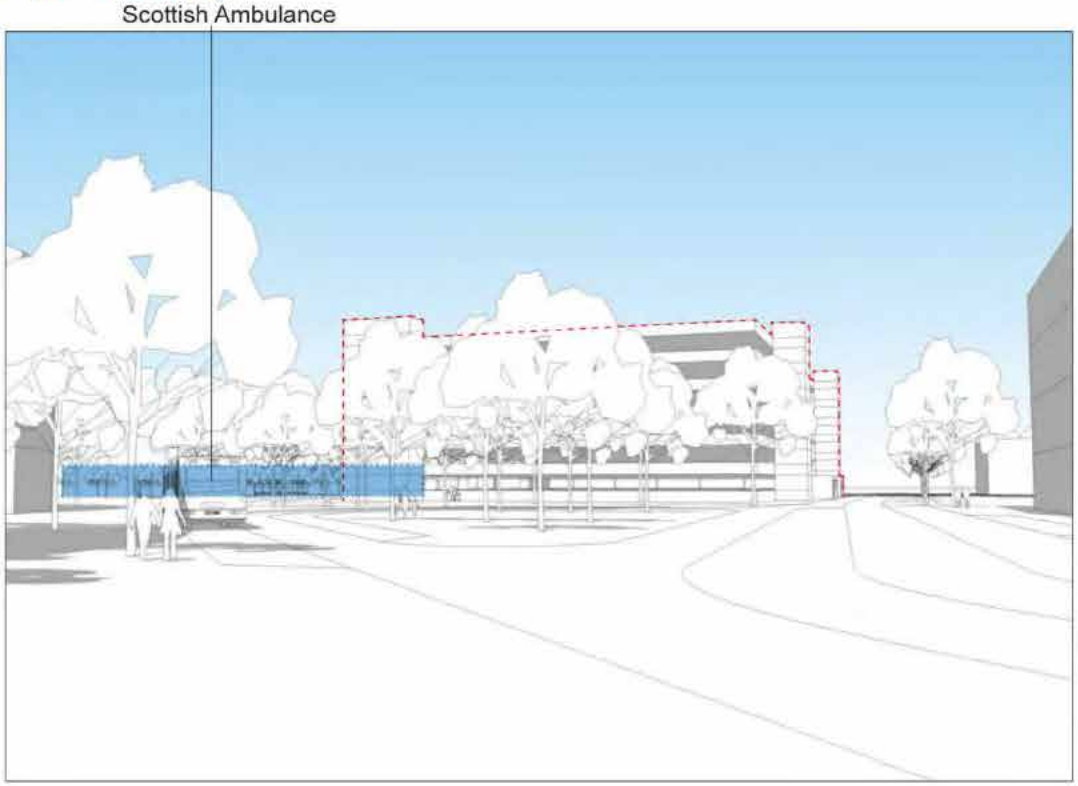
No traffic through structure, which is along the western boundary

Sits extensively within Scottish Ambulance land

Less containment of arrival square & further from entrance to car park

# Western Car Park

## Options Study




7 floors – inclusive of sub station footprint

No traffic through structure

Footprint avoids Scottish Ambulance land

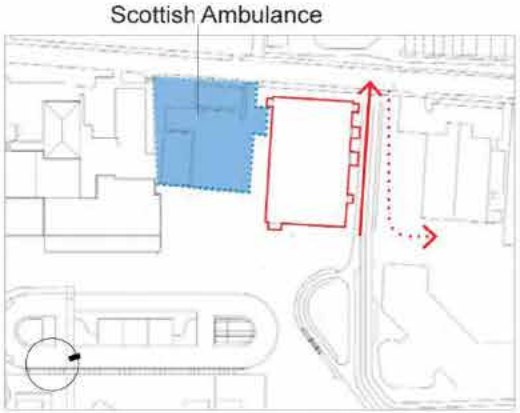
Provides a defined edge to the arrival square

## B01

7 floors

21m height

Excludes road




PREFERRED OPTION

# Western Car Park

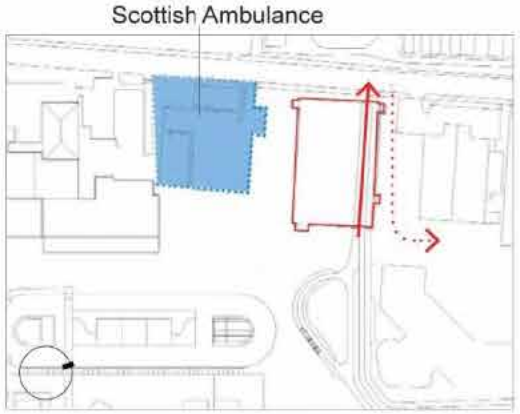
## Options Study

## B02

8 floors

24m height

3 lane road




8 floors – requiring additional height to maintain limited footprint

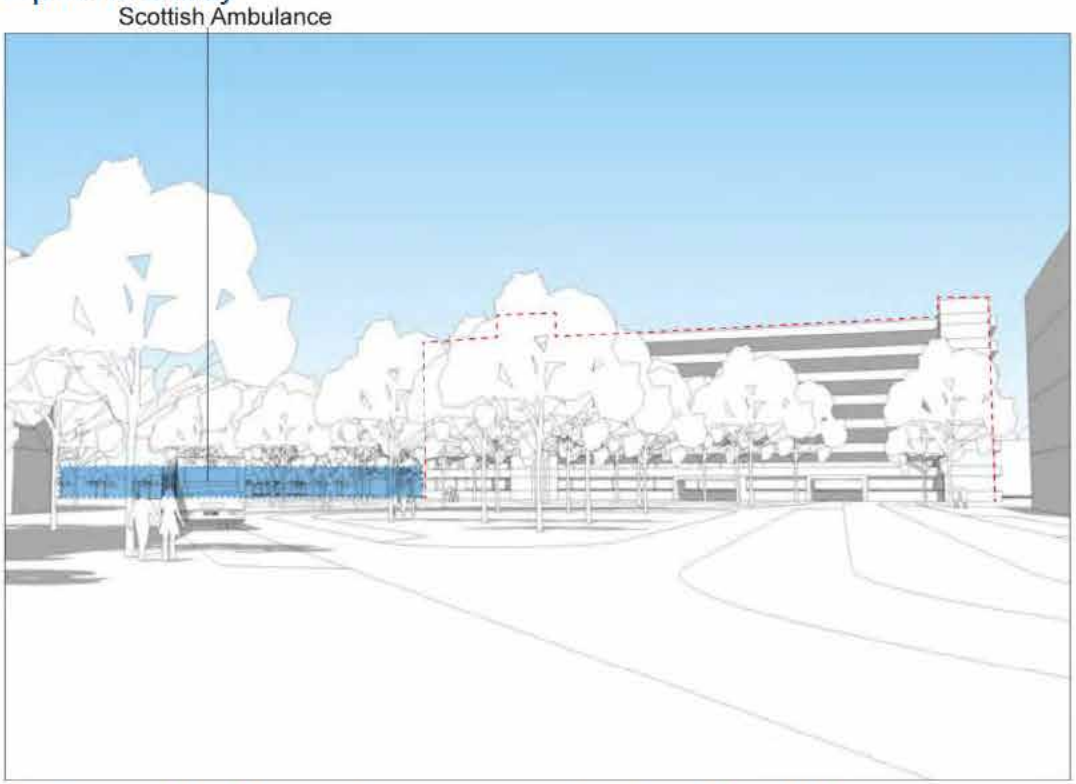
Traffic through structure, to enable move to north

Footprint avoids Scottish Ambulance land

Provides a defined edge and additional containment to the arrival square

# Western Car Park

## Options Study

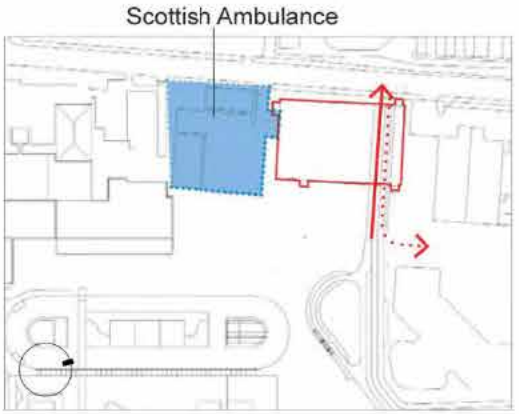



## B03

4 lane road

8 floors

24m height




Option rotated to explore minimum/efficient land take

4 traffic lanes required through structure (incl. FM access)

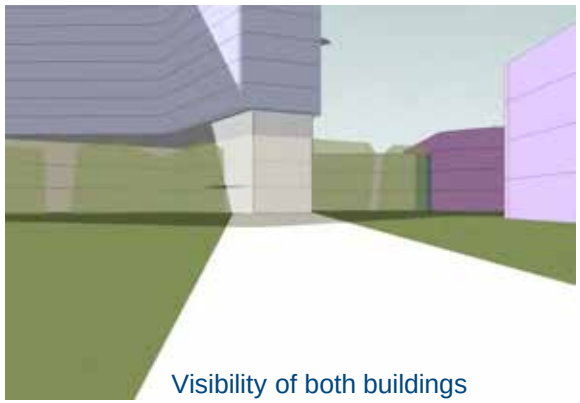
Avoids Scottish Ambulance land

Sits well back fro entrance to Children's hospital – impact of height reduced

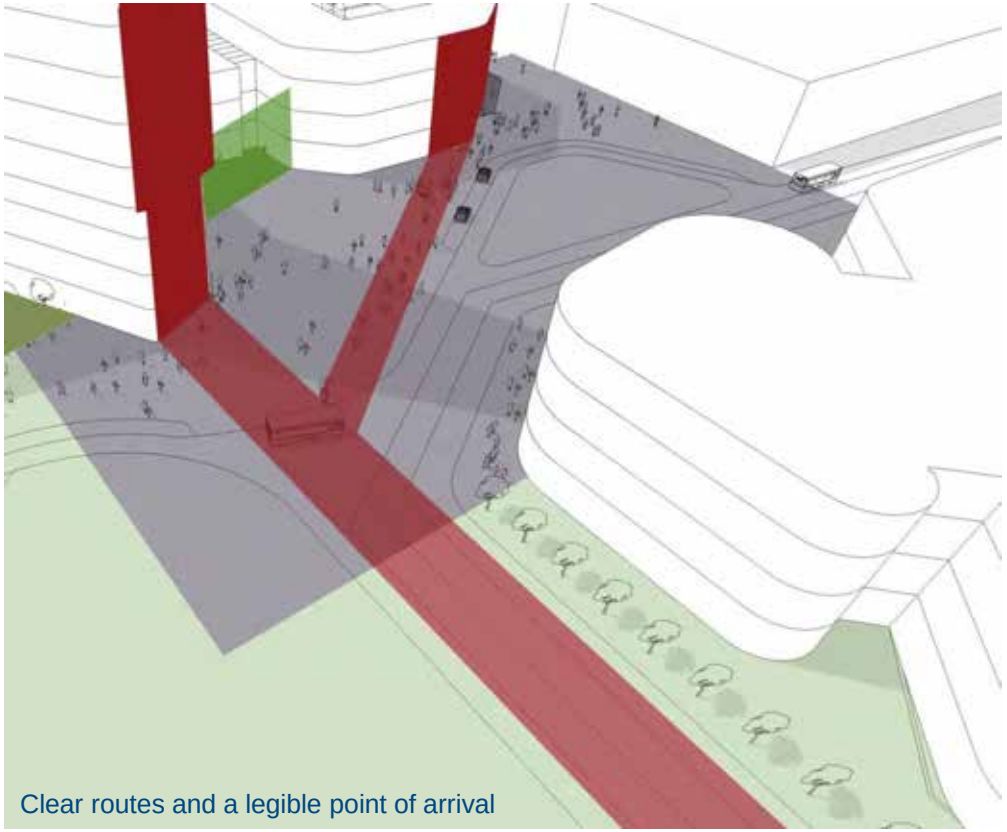
# Masterplan Structure Principles

## Orientation and Wayfinding

Visibility of main entrance from avenue



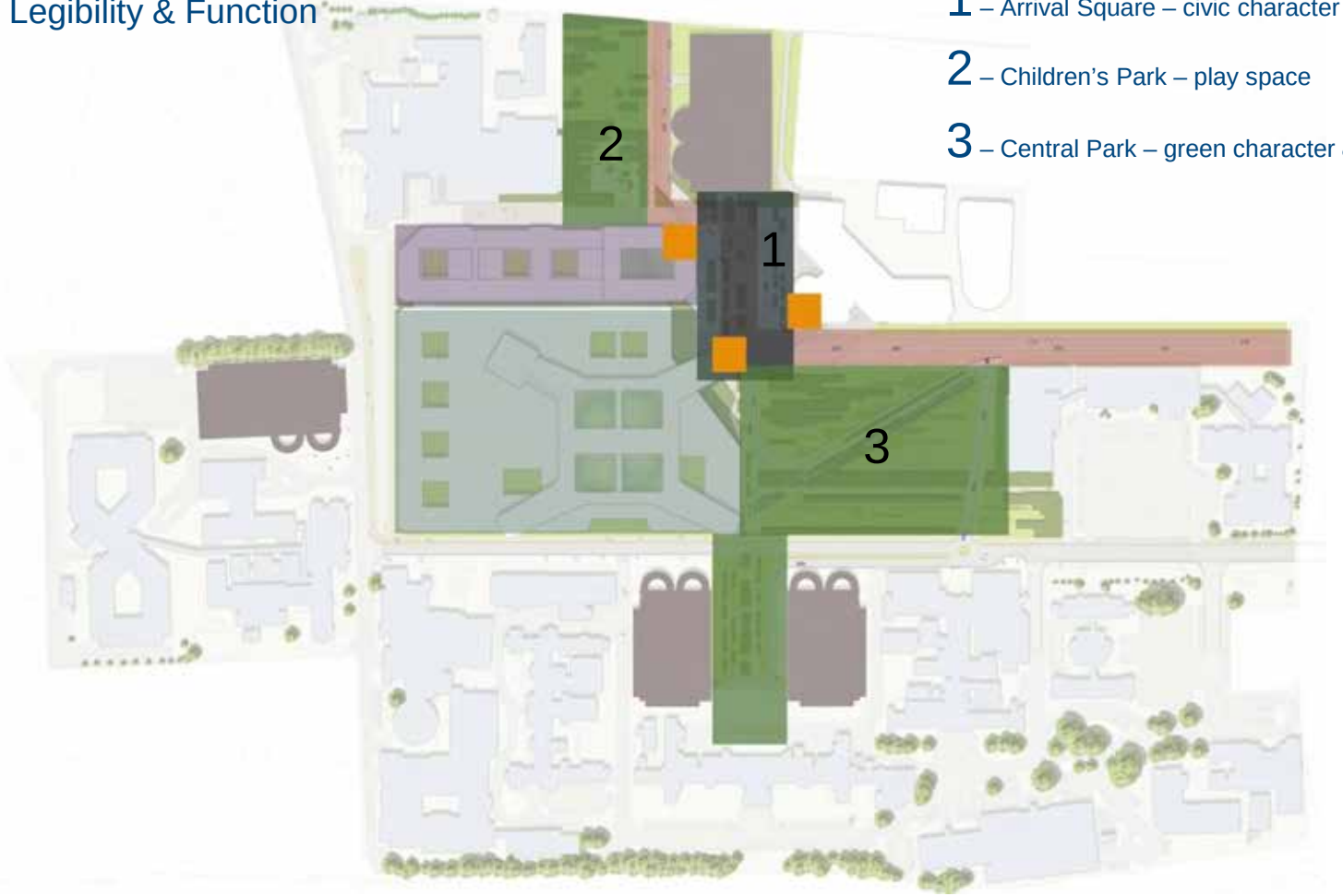
Visibility of both buildings



Clear routes and a legible point of arrival

# Masterplan Structure Principles

## Definition of Character Areas
## Legibility & Function

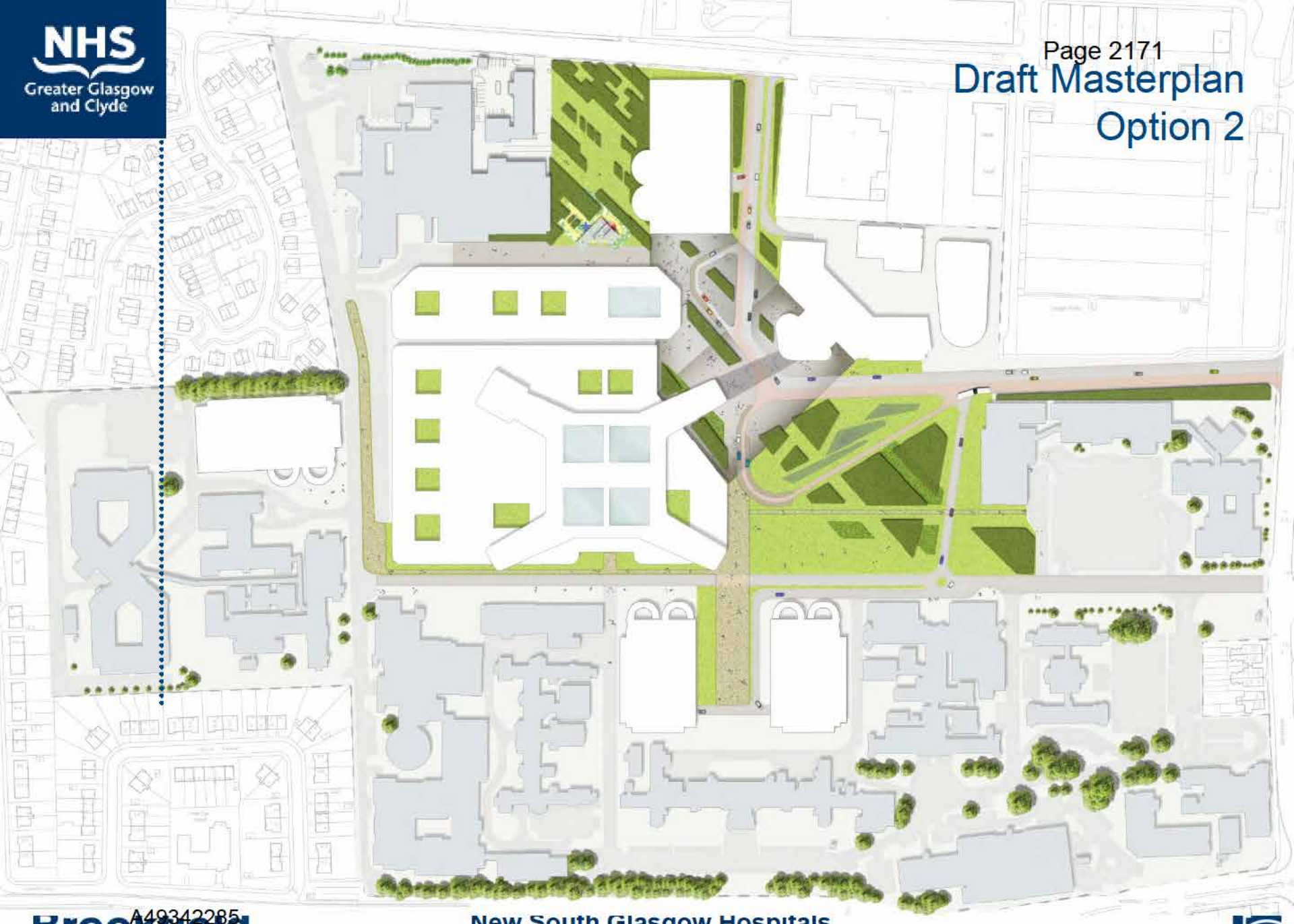



1 – Arrival Square – civic character

2 – Children's Park – play space

3 – Central Park – green character & variety

# Draft Masterplan Option 2

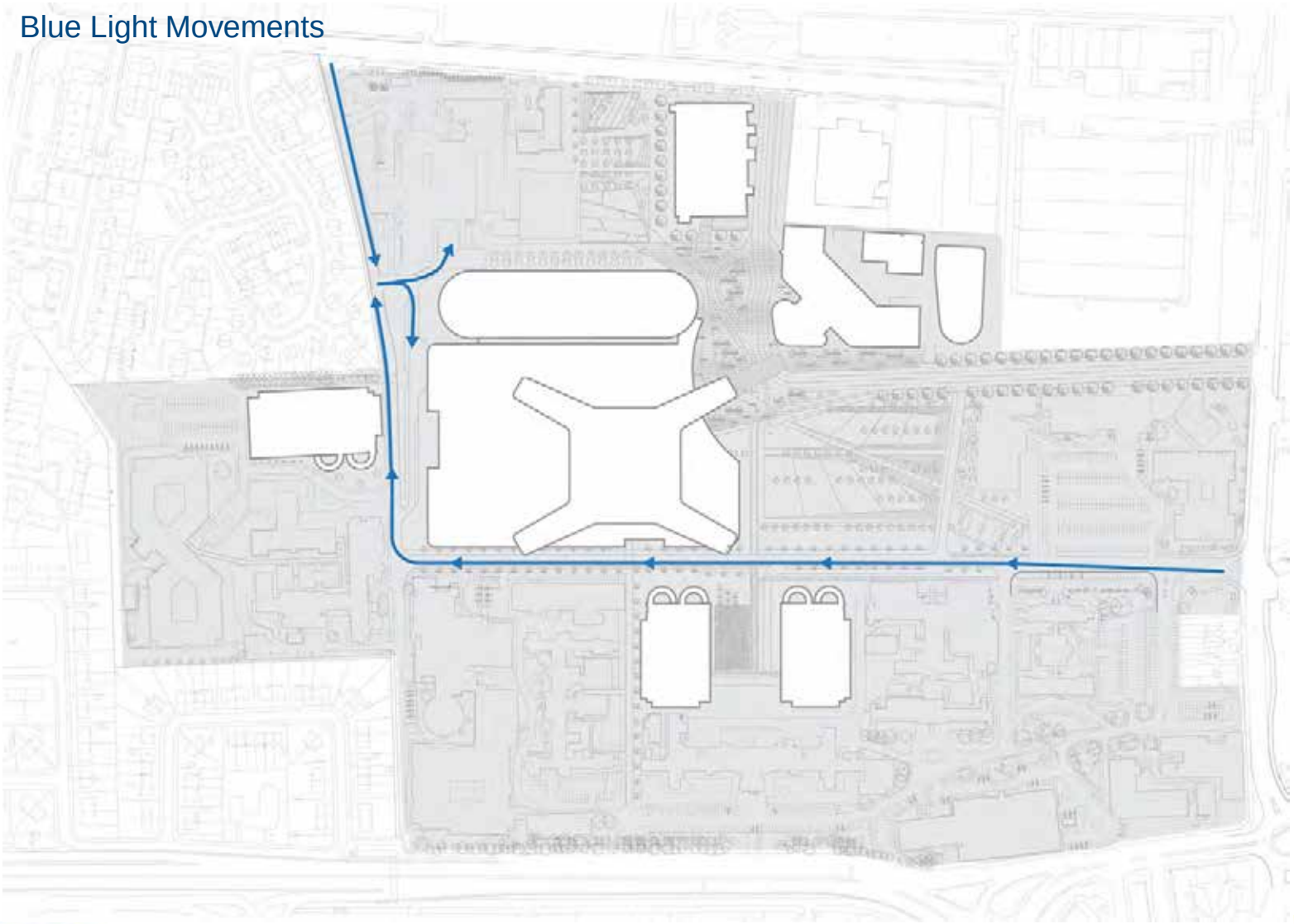


# Masterplan

## Current Plan

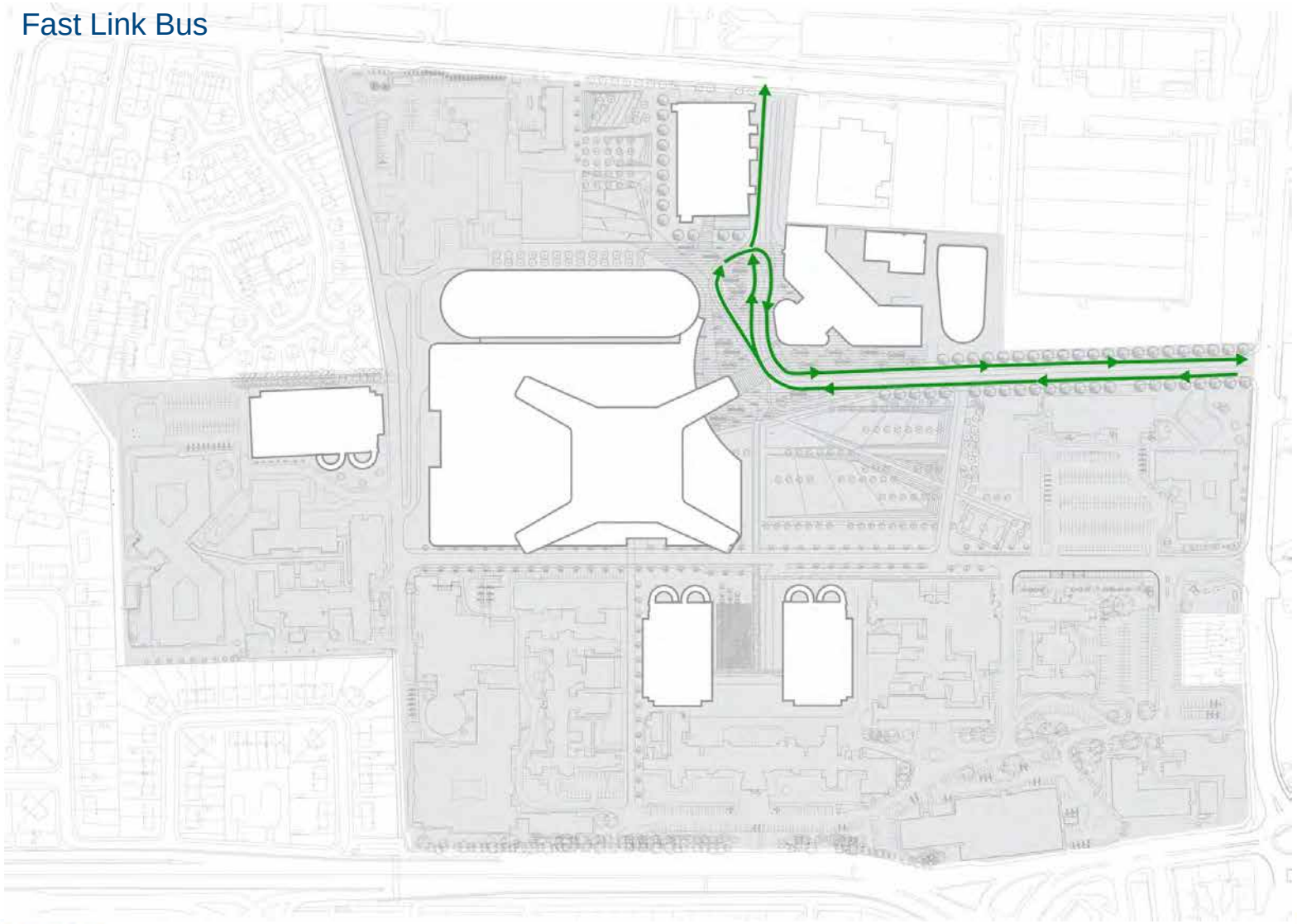
# Movement & Function

## Blue Light Movements



# Movement & Function

## Fast Link Bus

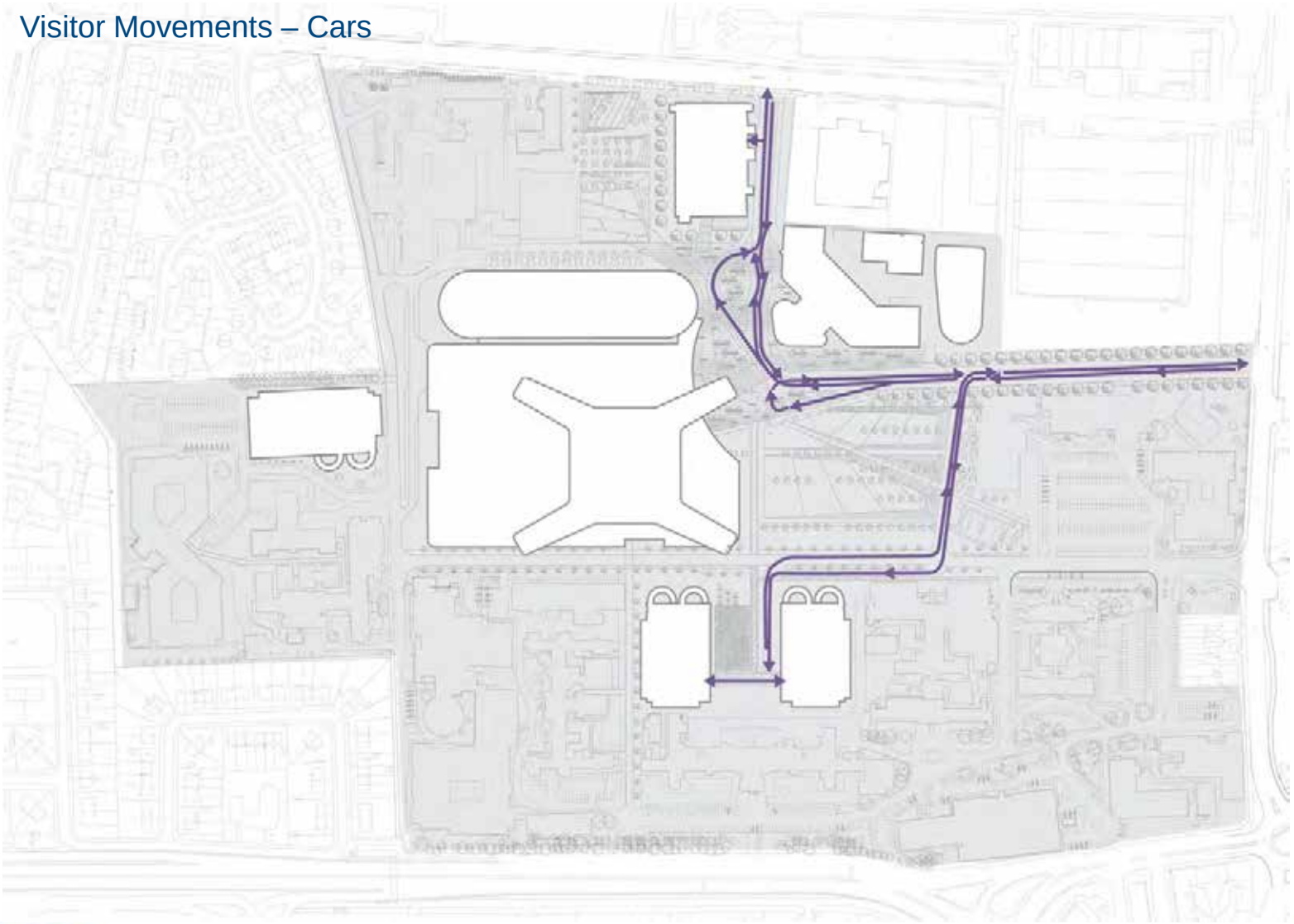


# Movement & Function

## Retention of Existing Bus Route

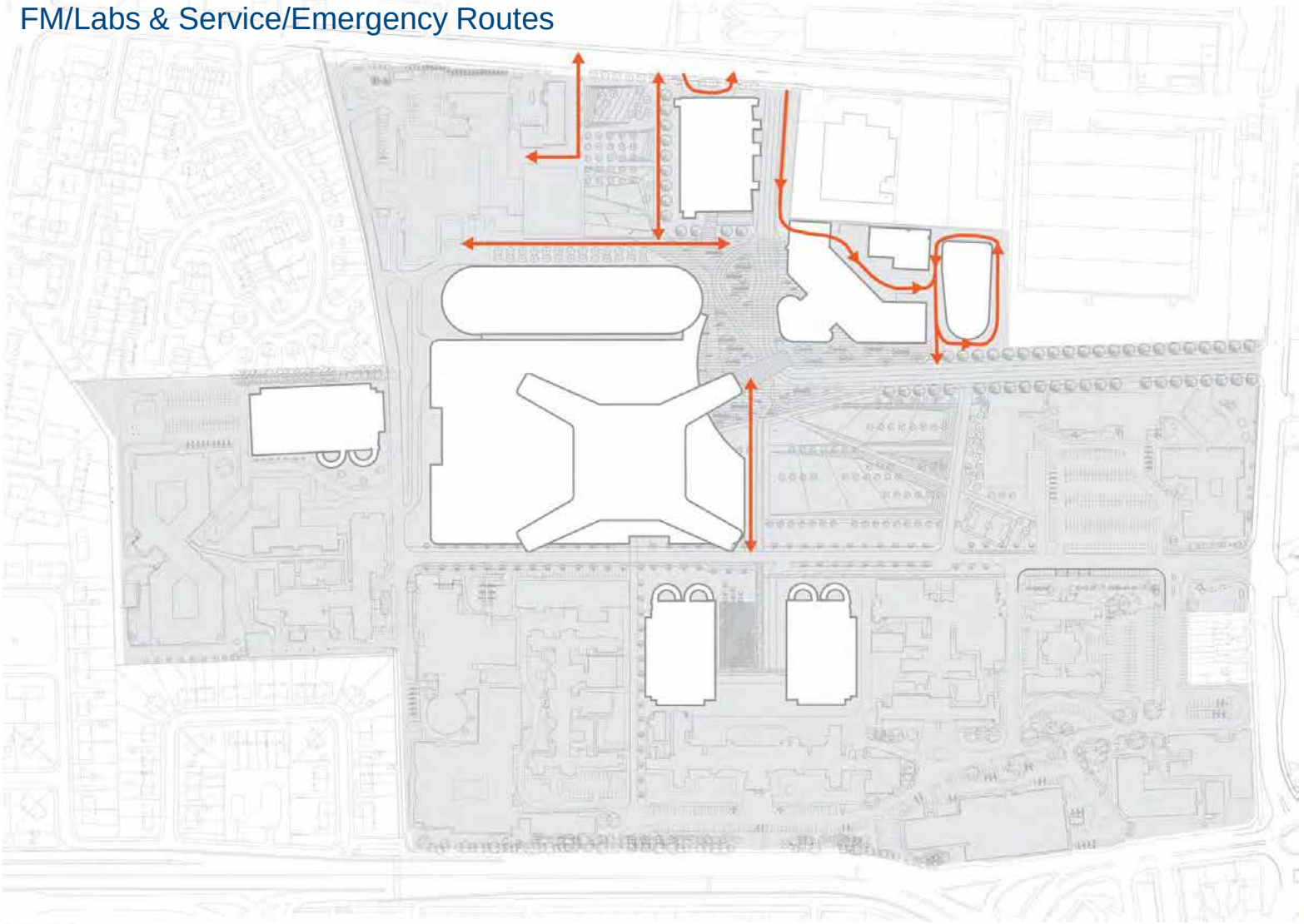
# Movement & Function

## Visitor Movements – Cars



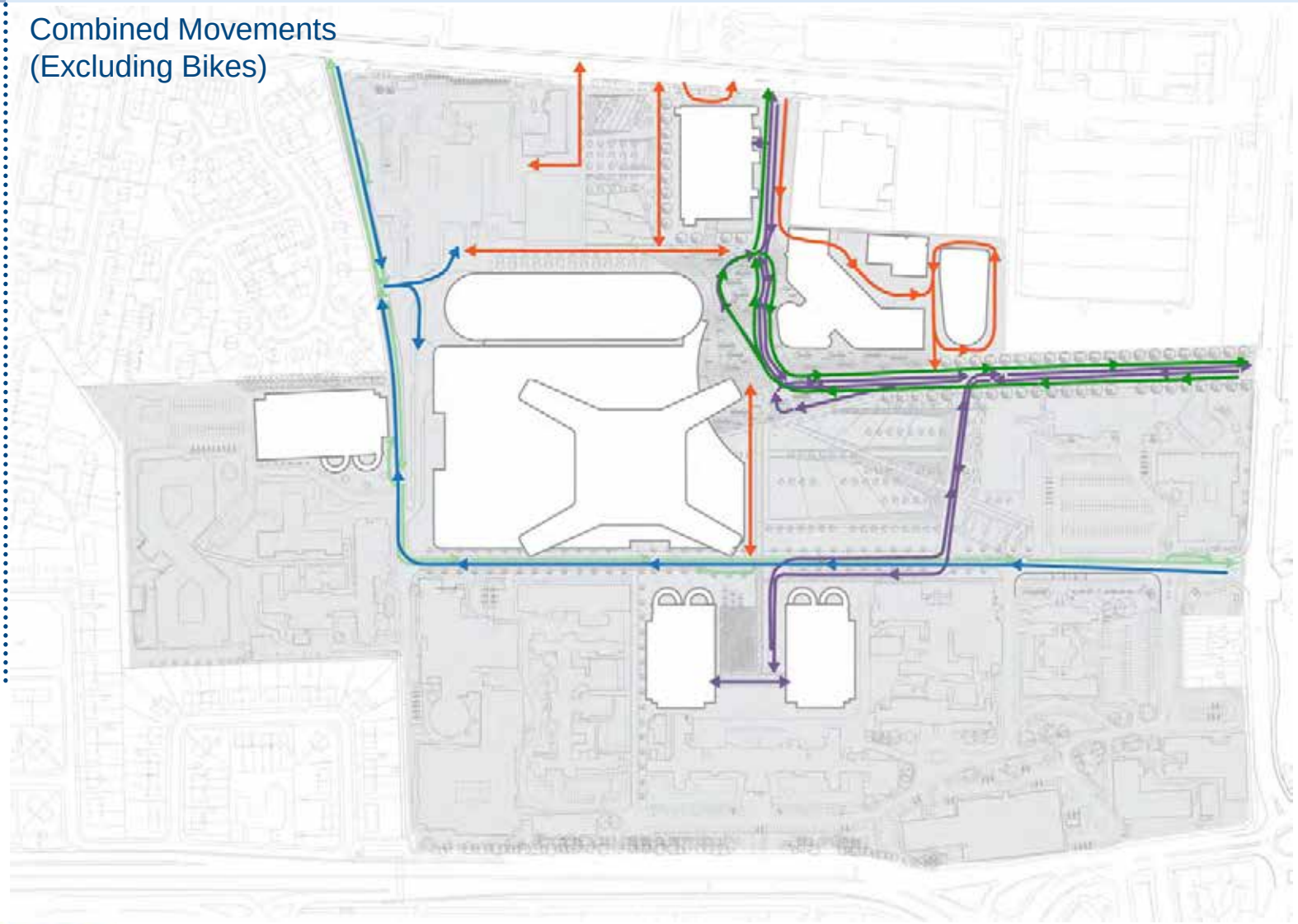
# Movement & Function

## FM/Labs & Service/Emergency Routes



# Movement & Function

## Combined Movements (Excluding Bikes)



# Movement & Function

## Primary Entrance

# Movement & Function

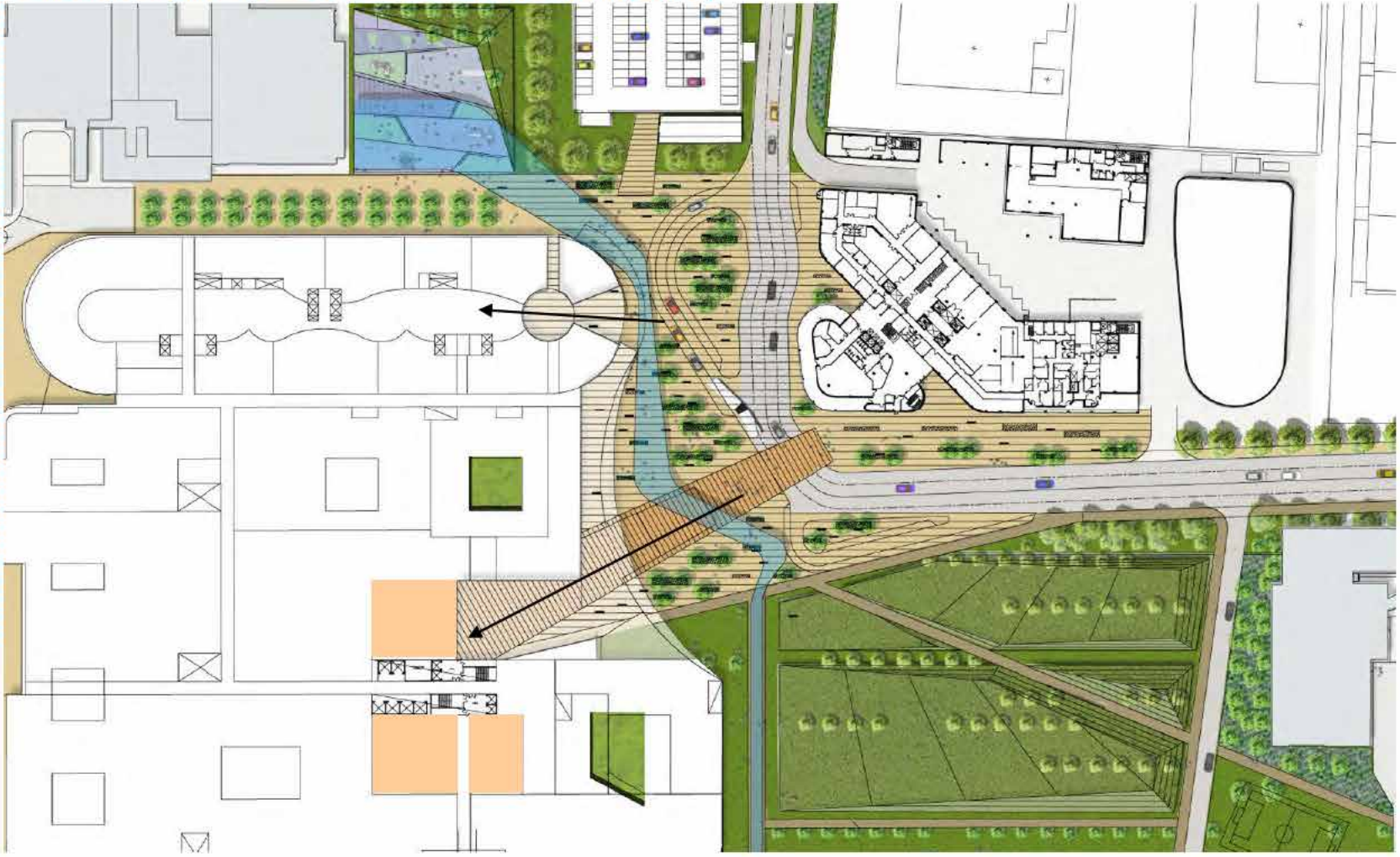
## Pedestrian Movements

# Masterplan

## Central Area Plan – Access & Connections

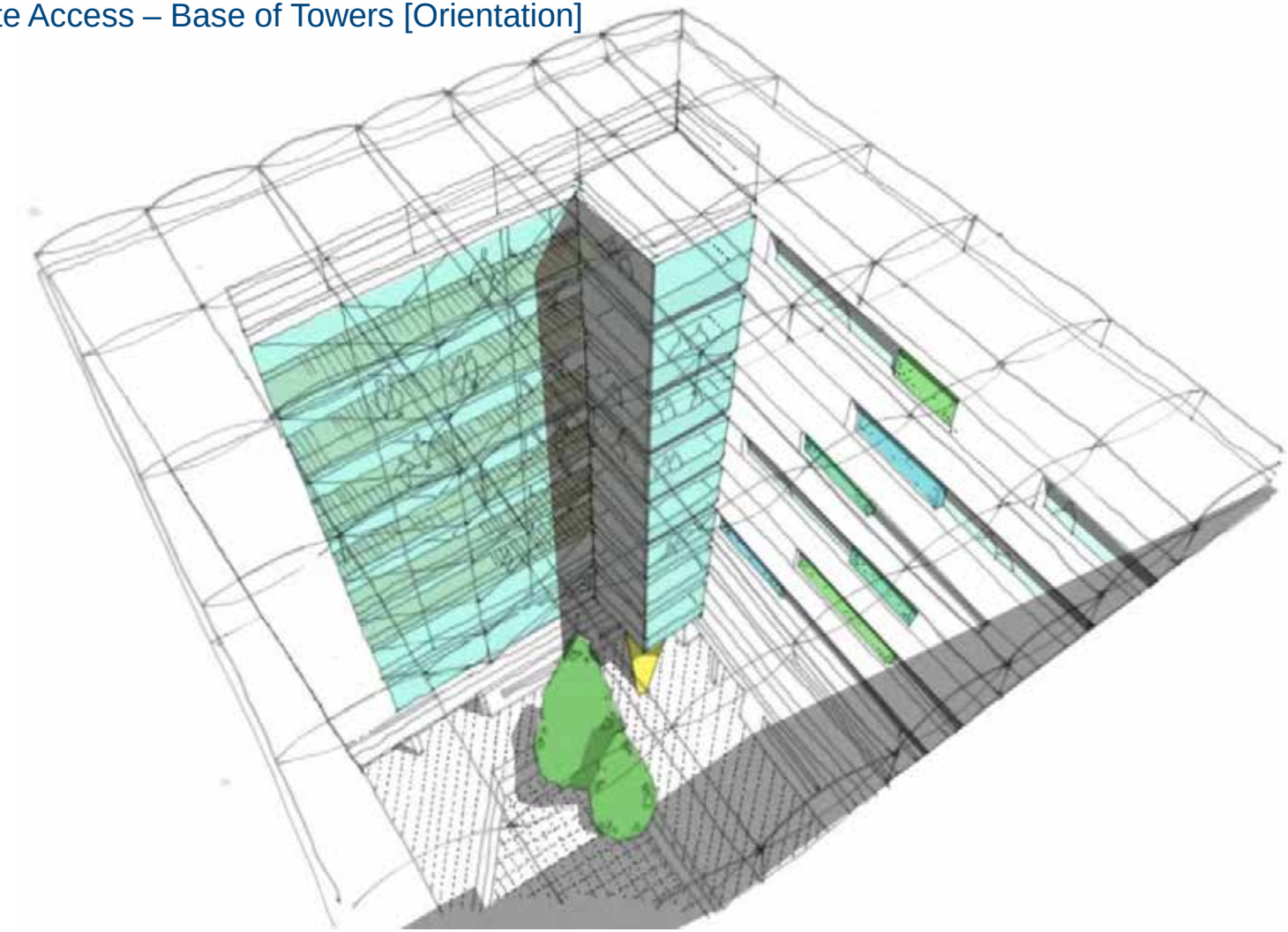
# Movement & Function

## Ground Floor Plan – Access & Connections [Draft]



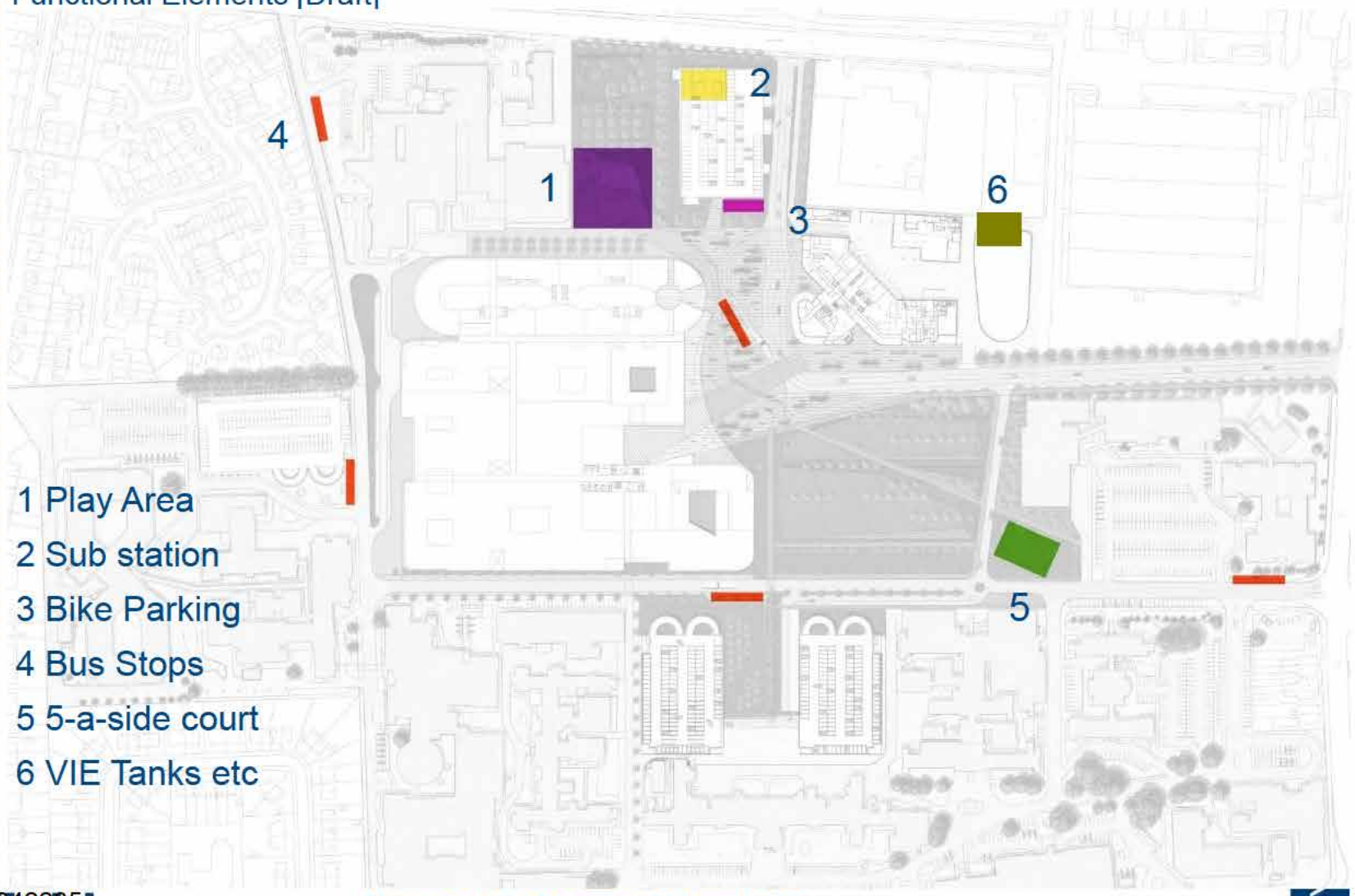
# Movement & Function

## Acute Access – Base of Towers [Orientation]



# Masterplan Components

## Functional Elements [Draft]




1 Play Area
2 Sub station
3 Bike Parking
4 Bus Stops
5 5-a-side court
6 VIE Tanks etc

# Movement & Function

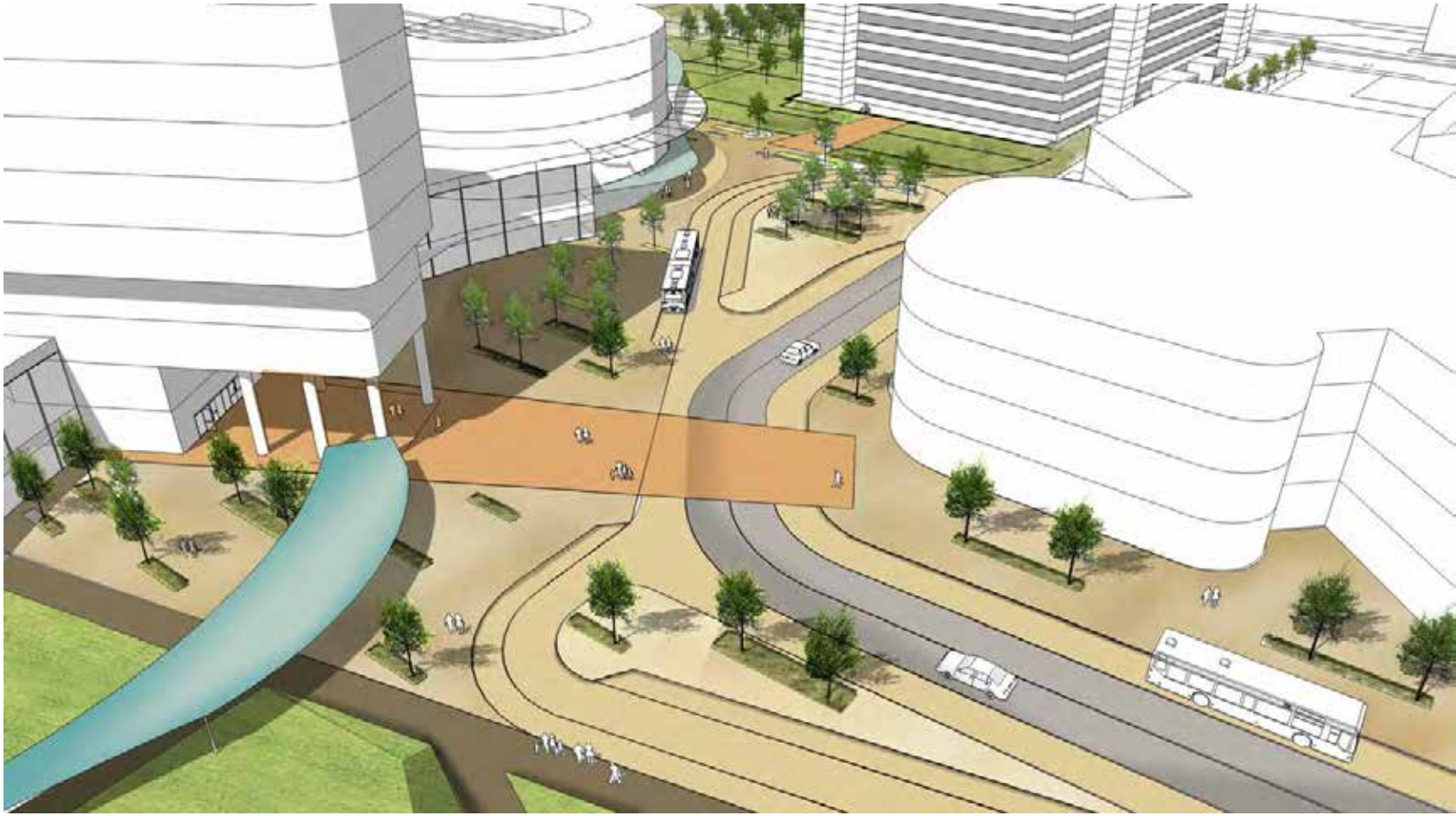
## Ground Floor Plan – Access & Connections [Draft]

# Character & Function

## Main Entrance Route

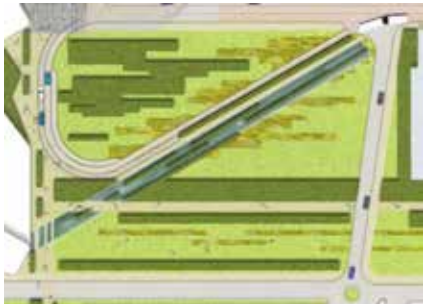
# Movement & Function

## Arrival Square – Scale & Character

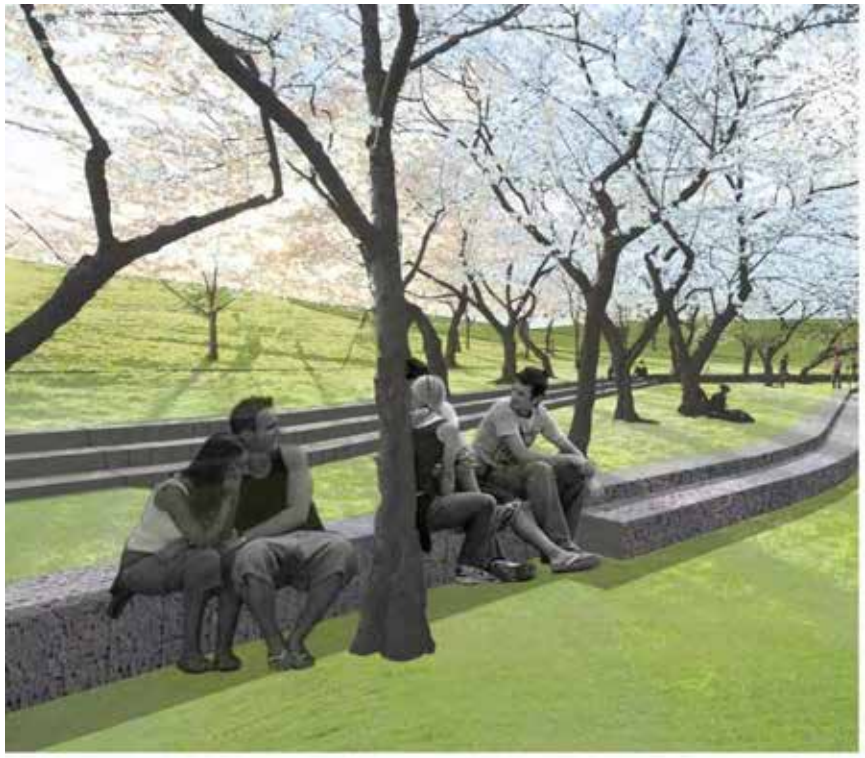


# Design Intent

## Central Park



- Simple materials
- Predominantly grass & trees
- Seasonal character
- Blossom
- Shelter
- Sports/recreation

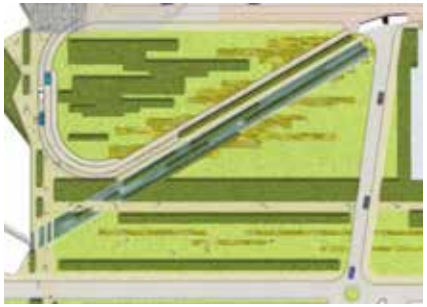


# Character & Function

## Pedestrian Movement – Diagonal Route

# Design Intent

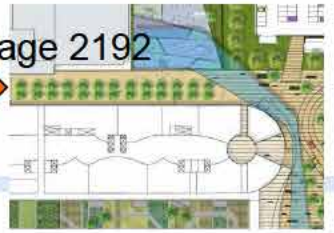
## Central Park



- Inviting
- Potential undulations
- Links to external café?
- Largely informal
- Legible network of paths
- Clear wayfinding
- Visibility of key buildings

# Character & Function

## Pedestrian Movements – Route from Car Parks [1a & 1b]

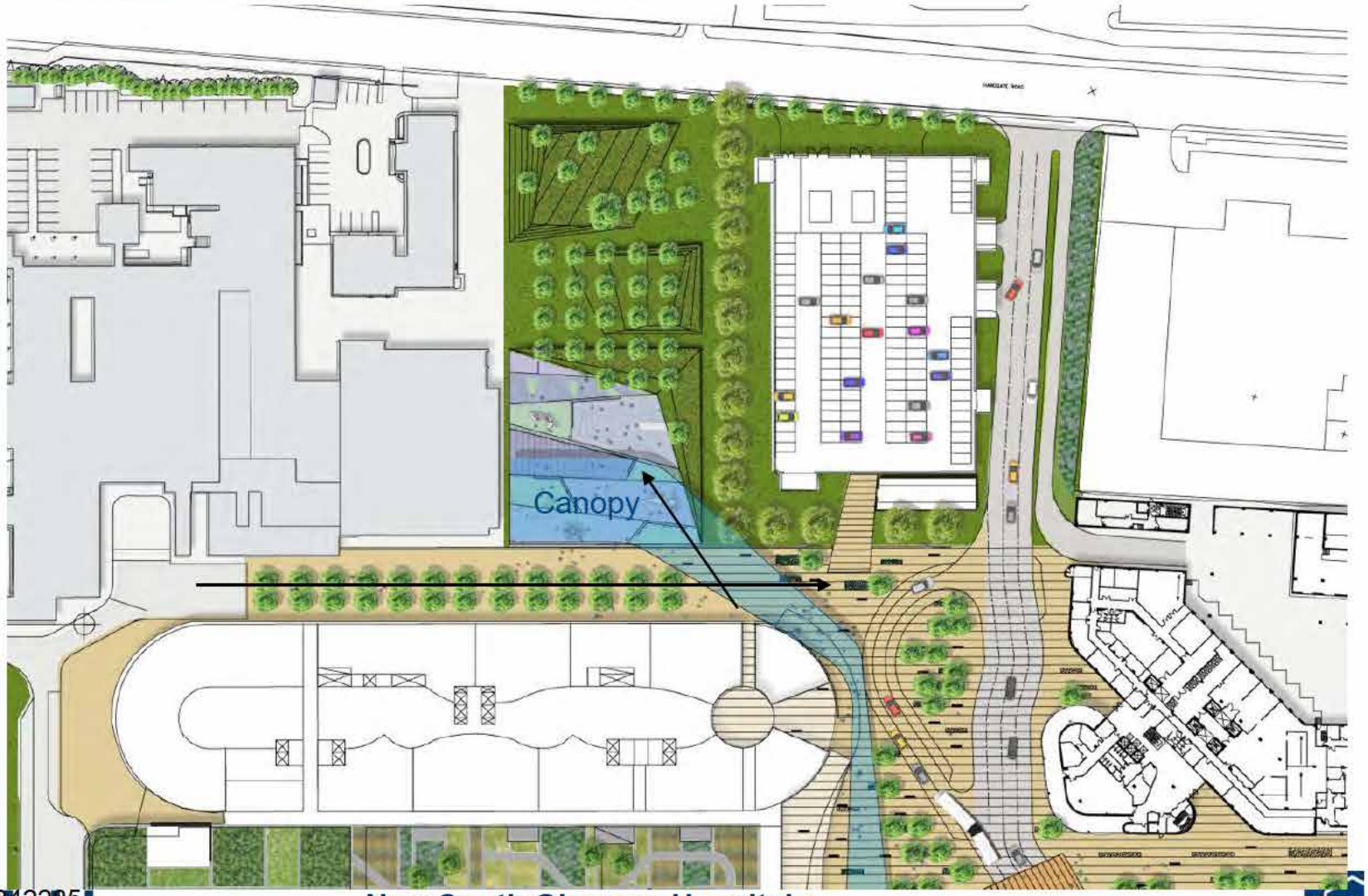


# Character & Function

## Maternity/Children's Street – Flexible Use

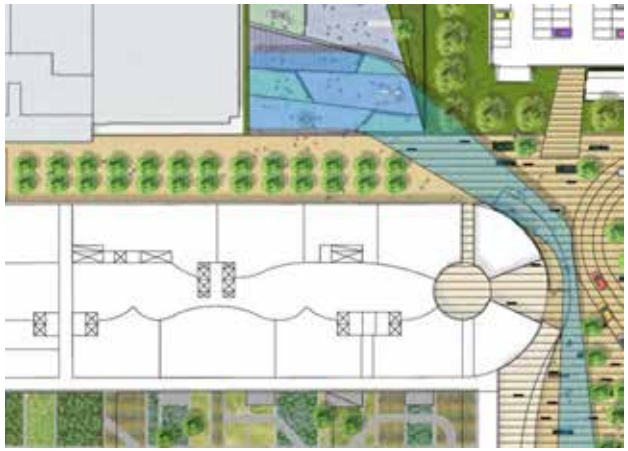
# Character & Function

## Maternity/Children's Street & Park – Flexible Use



# Movement & Function

## Children's Building



# Design Precedents

## Courtyards & Green Roof Potential

# Roof Terraces

## Rooftop Play & Accessible Garden

# Roof Terraces

- Intensive vs low maintenance
- Proportions to be determined
- Play space with canopies
- Quieter seating areas

# Design Intent

## Children's Park

- Interesting elements
- Variety
- Covered play areas
- Space for flexible uses
- Colour
- Interactivity

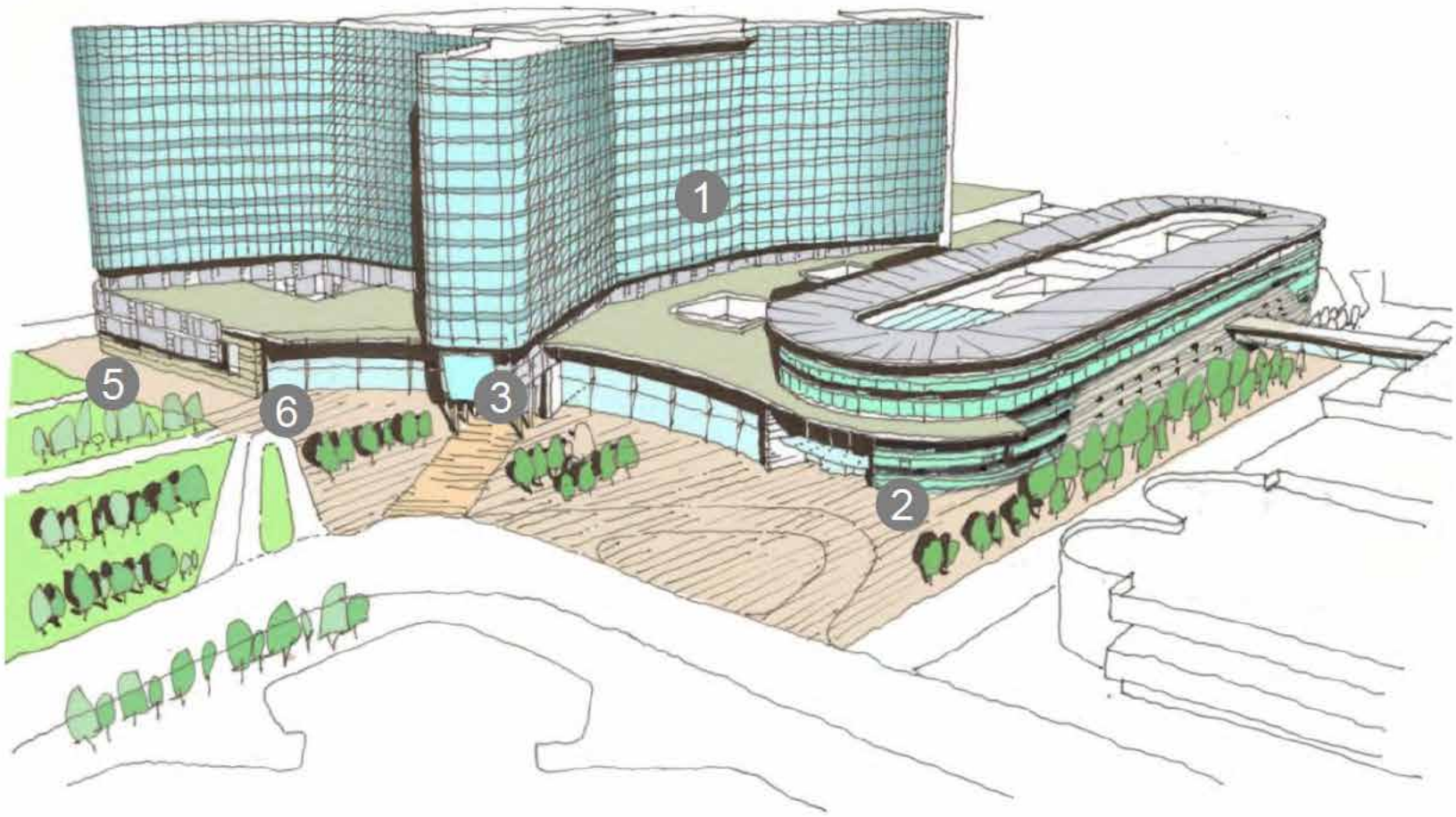
# Existing Site

Site Character
Habitat & Ecology

# Design Intent

## Central Park

# Clinical Breakout Sessions- Acute and Children's



# New South Glasgow Hospitals (NSGH) Project

## Dialogue Meeting Agenda – Bidder B

## Date: 07 July 2009

## Time: 1330 - 1700hrs

## Venue: Glynhill Hotel

**Workstream:** **Design # 5**

NHS Greater Glasgow & Clyde Attendees: [Complete at Meeting]

[Bidder Name] Attendees: [Complete at Meeting]

| Proposed Meeting Agenda | Objectives |
|---|---|
| | |
| | |
| | |
| | |
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| • | |
| | |

# Proposed Meeting Query List in Support of Agenda Items

| | |
|---|---|
| Agenda Item 2.2<br><br>Query 1 | |
| Agenda Item 2.2<br><br>Query 1<br><br>Query 2<br><br>Query 3<br><br>Query 4<br><br>Query 5 | |
| Agenda Item 2.2<br><br>Query 1<br><br>Query 2<br><br>Query 3<br><br>Query 4<br><br>Query 5 | |
| Agenda Item 2.2<br><br>Query 1<br><br>Query 2 | |
| Agenda Item 2.2<br>Query 1 | |

# Minutes from NHS Greater Glasgow & Clyde Meeting

**Workstream: Design # 4** **Bidder: B**

Date: 07 July 2009 at 1330hrs to 1700hrs

Venue Glynhill Hotel

## Attendees

| **Bidder B** | |
|---|---|
| Ross Ballingall<br>Paul Serkis<br>John Ko<br>Chris Lovejoy<br>Neil Murphy<br>Paul Britton<br>Pete Dunbar | Jim McGonigal<br>Neil McGarry<br>Alastair Leighton<br>Steve Pardy<br>Michael Frain<br>Matthew Palavidis |
| **NHS Greater Glasgow & Clyde Attendees** | |
| Alex McIntyre | Shiona Frew |
| Peter Moir | Harry Smith |
| Morgan Jamieson | Bob Menzies |
| Mairi Macleod | Iain Buchan |
| Heather Griffin | Graham Annandale |
| Fiona McCluskey | John Bushfield |
| Annette Rankin | David Hall |
| Frances Wrath | Mark Baird |
| Hugh McDerment | |

Apologies: Alex McIntyre

Minutes from Design Meeting # 5 on 07 July (Bidder B)

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 5-1 | Info | n/a | n/a | Masterplan development from DD#4 to DD#5 – required to get a better balance to entrances and<br><br>This has been approached by re-orientating the children's entrance. | n/a | n/a | n/a |
| 5-2 | Info | n/a | n/a | Board confirmed that a meeting was held 06 July 2009 with SPT around the masterplan. SPT have a requirement for a single point on the site for a transport hub/interchange. | n/a | n/a | n/a |
| 5-3 | Info | n/a | n/a | A semi-basement option (some above some below ground) being considered by the bidder. | n/a | n/a | n/a |
| 5-4 | Info | n/a | n/a | Public Art – collaborative principles (embedded design process) outlook of the bidder.<br><br>Andy Scott – Art Champion – introduced by the bidder.<br><br>Considered that the current development is strategy related rather than pictures/displays of potential art. | n/a | n/a | n/a |
| 5-5 | Info | n/a | n/a | External environment – children's roof garden has been developed further. | n/a | n/a | n/a |
| 5-6 | Info | n/a | n/a | At ground floor the bidder has re-introduced the central street per the exemplar. | n/a | n/a | n/a |
| 5-7 | Info | n/a | n/a | First floor – OPD to nuclear medicine link created. | n/a | n/a | n/a |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 5-8 | Info | n/a | n/a | Structure development has identified 3% daylighting achieved and modelled.<br><br>Structure of tower continues all the way down to the ground rather than transfer platform. | n/a | n/a | n/a |
| 5-9 | Info | n/a | n/a | Importance of art and destigmatism of healthcare is highlighted by the bidder. | n/a | n/a | n/a |
| 5-10 | Info | n/a | n/a | Public Art<br><br>Not considered as a heritage project (e.g. shipbuilding focus) rather building links with the community – a landmark and beacon in the community.<br><br>Arts for adult and children separately catered for (two approaches for two buildings).<br><br>Hospital = Beacon (security and stability)<br>Children's – Vessel (dynamic and flowing) | n/a | n/a | n/a |
| 5-11 | Info | n/a | n/a | Layered approach to public art is proposed:<br><br>NHS client group<br>Community representation<br>Contractor and design team<br>Strategic team<br>Public Arts Champion | n/a | n/a | n/a |
| 5-12 | Info | n/a | n/a | Public Arts Champion, examples of buildings and structure with art = BBC, Liverpool, one off bespoke reception desk. Believing we are worth it 20m high structure in Belfast.<br><br>Civic pride and input is outlook ~ community input and consultation. | | | |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 5-13 | Info | n/a | n/a | External Environment<br><br>Bidder will give focus to maintenance and growth patterns/requirements of the external space and green spaces.<br><br>Outlook that the incoming boulevard and other access routes will develop over time into mature tree-line spaces/avenues. | n/a | n/a | n/a |
| 5-14 | Info | n/a | n/a | 1:200 ward analysis<br><br>Revisited/questioned previous proposal:<br><br>1) Use – significant usage?<br>2) Daylight – will you actually get light down the 14storey shafts?<br><br>This has opened up the shafts to create only two nr split by one link with ward support off of this creating rooms/pods supported off of the link into the atrium. | n/a | n/a | n/a |
| 5-15 | Info | n/a | n/a | Ground Floor<br><br>Have tried to introduce other functions to make a more active space and not sterile – dining and associated functions moved to centre of space.<br><br>Have introduced central street – improved wayfinding and orientation achieved. | n/a | n/a | n/a |
| 5-16 | Info | n/a | n/a | First Floor<br><br>Introduced hospital chapel to this level. | . | n/a | n/a |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 5-17 | Info | n/a | n/a | Second Floor<br><br>Have adjusted external envelope to get light in horizontal from outside to support/complement light from shaft. | | | |
| 5-18 | Info | n/a | n/a | Adult Sub-Group<br><br>Critical Care layout tabled to identify the corrective measures and developed layout in response to the comments noted at DD#4.<br><br>This notes ordered CCU, HDU clusters, with improved observation from staff base, ability to flex CCU to HDU and more central yet discrete dirty utility spaces.<br><br>Noted that some (5+ rooms) do not have an external window – proposed that skylights can be integrated to these rooms as plant covers part of the floor above and this would be possible. | | | |
| 5-19 | Action | Board | 07/07/09 | Visitor waiting and relative room accommodation to swap places in the critical care department. | Bidder | Bid | n/a |
| 5-20 | Action | Board | 07/07/09 | Around 25% of rooms in acute assessment do not have access to direct daylight.<br><br>Only one room in complex needs does not have direct daylight.<br><br>Noted that Acute Assessment has made good progress although improved daylight to rooms would be beneficial/welcomed – this is particularly true for general receiving. | Bidder | Bid | n/a |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 5-21 | Action | Board | 07/07/09 | A&E<br><br>Potential for introduction of a corridor giving more direct access from minors triage to radiology to be considered. | Bidder | Bid | n/a |
| 5-22 | Action | Board | 07/07/09 | Theatres<br><br>Route from AoDoS to theatres without movement through Recovery to be considered.<br><br>Travel distances from theatres to Recovery (esp from furthest theatres) to be reviewed by the bidder.<br><br>Egress from theatres direct to corridor to avoid additional turns (side exit in current proposal) would be preferred.<br><br>Passing workstations etc from theatre to Recovery to be revisited.<br><br>Resilient (secondary) route for incoming clean FM to theatres to be considered.<br><br>Doors to be added to give more direct route from lifts to decontamination to provide for scopes etc from areas other than theatres.<br><br>Trolley access from endoscopy to recovery required. | Bidder | Bid | n/a |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 5-23 | Info | n/a | n/a | Ward<br><br>Chute for disposal removed.<br><br>Clean and dirty flows illustrated. | n/a | n/a | n/a |
| 5-24 | Info | n/a | n/a | Fire Strategy<br><br>Noted that over the 100beds for two stairways.<br><br>Given separation and sprinkler system bidder will be seeking relaxation on this. | n/a | n/a | n/a |
| 5-25 | Info | n/a | n/a | Travel distance (evacuation) is over the 60m hose length – again relaxation on requirement will be sought. | n/a | n/a | n/a |
| 5-26 | Info | n/a | n/a | Two potential solutions to fire being roof material that burns off to create an open space or ventilation around the perimeter. | n/a | n/a | n/a |
| 5-27 | Info | n/a | n/a | Other relaxations:<br><br>Not many on the lower levels due to number of staircases.<br><br>Atrium design will be fully fire engineered design.<br><br>Smoke screens to prevent spread of fire (combined with sprinklers) through atrium and to other areas has been considered and will be fire engineered.<br><br>Bidder is comfortable at retail space below clinical accommodation.<br><br>Bidder is reviewing fire requirements of helipad. | n/a | n/a | n/a |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 5-28 | Action | Board | 07/07/09 | Healthcare planning summary:<br><br>Children's – theatre<br><br>Access to dining room.<br><br>Access to outside space.<br><br>Access to discharge lounge.<br><br>Adults<br><br>Theatres – per comments at 5-22 above.<br><br>Acute Assessment - % of rooms with access to natural light.<br><br>A&E – access from minor triage to radiology.<br><br>Critical Care – flip relative rooms and waiting area. | Bidder | Bid | n/a |
| 5-29 | Action | Board | 07/07/09 | M&E summary:<br><br>Schematics were tabled, will be reviewed and fed back. | Board | 16/07/09 | n/a |
| 5-30 | Action | Board | 07/07/09 | BREEAM – nothing to report.<br><br>Energy target – work in progress, more emphasis on operational energy rather than design energy. | Bidder | Bid | n/a |

# New South Glasgow Hospitals (NSGH) Project

## Dialogue Meeting Agenda – Bidder B

## Date: 07 July 2009

## Time: 1330 - 1700hrs

## Venue: Glynhill Hotel

**Workstream:** **Design/Site # 5**

NHS Greater Glasgow & Clyde Attendees: [Complete at Meeting]

[Bidder Name] Attendees: [Complete at Meeting]

| Proposed Meeting Agenda | Objectives |
|---|---|
| **1.0 General Group Session – Overview of Agenda Items** | Approx. 15-20 minutes<br><br>Powerpoint presentation by Bidder B to summarise:<br><br>• The design development and response to Design Dialogue Meeting 4.<br>• An outline/introduction to our Agenda Items, including a summary of Master Planning and Architecture/Health Planning Sub-Group. |
| **2.0 Design Workshop Sub Groups** | Approx. 3 hours |
| Bidder B proposes to have 2 subgroups:<br>1. Master planning, Architecture and Health Planning (including sub-groups | |

| | |
|---|---|
| for the Adult and Children's Hospitals during the 1:200 Department Reviews, and Structure/Civil and Cladding<br>2. M&E<br>(Sub groups - Fire Engineering, Acoustic Strategy Principles, FM) | |
| **2.1 Design & Healthcare Planning** | |
| **Master planning:** | |
| 1. Brief Overview | A review of the process to date, including our response to the site and buildings, and their association with public art, cultural and environmental issues. |
| 2. Master Plan Concept | To present the updated Master Plan, including the key movement routes within the site |
| 3. Review of Key Areas, including the Arrival Square, the Children's Park | To present the design development of the key areas since DDM 04. |
| 4. Views and Entrances | To present updated visuals of the site views and entrance concept development. |
| 5. Public Art & Cultural Strategy | To open the Dialogue with the Board's representative, including the linkage of the external and internal Art strategies |
| **Architecture and Health Planning:** | |
| 1. Architectural Concept – Scale and Character | To present the development of the architecture including massing and 3D modelling for the internal feature spaces, entrances and key areas. |
| 2. 1:500 Concept Plans<br>- Department adjacencies<br>- Stacking Diagrams<br>- Main circulation flows<br>- Separation of flows | A summary of the clinical design solution for Opportunity E, demonstrating the proposed resolution of the Board's DDM 04 comments. |
| 3. Children's Hospital 1:200 Department Detailed Design<br>- Children's Ward<br>- Children's Ground Floor OPD/Atrium<br>- Children's Theatres<br>- Children's Radiology | To present the revised detailed clinical plans for Opportunity E Children's Hospital demonstrating the proposed resolution of the Board's DDM 04 comments. |
| 4. Adult Hospital 1:200 Department | To present the revised detailed clinical plans for |

| | |
|---|---|
| Detailed Design<br><br>- Adult Ward<br>- Adult A&E<br>- Adult Theatres<br>- Adult Radiology<br>- Adult Critical Care<br>- Adult Assessment Ward<br><br>***NOTE:*** *We propose to separate the Adult and Children's 1:200 Department Detailed Design (Items 3 and 4) reviews into 2 groups to maximise dialogue interface.*<br><br>**RFI Status** | Opportunity E Adult Hospital demonstrating the proposed resolution of the Board's DDM 04 comments. |
| **2.2 M&E** (separate Breakout Session)<br><br>1. BREEAM, Sustainability and Energy<br>2. Engineering Principles<br>3. Energy Centre Strategy and Primary Distribution<br>4. Distribution principles<br>5. Environment<br>6. Response to RFI's<br><br>Refer to supporting Query List at the end of the Agenda for further details. | |
| **2.3 Structure Framing / Civil Works** (separate Breakout Session) | Including a review of RFI responses |
| **2.4 Fire Strategy/Engineering** (separate Breakout Session) | Including a review of RFI responses |
| **2.5 FM Strategy Review** (separate Breakout Session) | Including a review of RFI responses |
| **3.0 General Group Session – Summary of the Design Dialogue Stage** | Approx. 20-30minutes<br><br>Summary of Dialogue Meeting 5<br><br>Overall review of our scheme demonstrating the development during the Design Dialogue Stage. |

# Proposed Meeting Query List in Support of Agenda Items

| | |
|---|---|
| Agenda Item 1 | BREEAM, Sustainability and Energy |
| Query 1/1 | Review of BREEAM status and credits achieved |
| Query 1/2 | Review of energy model and solutions to achieve carbon target |
| Agenda Item 2 | Engineering Principles |
| Query 2/1 | Review of major system schematics |
| Agenda Item 3 | Energy centre strategy and Primary Distribution |
| Query 3/1 | Discussion of layout proposals developed and resilience of systems |
| Agenda Item 4 | Distribution principles. |
| Query 4/1 | Presentation of developed proposals at 1:500 scale. |
| Query 4/2 | M&E Risers. |
| Query 4/3 | Plant room sizes / locations. |
| Agenda Item 5 | Environment |
| Query 5/1 | Daylighting levels |
| Query 5/2 | Approach to Tower |
| Query 5/3 | Thermal comfort within ward tower |
| Agenda Item 6 | Responses to RFIs |
| Query 6/1 | UPS Autonomy |

# Minutes from NHS Greater Glasgow & Clyde Meeting

**Workstream: Design # 5 Bidder: B**

Date: 07 July 2009 at 1330hrs to 1700hrs

Venue Glynhill Hotel

## Attendees

| **Bidder B** | |
|---|---|
| Ross Ballingall: Brookfield<br>Paul Serkis Brookfield<br>John Ko Brookfield<br>Chris Lovejoy Brookfield<br>Alan Keeley Brookfield<br>Manny Ajuwon Brookfield<br>Neil Murphy Nightingale associates<br>Paul Britton Tribal<br>Pete Dunbar WSP<br>Jim McGonigal WSP<br>Neil McGarry WSP<br>Alastair Leighton Gillespies | Andy Scott (Arts)<br>Steve Pardy ZBP<br>Michael Frain ZBP<br>Matthew Palavidis Acoustic Logic<br>Gary Howard Nightingale associates<br>Jonathan Kendrik Nightingale associates<br>Jamie Brewster Nightingale associates<br>Richard Mazuk Nightingale associates<br>Graham Harris Nightingale associates<br>Ed McIntyre Mercury Engineering<br>David Bowness WSP (Sustainability) |
| **NHS Greater Glasgow & Clyde Attendees** | |
| Alan Seabourne<br>Peter Moir<br>Morgan Jamieson<br>Mairi Macleod<br>Heather Griffin<br>Fiona McCluskey<br>Annette Rankin<br>Frances Wrath<br>Hugh McDerment<br>Anna Baxendale<br>Jackie Sands | Susan Logan<br>Colin Ashford<br>Harry Smith<br>Robert Menzies<br>Iain Buchan<br>John Bushfield<br>Raymond Quinn<br>David Hall<br>Mark Baird |

Apologies: Alex McIntyre

Minutes from Design Meeting # 5 on 07 July (Bidder B)

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 5-1 | Info | n/a | n/a | Masterplan development from DD#4 to DD#5 – required to get a better balance to entrances.<br><br>This has been approached by re-orientating the children's entrance. | n/a | n/a | n/a |
| 5-2 | Info | n/a | n/a | Board confirmed that a meeting was held 06 July 2009 with SPT around the masterplan. SPT have a requirement for a single point on the site for a transport hub/interchange. This requires to be reflected in the development of the design by bidders.<br><br>Noted that this is not different from planning conditions/information in the ERs, rather SPT highlighting their view/requirement within that. | n/a | n/a | n/a |
| 5-3 | Info | n/a | n/a | A semi-basement option (some above some below ground) being considered by the bidder. | n/a | n/a | n/a |
| 5-4 | Info | n/a | n/a | Public Art – collaborative principles (embedded design process) outlook of the bidder.<br><br>Andy Scott – Art Champion – introduced by the bidder.<br><br>Considered that the current development is strategy related rather than pictures/displays of potential art. | n/a | n/a | n/a |
| 5-5 | Info | n/a | n/a | External environment – children's roof garden has been developed further. | n/a | n/a | n/a |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 5-6 | Info | n/a | n/a | At ground floor the bidder has re-introduced the central street per the exemplar although it was noted that this is a 'hospital street corridor link' and not a full width 'mall'. | n/a | n/a | n/a |
| 5-7 | Info | n/a | n/a | First floor – OPD to nuclear medicine link created. | n/a | n/a | n/a |
| 5-8 | Info | n/a | n/a | Structure development has identified 3% daylighting achieved and modelled.<br><br>Structure of tower continues all the way down to the ground rather than transfer platform. | n/a | n/a | n/a |
| 5-9 | Info | n/a | n/a | Importance of art and destigmatism of healthcare is highlighted by the bidder. | n/a | n/a | n/a |
| 5-10 | Info | n/a | n/a | Public Art<br><br>Not considered as a heritage project (e.g. shipbuilding focus) rather building links with the community – a landmark and beacon in the community.<br><br>Arts for adult and children separately catered for (two approaches for two buildings).<br><br>Hospital = Beacon (security and stability)<br>Children's – Vessel (dynamic and flowing) | n/a | n/a | n/a |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 5-11 | Info | n/a | n/a | Layered approach to public art is proposed including the following and further sub-sets/workgroups:<br><br>NHS client group<br>Community representation<br>Contractor and design team<br>Strategic team<br>Public Arts Champion | n/a | n/a | n/a |
| 5-12 | Info | n/a | n/a | Public Arts Champion, examples of buildings and structure with art = BBC, Liverpool, one off bespoke reception desk, *"Believing we are worth it"* 20m high structure in Belfast.<br><br>Civic pride and input is outlook ~ community input and consultation. | n/a | n/a | n/a |
| 5-13 | Info | n/a | n/a | External Environment<br><br>Bidder will give focus to maintenance and growth patterns/requirements of the external space and green spaces.<br><br>Outlook that the incoming boulevard and other access routes will develop over time into mature tree-line spaces/avenues. | n/a | n/a | n/a |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 5-14 | Info | n/a | n/a | 1:200 ward analysis<br><br>Revisited/questioned previous proposal:<br><br>1) Use – significant usage?<br>2) Daylight – will you actually get light down the 14storey shafts?<br><br>This has opened up the shafts to create only two nr split by one link with ward support off of this creating rooms/pods supported off of the link into the atrium. | n/a | n/a | n/a |
| 5-15 | Info | n/a | n/a | Ground Floor<br><br>Have tried to introduce other functions to make a more active space and not sterile – dining and associated functions moved to centre of space.<br><br>Have introduced central street – improved wayfinding and orientation achieved. | n/a | n/a | n/a |
| 5-16 | Info | n/a | n/a | First Floor<br><br>Introduced hospital chapel to this level. | .n/a | n/a | n/a |
| 5-17 | Info | n/a | n/a | Second Floor<br><br>Have adjusted external envelope to get light in horizontal from outside to support/complement light from shaft. | n/a | n/a | n/a |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 5-18 | Info | n/a | n/a | **Adult Sub-Group**<br><br>Critical Care layout tabled to identify the corrective measures and developed layout in response to the comments noted at DD#4.<br><br>This notes ordered CCU, HDU clusters, with improved observation from staff base, ability to flex CCU to HDU and more central yet discrete dirty utility spaces.<br><br>Noted that some (5+ rooms) do not have an external window – proposed that skylights can be integrated to these rooms as plant covers part of the floor above and this would be possible. | n/a | n/a | n/a |
| 5-19 | Info | n/a | n/a | Preference is for visitor waiting and relative room accommodation to swap places in the critical care department. | n/a | n/a | n/a |
| 5-20 | Info | n/a | n/a | Around 25% of rooms in acute assessment do not have access to direct daylight.<br><br>Only one room in complex needs does not have direct daylight.<br><br>Noted that Acute Assessment has made progress although improved daylight to rooms would be beneficial/welcomed – this is particularly true for general receiving. | n/a | n/a | n/a |
| 5-21 | Info | n/a | n/a | A&E<br><br>Potential for introduction of a corridor giving more direct access from minors triage to radiology to be considered. | n/a | n/a | n/a |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 5-22 | Info | n/a | n/a | Theatres<br><br>Route from AoDoS to theatres without movement through Recovery to be considered.<br><br>Travel distances from theatres to Recovery (esp from furthest theatres) to be reviewed by the bidder.<br>Egress from theatres direct to corridor to avoid additional turns (side exit in current proposal) would be preferred.<br><br>Passing workstations etc from theatre to Recovery to be revisited.<br><br>Resilient (secondary) route for incoming clean FM to theatres to be considered.<br><br>Doors to be added to give more direct route from lifts to decontamination to provide for scopes etc from areas other than theatres.<br><br>Trolley access from endoscopy to recovery required. | n/a | n/a | n/a |
| 5-23 | Info | n/a | n/a | Ward<br><br>Chute for disposal removed.<br><br>Clean and dirty flows illustrated. | n/a | n/a | n/a |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 5-24 | Info | n/a | n/a | Fire Strategy<br><br>Noted that over the 100beds for two stairways.<br><br>Given separation and sprinkler system bidder will be seeking relaxation on this (bidder risk). | n/a | n/a | n/a |
| 5-25 | Info | n/a | n/a | Travel distance (evacuation) is over the 60m hose length – again relaxation on requirement will be sought (bidder risk). | n/a | n/a | n/a |
| 5-26 | Info | n/a | n/a | Two potential solutions to fire being roof material that burns off to create an open space or ventilation around the perimeter. | n/a | n/a | n/a |
| 5-27 | Info | n/a | n/a | Other relaxations that the bidder will seek (bidder risk):<br><br>Not many on the lower levels due to number of staircases.<br><br>Atrium design will be fully fire engineered design.<br><br>Smoke screens to prevent spread of fire (combined with sprinklers) through atrium and to other areas has been considered and will be fire engineered.<br><br>Bidder is comfortable at retail space below clinical accommodation.<br><br>Bidder is reviewing fire requirements of helipad. | n/a | n/a | n/a |

| Ref No. | Type (Info / Action / Risk / Q) | Raised By | Date | Description | Owner | Due Date | Status |
|---|---|---|---|---|---|---|---|
| 5-28 | Info | n/a | n/a | Healthcare planning summary:<br><br>Children's<br><br>Adjacency of Cardiac Theatre and Interventional Radiology should be reviewed<br><br>Access to dining room.<br><br>Access to roof gardens from wards.<br><br>Proximity of Discharge Lounge to outdoor space.<br><br>Adults<br><br>Theatres – per comments at 5-22 above.<br><br>Acute Assessment - % of rooms with access to natural light.<br><br>A&E – access from minor triage to radiology.<br><br>Critical Care – flip relative rooms and waiting area. | n/a | n/a | n/a |
| 5-29 | Action | Board | 07/07/09 | M&E summary:<br><br>Schematics were tabled, will be reviewed and any headline issues fed back. | Board | 24/07/09 | n/a |
| 5-30 | Info | n/a | n/a | BREEAM – nothing to report.<br><br>Energy target – work in progress, more emphasis on operational energy rather than design energy. | n/a | n/a | n/a |

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|---|---|---|---|---|---|---|---|
| | | | | **FM and M&E Breakout Session** | | | |
| 5-31 | Info | n/a | n/a | FM: Options were presented relative to relocation of identified facilities from the Laboratories area to the main hospital building, but principally it was noted that potential cost and programme savings were in the labs were to be negated by equivalent additional costs in the main hospital build. | n/a | n/a | n/a |
| 5-32 | Action | Bidder | 07/07/09 | Bidder has identified an option to relocate the Hard FM workshops and associated offices from the Ground Floor of the Laboratories build, to the Ground Floor of the Energy Centre. Bidder to raise RFI requesting agreement in principle and also requesting areas which could move over. | Bidder | 13/07/09 | |
| 5-33 | Info | n/a | n/a | Asset Management Application:<br><br>Presentation on proposed web based application evidencing its holistic capabilities from design to operation. | n/a | n/a | n/a |
| 5-34 | Info | n/a | n/a | Breeam Variances:<br>- Innovation: Bidder anticipates one additional credit<br>- HEA1 Daylighting: Bidder not confident, at this stage of the design process of achieving required daylighting to 80% of floor area in the podium.<br>- Indoor Air Quality: Bidder proposes additional credit<br>- ENE1: Bidder to consider wards and podium as two separate areas.<br>- Bidder to assume that Biogas supply from Scottish Water will not be available at point of opening.<br>- Bidder principal concern is ability to deliver carbon Target.<br>- Currently investigating provision of off-site | n/a | n/a | n/a |

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| | | | | renewables (wind turbine).<br>- small scale wind turbines to be installed on Energy Centre roof.<br>- Current assessments are based upon statutory requirements for Building Fabric U-values. SL/CA noted requirement to significantly exceed these statutory requirements.<br>Re-use of Land: to be reviewed upon receipt of Ecology survey.<br>ENE15: Bidder to assume zero score at this time. Board will endeavour to procure appropriate equipment but cannot guarantee full compliance at this point., | | | |
| 5-35 | Action | Board | 07/07/09 | SL to update Breeam boundaries upon receipt of Ecology Report | Board | 24/07/09 | |
| 5-36 | Action | Bidder | 07/07/09 | HMcD confirmed that the Ecology Survey has been completed and the report will be made available via upload to BIW. | Board | w/c 20/07/09 | |
| 5-37 | Action | Bidder | 07/07/09 | Bidder to raise an RFI re Thermal Modelling | Bidder | 17/07/09 | |
| 5-38 | Info | n/a | n/a | Active chilled beams are proposed for ward areas.<br><br>Option to utilise ground water for cooling is still under consideration. | n/a | n/a | n/a |
| 5-39 | Info | n/a | n/a | Business Stream Solutions report on water extraction is due by end July and will be uploaded to BIW. This will include yields. | n/a | n/a | n/a |
| 5-40 | Info | n/a | n/a | Drawings identifying distribution principles were passed to WW for perusal. | n/a | n/a | n/a |
| 5-41 | Info | n/a | n/a | Bidder confirmed proposal to mechanically ventilate sub-stations to reduce standing losses by keeping transformers cool. | n/a | n/a | n/a |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 5-42 | Info | n/a | n/a | MTHW to retained estate: propose to be direct to retained estate rather than via new build. | n/a | n/a | n/a |
| 5-43 | Action | Bidder | 07/07/09 | Bidder proposes that services will be via ducts to new build rather than via tunnel. Board to comment. | Board | w/c 20/07/09 | |
| 5-44 | Info | n/a | n/a | Bidder proposes to locate water storage in main hospital build rather than in Energy Centre. | n/a | n/a | n/a |
| 5-45 | Info | n/a | n/a | Bidder proposal: Wards: Top 3 floors to be sealed due to helicopter down-draught. | n/a | n/a | n/a |

**UPDATE ON THE ISOLATION ROOMS FOR THE NEW SOUTH GLASGOW (ADULT) HOSPITAL**

The following indicates the isolation rooms required for the New Adult Hospital.

**Haemato-Oncology Ward**

Sealed ward with hepa filtration positive to the rest of the hospital and all highly filtered air to H13 i.e. 99.95%

(NB - requires a negatively pressurised Treatment Room within the Haemato-Oncology Unit for administration of pentamidine inhalations.)

**Respiratory Wards (serving rest of medical)**

3 negatively pressurised sealed rooms (without ante rooms) - located together

**Renal inpatient wards**

2 positively pressurised sealed rooms with negatively pressurised ante-room/s – located within the 20 bedded higher acuity ward

**A&E (Emergency Department)**

2 negatively pressurised sealed rooms (without ante-rooms) - location as described within the Clinical Output Specification

**Critical Care (includes ICU/Surgical and Medical HDU)**

10 negatively pressurised sealed rooms with ante-rooms – location as described within the Clinical Output Specification

All in accordance with SHPN4 and SHTM 03-01

**Maximum Temperature Variant.**

The mandatory variant bid was partially removed from the ER's and the references have been highlighted under separate cover.

The Variant bid allowed the Board to take a decision on maximum temperature prior to contractor appointment based on fully costed schemes.

This has been discussed at length with Currie and Brown, we believe that uncontrolled removal has increased the risk that the bidders will not provide an environmental scheme with sufficient flexibility to allow for future requirements and will increase pressure on bidders to provide lowest construction cost solutions.

We have been advised that thermal comfort is still a high priority of the Board, late removal of the maximum temperature variant bid appears to have signaled some of the bidders to reduce the importance of avoidance of overheating.

We suggest that this issue is clarified and guidance given to avoid difficulties comparing unlike schemes and possible reduction in cost control created by amendments to the bidders proposals after Contractor appointment.

At this stage we suggest that the bidders are reminded of the importance of thermal comfort and the avoidance of over heating, this could be achieved by issuing a response in the Technical Query process in line with the attached or similar wording.

We recommend that this is circulated and considered by all parties with agreement reached prior to issue to the bidders.

***Removal of Mandatory Maximum Temperature Variant.***

*The maximum temperature variant has been removed from the bid requirements, the bidders shall put forward schemes to ensure thermal comfort and avoid overheating.*

*Sustainability has a major input into the project and all solutions must seek to minimize $C0_2$ and energy usage, however this must not be at the expense of thermal comfort and avoidance of over heating.*

For design purposes the level of thermal comfort shall be:
Room temperatures should not go below 18 $^{o}$C in winter for longer than 2 hours at a time, or higher than 26$^{o}$C in summer for more that 50 hours in total, but not on successive days.

*Feasibility studies are to be carried out into the potential use of low and zero carbon technologies to reduce carbon emissions associated with the operation of the building.*

*The bidder's attention is drawn to the Employers Requirements and in particular the following sections:*

***Appendix M&E3***
***Paragraph (Extracts)***

*2.4.3 Chilled Beams*

*The use of active chilled beams should be considered within all ward areas.*

*Active chilled beams will provide tempered, filtered air together with heating and comfort cooling of the space; thus providing effective local control of the environmental conditions.*

*2.4.4 Thermal Comfort*

*High levels of comfort are required for all users; in particular staff and patients.*

*Openable windows can be used as part of the ventilation strategy, and it is necessary to ensure that other, often contradictory requirements such as restricting openings for safety reasons, are met.*

*In perimeter spaces where mechanical ventilation is provided for functional reasons a mixed mode approach is a possible solution.*

*2.4.5 General Chilled Water*

*Sustainable cooling shall be used were possible with conventional chilling (with free cooling coils) used as required as a top up and to provide system*

*resilience, all lower carbon means of supplying cooling such as bore holes, piling systems and absorption chilling must be fully investigated and chosen if there is a carbon advantage over conventional cooling.*

*Chillers shall be selected to operate at design duty with an external ambient temperature of 30$^{o}$C dry bulb.*

*Chillers to have variable speed head pressure control with load and efficiency optimized head pressure and chilled water flow temperature control to improve seasonal efficiency.*

*3.1 External Design Temperatures*

| | | |
|---|---|---|
| *Summer* | *26.2°C DB* | *18.5°C WB* |
| *Winter* | *- 6°C* | |

*Global warming potential shall be considered and the Contractor shall provide suggestions for dealing with this under the innovation section of the tender return documents.*

***Appendix M&E2***
***Paragraph (Extracts)***

2.3 Cooling Load

The Cooling requirement shall be developed by the Contractor for the ~~standard and max temp mandatory variant~~ bid~~s~~, all cooling shall be provided by the most efficient method including, absorption chillers, free cooling etc.

5.0 25% uplift for power to main hospitals.

***Section 8***
***Paragraphs***

8.1.7 Thermal Comfort – (full contents)

8.1.8 Air Quality – (full contents)

8.2.11.3 The need to maintain the specified comfort conditions in all areas but particularly in clinical areas is of paramount importance and the Contractor shall develop strategies for achieving the specified environmental conditions with minimum energy consumption.

8.2.11.5 It is essential that the Contractor designs and provides ventilation and air conditioning systems which will ensure occupants comfort. This shall be achieved by use of well tested design principals and suitable plant selection. Air flow problems must be avoided by accurate system balancing, correct selection and location of air diffusers to prevent high air velocities and stratification together with adequate air volumes and accurate temperature control.

8.2.11.8 Air changes shall be in accordance with CIBSE guides, SHTM's, HTM's and Building Regulations.

8.2.11.10 Ensure heat gain from all Equipment and personnel is allowed for in sizing and selection of the systems.

8.1.25 In accordance with Good Industry Practice, all plant, plant spaces and building services systems shall be specifically designed and provided with defined reserve capacity allowances and future expansion capabilities for the Facilities (e.g. distribution boards with 25% spare capacity, 25% additional containment, 25% spare capacity in distribution Pipework, 25% additional plant capacity, 25% additional cooling capacity, 25% additional air handling capacity etc. for the buildings as designed).

**New South Glasgow Hospitals Project**
**Bid Submission Clarifications**
**Bidder: 1 (Brookfield)**
**Technical Clarification: 1 (issued 23 September 2009)**

**PRIVATE & CONFIDENTIAL**

| Item | Topic/Bid Reference | Board Clarification | Bidder Response |
|---|---|---|---|
| | | | |
| **General** | | | |
| | | | |
| **Logistics** | | | |
| | Site Parking | You have options but no firm plans for site parking, please confirm that the provision for site parking (incl any delivery area/holding area/lay-down areas off site) for all phases are included in your priced bid. | |
| | Delivery Team | Several of your proposed delivery team appear to have commitments to another healthcare scheme (i.e. Peterborough). Please confirm how your delivery team will be deployed in line with the NSGH timescales and your programme requirements. | |
| **Design/HP** | | | |
| | Entrances | Confirm your proposals for significant entrances to the site per ER requirement in this regard. | |
| | Specification | Confirm your proposals for electronic information points per ER requirement (7.15.4) in this regard. | |
| | Interstitial Blinds | Confirm your strategy for interstitial blinds to external windows/façade and internal observation screens (this to include a cross-section detail of your proposal(s)). | |
| **M&E Services** | | | |
| | | | |

| Renewables/Sustainability/BREEAM | | | |
|---|---|---|---|
| | Carbon | You noted at the presentation of 21 September you're your variant 2 for Laboratories will achieve the 80Kg CO2m2 – can you confirm that your compliant bid achieves this target also. | |
| | BREEAM | Clarify BREEAM Ene 1 score – 8 and 11 referred to in different sections. | |
| | Renewables | Confirm which LZC and renewables are included in the bid. | |
| | Energy Model | Confirm that the energy model is fully compatible with the servicing strategies set out in volume 3 in particular the use of a sealed building with chilled beams. | |
| | Energy Monitoring | Confirm that the energy monitoring system illustrated is included in the bid. | |
| | Energy Management | Has active energy management been included for by BE post construction as per clarification? | |

**New South Glasgow Hospitals Project**
**Bid Submission Clarifications**
**Bidder: 1 (Brookfield)**
**Technical Clarification: 2 (issued 30 September 2009 – return by 5pm Monday 05 October 2009)**

**PRIVATE & CONFIDENTIAL**

| Item | Topic/Bid Reference | Board Clarification | Bidder Response |
|---|---|---|---|
| - | - | - | - |
| **General** | | | |
| 1.0 | Bid Return Section 5 – Component / Product & Manufacturer Schedule | Noted that M&E related items do not appear in Section 5.<br><br>Clarification required of M&E component/product and manufacturers as well as (for all elements) that listed names will be utilised or "equal and approved" component/product manufacturers. | |
| 2.0 | Bid Return Section 7 – SHTM Compliance | **Mandatory Section** – clarification is required with regard to the following items:<br><br>**SHTM85 and SHTM86** – these are relevant as the design joins the existing hospitals, what are the proposals to comply in this regard.<br><br>**Health and Safety Action Notices (HSANs)** – require to confirm will comply with rather than "with reference to".<br><br>**NHSE10 and SN(01)01** – confirmation that anti-ligature is included in A&E as well as DFCP.<br><br>**NHSE HN04** – confirmation that anti-ligature is included in A&E as well as DFCP.<br><br>**SFPN3** – clarification required of how compliance with updated document will be achieved/documented.<br><br>**SHTM2010** – confirmation required that design will comply with rather than "with reference to". | |

| | | | |
|---|---|---|---|
| | | **SHTM2003** – notes that the services follow the principles set down in the HTM – clarification of compliance with the SHTM required (and specifically compliance with the services dimensions to be provided).<br><br>**SHTM2024 Part 4** – confirmation required that original maintenance provisions are included and priced in the bid. | |
| 3.0 | Bid Return Section 7 – SHTM Compliance | Where no specific options have been listed in your bid return (ref ERs 5.2.3) clarify that all options remain available to the Board with no additional costs to the Board. | |
| **Logistics** | | | |
| - | - | No items in this TC. | |
| **Design/HP** | | | |
| 4.0 | H+S Landscape | Courtyards – clarify what is intended by white gravel? | |
| 5.0 | H+S Landscape | Aside from the separately identified therapy courtyards is there any access or intended function for the remaining courtyards indicated? | |
| 6.0 | H+S Landscape | External Works Layout Dwg No. CD-WS-00-PL-711-01 indicates concrete blocks to the front of the hospital. The masterplan Dwg No. GIL-WS-00-PL-100 indicates exposed aggregate concrete paving. The Outline Specification for roads, car parks, pavements and cycle paths suggests paving in these areas will be natural stone granite. Can we clarify actual proposals for these areas? | |
| 7.0 | H+S Landscape | The drawings indicate a limited number of bike shelter locations (2No.)? Is this correct or are other bike shelter locations intended? | |
| **M&E Services** | | | |
| 8.0 | M&E Services | Please indicate any deviations from M&E elements of the ER's. | |
| 9.0 | M&E Services | Please confirm that racks will be provided for Client's active equipment. | |

| | | | |
|---|---|---|---|
| 10.0 | M&E Services | Please confirm that BMS IP network will be fully stand alone and that all active equipment has been included. | |
| 11.0 | M&E Services | Please confirm that asset tagging system has been included and that all services equipment shall be tagged. | |
| 12.0 | M&E Services | What function does scaffolding platform have in plant replacement strategy for transformers and generators. | |
| 13.0 | M&E Services | Confirm that reference to BOC should be “Air Products”. | |
| 14.0 | M&E Services | Please provide luminaire details to supplement pictorial views | |
| 15.0 | M&E Services | Please confirm light switches will be selected to suit lighting control system. | |
| 16.0 | M&E Services | Please confirm that bedside adjustable luminaires will be a modern low energy high output units. | |
| 17.0 | M&E Services | Please confirm fire alarm PC includes incident location graphics. | |
| 18.0 | M&E Services | Please confirm that 4 CHP units have been proposed as the narrative (schedule indicates 3). | |
| 19.0 | M&E Services | Television outlets on equipment schedule (are these back up for the CAT6A for digital distribution via the patient entertainment system? | |
| 20.0 | M&E Services | Please provide details on the proposed patient entertainment systems. | |
| 21.0 | M&E Services | Please advise how Renal & Specialist Departments water temperature requirements will be achieved. | |
| 22.0 | M&E Services | Confirm reference to 5A Switches equipment schedule should be 20A. | |
| 23.0 | M&E Services | Please confirm that metering will be provided to meet BREEAM requirements. | |

| | | | |
|---|---|---|---|
| 24.0 | M&E Services | Please advise proposals for water spillage protection from fan coils in secondary comms room. | |
| 25.0 | M&E Services | Please confirm compliance with maintainability and area isolation requirements. | |
| 26.0 | M&E Services | Please confirm that the renal Central Concentrate Delivery system is included (adult hospital). | |
| 27.0 | M&E Services | Please confirm that all services comply with HAI – SCRIBE. | |
| 28.0 | M&E Services | Please confirm that all plant and equipment will be suitably isolated to prevent transmission of noise and vibration. | |
| 29.0 | M&E Services | Please confirm that full environmental proving off all rooms will be provided. | |
| 30.0 | M&E Services | Please confirm that all metering requirements will be provided in accordance with the ER's and BREEAM requirements. | |
| 31.0 | M&E Services | Please confirm that all services elements are included to meet the fire engineering solution, e.g. stair pressurisation, smoke control etc. | |
| 32.0 | M&E Services | Please confirm that ICT cooling has been included and provide details. | |
| 33.0 | M&E Services | Please confirm that specialist drainage has been included. | |
| 34.0 | M&E Services | Please confirm that leak detection has been included. | |
| 35.0 | M&E Services | Please indicate percentage capacity of all water service pipework mains from the energy centre to the main buildings for resilience. | |
| **Renewables/Sustainability/BREEAM** | | | |
| - | - | No items in this TC. | |

| Laboratories | | | |
|---|---|---|---|
| 36.0 | Laboratories | The Values on Labs Summary Page for Overhead and Profit do not correspond with % values provided on Stage 1 or Incoming Utility Costs Associated with Stage 1. | |
| 37.0 | Laboratories | On Labs Final Summary Page (Page 4 of Submission) £281,552.00 in included for Additional Fee and Profit on Max Cost. If you apply the %'s from elsewhere on the page this value would be approx £43K less? | |
| 38.0 | Laboratories | Can you confirm extent of tunnels included within Stage 1 Section | |
| 39.0 | Laboratories | No evidence of anything noted as "Provisional". Please confirm or provide detail of items to be considered as Provisional. The Bills make reference to "general assumptions". Please confirm that they are not to be considered provisional. | |
| 40.0 | Laboratories | Substructure: Please confirm what exactly the £100k allowance is for fire escape and stairs includes for. | |
| 41.0 | Laboratories | Substructure: Allowance has been included for 14 Nr lift pits. Please confirm Nrs. Current drawing shows 12 Nr FF, goods & staff Lifts and 4 Nr lifts in connection with Robotics. | |
| 42.0 | Laboratories | Upper Floors: Please confirm all allowances for recesses or thickening of slabs is included. | |
| 43.0 | Laboratories | Stairs: Number of assumptions/clarifications: Design team to appraise/comment to facilitate in the removal from pricing docs. | |
| 44.0 | Laboratories | Ext Walls: Please identify where Spec item 1.12 (louvers to office block) appear in your bid. | |
| 45.0 | Laboratories | Ext Walls: Ext brise soleil system included. Not stated as being required on previous dwgs. | |
| 46.0 | Laboratories | Windows: Window sizes do not tally with C&B's original measure | |
| 47.0 | Laboratories | Ext Doors: Please advise where Revolving entrance doors are included. | |

| | | | |
|---|---|---|---|
| 48.0 | Laboratories | M&E: Please provide details of how M&E values arrived at and if possible provide detailed back up. | |
| 49.0 | Laboratories | M&E Lifts: Current drawings show 4 Nr FF Lifts, 4 Nr Goods Lifts, 3 Nr Passenger Lifts and 1 Nr Mortuary Lifts. This does not correspond with your bid. Please advise. | |
| 50.0 | Laboratories | Siteworks: Imported fill for backfilling. Is there no potential to re-use excavated materials ? | |
| 51.0 | Laboratories | Siteworks: No inclusion of barrier system to service yard. Please advise. | |
| 52.0 | Laboratories | Ext Services: £5k allowed for main water distribution. Seems low | |
| 53.0 | Laboratories | Please provide statement on Inflation allowances included. | |
| 54.0 | Laboratories | Has audio/visual system to Mortuary been included? If so, where and how much. | |
| 55.0 | Laboratories | Please confirm that the Cat 3 Containment Facilities Spec referred to in Clause 1.0, Appendix C1.2 of Outline Architect Spec is included. Is so, please advise where and provide breakdown of value. | |
| 56.0 | Laboratories | Has allowance been included in bid for various treatments to soffits under 1F slab in open yard or entrance areas? | |
| 57.0 | Laboratories | Design fees included are different to the fees provided to Bidders. Please provide details of difference. | |
| 58.0 | Laboratories | Please confirm that all temporary services connections prior to Energy Centre being completed are included | |
| 59.0 | Laboratories | Please confirm that all robotics costs included in Hospital element of bid. | |
| 60.0 | Laboratories | Please identify any costs associated with pneumatics included in the Labs element of your bid. | |

**BROOKFIELD** **G1274**
**INFORMATION REQUESTS** **25 September 2009**

1) Please indicate any deviations from M&E elements of the ER's
2) Please confirm that racks will be provided for Client's active equipment
3) Please confirm that BMS IP network will be fully stand alone and that all active equipment has been included
4) Please confirm that asset tagging system Has been included and that all services equipment shall be tagged
5) What function does scaffolding platform have in plant replacement strategy for transformers and generators
6) Confirm that reference to BOC should be "Air Products"
7) Please provide luminaire details to supplement pictorial views
8) Please confirm light switches will be selected to suit lighting control system
9) Please confirm that bedside adjustable luminaires will be a modern low energy high output units.
10) Please confirm fire alarm PC includes incident location graphics
11) Please confirm that 4 CHP units have been proposed as the narrative (schedule indicates 3)
12) C&B to comment on equipment schedule quantities
13) Television outlets on equipment schedule (are these back up for the CAT6A for digital distribution via the patient entertainment system?
14) Please provide details on the proposed patient entertainment systems.
15) Please advise how Renal & Specialist Departments water temperature requirements will be achieved.
16) Confirm reference to 5A Switches equipment schedule should be 20A
17) Please confirm that metering will be provided to meet BREEAM requirements
18) Please advise proposals for water spillage protection from fan coils in secondary comms room.
19) Please confirm compliance with maintainability and area isolation requirements
20) Please confirm that the renal Central Concentrate Delivery system is included.
21) Please confirm that all services comply with HAI – SCRIBE.
22) Please advise if water borehole has been considered.
23) Please confirm that all plant and equipment will be suitably isolated to prevent transmission of noise and vibration.
24) Please confirm that full environmental proving off all rooms will be provided.
25) Please confirm that all metering requirements will be provided in accordance with the ER's and BREEAM requirements.
26) Please confirm that all services elements are included to meet the fire engineering solution, e.g. stair pressurisation, smoke control etc.
27) Please confirm that ICT cooling has been included and provide details
28) Please confirm that specialist drainage has been included.
29) Please confirm that leak detection has been included.
30) Please indicate percentage capacity of all water service pipework mains from the energy centre to the main buildings for resilience.

**GENERAL INFORMATION FOR TEAM**

31) Limited run generators proposed
32) Board to confirm acceptance of items required for BREEAM Wat 1
33) Roof fabric is unlikely to provide protection to BSEN 62305, bidder to include for all requirements
34) 50/125qm multi-mode fibre is not as per ER's
35) 12 hour water storage included rather than 24 hour.
36) 0.2 micron water filtration rather than 0.5 micron.

**New South Glasgow Hospitals Project**
**Bid Submission Clarifications**
**Bidder: 1 (Brookfield)**
**Technical Clarification: 3 (issued 02 October 2009 – return by 5pm Tuesday 06 October 2009)**

**PRIVATE & CONFIDENTIAL**

| Item | Topic/Bid Reference | Board Clarification | Bidder Response |
|---|---|---|---|
| - | - | - | - |
| **General** | | | |
| 1.0 | LCC | In relation to any perceived LCC benefits/savings over the period, can you provide supporting details/justification of same. | |
| **Logistics** | | | |
| - | - | No items in this TC. | - |
| **Design/HP** | | | |
| 2.0 | Energy Centre | Please confirm the location in your compliant bid the Energy Centre Layout plan reflecting the retention of the Stage D Laboratories design. | |
| **M&E Services** | | | |
| - | - | - | - |
| **Renewables/Sustainability/BREEAM** | | | |
| 3.0 | - | Please confirm that your compliant laboratory scheme will achieve BREEAM Excellent. | |
| **Laboratories** | | | |
| - | - | No items in this TC. | - |

DATED 18TH JUNE 2010

BROOKFIELD CONSTRUCTION (UK) LIMITED

- and -

NIGHTINGALE ARCHITECTS LIMITED

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# PROFESSIONAL SERVICES CONTRACT

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| Clause | Heading |
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| 3. | APPENDIX 2 - NOTICE TO PROCEED ..... |
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| 5. | SCHEDULE 1 - THE COLLATERAL WARRANTY |
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| 7. | PART ONE - DEFINITION OF SCOPE AND *SERVICES* |
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**AGREEMENT**

between

**BROOKFIELD CONSTRUCTION (UK) LIMITED** of 23 Hanover Square, London, United Kingdom W1S1JB ("the *Employer*"); and

**NIGHTINGALE ARCHITECTS LIMITED** (Company No. 04440612) having its Registered Office at 87-91 Newman Street, London W1T3EY (the "*Consultant*").

WHEREAS: -

The *Employer* has been appointed to carry out the design and construction of the New South Glasgow Hospital ("the Project") and wishes to have the *Consultant* Provide the *services* in connection with the same as follows: -

| Stage | Heading | Outline Activities |
|---|---|---|
| Stage 1 | Design and Construct Laboratories | Detailed design and construction of the Laboratories and FM Hub. Concurrent with Stage 2. |
| Stage 2 | Design Development - New Hospitals Building | Detailed design of New Adult Acute and New Children's Hospitals to Full Business Case Submission. Concurrent with Stage 1. |
| Stage 3 | Final Design of the New Hospitals Building | Final design of New Adult Acute and New Children's Hospitals and Energy Centre. Consecutive to Stage 2. |
| Stage 3A | Demolition and Final Landscaping | Demolition of surgical block and associated buildings and completion of |

| Stage | Heading | Outline Activities |
|---|---|---|
| | | soft landscaping. |

**NOW IT IS AGREED THAT**

1. The *Consultant* will Provide the Services in accordance with the NEC Professional Services Contract, Option A: Priced Contract with activity schedule June 2005 (as the same are amended by the Contract Data) ("*the conditions of contract*") and the principles stated in Appendix 1 of this Agreement.

2. The *Employer* will pay the *Consultant* in accordance with Section 5 of the *conditions of contract.*

3. The *Consultant* acknowledges and agrees that as at the Contract Date the Consultant shall be authorised to proceed with the *services* in connection with Stages 1 and 2 only. The *Consultant* is authorised to commence and proceed with Stages 3 and 3A upon written authorisation given by the *Employer* in the form attached as Appendix 2 hereto. In the event that the *Consultant* undertakes any work in connection with Stages 3 and 3A without such written authority from the *Employer*, the *Consultant* does so at his own cost and risk.

6. The documents forming part of this contract are:

   6.1 this Agreement

   6.2 the *conditions of contract*,

   6.3 Contract Data part one — data provided by the *Employer*

   6.4 Contract Data part two - Data provided by the *Consultant*

7. In the event of conflict between the documents forming part of this contract the following order of priority will apply:-

   7.1 This Agreement (excluding Appendix 1)

   7.2 The *conditions of contract*,

   7.3 Contract Data Part One (including the Scope).

   7.4 Contract Data Part Two

   7.5 Appendix 1 of this Agreement

IN WITNESS WHEREOF these presents consisting of this and the 2 preceding pages together with Appendices 1 and 2 and the Contract Data part one (including its Appendices) and Contract Data part two are executed as follows: -

**EXECUTED** as a **DEED** by )
**BROOKFIELD CONSTRUCTION (UK)** )
**LIMITED** )
and signed accordingly by

[redacted]

Director

Director/Secretary

**EXECUTED** as a **DEED** by
**NIGHTINGALE ARCHITECTS LIMITED**
and signed accordingly by

[redacted]

Director

Director/~~Secretary~~

**This is Appendix 1 to the foregoing Agreement between Brookfield Construction (UK) Limited**

**and**

**Nightingale Architects Limited**

**Principles governing the Agreement**

**Definitions**

| **Defined Term** | **Definition** |
|---|---|
| "Building Contract" | means the contract between or to be entered into between the Employer and Greater Glasgow and Clyde Health Board in relation to the design and construction of the New South Glasgow Hospital. |
| "Overriding Objective" | means the objective set out in Paragraph 4. |
| "Overriding Principle" | means principle set out in Paragraph 1. |
| "Professional Advisor" | means any party providing specialist advice to the *Employer*. |

1. The Overriding Principle of this Agreement is to work together with the *Employer* and its Professional Advisers in a co-operative and collaborative manner to achieve the Overriding Objective acting in good faith and in the spirit of mutual trust and respect.
2. In order to work together in co-operative and collaborative manner the *Employer* and the *Consultant* agree that they should each give to and welcome from each other, and any Professional Adviser, feedback on performance and shall share information openly and highlight any difficulties at the earliest practical time. The parties shall support collaborative behaviour and confront behaviour that does not comply with the Overriding Principle.
3. The terms of the Agreement shall be interpreted according to their natural meaning but in the event of any ambiguity in their natural meaning they shall be interpreted so as to give best effect to the Overriding Principle.
4. In entering into the Agreement the parties' Overriding Objective is by working together in accordance with the terms of the Agreement to achieve the successful delivery by the *Consultant* of the *services*: -

4.1 to the standard and functionality defined or as reasonably inferred from the Client's requirements set out in the Building Contract to a quality which meets or exceeds these requirements;

4.2 at a cost that offers best value for money taking into account whole life (as well as capital) costs over the proposed design life of the *works* through the application of the principles of value engineering; and

4.3 to the timescale acceptable to the *Employer* and agreed between the parties without compromising health and safety or the *Employer*'s required standards and the quality of the completed *works* and in any event before the Completion Dates set out in the Building Contract.

5. The *Consultant* shall carry out the management and be responsible for the delivery of the *services* in accordance with the Agreement and shall work and liaise with the *Employer* and any of its Professional Advisers as necessary or appropriate or as requested by the *Employer* in order to achieve the Overriding Objective.

6. The *Consultant* shall engage persons from the key people set out in the Contract Data — Part two in the performance of the *services* to be provided by the *Consultant* under the Agreement and shall not replace any of the key people without the approval of the *Employer* (such approval not to be unreasonably withheld). The *Consultant* will ensure that where a member of its key personnel is replaced that they have the skills, qualifications, experience and ability to provide the best service to the *Employer*.

7. Throughout the period of the Agreement the performance of the *Consultant* shall in relation to the *services* be monitored against the Key Performance Indicators defined in the Scope and/or the Contract Data and/or the Contract Data to the Building Contract.

8. During the period of the Agreement amendments may be made to the Key Performance Indicators by agreement between the *Employer* and the *Consultant* except where the Client is required by the Scottish Government or regulatory bodies to provide Key Performance Indicators. In such cases the *Employer* will provide information on any requirements to the *Consultant* as soon as reasonably practicable.

9. At 2 monthly intervals or at such other intervals as the parties may agree during the performance of the Agreement, the *Employer* and the *Consultant* shall undertake formal reviews of the performance of the *Consultant* against its Key Performance Indicators. The *Employer* and the *Consultant* will discuss any way in which the performance of the *Consultant* may be improved.

10. The *Consultant* shall keep a comprehensive record as specified by the *Employer* of all performance monitoring carried out under the Agreement in such form as the *Employer* may reasonably request for a period of 6 years after the expiry or earlier termination of this

Agreement and shall provide copies of such records to the *Employer* for the *services* to enable him to record, disseminate and compare the performance of the *Consultant*. Each record shall be retained in a format that can be read and copied and kept with the IT requirements on an electronic based database.

11. The *Consultant* shall throughout the period of the Agreement look for and seek to achieve continuous improvement in the quality of the *services* while reducing whole life costs, wastage (in accordance with WRAP guidance), and the time taken to deliver the *services*. Innovation and best practice will be shared with the *Employer*.

12. To achieve the aim set out in Clause 11 the *Consultant* shall actively participate in the continuous improvement "learning sets" with the Employer in relation to the Agreement. This commitment is likely to involve meetings at least once every 3 months in relation to the *services* and meetings at least once every 6 months in relation to the lessons to be learned. The *Consultant* shall also use reasonable endeavours to procure the involvement of any of its subconsultants in such learning sets where considered appropriate.

**This is Appendix 2 to the foregoing Agreement between Brookfield Construction (UK) Limited**

**and**

**Nightingale Architects Limited**

**BROOKFIELD CONSTRUCTION (UK) LIMITED** of 23 Hanover Square, London, United Kingdom W1S1JB ("the *Employer*"); and

**NIGHTINGALE ARCHITECTS LIMITED** (Company No. 04440612) having its Registered Office at 87-91 Newman Street, London W1T3EY (the "*Consultant*").

WHEREAS

1. The *Employer* and the *Consultant* entered into the Agreement dated [ ] whereby the *Consultant* is to Provide the Services in connection with the New South Glasgow Hospital Project.
2. The *Employer* wishes the *Consultant* to continue to Provide the Services by commencing and carrying out:

| | | |
|---|---|---|
| Stage 3 | Final design of the New Hospitals Building | Final design of the New Adult Acute and New Children's Hospitals and Energy Centre. Consecutive to Stage 2. |
| Stage 3A | Demolition and Final Landscaping | Demolition of surgical block and associated buildings and completion of soft landscaping. |

NOW IT IS AGREED THAT

1. The *Employer* hereby authorises the *Consultant* to commence and carry out Stages 3 and 3A of the *services* ie the Final design of the New Adult Acute and New Children's Hospitals and New Children's Hospitals and *services* in connection with the demolition of the surgical block and associated buildings.
2. The *Consultant* will continue to Provide the Services in accordance with the Agreement.
3. The Agreement is amended and modified to the following extent:-

[*Any amendments to the Scope and/or Contract Data which will have come about during Stage 2*]

EXECUTED for and on behalf of the *Employer* at [ ] 20[ ] as follows:-

.....

(Authorised official)

Before this witness: -

..... ..... Full name

..... ..... Address

EXECUTED for and on behalf of the *Consultant* at [ ] day of [ ] 20 [ ] as follows: -

.....

(Director/Authorised Signatory)

Before this witness: -

..... Full name

..... Address

**CONTRACT DATA PART ONE —**

**DATA PROVIDED BY *THE EMPLOYER***

**Contract Data Part one - Data provided by the *Employer***

**1. General**

- The *conditions of contract* are the core clauses for main Option A, dispute resolution Option W2 and Secondary Options — X2, X5, X8, X18.3, Y(UK)2 and Z of the NEC3 Engineering and Construction Contract (June 2005).
- The services are management and delivery of design services for the New South Glasgow Hospital Project as the *services* are more specifically referred to in the Scope.
- The *Employer* is

  Name: Brookfield Construction (UK) Limited

  Address: 23 Hanover Square, London, United Kingdom W1S1JB
- The *Adjudicator* is: to be nominated by the Nominating Body
- The *Services* are: set out in Schedule 2.
- The Scope is in: Schedule 2.
- The *language* of the contract is English.
- The *law of the contract* is the law of Scotland subject to the jurisdiction of the Courts of Scotland.
- The *period for reply* to a communication is
  - to *Consultant's* submission of particulars of design for acceptance - Four (4) weeks
  - Reply to all other communications unless otherwise stated in this contract three (3) weeks
- The *Adjudicator* nominating body is:

  The Scottish Branch of the Royal Institute of Chartered Surveyors
- The *tribunal* is the Scottish Courts

2. **The Parties' main responsibilities:**

Not used

**3. Time**

- The *starting date* is 18 December 2009

- The Consultant submits revised programmes at intervals no longer than three (3) weeks.

**4. Quality**

- The quality policy statement and quality plan are provided within 3 weeks of the Contract Date.
- The *defects date* is 104 Weeks after Completion of the *services*.

**5. Payment**

- The *assessment interval* is four (4) weeks alternatively calendar monthly in accordance with the Cashflow set out in Contract Data Part Two.
- The *currency of this contract* is the pound sterling (£)
- The interest rate is 5% per annum

**8. Indemnity, insurance and liability**

The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the works, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the Consultant) caused by activity in connection with this contract for any one event is

**£10,000,000.00 (ten million pounds sterling)**

The minimum limit of indemnity for insurance in respect of death or bodily injury to employees of the *Consultant* arising out of and in the course of their employment in connection with this contract for any one event is

**£10,000,000.00 (ten million pounds sterling)**

The amount of the minimum limit of indemnity for Professional Indemnity Insurance for design liability in connection with this contract is **£10,000,000 (ten million pounds sterling)** for each and every claim plus **US$32,000,000** for each and every claim and in the annual aggregate in excess coverage for a period from the date of commencement of the *services* until the date which is twelve years after Completion of the whole of the *services*.

Consultant to provide documentary evidence to which insurance option is being provided

The *Consultant* provides all other insurances required by the *law of the contract*

**Optional Statements**

**If the Employer has decided the completion date for the whole of the *works***

The *completion date* for the whole of the *services* is 19th July 2016

**If no programme is identified in part two of the Contract Data**

The Consultant is to comply with the programme contained in Schedule 2 Part Three as amended from time to time.

**If the Employer has identified work which is to meet a stated *condition* by a *key date***

The *key dates* and *conditions* to be met are

| **Condition to be met** | **key date** |
|---|---|
| Stage 2: Completion of Detailed design to allow FBC to be submitted to Scottish Government by 8 November 2010. | 31 October 2010 |

**If Option A is used**

- The *Consultant* prepares forecasts of the total *expenses* at intervals no longer than 4 weeks.

**If Option X5 is used**

- The *completion date* for each *section* of the *services* is

| Section | Description | *completion date* |
|---|---|---|
| 1 – Stage 1 | Laboratories | 10 March 2012 |
| 2 - Stage 2 | Design of Adult and Childrens for FBC | 8 Nov 2010 |
| 3 - Stage 3 | New Hospital | 31st January 2015 |
| 4 – Stage 3A | Demolition of surgical block | 19 July 2016 |

**If Option X8 is used**

- The *collateral warranty agreements* are:

| Agreement reference | Third Party |
|---|---|
| Form as set out in Schedule 1 | Greater Glasgow Health Board |

Others as required by the Client and requested by the *Employer*

**If Option X18 is used**

The *end of liability date* is twelve (12) years after the Completion of the whole of the *services.*

**If Option Z is used**

*The additional conditions of contract are*

**Amendments and additions to existing Clauses:**

**Z 1 Additions to Clause 11.2 - Identified and Defined Terms**

11.2(14) "Agreement" is the form of agreement entered into between the *Employer* and the *Consultant* in respect of the services forming part of this contract

11.2(15) "the Client" is the Greater Glasgow Health Board.

11.2(16) "Full Business Case" is the Client's submission to the Scottish Government for approval to proceed with Stage 3.

11.2(17) "Laboratories" is the new laboratory block as the same is more particularly described in the Scope.

11.2(18) "Stage" has the meaning ascribed to it in the recital to the Agreement.

11.2(19) "*conditions of contract*" is the NEC Professional Services Contract, Option A: Priced contract with activity schedules, June 2005 (as the same are amended in by the Contract Data.

11.2(20) "Design Deliverables" are those elements of design to be delivered by the *Consultant* to the *Employer* during Stage 2 as set out in Schedule 3.

11.2(21) "Documents" includes, without limitation, all technical information (whether or not stored in computer systems), drawings, models, calculations, specifications, schedules, details, plans, programs, budgets, reports or other documents, work or other things provided or to be provided by or on behalf of the *Consultant* in connection with the *services*.

**Z2 Amendment to clause 11.2 (4) - Identified and Defined Terms**

Delete and replace with "the Contract Date is the date of execution of this contract"

**Z3 Amendment to Clause 16.1 – Ambiguities and inconsistencies**

Add the following sentence to the end of Clause 16.1

"Instructions issued under this clause do not necessarily give rise to a compensation event"

**Z4 Addition to Clause 16 – Ambiguities and inconsistencies**

"16.2 Inconsistencies and ambiguities between (a) the NHS Mandatory Documentation and NHS Guidance Documentation and building control or (b) between the NHS Mandatory Documentation and NHS Guidance Documentation and the Schedules of Accommodation or (c) between the NHS Mandatory Documentation and NHS Guidance Documentation and any information issued to the Consultant by the Employer, are to be dealt with in accordance with the procedures set out in the Scope."

**Z5 Amendment to Clause 18 – Prevention**

Add new Clause 18.2

"Notwithstanding the provisions of Clause 60 and subject to Clause 18.4, the *Consultant*'s sole right to payment in respect of the occurrence of an event under Clause 18.1 is as provided in Clause 92."

Add new Clause 18.3

"The *Consultant* and the *Employer* take all reasonable steps to mitigate the effect of the occurrence of an event under Clause 18.1."

Add new Clause 18.4

"If the *Employer* instructs the *Consultant* to take steps to Provide the Services in a manner not prevented by the occurrence of an event under Clause 18.1, and such instruction changes the Scope, the *Consultant* is entitled to notify a compensation event under clause 60."

**Z6 Amendment to Clause 21.2 - The *Consultant's* design**

Delete and replace with: "The *Consultant's* obligation is to perform the *services* using the degree of skill and care that would reasonably be expected of a competent professional designer experienced in carrying out design activities of a similar nature, scope and complexity to those comprised in the *services*.

**Z7 Addition to Clause 31 – The programme**

"31.4 The *Consultant* complies with section 6.8 of Volume 2/1 of the Employers Requirements Section of the Works Information in the Building Contract in connection with commissioning and handover for the whole of the *works*. "

**Z 8 Addition to Clause 51 - Payment**

51.6 If the amount to be paid at an assessment date exceeds the amount for the assessment interval as shown in the *Consultant*'s cash flow forecast (as set out in the Activity Schedule), then the *Employer* certifies payment up to the amount forecast. Any amount exceeding the forecast is not certified but held over to the next assessment interval, where if amount to be paid at the next assessment date again exceeds the *Consultant*'s cash flow forecast for the assessment interval the process is repeated. This clause does not apply where the *Consultant* provides a valid and acceptable reason for an exception to the limitation of the *Employer's* assessment certification.

**Z9 Amendment to Clause 60.1(11)**

Add new bullet point 6, "does not arise from a sub-consultant ceasing to trade or becoming insolvent (or other equivalent event)"

Add at the end, "provided that the occurrence of such event only entitles the Consultant to a change to the Completion Date or a change to a Key Date and not to a change in the Prices and Clauses 61 – 65 are interpreted accordingly."

**Z10 Amendment to Clause 61.4 - Notifying of Compensation events**

In line 15 delete "two" and substitute "four"

**Z11 Amendment to Clause 70 – the Parties' use of material**

Delete and replace with: -

"70.1 The copyright and all intellectual property rights in the Documents remain vested in the *Consultant* or the person responsible for the production (as the case may be).

70.2 Where documentation (including drawings) is (or are) provided by the *Employer* copyright and such documentation and drawings remain vested in the *Employer*.

70.3 The *Employer* has an irrevocable, non-exclusive royalty free licence to copy and use the Documents and to reproduce the designs contained in them for

any purpose relating to the *works* including (but without limitation) the construction, completion, maintenance, promotion, advertisement, reinstatement, repair, any extension of the *works* and for dissemination within the NHS as part of the feedback of information to better or enable the NHS to realise improvements in its methods and practice of construction and in the design and procurement of its construction.

70.4 The *Consultant* shall not be liable for any use of the *Employer* of the Documents for any purpose other than that for which the same is prepared and provided."

**Z12 Addition to Clause 81.1 – Insurance cover**

Add to the Insurance Table:

| | |
|---|---|
| Liability for negligent management or design – professional indemnity insurance | The amount specified in the Contract Data for any one claim or series of claims arising out of one single incident during any period of insurance which shall not be more than 12 months from the date the *Consultant* starts to Provide the Services for a period of twelve years from Completion of the whole of the *services*, with insurers of good repute carrying on business in the European Union provided always that such insurance is available at rates and terms which are commercially reasonable to Consultants of a similar size and standing in the UK In determining whether or not insurance is available as aforesaid, the financial characteristics and claims' record of the Consultant shall be ignored. |

**Z13 Amendment to Clause 82.1**

Delete and replace with "Notwithstanding any other term of this contract the total aggregate liability of the *Consultant* to the *Employer* under, arising out of or in connection with this contract , whether in contract (either claims under the contract or for breach of the contract ), tort (including negligence), liquidated and ascertained damages or otherwise, shall be limited to an amount equal to £10 million save where the *Consultant* is able to take the benefit of additional insurance cover as required by Contract Data Part One clause 8. Where the *Consultant* is able to take the benefit of cover as required by Contract Data Part One clause 8 the *Consultant*'s cap on liability shall be limited to the aggregate of that cover and the £10m cover provided for in Contract Data Part One clause 8. This Clause 82.1 shall not apply to any liability for or in respect of personal injury or death".

**Z14 Amendment to Clause 90.4 – Reasons for Termination**

Add at the end "notwithstanding that a delay to the Completion Date has previously been notified to the *Consultant* in respect of such event"

**Z15 Addition to Clause 90**

90.5 The *Employer* may terminate the *Consultant's* obligations to Provide the Services for Stage 3 and 3A either (i) upon termination of the Building Contract or (ii) if the Full Business Case is not approved by the Scottish Government.

**Z16 Addition to 91 - Procedures on termination**

"91.2 The *Consultant* hands over to the *Employer* all hard copy and electronic data for the *Consultant*'s design including material prepared by a sub-consultant, so far as prepared at termination. At such termination the *Employer* has the right to use such material for completion of the *services*.

**Z17 Amendment to Clause 92 - Payment on Termination**

92.3 : - "On termination the *Employer* shall not be liable to the *Consultant* for loss of profit, loss of expectation of profit, loss of use, loss of production or indirect and consequential damages."

**Z18 Addition to Clause W2.1(1) – Dispute Resolution**

Add at the end: - "The word "dispute" in this Clause W2 includes any difference under or in connection with this contract".

**Z19 Addition to Clause W2.3(8) – the adjudication**

After "reasons" add the words, "(which will be in writing)"

**Z20 Addition to Clause W2.3(11) – The adjudication**

Delete the first sentence and replace with, "The decision of the *Adjudicator* is binding until the dispute is finally determined by the *tribunal* or by agreement."

**Z21 Amendment to Clause X8 – Collateral Warranty Agreements**

Add at the end: "and provides them to the *Employer* within 5 days of the *Employer*'s written request".

**Z22 New Clause - Confidentiality**

Z22.1 The *Consultant* shall not append their name or give authority to the appending of their name to any publicity concerning this agreement or the services or indulge in any publicity concerning the services without the prior written consent of the *Employer*.

Z22.2 The *Consultant* shall immediately notify the *Employer* in writing regarding any matter that has arisen which may materially adversely affect the *Consultant's* ability to perform the *services*.

Z22.3 The *Consultant* undertakes to treat any information derived from or obtained in the course of the Agreement as confidential and to take all the necessary precautions to ensure that its employees and sub-consultants and their employees treat any information as confidential and in doing so the *Consultant* shall reasonably ensure that its employees and sub-consultants and their employees keep secret and do not disclose information of a confidential nature by him or them by reason of the Agreement. The *Consultant* shall be entitled to disclose such information as required by law or where it is already within the public domain.

**Z23 New Clause – Data Protection**

Z23.1 The *Consultant* warrants and will at all times comply with the provisions of the Data Protection Act 1998 ("the 1998 Act") and any other subordinate legislation enacted pursuant thereto.

Z23.2 The *Consultant* shall only undertake such processing of personal data as is reasonably required in connection with the performance of its obligations under pursuant to the Agreement. To the extent required by the 1998 Act

the *Consultant* shall notify the Information Commissioner of any processing which is being carried out and maintain any such notification in full force and effect.

Z23.3 The *Consultant* in its role as Data Processor undertakes to comply with the obligations imposed on a Data Controller under the 7th Data Protection Principle as set out in Part 1 of Schedule 1 of the 1998 Act in respect of all personal data processed pursuant to this Contract.

Z23.4 The *Consultant* shall not, other than in accordance with the 1998 Act, transfer any personal data to any country or territory outside the European Economic Area.

Z23.5 Terms defined within the 1998 Act shall have the same meaning when used in this clause.

**Z24 New Clause – Failure to deliver Collateral Warranty Agreements**

When any Collateral Warranty Agreement is not delivered as required pursuant to Clause X8, one quarter of any amount due to the *Consultant* is retained in assessments of the amount due until the *Consultant* has delivered such Collateral Warranty Agreement to the *Employer*.

**Z25 New Clause – Third Parties**

The *Consultant* performs its obligations under this contract in such a manner and at such times that no act, omission or default of the *Consultant* in relation thereto constitutes, causes or contributes to any breach by the *Employer* of any third party agreement or any other obligation it may owe to a third party relating to the works or the Project, details of which the *Consultant* was made aware of prior to the Contract Date.

**Z26 New Clause - Inconsistencies**

In the case of any inconsistency between these *additional conditions of contract* and the other terms of the contract, the *additional conditions of contract* prevail. In the event of any inconsistency between the Core Clauses and any other term of this contract (except these *additional conditions of contract*) the Core Clauses prevail.

**Z27 New Clause – Approval**

No inspection, testing, approval or review nor any omission to inspect, test, approve or review on the part of the *Employer* diminishes any duty or liability under this contract of the *Consultant*.

**Z28 New Clause – Set off**

Without derogating from its rights under this contract or under the *law of the contract*, whenever any sum of money is recoverable by the *Employer* against the *Consultant*, such sum is deducted from any sum due or which may become due to the *Consultant* under this or any other contract with the *Employer*.

**Z29 New Clause – Security**

Z29.1 The *Consultant* acknowledges that the Site forms part of the larger Southern General Hospital site and that the Southern General Hospital is a live and functioning acute hospital. The Consultant takes measures to prevent its employees, sub-consultants and suppliers of the Consultant from entering into or otherwise interfering with the operation of the existing Southern General hospital, except for access to or egress from the Site.

Z29.2 The *Employer* may instruct the *Consultant* to take measures to prevent unauthorised persons being admitted on the Site.

Z29.3 The *Consultant* does not take photographs of the Site or the works or any part of them unless he has obtained the approval of the *Employer*.

Z29.4 The *Consultant* takes the measures needed to prevent his and his sub-consultants' people taking, publishing or otherwise circulating such photographs.

**Z30 New Clause – Retention**

In respect of each invoice issued by the *Consultant* pursuant to Clause 5 during Stage 2 the *Employer* shall be entitled to retain 10% of the amount due which shall be released on delivery of the Design Deliverables to the *Employer*. No amount shall be retained by the *Employer* following the completion of the *services* relating to Stage 2.

**SCHEDULE 1**

**FORM OF COLLATERAL WARRANTY AGREEMENT**

**CONSULTANT'S COLLATERAL WARRANTY**

This Agreement is among

(1) **GREATER GLASGOW HEALTH BOARD** of Dalian House, 350 St Vincent Street Glasgow, G3 8YZ ("the Beneficiary" which expression shall include its successors in title or permitted assignees under this Agreement)

(2) **BROOKFIELD CONSTRUCTION (UK) LIMITED** of 23 Hanover Square, London, United Kingdom W1S1JB (Registered number 3808946) ("Main Contractor" which term shall include any successor including any parties taking over the obligations of Main Contractor. under the Project Agreement)

(3) **NIGHTINGALE ARCHITECTS LIMITED** (Company No. 04440612) having its Registered Office at 87-91 Newman Street, London W1T3EY (the "*Consultant*")

WHEREAS:

A The Beneficiary has entered or is about to enter into an agreement with the Main Contractor (°the Building Contract") in connection with the design and construction of the New South Glasgow Hospital, Govan, Glasgow ("the Project").

B The Main Contractor has engaged or is about to engage the Consultant under an appointment ("the Appointment), which expression shall include all documents incorporated therein and any agreed amendment thereto, to carry out architectural design services as more particularly described in the Appointment ("the Services"), which expression shall include any additional services performed by the Consultant under the Appointment including in connection with any modifications or variations made thereunder.

C It is a condition precedent of the Building Contract that the Consultant, the Main Contractor and the Beneficiary enter into this agreement ("this Agreement").

NOW IT IS AGREED:

1. The Consultant warrants and undertakes to the Beneficiary that it has complied and will continue to comply with all the terms and obligations under the Appointment on the Consultant's part to be performed and observed and shall complete the Services in

accordance with the Appointment.

2. Without prejudice to Clause 1 of this Agreement, the Consultant further warrants and undertakes to the Beneficiary that:

2.1 it has exercised and will continue to exercise all the reasonable skill, care and diligence to be expected from a competent and qualified professional designer experienced in carrying out services similar in nature, size and complexity to the Services including in the selection of goods and materials for the Project; and

2.2 it has not and will not specify for use in relation to the Project any products or materials not in conformity with relevant British or European standards or Codes of Practice or which are at the time of specification generally known within the United Kingdom to an experienced professional designer of works such as the Project to be deleterious to health and safety or to the durability of buildings and/or other structures and/or finishes and/or plant and machinery in the particular circumstances in which they are used;

Provided that:

2.3.1 the obligations of the Consultant under this Agreement shall be no greater in extent or quantity than if the Beneficiary had been named as joint employer with Main Contractor under the Appointment; and

2.3.2 the Consultant shall be entitled in any action or proceedings brought by the Beneficiary to rely on any limitation in the Appointment and to raise the equivalent rights in defence of liability (excluding counterclaim and set-off in respect of amounts due to the Consultant under the Appointment) as it would have if the Beneficiary had been named as joint employer with the Main Contractor under the Appointment.

3 The Beneficiary has no authority to issue any direction or instruction to the Consultant in relation to the Appointment unless and until the Beneficiary has given notice under Clauses 4 or 5 below. The Beneficiary or its appointee has no liability to the Consultant in relation to

amounts due under the Appointment unless and until the Beneficiary has given notice under Clauses 4 or 5.

4 The Consultant agrees that it will, if so required by notice in writing given by the Beneficiary, subject to Clause 6, below, accept the instructions of the Beneficiary or its appointee, as the case may be, (which for the avoidance of doubt and without limitation may include a third party appointed by the Beneficiary to act as "the Employer" under this Appointment) to the exclusion of the Main Contractor in respect of the Project upon the terms and conditions of the Appointment. The Main Contractor acknowledges that the Consultant shall be entitled to rely on a notice given to the Consultant by the Beneficiary under this Clause 4 and further acknowledges that such acceptance of the instructions of the Beneficiary or its appointee, as the case may be, to the exclusion of the Main Contractor shall not constitute any breach of the Consultant's obligations to the Main Contractor under the Appointment.

5 The Consultant further agrees that it will not without first giving the Beneficiary not less than 35 days notice in writing exercise any right or purported right it may have to determine its employment tinder the Appointment, treat the same as having been repudiated by the Main Contractor, or discontinue the performance of any duties or obligations thereunder. Further, the Consultant shall within 14 days of giving the said notice, provide statements to the Beneficiary containing the following:

5.1 all amounts properly due and payable to the Consultant under the Appointment on or before the date of issue of the said notice which remain unpaid;

5.2 in the reasonable estimation of the Consultant, the amount of any monetary claim (it any) asserted by the Consultant against the Main Contractor under the Appointment arising out of or in connection with the breach for which the said notice was served; and

5.3 where the Consultant intends to terminate the Appointment due to some default or breach of contract of a non-financial nature:

5.3.1 the provision of the Appointment alleged to have been breached or not

fulfilled;

5.3.2 supporting information in reasonable detail to enable the Beneficiary to identify the material facts;

5.3.3 the steps reasonably required to remedy the specified breaches or conditions not fulfilled;

5.3.4 the time within which the specified steps can reasonably be expected to be taken;

5.3.5 (if applicable) the amount of damages claimed and the basis of their calculation; and

5.3.6 (if applicable) the relief to be sought.

The Consultant warrants to the Beneficiary that to the best of the Consultant's knowledge and belief, having made all proper and appropriate enquiries, the statements submitted under this Clause 5 shall be true, complete and accurate statements of the amounts to which the Consultant considers itself entitled. In the event that the Consultant shall delay in giving such notice and information within the said 14 days, the period of 35 days shall be extended to correspond with the period of any such delay. The Consultant's right to determine its employment under the Appointment or to treat the same as having been repudiated or to discontinue performance shall cease if, within the said 35 day period (extended as appropriate) and subject to Clause 8 the Beneficiary shall give notice in writing to the Consultant requiring the Consultant to accept the instructions of the Beneficiary or its appointee to the exclusion of the Main Contractor in respect of the Project upon the terms and conditions of the Appointment.

6 It shall be a condition of any notice given by the Beneficiary under Clauses 4 or 5 above, that the Beneficiary or its appointee, as the case may be, accepts liability for payment of the sums due under the Appointment and detailed in the statement provided under Clause 5 (and makes payment within a period of 28 days of such notice from the Beneficiary), and for subsequent performance of the Main Contractor's obligations. Upon the issue of any notice by the Beneficiary under Clauses 4 or 5, the Appointment shall remain in full force and effect as if no right of determination of its employment under the Appointment, or any right of the

Consultant to treat the Appointment as having been repudiated by the Main Contractor had arisen and the Consultant shall be liable to the Beneficiary and/or its appointee, as the case may be, under the Appointment in lieu of its liability to the Main Contractor.

7 The Beneficiary may at any time following the issue of any notice by the Beneficiary under Clauses 4 or 5, serve a further notice that following the expiry of 28 days from the giving of such notice the Beneficiary will have no liability (save in respect of the Beneficiary's antecedent breach) for any sums due or to become due to the Consultant in respect of the period following expiry of the last mentioned 28 day period. The Beneficiary may exercise any of its rights pursuant to Clauses 4 or 5 on more than one occasion.

8 The Consultant shall maintain for the period expiring 12 years after completion of the Services or until termination of the Consultant's employment under the appointment, Professional Indemnity Insurance in an amount of not less than £10m (ten million pounds) sterling for any one claim or series of claims arising out of one single incident during any period of insurance which shall not be more than 12 months with insurers of good repute canting on business in the European Union provided always that such insurance is available at rates and terms which are commercially reasonable to consultants of a similar size and standing in the UK. In determining whether or not insurance is available as aforesaid, the financial characteristics and claims' record of the Consultant shall be ignored. The Consultant shall immediately inform the Beneficiary if such insurance ceases to be available at rates and terms which are commercially reasonable in order that the Consultant and the Beneficiary can consider alternative means of best protecting their respective positions in respect of the Project In the absence of such insurance provided that the Beneficiary shall be entitled to require the Consultant to maintain such lesser amount of Professional Indemnity Insurance as is available to the Consultant at rates and terms which are commercially reasonable. As and when it is reasonably requested to do so by the Beneficiary (but not more than once in any period of insurance) the Consultant shall produce; for inspection documentary evidence satisfactory to the Beneficiary (acting reasonably) that its Professional Indemnity Insurance Is being maintained.

9 The Consultant hereby grants to the Beneficiary or its appointee and all those authorised by the Beneficiary an irrevocable, non-exclusive and royalty-free licence (which shall be capable

of assignation) to use and reproduce all technical information (whether or not stored in computer systems), drawings, models, calculations, specifications, schedules, details, plans, programs, budgets, reports or other documents, work or other things whatsoever provided or to be provided by the Consultant in connection with the Project (the 'documents") for any purpose relating to the Project including (but without limitation) the construction, completion, maintenance, promotion, advertisement, reinstatement, repair and any extension of the project and for dissemination within the NHS as part of the feedback of information to better or enable the NHS to realise improvements in its methods and practice of construction and in the design and procurement of its construction. Such licence shall carry the right to grant sub-licenses and shall subsist notwithstanding that the Appointment is terminated or the obligations and duties thereunder have been completed. For the avoidance of doubt, the grant of such licence or sub-licences shall not impose any additional liability on the Consultant. The Consultant will not assign or agree to assign the copyright in any of the documents without the prior written consent of the Beneficiary. The Consultant shall on reasonable demand provide to the Beneficiary or its appointee and those authorised by the Beneficiary additional copies of any documents on receipt of reasonable copying costs. The Consultant shall not be liable for any use by the Beneficiary of any of the documents for any purpose other than those authorised by this clause.

10 This Agreement may be assigned on a maximum of two occasions in whole or in part by the Beneficiary to any party to whom the Beneficiary's interest in the Main Contract or any part thereof is assigned or disposed of without the consent of the Main Contractor or the Consultant being required and any such assignation shall be effective upon written notice thereof being given to the Main Contractor and to the Consultant. No other or further assignation of this Agreement, other than permitted by this Clause, by the Beneficiary or any other party shall be permitted. The Consultant shall not be entitled to assign or transfer any rights or obligations hereunder without the consent of the Beneficiary.

11 The Consultant undertakes that it will not raise as a defence to any action by the Beneficiary for alleged breach of this Agreement the fact that the obligations of the Main Contractor to the Beneficiary in respect of the services have been released as a result of the termination of the Building Contract.

12 No failure, approval, act or forbearance on the part of the Beneficiary in respect of any right of the Beneficiary pursuant to this Agreement shall constitute any waiver of any right of the Beneficiary under raising out of this Agreement nor relieve the Consultant of any of its duties or obligations under or arising out of this Agreement.

13 Any notice, consent or demand to be given or made by any party under this Agreement (hereinafter called a "Notice") shall only be validly served if In writing and delivered personally or sent by pre-paid first class recorded delivery post to the following address and marked for the attention of the following person in the case of each party:

| Party: | Address: | Person: |
|---|---|---|
| Beneficiary | Dalian House, 350 St Vincent Street Glasgow, G3 8YZ | Head of Board Administration |
| Main Contractor | 23 Hanover Square, London W1S1JB | Paul Serkis |
| Consultant | 87-91 Newman Street, London W1T3EY | Andrew Jackson |

Any party may by Notice to the other party/parties change its address or the title of the person for whose attention Notices are to be given or made pursuant to this Clause. Any such Notice shall be deemed to have been received:

13.1 if delivered personally, at the time of delivery;

13.2 in the case of pre-paid first class recorded delivery post, on the first Business Day after the date of posting.

If any Notice Is delivered after 5 p.m. on a Business Day, or at any time during a day which is not a Business Day, that Notice shall be deemed to have been received at 9 a.m., on the next Business Day. For the purposes of this Clause, "Business Day" means any day which is not a Saturday, a Sunday or a public holiday in Scotland. In proving service it shall be sufficient to

prove that the envelope containing such Notice was properly addressed to the relevant party and either delivered personally to that address or delivered into the custody of the postal authorities as a pre-paid first class recorded delivery letter. For the avoidance of doubt, Notices shall not be validly served if sent by email or fax.

14 No action or proceedings for any breach of this Agreement shall be commenced against the Consultant after the expiry of twelve years from Completion or earlier termination of the Consultant's employment under the Appointment.

15 The definitions of words and phrases used in this Agreement shall be those set out in the Appointment except where expressly defined in this Agreement.

16 This Agreement shall be governed by and construed in accordance with Scots Law and the parties hereto submit to the exclusive jurisdiction of the Scottish Courts.

IN WITNESS WHEREOF these presents consisting of this and the preceding 8 pages have been executed as follows:

**SUBSCRIBED** for and on behalf of the said **GREATER GLASGOW HEALTH BOARD** at

on the [ ] day of [ ] 2010:

..... AUTHORISED SIGNATORY

..... FULL NAME

..... AUTHORISED SIGNATORY

..... FULL NAME

**SUBSCRIBED** for and on behalf of the said **BROOKFIELD CONSTRUCTION (UK) LIMITED** at

on the [ ] day of [ ] 2010 by:

..... DIRECTOR

..... FULL NAME

before this witness

..... WITNESS

..... FULL NAME

..... ADDRESS

**SUBSCRIBED** for and on behalf of the said **NIGHTINGALE ARCHITECTS LIMITED** at

on the [ ] day of [ ] 2010:

..... DIRECTOR

..... FULL NAME

before this witness

..... WITNESS

..... FULL NAME

..... ADDRESS

## SCHEDULE 2

## DEFINITION OF SCOPE AND *SERVICES*

## SCHEDULE 2, PART 1

## DEFINITION OF SCOPE AND *SERVICES*

# Contract Data Part 1

## Schedule 2

## Part 1

# SCOPE OF SERVICES

## NEW SOUTH GLASGOW HOSPITALS (NSGH)

## Lead Consultant and Architect

## NIGHTINGALE ASSOCIATES

May 2010

# Table of Contents

1. Outline
2. Concept Design and Design Development
3. Construction Documentation and Construction Phase
4. Documentation Deliverables
5. Commissioning, Completion and Post Completion

# 1. OUTLINE

## Introduction

1.1 The New South Glasgow Hospitals (NSGH) Project consists of new adult acute and children's hospitals, new laboratories, energy centre, car parks and associated support facilities and infrastructure for the NHS Greater Glasgow and Clyde (the Client/Board).

The Project is located on the existing hospital site at the Southern General in Govan, Glasgow which is required to remain operational during the execution of the Works. The Project is to provide in the order of 175,000m2 of internal area comprising approximately 1,400 beds in addition to the development of the external spaces.

This Scope of Services excludes the new laboratory block and car parks (which comprises of the laboratories building and the FM facility to its rear), unless highlighted as otherwise.

1.2 The Services shall be the provision of professional labour, supplies, systems and other resources as necessary to design, specify, document, inspect (in regards to generally in accordance with the design) report and certify the architectural elements of the Works for the Project. The Services outlined herein are the basic scope of works specifically applicable for this Project and are completely allowed for in the initial total fee unless specifically noted as otherwise.

1.3 Key Performance Indicators (KPIs) – The quantitive KPIs for Stage 2 Works (leading to the Full Business Case) are defined in the Contract Data Part 1 Appendix 3 in addition to the Design Programme contained in Contract Data Part 1 Appendix 2 Schedule 3 and the Cost Plan referenced in the Building Contract. This Scope of Services represents the qualititive KPIs to be achieved by the Consultant.

1.4 The Architect is vested with the responsibilities inherent in the role of the Lead Consultant for the Project. To this end, the Architect is responsible for leading the timely coordination, cooperation, integration and liaison of the design and documentation work with other consultants, subcontractors, suppliers, authorities and other relevant parties/stakeholders to define clearly the design of the Project working within the Project costs, time and risk parameters. Some of the specific Lead Consultant tasks are highlighted below.

The Lead Consultant shall:

a) In conjunction with the Consultant's own design and documentation requiring to be coordinated and integrated with all relevant designs and advice from other consultants, subcontractors and the Statutory requirements, the Lead Consultant shall be responsible for the integration of the activities of the engaged and likely to be engaged consultants (as reasonably expected for a project of this type) to ensure that their design and documentation are coordinated. In other words, the Lead Consultant is to manage the sequence of design and documentation production including those by other consultants.

b) Represent the design team in all formal communications with the Employer in connection with the Project delivery.

c) Produce the Design Programmes (and Documentation Schedules as applicable) which must be coordinated with other consultants to identify the design documents to be provided, the allocation of resources and the release date for each document.

d) Monitor the design release against the Programmes and the performance of the other consultants to produce the information at the required time.

e) Ensure that the design and detail complies with the Statutory requirements and assist in the timely approval and certification.

f) Advise the Employer of any requirement more onerous than the Statutory requirements once known by the Consultant.

g) Ensure that all relevant submissions and amendments are submitted and assist in discharging the Planning consent reserved matters and other Statutory conditions of approval in sufficient time to obtain timely approval.

h) Manage that all of the approvals necessary for the Works required by the Employer from all Statutory Authorities have been obtained either by themselves or by other consultants as necessary.

i) Advise on the need for any Specialist consultants to the Employer in addition to those already engaged for the Project and if reasonably required, assist in their selection.

j) Instigate, prepare, chair and produce minutes of all design team meetings and advise the Employer with respect to the results thereof and any decisions, instructions or information required. In addition, the Consultant shall attend all other reasonable meetings requested by the Employer and/or the Board in relation to the Project.

k) Advise the Employer throughout the Project of any information which may be required from third parties including but not limited to from the Board, to enable the Project to progress.

l) Assist in achieving the WRAP ratings as required by the Employer.

m) Investigate and analyse value engineering and value management opportunities throughout the Project in respect to alternative designs, materials or products as examples including those proposed/specified by others. This is subject to the implementation timing of the value engineering proposal which may attract reimbursement for the redesign work to be discussed and agreed between the Consultant and the Employer on a case by case basis.

n) Establish and manage the documentation standard protocols such as the drawing templates and the like.

o) Manage the User Groups' consultations and sign off process taking into consideration the timescale constraints.

p) Liaise with the Employer and lead other consultants in assisting the achievement of the Full Business Case, the development of the total Project value and the subsequent design in compliance with the Cost Plan.

q) Assist the Employer (and its designate as applicable) by leading the consultants in contributing to, monitoring and managing the Project risk schedules, list of derogations and assumptions/clarifications associated with the design matters as reasonably required by the Employer.

r) Notwithstanding the generality of the foregoing, the Consultant shall carry out potential services which it is required to perform pursuant to the Building Contract and such other services as the Employer may from time to time reasonably require.

1.5 The Services are to be provided in the following Work Stages:

- Concept Design and Design Development
- Construction Documentation and Construction Phase
- Commissioning, Completion and Post Completion

Note: Notwithstanding the entry point to an individual scheme or design task, the Consultant is required to review all the previous information for the scheme made available in a timely manner

by the Employer in addition to those sourced by the Consultant and undertake the Services and lead other consultants in order to enable the Employer to complete the Works.

**Performance Standards**

1.6 The Consultant shall submit its Quality Plan for review by the Employer. The Consultant shall amend its Quality Plan as reasonably required by the Employer. The Quality Plan shall explain how the design and documentation work are to be planned to the standard specified in ISO 9001:2008 particularly the Section 7.3 and shall include:

- The design and documentation stages
- The review, verification and validation that are appropriate to each design and documentation stages
- The responsibilities and authority for design and documentation

The Consultant is to assist (where to be discussed and agreed) in reviewing and commenting on the Quality Plans (especially the Quality Inspection and Test Plans) from the subcontractors and suppliers as reasonably required by the Employer.

1.7 The Documentation (or Documents) to be provided by the Consultant shall be all that is required in order that the Project can be completed in the most time and cost efficient manner and shall include but not be limited to:

- Drawings (including 3D sketches as required)
- Schedules
- Specifications
- Working models, and other visualization presentation materials – this is subject to additional fees to be discussed and agreed between the Employer and the Consultant as the need arise
- Calculations and sketches
- Reports (including Progress Status)
- Certifications (including Compliance) in a format to be agreed between the Consultant and the Employer
- Meeting minutes, file notes etc.

1.8 Conform with the Project specific documentation protocols as updated from time to time by the Employer (or its designate) including the CAD parameters and electronic documentation transfer facilities such as the FTP websites or as requested by the Employer. The Consultant as the Lead Consultant will be required to set up and provide access to others, a FTP site should it be requested by the Employer.

1.9 In respect of all Work Stages, the Consultant shall:

a) Not used.

b) Ensure that it has the necessary skill and resources to provide the Services.

c) Take all necessary steps on an ongoing basis so that all persons engaged for the Services are properly qualified, competent and experienced for the size, scope and complexity of the Project.

d) Inform itself of the Project requirements by regularly consulting with other relevant parties and the Employer. Review all relevant documents and immediately inform the Employer (once becoming aware) of any apparent errors or ambiguities contained in such documents and make recommendations for the correction of such ambiguities.

e) Keep secure the Employer materials and documents and return them at the end of this Appointment.

f) Strictly remain within the scope of the authority granted by the Employer and not act beyond its authority or hold out that it has authority beyond this Appointment.

g) Seek the Employer's prior consent to any proposed sub-letting and notify the Employer should the need arise to employ an outside agency and/or self employed staff.

h) Comply with all policies relating to the use of the Employer office premises and facilities when using them as made aware to the Consultant.

i) Permit the Employer to carry out agreed and scheduled visits to the Consultant's business premises in connection with the Services.

j) Keep proper commercial records and accounts for any claims it makes on the Employer including if applicable, for reimbursement of expenses and remuneration of fees based on time charged billing and permit the Employer auditors to inspect such records and accounts.

k) Not used.

l) Liaise and cooperate with the other consultants employed (and likely to be employed as reasonably expected for a project of this type) by the Employer for the purpose fulfilling its obligation that the Project shall be designed in compliance with the Project requirements.

m) Manage the coordination and sequence of design work tasks.

**Performance Obligations**

1.10 The Consultant is to ensure that:

a) The Services shall be carried out using proven best up-to-date practice and to appropriate standards (having regard to the nature of the Project).

b) The Services and all Documentation comply with the requirements of Planning consent for the Project and with all Statutory Authorities requirements and regulations and with all other legislation applicable to the Services and/or to the Works.

c) The Services and all Documentation comply with all specific standards contained in this Appointment. If no such standards are stated in this Appointment and if they cannot be reasonably inferred from the Project Documents, the standards shall be those required by relevant British Standards and/or UK Building Regulations and/or any relevant applicable legislation and/or relevant local Statutory Authority requirements.

d) The Services and any Documentation prepared by the Consultant in relation thereto shall comply with and meet the requirements of the consented Planning submission, the Employer's Requirements and the Contractor's Proposals.

e) Not used.

f) All Consultant's Documentation and any other documentation included within the ambit of the Services are progressively submitted to the Employer by the agreed dates specified in the Programme or if no dates are specified, in accordance with the progress of the Works and the Employer's reasonable requirements.

g) All drawings that are produced as part of the Documentation are to be computer generated and capable of being transferred into 'tiff', 'pdf, and 'dwg' formats or other format approved

by the Employer. The Consultant shall send and receive written correspondence, drawings, schedules and specifications and any other relevant documentation by a controlled web based document management system (Aconex) in accordance with the rules and procedures (updated from time to time) as provided by the Employer.

h) Specifications as referred to in the definition of Documentation shall be A4, double sided and comprising of two bound copies and one copy on a portable memory storage device. The Consultant shall also upload one copy onto a web based document control system (Aconex). The specifications shall be in full compliance with the Project requirements and shall be complete and coordinated with all other consultants in a format agreed with the Employer. The specifications shall be in the NBS formats that are capable and suitable for the Employer to invite tenders for the various packages of work and for the subsequent construction and completion of the Project. The specifications shall also incorporate, but not be limited to, materials, finishes workmanship and quality standards and other items as may be reasonably required by the Employer.

i) Not used.

j) The Consultant's design and documentation specifying the materials and its method of use, fixing or working must not infringe any patent, registered design, copyright or other protection rights.

k) The Services include reviewing and commenting on relevant temporary works as reasonably requested by and agreed with the Employer in completing the Project.

l) The Consultant shall send, receive, review and comment on architectural information in relation to O&M manuals which may be by a controlled web based management system.

m) The Consultant provides advice and documents as reasonably required to assist the Employer in the maintenance of the building to ensure whole-life costs are minimised.

n) The Consultant provides information as requested by the Employer for use by the Building Owner, Funders, Facilities Manager, Operators and the like. The level of such information to be reasonably agreed between the Consultant and the Employer on a case by case basis.

o) The Consultant coordinates, incorporate and document all fire protection and acoustic treatment measures in respect to the architectural elements in consultation with the Fire Engineer and Acoustic Engineer respectively to satisfy the Statutory Authority requirements.

p) The Consultant proactively endeavours to maximise the BREEAM rating of the Project and develop energy efficient strategies.

q) The Consultant evaluates, design, specify and document Secure by Design and the like.

r) In reference to CDM 2007 Regulations and in particular Regulation 11, the Consultant shall produce information to the Employer, other Designers and (sub)Contractors in respect to the residual design risks and where possible this information shall be included in all Documentation especially the drawings issued by the Consultant.

s) The Consultant submits evidence of competence to comply with the CDM 2007 Regulations as per Regulation 4 and as set out in Appendix 4 of the Regulations.

t) In providing the Services, the Consultant shall aim to minimise any adverse impacts that construction has on the environment. This shall be through the design process, materials selection, construction techniques and operational methods. Specific information on the Employer's policy which the Consultant is required to comply is set out in the Environmental Policy Statement (as set out below).

The Consultant shall work towards to reduce waste and use materials efficiently and proactively assist in reaching the Employer's objective as outlined in the Waste Policy Statement (as set out below). The Consultant shall support this Policy by:

- Assist in developing the Site Waste Management Plan from an early design stage, including waste forecasts and data on reduction targets and actions.
- Assist in implementing the Site Waste Management Plans throughout the design and construction period that comply with the applicable Regulatory requirements and include in such Plans project-specific targets for waste recovery and reused and recycled content and for waste reduction;
- Identifying methods to reduce waste and waste to landfill and increase reused and recycled content, throughout the duration of providing the Services and report to the Employer. In this regard, the Consultant shall use site waste management software nominated by the Employer which shall be WRAP's Designing out Waste Tools or Net Waste Tool (accessible at www.wrap.org.uk/nwtool) unless notified otherwise;
- Work with the Project team to ensure that design actions to reduce construction waste and increase reused / recycled content are implemented;
- Agree with the Employer which level of waste reduction and reuse to pursue.

Note: The Consultant should refer to the WRAP Designing out Waste guidance to identify, prioritise and implement ways of meeting Project targets for waste.

# BROOKFIELD CONSTRUCTION (UK) LTD

# ENVIRONMENTAL POLICY STATEMENT

This policy statement is valid from May 2010 to 31st December 2010.

## Introduction

Brookfield Construction (UK) Ltd is focused on the construction of significant landmark projects. Our overall mission is to build high quality construction projects using materials and processes that respect the environment.

We firmly believe that the delivery of high quality construction projects requires active consideration of the environmental and social impacts associated with construction. High standards of environmental performance in these areas can also deliver benefits to the environment, society and economy.

## Environmental Policy

At Brookfield Construction (UK) Ltd, our aim is to:

- Work to prevent pollution and minimise the overall impact of our activities on the environment, from the sourcing of our materials to the recycling and disposal of wastes.
- Make more efficient use of energy and natural resources and minimise emissions and waste, focusing on those activities which have the most significant impacts.
- Comply with applicable legal requirements and other requirements to which Brookfield subscribes which relate to its environmental aspects. Such requirements include WRAP's (Waste & Resources Action Programme) initiative for "Halving construction waste to landfill", BREEAM, Considerate Constructors and Considerate Contractors in London.
- Apply environmental management practices across the business which protect and enhance our reputation and meet the expectations of our stakeholders.
- Pursue continual improvement in our environmental performance.

In order to deliver this aim we will:

- Implement a formal Environment Management System.
- Provide information and training to enable environmental impacts and opportunities to be identified, prioritised and managed effectively.
- Promote joint consultation with employees, contractors, the Environment Agency, Environmental Health Officers and other relevant organisations.
- Work proactively with the local communities in which we operate.
- Set environmental objectives and targets relevant to our significant environmental aspects and monitor our progress against these; year on year.

## Organisation and General Responsibilities

The UK Health and Safety Manager and UK Environmental Advisor are responsible for environmental issues and report to the Brookfield Europe Safety Director. Environment, Health and Safety Managers are allocated to projects and report to the Project Director whilst retaining a functional reporting link to the UK Health and Safety Manager.

Detailed descriptions of our organisation and responsibilities are available in the Environmental Management System which is integrated with the Health and Safety Management System. This integrated system forms a part of a larger suite of documents which also includes the Quality Management System. This larger system is referred to as "CoSHEQ". This document is available on the Brookfield Europe Intranet, which is accessible to all employees.

**Brookfield** **Environmental Policy Statement** UK/EHS/F/001a rev 07

**Arrangements**

*Management Systems*
The Environmental Management System sets out through Procedures, Forms, Risk Registers, Management Plan Templates and Best Practice Standards (the "Supervisors Manual") the way in which environmental issues are managed on our projects.

*Sustainability Strategy*
Our appointed designers are required to meet the guidance given in the Brookfield Europe Sustainability Strategy.

*Third Party Certification*
The company is third party certified to ISO 14001:2004 Environmental Management Systems.

*Code of Conduct*
The behaviour expected from Brookfield employees and our subcontractors is set out in our Code of Conduct. Copies of this are displayed on notice boards at Head Office and at each project.

This document is available to the public on the Brookfield Europe website and is communicated to all employees.

**12 month objectives January 2010 to December 2010 for Environment and Sustainability**

- As signatories to WRAP's initiative for halving construction waste to landfill by 2012, taking 2009 as the baseline year, we will take measures to divert construction waste from landfill sites.
  **Target** – For construction, demolition and excavation waste corporate targets see our Waste Policy Statement

- Promoting the ethical and environmentally sustainable management of the world's forests we will endeavour as far as practicable to only use FSC-certified timber products on all our projects.
  **Target** – Publish percentage of FSC-certified timber employed on our projects

- In order to reduce our environmental impact we will reduce the amount of our office waste going to landfill. A new office waste management strategy will be introduced and implemented in 2010 that will involve segregating recyclable waste at source and phasing out individual desk bins.
  **Target** – 90% of all office waste to be diverted from landfill and relevant data to be published

[redacted]

Ashley Muldoon
Managing Director
Brookfield Construction (UK) Ltd
May 2010

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# BROOKFIELD CONSTRUCTION (UK) LTD

## WASTE POLICY STATEMENT

**Scope**
This Policy Statement applies to Brookfield Construction (UK) Ltd for 2010 and must be read in conjunction with the Brookfield Construction Environmental Policy Statement.

**Introduction**
Brookfield Construction (UK) Ltd is focused on the development, construction, management and ownership of significant landmark projects. In all of its development work, Brookfield aims to minimise any adverse impacts that construction has on the environment. We seek this through the design process, materials selection, construction techniques, and operational methods.

From 2010 all organisations appointed to work on our behalf are required to work in accordance with these principles.

**Achievements**
We have set waste targets since 2007. Each year the target for recycling has been increased as follows:

2007 to recycle 70% waste concrete, bricks and ceramics over the course of a project and 50% of general waste over the course of a project.

2008 and 2009 to recycle 80% of construction waste (combined Construction, Refurbishment, Demolition and Excavation).

The company has succeeded in meeting these targets.

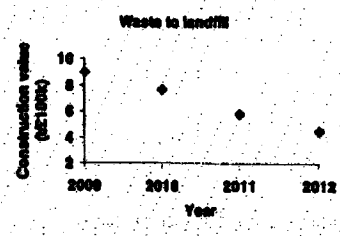
**The WRAP Initiative**
Committed to continual improvement in 2009 Brookfield Construction (UK) Ltd became a signatory to the "Halve waste to landfill by 2012" initiative for the construction industry of the Waste and Resources Action Programme, (WRAP) a government-backed body set up to facilitate waste minimisation in the UK. There are two strands to this commitment:

1 To generally reduce the amount of waste generated from a construction project by exploring possibilities in design and procurement.

2 Following on from this, to increase the percentage of residual waste that is recycled.

WRAP proposes that waste data is measured against each £100k construction value[1]. This will then capture both reductions that are obtained from design and procurements in addition to the residual waste figures.

**The Baseline Year: 2009**
To meet the WRAP Commitment, Brookfield Construction has selected 2009 as its baseline year. The WRAP typical figure for waste sent to landfill was 10 tonnes per £100k and the Brookfield Construction target waste figure to be sent to landfill was 9 tonnes per £100k.




**Our target for 2012**
Brookfield Construction will set a 2012 target of 50% of the 2009 target. This is 4.5 tonnes per £100k.

The targets for 2010 and 2011 will be based on a linear progression from 2009 through to 2012.

[1] Construction value is the price in the accepted tender or, if there is no tender, the cost of labour, plant and materials, overheads and profit.

**Brookfield** **Waste Policy Statement** UK/EHS/F/001c rev 01

We will work to adopt and implement standards for good practice in reducing waste, recycling and reusing more. This will support national policy goals e.g. halving waste to landfill by 2012, adopted in England by the Government's Strategy for Sustainable Construction and Zero Waste in Scotland, and will be achieved by reducing waste, recovering more materials and using more recovered material in new construction.

**Policy**
Any contractual and client requirements will be taken into account to form the project-specific requirements, but as a minimum on projects commencing in 2010 our design and construction project teams will be required to:

- forecast waste quantities and waste recovery and set targets for waste reduction from an early design stage (for instance by using WRAP's Designing out Waste Tools and Net Waste Tool[2] or the Building Research Establishment's SMARTWaste benchmark calculator[3]).
- before starting on site, the project team shall submit a copy of the Site Waste Management Plan identifying the actions to be taken to reduce waste and increase recovery, as well as the corresponding roles and responsibilities, and quantifying the resulting changes.
- implement Site Waste Management Plans throughout the design and construction period that comply with regulatory requirements and include in such Plans project-specific targets for waste recovery and for waste reduction.
- where there is sufficient space the project teams should plan for and implement waste segregation on site. Otherwise the volume of waste that is recovered will be maximised by using third party contractors.
- measure and report progress against the corporate targets for the quantity of waste produced and the quantity of waste sent to landfill (in tonnes per £100k construction value). The information will be annually reported on the WRAP Waste to Landfill Reporting Portal[4] and guidance.
- on completion of the Works, the project team shall submit a copy of the completed Site Waste Management Plan, reporting the forecast and actual performance for waste quantities, disposal routes, and reused and recycled content used in construction.

**Target for 2010**
- recover at least 83% of construction materials demolition, strip-out and excavation materials.

[redacted]

Ashley Muldoon
Managing Director
Brookfield Construction (UK) Ltd
May 2010

*This policy statement is valid from May 2010 to 31st December 2010.*

[2] The Designing out Waste Tools for Buildings and for Civil Engineering and the Net Waste Tool are freely accessible at www.wrap.org.uk/nwtool

[3] The SMARTWaste Plan is freely accessible at http://www.smartwaste.co.uk/swmp

[4] Accessible at www.wrap.org.uk/reportingportal

**Meetings**

1.11 The Consultant shall:

a) Attend and issue records of the design team meetings and workshops for those in relation to the design, construction and co-ordination as required by the Employer. Attend value engineering and risk management meetings throughout the duration of the Project.

b) Attend construction site meetings and subcontractor meetings as reasonably required by the Employer. Attendance may be required for factory visits and design and or construction meetings at off site locations. Travel and associated expenses within the UK are generally allowed for by the Consultant. However, the travel costs outside the UK if required to be agreed between the Consultant and the Employer on a case by case basis.

c) Attend and issue records of the design meetings with other consultants as necessary to integrate, coordinate and clarify the Works during the Project as reasonably required by the Employer.

d) Attend and issue records of the meetings with Statutory Authorities as reasonably required by the Employer.

e) Attend and issue records of the meetings with the Employer as reasonably required on all relevant Project design related issues.

f) Provide draft minutes for all of the above meetings, workshops and the like as reasonably required for review by the Employer or distribute as requested by the Employer.

**Reports**

1.12 The Consultant shall:

a) Provide periodic status reports (monthly or to be agreed with the Employer) in a form reasonably required by the Employer which shall include as a minimum, a summary documenting the progress of the Services against the Design Programme and Documentation Schedules. Highlight areas of difficulty being experienced with progress of the Services, design co-ordination issues, Statutory Authority approvals status and the like including the proposed mitigating measures.

b) Undertake site inspection as reasonably required or as requested by the Employer. Provide defects and non conformance reports in relation to the construction works when requested by the Employer in a workable electronic format including photographs.

c) Prepare report or documentation required for the assessment of design alternatives and in contemplation of envisaged change to the Project requirements that has impact on the architectural elements as reasonably requested by the Employer.

d) Provide reports and information to reasonably assist the Employer in its preparation of application for payment and in the settlement of the final account.

e) Progressively compile and provide design risk registers in reference to the CDM.

f) Not used.

g) Not used.

h) Provide draft reports for all of the above as reasonably requested for review by the Employer prior to the formal issue.

**Certification**

1.13 On a periodic basis or when requested by the Employer in agreement with the Consultant, provide a progress certification that the design and documentation work done to that period is in accordance with and complies with the Project requirements such as the Employer's Requirements, the Cost Plan, the Programme, Contractor's Proposals and with all relevant Statutory Authority requirements.

**Authorities**

1.14 The Consultant shall:

a) Liaise with the Employer, other consultants and all relevant Statutory Authorities for the purpose of ensuring that the design complies with all Planning consent conditions.

b) Liaise with the Employer, other consultants, and others involved in the Works, including without limitation the CDM Coordinator, subcontractors and all relevant Statutory Authorities for the purpose of ensuring that the design complies with all relevant Statutory Authority requirements and for obtaining all necessary permits and approvals. Incorporate all relevant Statutory Authority requirements into the design and documentation.

c) Advise on the need to obtain further Planning permissions, Building Regulation approvals and any other Statutory approvals and prepare all necessary architectural associated applications for consideration by the Employer.

d) Liaise with other consultants who are the lead in dealing with all relevant utility companies, service providers and others involved in the identification, relocation and modification of utility services affected by the Project.

e) Prepare coordinated Documentation in conjunction with other consultants for submission to the relevant Authorities. All such Documentation is to be discussed with the Employer prior to submission to the Statutory Authority.

f) Revise and re-submit submissions to the Planning Authority as required where the development of the design has varied from the original Planning consented scheme which may be subject to additional fee to be discussed and agreed between the Consultant and the Employer. Amend Documentation in conjunction with other consultants for resubmission to other relevant Statutory Authorities arising from any directives, requirements or comments from the Employer or Statutory Authorities including those on the previous submissions.

g) Assist in the review of all relevant Planning Authority approvals and conditions and in the preparation of schedule/checklist for review by the Employer to monitor timely discharge of all conditions.

h) Liaise with all relevant Authorities for expeditious approval and attend all meetings as reasonably required by the Employer. Update and amend documentation in conjunction with others as required, to obtain all regulation modifications, approvals and permits.

i) Highlight opportunities to the Employer in respect to alternative means of achieving the Statutory compliance for the benefit of the Project including waivers, relaxations and dispensations. Where requested by the Employer, negotiate the same with the Authorities. Should this task be considered as extensive, additional fee may be applicable for which the Consultant and the Employer are to discuss and agree on a case by case basis.

j) Revise documentation as necessary to reflect the outcome of the negotiations with the Statutory Authorities subject to the timing of this outcome. Otherwise, the Employer and the Consultant are to discuss and agree on potential additional fee on a case by case basis.

k) Reasonably assist the Employer with any relevant tests and inspections required by the Statutory Authorities and in obtaining all permits, approvals and certificates required for the lawful use of the Project.

l) Complete all relevant certificates associated with the Services as and when required by the Employer and liaise with Statutory Authorities for the purpose of assisting in obtaining staged building permits and other approvals.

m) Prepare design certification (in a format to be reasonably agreed between the Consultant and the Employer) necessary for the completion of the Project and/or the granting of relevant Statutory Authority for Completion, occupancy and title.

n) Review all relevant Building Regulations approvals and conditions. Prepare a schedule/checklist for review by the Employer to monitor timely discharge of all conditions.

**Architectural Design Elements**

1.15 The Services are required for the following elements of the Works, as examples:

- Building outline including concrete outline, slab soffit profiles, formed penetrations, walls, columns, beams. The primary set out of all structural elements in consultation with other consultants
- Not used
- External cladding including façade, precast, windows, louvres, screens and doors
- External building maintenance units and fall protection systems
- Roofing including canopies
- Masonry, brickwork and blockwork
- Plasterboard wall linings and wall systems including shaftwalls
- Internal walls and partitioning systems including operable walls
- Ceilings including bulkheads, access openings (as defined by others) and setting
- Glazing including the aluminium glazing and doors
- Roller shutters, screens, steel doors and internal fencing and gates
- Toilet finishes including the partition systems and toilet accessories
- Doors, frames and ironmongery including master keying
- Architectural metalwork including handrails, balustrades and security barriers
- Granolithic and stone flooring and walls including marble and granite finishes
- Floor finishes including the raised flooring, carpet and the resilient flooring such as vinyl, epoxy and other special floor coatings
- Tiling including wall and floor
- Window treatments
- Joinery
- Painting and decorating
- Signage (illuminated and non-illuminated) including statutory, operational and wayfinding
- Not used

- Fire strategy and acoustic treatment documentation
- Interior fit out design including lift car finishes
- FF&E layouts and elevations for each exemplar room type in addition to standard wall elevations for the remaining rooms
- Sundry fittings
- Artwork integration

# 2. Concept Design and Design Development

## Overview

2.1 It is a fundamental requirement that all Documentation produced during the Concept Design and Design Development stages are in full compliance with the parameters of the Project requirements such as the Planning consents, the Employer's Requirements, the Cost Plan and the Programmes as these may be amended from time to time (the Programme to be the version as agreed between the Consultant and the Employer).

2.2 The Design Development stage involves the development of the Concept Design and enables the tendering and construction of the Project to be executed, particularly for the enabling works and the early release packages. Consequently the particulars highlighted below require the Consultant to undertake iterative Services and revisit the work carried out under Concept Design which must be amended or otherwise.

## Tasks

The Consultant shall:

2.3 Supplement Project details provided by the Employer by sourcing relevant information about the Site as reasonably expected from the Consultant. Based on these documents make appraisals and establish constraints for the Works.

2.4 Seek clarification or direction on Project requirements as necessary from the Employer.

2.5 Visit site in addition to as requested reasonably by the Employer.

2.6 Contribute to site appraisals and surveys and (re)evaluate Project requirements including the preparation of options/recommendations for consideration by the Employer highlighting advantages and disadvantages (financial and technical) and where relevant any long lead-in procurement building elements.

2.7 Evaluate proposed amendments to the Project requirements and advise the Employer on options for development of the design having regard to the effect on the Employer's Requirements, the Cost Plan, the Programme and any other relevant Statutory Authority requirements.

2.8 As when requested by the Employer, provide a Documentation Schedule for review by the Employer. This Documentation Schedule shall support the Full Business Case timeline, the Employer's tender letting schedule and construction programme and shall set out the Documentation to be produced by the Consultant including the sequence and the dates for the production of same.

2.9 Update or amend the Documentation Schedule in consultation with the Employer. Complete/populate the master documentation matrix if utilised by the Employer. This matrix indicates to which tender package each of the Consultant's documents relates to.

2.10 Provide assistance and support the Structural Engineer, the Mechanical and Electrical Engineer and other consultants in the preparation, design, specification and installation details of their respective discipline.

2.11 Prepare the Documentation incorporating the structural, services and other consultants' requirements and/or information into the architectural design having regards at all times to the Planning constraints, the Employer's Requirements, the Cost Plan and the construction programme. In conjunction with the other consultants, establish all relevant Statutory Authority requirements and incorporate into the design.

2.12 Prepare design studies as discussed and agreed with the Employer and make presentations to the Employer. The Consultant shall take account of any comments from the Employer and amend the Documentation as necessary. The Consultant shall also consult with local or other Statutory Authorities and with other interest groups as reasonably required by the Employer.

2.13 In accordance with the agreed Documentation Schedule, prepare and submit to the Employer in accordance with the Programme, the adequately coordinated and progressed design and as the Lead Consultant for the specific design responsibilities, coordinate tasks and submissions from other consultants. Note: all CAD drawings are to be at an appropriate scale as reasonably required by the Employer.

2.14 In conjunction with the other consultants, develop the design incorporating the design solutions and where required, provide documentation for submissions to the relevant Statutory Authorities including for the discharge of Planning consent conditions and/or to seek conditions of approval for Building Regulations compliance.

2.15 Liaise with other consultants and coordinate the provision of information and data as reasonably required by the Cost consultant and the Employer for use in connection with the Cost Plan.

2.16 Prepare and provide Documentation in respect of alternative designs and/or construction solutions for the purpose of value engineering and reviewing costs. Repeat the process as instructed by the Employer to ensure that the construction costs remain within the Cost Plan.

2.17 Assess and provide comment on alternatives offered by the Employer, its subcontractors and suppliers. Provide design details and information as required by the Cost consultant in pricing options / alternatives. Develop and amend the design as required to ensure the design remains within the Cost Plan.

2.18 Provide studies and information on maintenance, lifecycle and other costs for the Project as reasonably required by the Employer.

2.19 Assist the Employer in the preparation of Scope of Work packages on a trade by trade basis for inclusion in subcontract and supply procurement.

2.20 Prepare and issue drawings, specifications (in NBS format), schedules and the like as required by the Employer for market testing, tender and costing purposes.

2.21 Prepare internal and external finishes schedules, sample boards, source mock-ups as appropriate, perspectives, computer generated images, models and other presentation materials as reasonably required by the Employer to illustrate the proposed design.

2.22 Assist in the development and finalization of the Schedule of Accommodation (SoA) for the Full Business Case (FBC). After the FBC, maintain and update the SoA by undertaking the necessary calculations of the floor areas such as the gross and net highlighting the clinical department, plant, circulation, support facility etc spaces including any variances from the Project requirements.

2.23 Review and comment on the temporary works in relation to such activities as the crane locations, materials handling areas, storage and compound areas and the like insofar as it being associated with the architectural design.

2.24 Regularly review the design against the Project requirements including the Employer's Requirements and all relevant Statutory Authority requirements and immediately notify the Employer of any non-compliance together with associated remedial recommendations.

2.25 Prepare and issue a coordinated set of Documentation for these design stages in a report format to be agreed with the Employer. The Documentation shall be dimensioned at suitable scales - Drawings and schedules (as applicable) to indicate all penetrations greater than 100mm diameter area, setdowns, rebates (as coordinated with others) and builders work in connection details including coordination information such as the overlay drawings as requested by the Employer.

# 3. Construction Documentation and Construction Phase

## Overview

3.1 This Work Stage shall be the Construction Documentation and Construction Phase of the Project. This Work Stage continues from the Concept Design and Design Development Work Stage and shall enable the remaining tendering and construction of the Project to be progressed. This Work Stage is undertaken in conjunction with the ongoing design development tasks as identified on the Programme. Consequently all items scheduled below are a continuation of and are in addition to the items scheduled in the Design Development (and where necessary, Concept Design) Work Stage(s) and to the extent that any of the Services carried out under Design Development (and where necessary, Concept Design) must be amended or otherwise, such work shall be deemed to be part of/concurrent to this Work Stage.

3.2 It is a fundamental objective of the Employer that all Documentation produced during this Work Stage is suitable for properly constructing the Project and shall fully reflect the developed design in full compliance with the parameters of the Project requirements such as the Planning consents, Employer's Requirements, the Cost Plan and the Programme as these may be amended from time to time, especially the construction programme.

## Tasks

The Consultant shall:

3.3 Receive further Project details and requirements from the Employer if any and together with other relevant information sourced by the Consultant as reasonably expected from the Consultant, make further appraisals of Project constraints.

3.4 Evaluate proposed amendments to the Project requirements and advise on options for consideration by the Employer having regard to the effect on the Employer's Requirements, the Cost Plan, the Programme and any other relevant Statutory Authority requirements

3.5 Visit site in addition to as requested reasonably by the Employer.

3.6 As when requested by the Employer, update and issue the Documentation Schedule for review by the Employer. The Documentation Schedule shall be consistent with the Employer's construction programme and shall set out the Documentation to be produced by the Consultant including the sequence and the dates for production of same.

3.7 Liaise with other consultants to provide integrated and coordinated design information and data as required by the Employer to comply with the construction programme to assist in ensuring that there is no delay in providing information to subcontractors or in constructing the Works.

3.8 Update or amend the Documentation Schedule as required by the Employer. Update the master documentation matrix in a format requested by the Employer.

3.9 Produce update of the Documentation Schedule at agreed intervals or at other times as reasonably required by the Employer, showing the Consultant's actual and proposed delivery against the programmed issue dates for each Documentation including the details of the mitigation measures.

3.10 Provide Documentation in accordance with the Documentation Schedule. All Documentation to be in compliance with the Project requirements. The Documentation shall be suitable for inviting tenders from trade subcontractors and updated to provide adequate details to allow each design element to be constructed which must for example, take due regard of good health and safety practices, buildability requirements such as construction sequencing and access and construction tolerances.

3.11 Provide support to the Employer in reviewing all relevant subcontractors and/or suppliers' tender returns and submissions of samples and technical data in respect of compliance with the Project requirements.

3.12 Evaluate alternatives proposed by the trade subcontractors and in conjunction with other consultants, coordinate and integrate all such preferred alternatives into the Documentation as instructed by the Employer.

3.13 In conjunction with the other consultants, review and comment on all shop drawings, specifications, prototypes, samples and technical data submissions and other information prepared by potential and/or engaged subcontractors or suppliers for compliance with the Project requirements. Provide such comments within 7 days of receipt. However, the Consultant shall endeavour to review, comment and return such submissions earlier should the specific need arise as to be discussed between the Consultant and the Employer.

3.14 Review and comment on the documentation of other consultants and subcontractors within 7 days of receipt and ensure that all Consultant's Documentation is fully updated where necessary. However, the Consultant shall endeavour to review, comment and return such submissions earlier should the specific need arise as to be discussed between the Consultant and the Employer.

3.15 Notify the Employer in writing for any amendments or additions/deletions in the Documentation which may increase the cost of construction and/or whole life cost of the Project.

3.16 Redesign any aspects of the work that falls outside the Cost Plan allowances or as proposed by the Employer as instructed.

3.17 Provide updated, coordinated and dimensioned drawings at suitable scales in a timely manner including coordination information such as the overlay drawings as requested by the Employer. The Consultant is to review and comment on design information in relation to the temporary works required to construct the Works.

3.18 Produce supplementary documentation as may be required by the Employer to clarify the Documentation during construction, including issuing sketches, details, clarifications, further Documentation, investigating site based construction issues related to the Documentation and preparing and issuing design solutions in conjunction with other consultants where applicable. Such supplementary documentation to be issued so as not to delay the progress of the construction works.

3.19 Provide Construction Documentation ("For Construction") drawings incorporating all information issued as advices or sketches so that the latest information is shown on the Documentation to be used for construction. All Documentation must be completed and issued in compliance with the Programme and with the general progress of the Works to ensure that such progress is not delayed and/or disrupted.

3.20 Issue updated drawings, specifications, schedules, details and other design information as the Employer may require.

3.21 Revise and resubmit Planning consent submissions to the Planning Authority as required where the progressed design has varied from the original permit approval.

3.22 Regularly check the Documentation against the Project requirements such as the Employer's Requirements all relevant Statutory Authority requirements and immediately notify the Employer of any non-compliance together with associated remedial recommendations.

3.23 Assist in the updating of design and construction programmes as required by the Employer.

3.24 Respond to all correspondence including (but not limited to) Requests for Information within 5 days. However, the Consultant shall endeavour to review, comment and return such submissions earlier should the specific need arise as to be discussed between the Consultant and the Employer.

3.25 Undertake any off-site inspections reasonably requested by the Employer. Travel and associated expenses within the UK are generally allowed for by the Consultant. However, the travel costs outside the UK if required to be agreed between the Consultant and the Employer on a case by case basis.

3.26 Review mock-ups and samples for compliance with the Project requirements such as the Planning consent and the Employer's Requirements and recommend benchmarks for finish and workmanship with the Employer in respect of subcontractors, suppliers and manufacturers.

3.27 Undertake regular inspections of the Works and provide report on same to the Employer in addition to the defects inspections as required by the Employer. Provide inspection reports and attend re-inspections as required. Defect inspections of the Project may commence well before the Completion. Ensure dedicated resources to any reasonable defects inspection / sign off procedure required by the Employer.

3.28 Prepare documentation for a marketing and display facilities as appropriate for the Project or as reasonably required by the Employer.

# 4. Documentation Deliverables

## Overview

4.1 The Employer intends to engage specialist subcontractors for the following trades to design (For Construction details only) and construct that part of the Works. Some of these are early release packages. For these trades, the Consultant is to provide documentation as relevant to each particular discipline that outline the design intent and the performance requirements from which the subcontractor(s) will prepare their construction design (ie. shop drawings):

- Piling
- Structural steel (connection design only)
- Architectural precast concrete
- Major building (M&E) services
- Medical gases
- Lifts and escalators
- Unitised curtain wall system
- Special/feature glazing such as the entrance glass doors and canopy
- Courtyard cladding including ribbon windows
- Podium (rainscreen) cladding
- Plantroom cladding
- Louvres
- ETFE roof coverings
- Glass roof structures
- BMU/Cleaning cradle and gantry systems
- Robotics

The Lead Consultant for a given package (refer to the Design Consultant Responsibility Matrix) is to coordinate with other consultants in reviewing the design by these specialist subcontractors and confirm that they are acceptable for coordination with the Services and that the design intent and performance specification has been satisfied.

4.2 The level/extent of the design information to be shown on the Consultant's documentation must be adequate and capable of being constructed on site. For example: The Architect as the Lead Consultant shall manage the coordination and document the set out of all critical building elements of the Project. This includes but is not limited to the following:

- All formed penetrations over 100mm.
- All visible services elements on walls and ceilings.
- All required movement joints and construction joints

Reflected Ceiling Plans shall include as a minimum the following details:

- Ceiling types and reduced levels
- Acoustic and fire rating treatments as required

- Setting out of movement joints
- Setting out of bulkheads
- Coordinate setting out of all lights, air conditioning / ventilation registers, speakers, smoke detectors, sensors, sprinkler heads, nurse calls and the like
- Setting out of mounted linear bar grilles
- Cross referencing to relevant other drawings and details

Floor Plans shall include as a minimum the following details:

- Architectural layout including furniture, fittings and equipment layout
- Space/room names and number
- Reference tags linked to relevant drawings and schedules
- Reference tags for all wall types linked to wall type details
- Door numbers and swings
- Cross reference to relevant enlarged plan and section details
- Setting out of external cladding
- Setting out of walls, nibs and door openings
- Setting out of wall and floor services points
- Setting out of floor finishes

**Documentation**

4.3 The Documentation Deliverables shall be coordinated with other consultants and other relevant parties prior to issue.

In addition to the above, please note the following general principal requirements:

a) Drawings are to be prepared in a digital form on standard A size sheet (ie. A0, A1, A2, A3). Drawings are not to be any larger than the A0 size.

b) Building Orientation: North to top of sheet, part floors details to be drawn with North to top of sheet – in case where the Consultant consider this to be impractical, the Consultant is to advise the Employer with alternative recommendation(s) as necessary. North arrow must be shown on the drawing title block with a key plan to enable orientation.

c) Each Documents must contain/show:

- Unique document number
- Full title with no abbreviation
- Drawn (or prepared) by and checked by – sign offs
- All details to have scale identified for each
- Denote full (sheet) size
- Changes from the previous drawing revision are to be numbered individually and highlighted with a bold cloud. Once the drawing is revised again, these clouds will be removed and new/latest clouds added to highlight the new drawing amendments

- Detailed description of the change(s) under each number with a date in the title block (to match the cloud number) so that the change(s) can be easily understood from the previous issue
- All documents to be prepared in black and white and not colour unless advised otherwise by the Employer
- The orientation of all drawings when submitted electronically shall be checked that they are landscape and uploaded in the correct orientation (e.g. not scanned upside down)

d) The text on all Documents including the drawings shall be in UK English. All dimensions shall be given in metric format. Calendar dates shall follow the Day/Month/Year format.

e) When revising a document, such as specifications, the full version is to be issued (ie. do not issue just an addenda/extract of the pages that changed).

f) Revisions to text documents will have the revised text in bold and italics (***this is an example***). Text that has been deleted will be in italics and struck through (~~*another example*~~). The Table of Contents shall also highlight in bold italic sections modified. Revised text highlighted must be removed by the Originator prior to issuing the next revision or prior to issuing a document For Tender/Contract and For Construction purposes.

g) Text documents will be prepared on standard A4 size sheets. All text documents will have a title page displaying the relevant information. Each page of the document must show (as a minimum) - document number and its revision, the page number and the total number of pages (ie. page X of Y).

4.4 The following sample list of documents for the architectural design as provided by the Consultant indicates the level of design documentation proposed. However, the Consultant shall provide agreed additional documentation which is not listed below which would be required by the Employer to construct the Works in addition to the Design Development and Overall Design Document Deliverables required by the Board as listed under Appendix K of the Building Contract which includes those Deliverables required in advance of (Stage 2) Full Business Case:

| Drawing No. | Description / Title | Scale | Size |
|---|---|---|---|
| | **Appendix K Deliverables** | | |
| | Architectural NSGH Outline Specifications | | |
| | Architectural NSGH Specification Schedules | | |
| | Departmental Relationship Drawings for all levels | 1:500 | |
| | General Arrangement Plans – Departmental colour plans | 1:200 | |
| | General Arrangement Plans for all levels | 1:200 | |
| | Roof/Soffit Type Location Plans | 1:200 | |
| | General Arrangement Roof Plans | 1:200 | |
| | General Arrangement Elevations – Colour Elevations Planning Submission Set | 1:200 | |
| | General Arrangement Elevations | 1:200 | |
| | General Arrangement Sections | 1:200/1:50 | |
| | General Arrangement Sections – Colour Elevations Planning Submission Set | 1:200 | |
| | Key Elevations for Special Areas | 1:50 | |
| | Cladding Type Plans | 1:200 | |
| | Cladding Type Detailed Sections | 1:20 | |
| | 3D Visualisation | | |
| | Component/Assembly Drawings | | |

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|---|---|---|---|
| | Fire Strategy Plans* | 1:500/1:200 | |
| | Internal Plan Drawings | 1:50 | |
| | Floor Finishes Strategy Plans | 1:200 | |
| | Wall Finishes Strategy Plans | 1:200 | |
| | Ceiling Types and Finishes Strategy Plans | | |
| | Wall Protection Strategy Plans | 1:200 | |
| | Door Type Strategy Plans | 1:200 | |
| | Access Control and Locking Strategy Plans | 1:200 | |
| | Radiation Protection Strategy Plans* | 1:200 | |
| | Acoustic Strategy Plans* | 1:200 | |
| | Specialist Equipment Strategy Plans* | 1:200 | |
| | Glazed Screen Location and Type Strategy Plans | 1:200 | |
| | Room Layouts | 1:50 | |
| | Room Data Sheets (RDS) | | |
| | Equipment Schedules/Reports | | |
| | Interior Design Strategy | | |
| | Wayfinding Strategy | | |
| | Art Strategy | | |
| | DDA Strategy | | |
| | Access and Maintenance Strategy | | |
| | | | |
| | *These plans are based on the design advice from specialist consultants | | |
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| | **GENERAL** | | |
| | General Notes | | |
| | Drawing Index | nts | A0 |
| | Abbreviations, Legends, Symbols, Vicinity Plan | nts | A0 |
| | Construction notes | nts | A0 |
| | Material Codes | nts | A0 |
| | Site + Location Plans | | |
| | Key Plans | | |
| | | | |
| | | | |
| | | | |
| | **SET OUT DRGS** | | |
| | Building Set Out Information | | |
| | Site boundaries (in consultation with others) | 1:200 | |
| | Building Set Out Geometry | | |
| | Grid Set Out | 1:100 | A0 |
| | Basement Level Col Set-out | 1:100 | A0 |
| | Tower Col Set-out | 1:100 | A0 |
| | | | |
| | **SET OUT GEOMETRY** | | |
| | | | |

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|---|---|---|---|
| | **GA PLANS FOR ALL LEVELS** | | |
| | | | |
| | **GA ELEVATIONS** | | |
| | Elevations - West Elev. | 1:500 | A0 |
| | Elevations - North Elev. | 1:500 | A0 |
| | Elevations - East Elev. | 1:500 | A0 |
| | Elevations - South | 1:500 | A0 |
| | | | |
| | **GA SECTIONS** | | |
| | Section A-A | | A0 |
| | Section B-B | | A0 |
| | Section C-C | | A0 |
| | Section D-D | | A0 |
| | Section E-E | | A0 |
| | Section F-F | | A0 |
| | | | |
| | **SECTIONS** | | |
| | Cross Section Diagram | 1:500 | A0 |
| | | | |
| | **FIRE STRATEGY DRGS** | | |
| | Fire Strategy for each level/area | 1:200 | A0 |
| | **Detail Fire Diagrams** | | |
| | | | |
| | **Fire - Sections/Elevations** | | |
| | | | |
| | **Fire - Key Plans** | | |
| | | | |
| | **STRUCTURAL FIRE STRATEGY** | | |
| | Structural fire diagram | nts | A0 |
| | Typical Floors – Column and Beam Protection | nts | A0 |
| | | | |
| | **MIP ACCESS / WC** | | |
| | | | |
| | **VEHICULAR SERVICING** | | |
| | Ground | 1:100 | A0 |
| | Basement parking | 1:100 | A0 |
| | Basement Loading Bay | 1:100 | A0 |
| | Loading Bay layout - Swept paths - In | 1:200 | A0 |
| | Loading Bay layout - Swept paths - Out | 1:200 | A0 |
| | | | |
| | **PART BLD.ELEV+WALL SECT** | | |
| | **Sub-structure** | | |
| | **Sub-structure Waterproofing Details** | | |
| | Waterproofing Details | 1:5 | A0 |
| | | | |

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|---|---|---|---|
| | **Sub-structure Blockwork Details** | | |
| | Blockwork Details | 1:5 | A0 |
| | | | |
| | **General** | | |
| | Floor Build-Up Types | nts | A0 |
| | Typical Floor Build-Up | nts | A0 |
| | | | |
| | **Super-structure** | | |
| | Connection Details: Column to Brace Sections | | A0 |
| | Encasement Detail | 1:5 | A0 |
| | Encasement Detail - Horizontal Flanking Transmission | 1:5 | A0 |
| | Brace Size Analysis | nts | A0 |
| | Rationalism Option For Braces | nts | A0 |
| | | | |
| | **KEY FAÇADE TYPES** | | |
| | **Main** | | |
| | Main Façade Scope - Elevations | 1:500 | A0 |
| | Main Facade Unwrapped Elevation | 1:500 | A0 |
| | Facade Panel Types | nts | A0 |
| | Plan Showing Typical Panel Layout | 1:100 | A0 |
| | Façade and Partition Interface | 1:5 | A0 |
| | Aviation Lighting Scope & Location | 1:500 | A0 |
| | Aviation Light Interface with Main Façade | 1:20 | A0 |
| | Facade Attachment Principles | nts | A0 |
| | Facade Cavity & Mixed Mode Venting | nts | A0 |
| | Principles of AHU Supply & Exhaust Through Facade | nts | A0 |
| | Plant Room Louvers | nts | A0 |
| | Main Facade Visual Mockup | 1:20 | A0 |
| | Main Façade Profile Amendments to Acoustics in Wind | nts | A0 |
| | | | |
| | **Roof** | | |
| | Roof Scope Plan | 1:100 | A0 |
| | Roof Overall Section | 1:200 | A0 |
| | Roof Section A-A | | |
| | Roof Section B-B | | |
| | Roof Plans Level | | |
| | Roof - Overall View | nts | A1 |
| | Roof and façade - Interface | nts | A1 |
| | Roof - Plant Level Facades | nts | A1 |
| | Roof Plan/Sec/Elev Level | 1:50 | A0 |
| | Roof Plan/Sec/Elev - Details | 1:10 | A0 |
| | | | |
| | **CANOPY** | | |
| | Canopy Constraints Plan | | A0 |
| | Canopy Scope Plan | 1:100 | A0 |

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|---|---|---|---|
| | Canopy Scope Elevations | | A0 |
| | Canopy Sections | 1:100 | A0 |
| | Canopy Setout Principles | | A0 |
| | Canopy Registration Points | | A0 |
| | Canopy Sizing Study | nts | A0 |
| | Detail Section | 1:50 | A0 |
| | Canopy Details | 1:5 | A0 |
| | | | |
| | **SAMPLES** | | |
| | Mock-Up Details - 2 x 2 Panel Sample | 1:20 | A0 |
| | | | |
| | **Lobby Glazing** | | |
| | Elevations | | A0 |
| | Plan | 1:50 | A0 |
| | Sections | 1:50 | A0 |
| | Overall Views | nts | A1 |
| | Detail Views | nts | A1 |
| | Details | 1:5 | A0 |
| | | | |
| | **CORES** | | |
| | **Core Diagrams: Lift Strategy** | | |
| | Lift Strategy Isometric | nts | A0 |
| | Lift Strategy Overview | nts | A0 |
| | Lift Hoistway overview | | A0 |
| | Lift Car Color Concepts | nts- | A0 |
| | | | |
| | **Stair Strategy** | | |
| | Stair Strategy Diagram | nts | A0 |
| | Stair Study Core A | nts | A0 |
| | Stair Study Core B+C | nts | A0 |
| | | | |
| | **Sanitary Strategy** | | |
| | Washroom Material Palette | | A0 |
| | Elevation Key Low Levels | | A0 |
| | Elevation Key Mid Levels | | A0 |
| | Elevation Key High Levels | | A0 |
| | | | |
| | **CORE TYPES (1:50)** | | |
| | Core Plan Level | 1:50 | A0 |
| | Core Basement | 1:50 | A0 |
| | Core Context Diagram | 1:200 | A3 |
| | Core Ground Floor | 1:50 | A0 |
| | Core Roof Plan | 1:50 | A0 |
| | Core Section A-A | 1:100 | A3 |
| | Core Section B-B | 1:100 | A3 |

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| | **CORE ELEVATIONS (CONCRETE)** | | |
| | Core East –Levels xx to xx | 1:50 | A0 |
| | | | |
| | **CORE ELEVS (STEEL ,DRYWALL,DOORS)** | | |
| | Core East –Levels xx to xx | 1:50 | A0 |
| | | | |
| | **CORE SECTIONS** | | |
| | Long. Section Lv | 1:50 | A0 |
| | Latitudinal section Lv | 1:50 | A0 |
| | | | |
| | TYPICAL LIFT LOBBY: Lv. xx | | |
| | Local Lift Lobby - Plans and RCPs | | A0 |
| | Local Lift Lobby- –Elevations and Sections | | A0 |
| | Core Fire lift Lobby Plan / RCP | | A0 |
| | Lift Lobby details | 1:5 | A0 |
| | | | |
| | **LIFT CAR DETAILS** | | |
| | Type 01: | 1:20 | A1 |
| | | | |
| | **STAIR SERIES** | | |
| | Typical steel stair | 1:50 | A0 |
| | Non-Typical steel stair | 1:20-50 | A0 |
| | steel stair detail plans | 1:50 | A0 |
| | | | |
| | **SANITARY SERIES** | | |
| | typical washroom finishes | | A0 |
| | MIP washroom | | A0 |
| | Typical washroom details | 1:5 | A0 |
| | | | |
| | **LOBBIES: Plans, Elevations, Sections** | | |
| | | | |
| | **ENTRANCE LOBBY** | | |
| | **PLANS** | | |
| | Lobby Plan Lv. | 1:50 | A0 |
| | Lobby Floor Finshes Plan Lv. | 1:50 | A0 |
| | Lobby Reflected Ceiling Plan Level | 1:50 | A0 |
| | | | |
| | **ELEVATIONS** | | |
| | Entry Lobby Elevation | 1:100 | A0 |
| | North Core Elevation | 1:100 | A0 |
| | South Core Elevation | 1:100 | A0 |
| | East Core Elevation | 1:100 | A0 |
| | West Core Elevation | 1:100 | A0 |
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|---|---|---|---|
| | **SECTIONS** | | |
| | Section Cut Locations | 1:100 | A0 |
| | Long Section AA | 1:100 | A0 |
| | Long Section BB | 1:100 | A0 |
| | Long Section DD | 1:100 | A0 |
| | | | |
| | **PROCESSION THROUGH BUILDING** | | |
| | | | |
| | **Courtyards and Lightwells** | | |
| | | | |
| | **LOBBY DETAILS** | | |
| | **Ground Floor Lobby** | | |
| | Wall Details | 1:5 | |
| | Ceiling Details | 1:5 | A0 |
| | Floor Details | | |
| | | | |
| | **Stairs, Escalator and Lift Details** | | |
| | Escalator Elevation | 1:20 | |
| | Escalator Section | 1:20 | |
| | Escalator Details | As noted | |
| | | | |
| | **Furniture and Misc Details** | | |
| | Reception Desk | | |
| | Reception Desk Details | | |
| | Security Gates Plan & Elevation | 1:20 | |
| | Security Gates Detail | | |
| | Bench & Misc | | |
| | Restaurant | | |
| | | | |
| | **FINISHES** | | |
| | **CEILINGS** | | |
| | Basement RCPs | 1:100 | |
| | RCPs for each level/area/room | 1:100 | A0 |
| | | | |
| | **WALLS** | | |
| | Wall Type Schedule | 1:5 | A0 |
| | Partition details | 1:5 | A0 |
| | Partition details: wall penetrations | 1:5 | A0 |
| | Lift Shaft section details | 1:5 | A0 |
| | Wall Protection | | |
| | Skirtings | | |
| | | | |
| | | | |
| | **FINISHES** | | |
| | Finishes Schedule | nts | A0 |

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|---|---|---|---|
| | Wayfinding and Signage | | |
| | Glazing | | |
| | | | |
| | | | |
| | | | |
| | **DOORS** | | |
| | Door Schedule | nts | A0 |
| | Door Elevations | 1:20 | A0 |
| | Door Details | 1:5 | A0 |
| | | | |
| | **MISCELLANEOUS** | | |
| | Cat Ladder Details | 1:5 | A0 |
| | Miscellaneous Details | various | A0 |
| | Radiation Protection Details | | |
| | Helipad Details | | |
| | | | |
| | | | |
| | | | |
| | **SCHEDULES** | | |
| | Room Data Sheets | | |
| | Schedule of Accommodation | | |
| | | | |
| | **SPECIFICATIONS** | | |
| | General Requirements | | |
| | Concrete Slab Paving | | |
| | Stone Flooring | | |
| | Bicycle Racks | | |
| | Architectural Concrete Finishes | | |
| | Architectural Precast Concrete | | |
| | Cement-Based Screeds | | |
| | Brick and Blockwork | | |
| | Exterior Stone Cladding | | |
| | Structural Steel - Architectural Requirements | | |
| | Metal Fabrications | | |
| | Metal Stairs | | |
| | Handrails and Railings | | |
| | Ornamental Metalwork | | |
| | Rough Carpentry | | |
| | Finish Carpentry | | |
| | Wood Paneling - WC Cubicles | | |
| | Self-Adhering Sheet Waterproofing | | |
| | Hot Fluid-Applied Waterproofing | | |
| | Parking Garage Surfacing | | |
| | Building Insulation | | |
| | Exterior Insulation and Rendering Systems | | |

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|---|---|---|---|
| | Hot Fluid-Applied Roofing | | |
| | Sheet Metal Flashings | | |
| | Roof Accessories | | |
| | Roof Hatches and Smoke Vents | | |
| | Board Fireproofing | | |
| | Fire and Acoustic Stopping | | |
| | Joint Sealants | | |
| | Metal Doors and Frames | | |
| | Wood Doors and Frames | | |
| | Roller Shutters | | |
| | Fire-Resisting Glass Screen and Doors | | |
| | Interior Glass Doors and Screens | | |
| | Door Ironmongery | | |
| | Glazing | | |
| | Gypsum Plaster | | |
| | Portland Cement Rendering | | |
| | Glass-Fibre Reinforced Gypsum Fabrications | | |
| | Gypsum Board Assemblies | | |
| | Ceramic Tiling | | |
| | Acoustical Metal Panel Ceilings | | |
| | Wood Ceilings | | |
| | Stone Flooring | | |
| | Resilient Sheet Flooring | | |
| | Sheet Carpet | | |
| | Carpet Tile | | |
| | Interior Stone Cladding | | |
| | Painting | | |
| | Intumescent Coatings | | |
| | Resinous Floor Coatings | | |
| | Louvers' | | |
| | Wall Protection | | |
| | Raised Access Flooring | | |
| | Bird and Vermin Control | | |
| | Signage | | |
| | Metal Lockers | | |
| | Metal Sheet Partitions and Linings | | |
| | Toilet Accessories | | |
| | Building Maintenance - Fall Restraint Systems | | |
| | Special Construction | | |
| | Lift Car Fit-Out | | |
| | Escalators - Architectural Requirements | | |
| | Sanitary Fixtures and Fittings Architectural | | |
| | Performance Specification for the External Envelope | | |

# 5. Commissioning, Completion and Post Completion

## Overview

5.1 This Work Stage shall be the Commissioning, Completion and Post Completion Phase of the Project and shall enable the Project to be commissioned and occupied. Consequently all items scheduled below are a continuation of and are in addition to the items scheduled in the Design Development, the Construction Documentation and the Construction Phases Work Stages.

5.2 It is a fundamental objective of the Employer that all Documentation produced during this Work Stage are suitable for properly constructing, commissioning and completing the Project in full compliance with the Project requirements such as the Planning consents, the Employer's Requirements, the Cost Plan and the construction and completion programmes.

## Tasks

The Consultant shall:

5.3 Receive further Project details and requirements from the Employer if any and together with other relevant information sourced by the Consultant as reasonably expected from the Consultant, make further appraisals of Project constraints.

5.4 Visit site in addition to as requested reasonably by the Employer.

5.5 Evaluate proposed amendments to the Project requirements and advise on options for consideration by the Employer having regard to the effect on the Employer's Requirements, the Cost Plan, the Programme and any other relevant Statutory Authority requirements.

5.6 In conjunction with the other consultants, review as reasonably required by the Employer all subcontractor proposed commissioning procedures and report to the Employer.

5.7 Provide assistance to the Employer during the defects liability period in closing-out the defects.

5.8 Review and comment on all relevant guarantees, warranties and O & M manuals prepared by subcontractors and suppliers.

5.9 In preparation for Completion, inspect the Works as required by the Employer and provide inspection reports that in the opinion of the Consultant might prevent the Works being certified as completed together with recommendations for rectification of those defects. If required by the Employer and in conjunction with the Employer, the Consultant shall re-inspect the Works to verify that the defects have been rectified. These tasks are to be provided in a timely manner and where requested by the Employer, make appropriate representations on Employer's behalf to the Board in regards to the defects and their remedial works.

5.10 Review and comment within 10 days, all relevant "As-Built" documents as prepared by the subcontractors including drawings, specifications, schedules, manuals and maintenance instructions or any other documents as required by the Employer.

5.11 Attend commissioning and witness testing to review the satisfactory function and completion of relevant systems for compliance with the Consultant's design intent and specifications in accordance with the Project requirements.

5.12 Assist the Employer with the preparation and provision of the Project operation and maintenance manuals and the like as necessary for the Completion of the Project.

5.13 Assist in the preparing and updating the completion programmes as required by the Employer.

5.14 Liaise with other consultants and coordinate the provision of information and data as required by the Employer to comply with the construction and/or commissioning programme to ensure that there is no delay in providing information to the relevant parties.

5.15 Check the Documentation produced during this Work Stage against the Planning consents and other Project requirements such as the Employer's Requirements. Report on any non-compliance and provide mitigation recommendations on same.

5.16 Provide all necessary information to the CDM Coordinator to be included in the Health and Safety File for the purposes of the CDM Regulations.

5.17 Provide final "As-Designed" Documentation drawings and other documents incorporating all latest information including those issued as advices or sketches by the Consultant and the relevant information and submittals from the subcontractors. The architectural "As-Designed" drawings are to include information provided by others such as all plumbing, sanitary, rainwater and drainage installations. All "As-Designed" Documentation must be completed and issued in compliance with the Programme and with the general progress of the Works to ensure that such progress is not delayed and disrupted.

5.18 Provide other Architectural and Lead Consultant duties that may be required by the Employer to secure the Completion of the Works.

5.19 Provide the Employer with a written statement in a format to be agreed certifying that the Works are consistent with the Consultant's latest design Documentation and the Project requirements such as the Employer's Requirements.

5.20 Participate in inspections which shall be conducted throughout the first 52 weeks, if not at 52 weeks after the date of Completion.

5.21 Assist the Employer in the settlement of any differences in relation to the Works that may arise between the Board and the Employer or between the Employer and any subcontractor or supplier up to and prior to entering into formal dispute resolution mechanism such as adjudication or arbitration.

**End**

**SCHEDULE 2, PART 2**

**CONSULTANT COORDINATION MATRIX**

Contract Data Part 1

Schedule 2

Part 2

# DESIGN CONSULTANT RESPONSIBILITY MATRIX

NEW SOUTH GLASGOW HOSPITALS (NSGH)

June 2010

NHS GREATER GLASGOW AND CLYDE
NEW SOUTH GLASGOW HOSPITALS (NSGH)

BROOKFIELD CONSTRUCTION (UK)

# Design Consultant Responsibility Matrix

## June 2010

**NHS GREATER GLASGOW AND CLYDE**
**NEW SOUTH GLASGOW HOSPITALS (NSGH)**

**BROOKFIELD CONSTRUCTION (UK)**

The Consultant with the primary lead responsibilities including the overall coordination for the various design tasks are as follows, but not necessarily limited to:

Note:

1. All other Consultants are required to assist by providing definitive and complete design advice and information in a timely manner to the Lead Consultant responsible for that design task.
2. The responsibilities below exclude the design tasks associated with the Laboratory Building.

| **Lead Consultant : L** | | Architect and Medical Planners - **Nightingale** | Services Engineer - **ZBP** | Healthcare Planner - **Tribal** | Structural /Civil Engineer - **WSP** | Landscape Architect and Masterplanners - **Gillespies** | Art Strategy - **Gingko** | Environmental Engineer incl BREEAM - **WSP** | Acoustic Consultant – **Acoustic Logic** | Fire Engineering - **WSP** | Radiation Protection - **TBA** | Kitchen Consultant - **TBA** | EMC Consultant - **TBA** | Helicopter Consultant – **Peter Rover** | Lift Engineers - **Schindler** | Cost Planner – **Doig & Smith** | Building Control – **Glasgow City Council** | Planning Consultant - **Ironside Farrar** | CDM Coordinator - **URS** | Client – **NSGH Board** | Contractor / Employer - **Brookfield** | **Notes** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.0 Overall Duties** | | | | | | | | | | | | | | | | | | | | | | |
| 1.1 | Design brief development and confirmation | | | | | | | | | | | | | | | | | | | | L | |
| 1.2 | Design brief compliance | L | L | L | L | L | L | L | L | L | L | L | | L | L | | | | | | | For their respective design discipline |
| 1.3a | Master plan – Review, testing and development | | | | | L | | | | | | | | | | | | | | | | |
| 1.3b | Master plan - Ongoing coordination to ensure integration of changes and consistency | | | | | L | | | | | | | | | | | | | | | | |
| 1.3c | Master plan – Prepare, review and submit revised Master plans | | | | | L | | | | | | | | | | | | | | | | Assisted by other Consultants where required |
| 1.3d | Landscape Visual Impact Assessment as necessary | | | | | L | | | | | | | | | | | | | | | | Assisted by other Consultants where required especially from Planning Consultant |
| 1.3e | Update Environmental Impact Statements | | | | | | | | | | | | | | | | | L | | | | Input from other Consultants especially from the Landscape Architect |
| 1.4 | Design presentations | L | | | | | | | | | | | | | | | | | | | | Assisted by other Consultants where required |
| 1.5 | Overall design and documentation coordination | L | | | | | | | | | | | | | | | | | | | | |
| 1.6 | Site and Building grids and setting out | L | | | | | | | | | | | | | | | | | | | | Coordinate/consider grid requirements with the Structural Engineer and Landscape/Masterplanning Consultant |
| 1.7 | Architectural design and specifications | L | | | | | | | | | | | | | | | | | | | | |
| 1.8 | Healthcare planning (including user | | | L | | | | | | | | | | | | | | | | | | Healthcare Planner to lead in SoA, RDS and |

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| | group adjacencies) | | | | | | | | | | | | | | | | | | | | | other associated issues |
| 1.9 | Substructure (incl foundation) design and specifications | | | | L | | | | | | | | | | | | | | | | | |
| 1.10 | Superstructure design and specifications | | | | L | | | | | | | | | | | | | | | | | |
| 1.11 | Building Services design and specifications | | L | | | | | | | | | | | | | | | | | | | Supply Chain input |
| 1.12 | IT, data and audio visual design intent | | L | | | | | | | | | | | | | | | | | | | MEP Subcontractor to undertake the sizing/location of hub rooms and coordinate to prepare the installation drawings. Services Engineer to provide wireways to Specialist requirements |
| 1.13 | Infrastructure services design (including incoming services) and specifications | | L | | | | | | | | | | | | | | | | | | | From the (connection) point of Utility Provider |
| 1.14 | Traffic study and design | | | | L | | | | | | | | | | | | | | | | | |
| 1.15 | Site wide road way, paths, civic space concept design | | | | | L | | | | | | | | | | | | | | | | |
| 1.16 | Site wide road way, paths, civic space detailed design | | | | L | | | | | | | | | | | | | | | | | With input from the Architect and Landscape Architect for setting out |
| 1.17a | Site phasing, logistics, concept | | | | | | | | | | | | | | | | | | | | L | Landscape Architect to provide support role in associated graphics |
| 1.17b | Site wide temporary road way, paths, car parks – detailed design | | | | L | | | | | | | | | | | | | | | | | Construction related traffic signage by the Contractor |
| 1.18 | Landscaping design (hard and soft) | | | | | L | | | | | | | | | | | | | | | | |
| 1.19 | Secure by Design compliance | L | | | | | | | | | | | | | | | | | | | | |
| 1.20 | Anti-terrorism design issues – non structural | L | | | | | | | | | | | | | | | | | | | L | Contractor to seek clarification from Board |

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| 1.21 | Anti-terrorism design issues – structural | | | | L | | | | | | | | | | | | | | | | L | Contractor to seek clarification from Board |
| 1.22 | Interior (Fitout and FF&E) design and specifications | L | | | | | | | | | | | | | | | | | | | | For their respective design discipline - as applicable to Group 1 (supply and install) and Group 2 ("free issue" from the Board for installation) |
| 1.23 | Acoustic, noise and vibration criteria and design | | | | | | | | L | | | | | | | | | | | | | |
| 1.24 | Vertical transportation study and design | | | | | | | | | | | | | | L | | | | | | | |
| 1.25 | Fire engineering strategy and design | | | | | | | | | L | | | | | | | | | | | | |
| 1.26 | Access and Disability related design | L | | | | | | | | | | | | | | | | | | | | To comply with Part M and other relevant legislations |
| 1.27 | Helipad facility design/brief strategy | | | | | | | | | | | | | L | | | | | | | | |
| 1.28 | Helipad detailed design documentation to meet brief | L | L | | L | | | | | | | | | | | | | | | | | For their respective design discipline |
| 1.29 | Radiation protection design strategy brief | | | | | | | | | | L | | | | | | | | | | | |
| 1.30 | Radiation protection detailed design documentation to meet brief | L | L | | L | | | | | | | | | | | | | | | | | For their respective design discipline |
| 1.31 | Electro magnetic compatibility | | | | | | | | | | | | L | | | | | | | | | |
| 1.32 | Kitchen concept design | | | | | | | | | | | L | | | | | | | | | | |
| 1.33 | Kitchen detailed design documentation to meet brief | L | L | | | | | | | | | | | | | | | | | | | For their respective design discipline |
| 1.34 | Clean room design | L | L | | | | | | | | | | | | | | | | | | | For their respective design discipline for shell. Clean Room design by Specialist. Design interfaces to be provided by the relevant Consultants |

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| 1.35 | Building cleaning maintenance access strategy and design | L | | | | | | | | | | | | | | | | | | | | |
| 1.36 | Specialist lighting design (internal) | L | | | | | | | | | | | | | | | | | | | | Engineering by the Services Engineer |
| 1.37a | External areas lighting design | | | | | L | | | | | | | | | | | | | | | | Engineering (ie. power supply) by the Services Engineer. Lighting for roads by the Civil Engineer. All other lighting design intent by the Landscape Architect |
| 1.37b | External lighting design for building envelope | | L | | | | | | | | | | | | | | | | | | | Design intent by the Architect. Engineering (eg. power reticulation) by the Services Engineer. |
| 1.38 | Public Artwork strategy | | | | | | L | | | | | | | | | | | | | | | Landscape Architect to integrate in Master plan and external detail design. |
| 1.39 | All other artwork | L | | | | L | L | | | | | | | | | | | | | | | Architect to integrate into internal design. Landscape Architect to integrate in external design. |
| 1.40a | Signage and wayfinding - Internal | L | | | | | | | | | | | | | | | | | | | | Requirements such as the location, type etc by the Architect. Final manufacturing design by the Supply Chain |
| 1.40b | Signage and wayfinding - External | | | | | L | | | | | | | | | | | | | | | | Requirements such as the location, type etc by the Landscape Architect. Final manufacturing design by the Supply Chain |
| 1.40c | Signage and wayfinding - Traffic | | | | L | | | | | | | | | | | | | | | | | |
| 1.41 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 1.42 | Expansion/flexibility strategy contained in the bid submission | L | L | | L | L | | | | | | | | | | | | | | | L | For their respective design discipline. Contractor to clarify Board requirements (if any in addition to the ERs) |
| 1.43 | Trade package scope of works | | | | | | | | | | | | | | | | | | | | L | Assisted by the Consultants |
| 1.44 | Design programming | | | | | | | | | | | | | | | | | | | | L | With input from relevant Consultants |

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| 1.45 | Documentation management | | | | | | | | | | | | | | | | | | | | L | With respect to Aconex |
| 1.46 | Monthly design reporting | L | L | L | L | L | | | | | | | | | | | | L | L | | | For their respective design discipline |
| 1.47 | Design meetings and workshops | L | | | | | | | | | | | | | | | | | | | | With input from all Consultants |
| 1.48 | Quality assurance and control | L | L | L | L | L | | L | L | L | L | L | L | L | L | L | L | L | L | L | L | For their respective design discipline |
| 1.49 | Cost plan | | | | | | | | | | | | | | | L | | | | | | |
| 1.50 | Cost management | | | | | | | | | | | | | | | | | | | | L | With input from all Consultants |
| 1.51 | Risk management scheduling and management | | | | | | | | | | | | | | | | | | | | L | Assisted by the Cost Planner |
| 1.52 | Design change administration | | | | | | | | | | | | | | | | | | | | L | Supported by Consultants |
| 1.53 | Submission of design information to Client | | | | | | | | | | | | | | | | | | | | L | Supported by Consultants |
| 1.54 | Schedule of Derogations | | | | | | | | | | | | | | | | | | | | L | Input from Consultants |
| 1.55 | CDM risk assessments | | | | | | | | | | | | | | | | | | L | | | |
| 1.56 | Health and Safety File | | | | | | | | | | | | | | | | | | L | | | With input from all Consultants |
| 1.57 | Commissioning Specification | | L | | | | | | | | | | | | | | | | | | | Strategy and methodology input from the MEP Subcontractor(s) |
| 1.58 | O&M and Handover strategy | | | | | | | | | | | | | | | | | | | | | Supported by Consultants and Supply Chain |
| 1.59 | Updating the final design drawings and documents for Completion/Occupation | L | L | L | L | L | | L | L | L | | | | | L | | | | | | | For their respective design discipline with marked up drawings supplied by Contractor (ie. from Subcontractors). Services Engineer to provide final updated performance specifications for the building services works |
| 1.60 | On site neighbour liaison | | | | | | | | | | | | | | | | | | | | L | |
| 1.61 | Client liaison | | | | | | | | | | | | | | | | | | | | L | |
| 1.62 | Site Waste Management Plan (incl | | | | L | | | | | | | | | | | | | | | | | Assisted by others where required |

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| | use of WRAP) | | | | | | | | | | | | | | | | | | | | | |
| 1.63 | Facilities management strategy | | | | | | | | | | | | | | | | | | | L | | |
| 1.64 | Facilities management requirements – incorporation into design | L | L | L | L | L | L | L | L | L | L | L | | L | L | | | | | | | For their respective tasks |
| **2.0 Authorities** | | | | | | | | | | | | | | | | | | | | | | |
| 2.1 | Environment Agency liaison and consents | | | | L | | | | | | | | | | | | | | | | | |
| 2.2 | Planning conditions negotiations and approvals including deviation requests and change audit submissions | | | | | | | | | | | | | | | | | L | | | | Supported by the Design Consultants for their respective discipline |
| 2.3 | S75 Agreement input | | | | L | | | | | | | | | | | | | | | | | Lead by the Board |
| 2.4 | Building Control negotiations and conditions of approvals including deviation requests | L | L | | L | L | | L | L | L | L | L | | L | L | | | | | | | For their respective design discipline |
| 2.5 | Building Regulation compliance | L | L | | L | L | | L | L | L | | L | | | L | | L | | | | | For their respective design discipline guided by Building Control |
| 2.6 | Environmental Health Officer liaison and consent | | | | | | | | | | | | | | | | | | | | L | All Consultants to liaise for their respective design discipline |
| 2.7 | Local Transport liaison and consents Authority | | | | L | | | | | | | | | | | | | | | | | |
| 2.8 | Public Utilities liaison and consents for Incoming (Electricity, Water, Gas) | | L | | | | | | | | | | | | | | | | | | | Telecom order placed by Board |
| 2.9 | Public Utilities liaison and consents for Out going foul and stormwater discharge | | | | L | | | | | | | | | | | | | | | | | |
| 2.10 | Public Utilities legal agreements (way leaves/leases/licences) | | | | | | | | | | | | | | | | | | | L | | |
| **3.0 Specific Tasks** | | | | | | | | | | | | | | | | | | | | | | |

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| 3.1 | Site boundary definition | | | | | | | | | | | | | | | | | | | L | | |
| 3.2 | General site context analysis | | | | | L | | | | | | | | | | | | | | | | Input from Architect and Engineers |
| 3.3 | Dimensional topographical surveys analysis | | | | L | L | | | | | | | | | | | | | | | L | |
| 3.4 | Geotechnical investigation and analysis | | | | | | | L | | | | | | | | | | | | | | |
| 3.5 | Ground contamination investigation and analysis | | | | | | | | | | | | | | | | | | | L | | Board to provide contamination free site. Civil Engineer allowed for supporting the discharging of the planning condition |
| 3.6 | Contamination advice and statutory liaison coordination and consents | | | | | | | L | | | | | | | | | | | | | | |
| 3.7 | Ground modelling to establish building formation levels | | | | L | | | | | | | | | | | | | | | | | Input from Contractor in relation to phasing/construction sequence. |
| 3.8 | Asbestos investigations and analysis | | | | | | | | | | | | | | | | | | | L | | |
| 3.9 | Environmental surveys to discharge planning approval conditions | | | | | | | | | | | | | | | | | L | | | | With input from the relevant Consultants |
| 3.10 | Environmental remediation certification | | | | | | | | | | | | | | | | | | | L | | Board to provide contamination free site. Civil Engineer allowed for supporting the discharging of the planning condition |
| 3.11 | Archaeological liaisons, coordination and consents | | | | | | | | | | | | | | | | | L | | | | Input from Archaeological specialist. Other Consultants to assist in coordination |
| 3.12 | Liaise coordination of services off site | | L | | | | | | | | | | | | | | | | | | | |
| 3.13 | Flood study and design | | | | L | | | | | | | | | | | | | | | | | |
| 3.14 | Integration of available existing structural design information | | | | L | | | | | | | | | | | | | | | | | |
| 3.15 | Integration of available existing services design information | | L | | L | | | | | | | | | | | | | | | | | |
| 3.16 | Integration of other available existing design information | L | | | | | | | | | | | | | | | | | | | | |

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| 3.17 | Integration of Site staging (eg. parking controls) and appropriate liaison | | | | | | | | | | | | | | | | | | | | L | Contractor logistics and phasing plans. Input from Consultants as required. |
| 3.18 | Sub/superstructure (interface) design coordination | L | | | L | | | | | | | | | | | | | | | | | |
| 3.19 | Spatial coordination of Building Services | | L | | | | | | | | | | | | | | | | | | | MEP Subcontractor(s) to take this detailed design from the Services Engineer in preparing the final installation drawings |
| 3.20 | Detailed coordination of Building Services | | L | | | | | | | | | | | | | | | | | | | MEP Subcontractor/Services Engineer |
| 3.21 | Coordination of external services (ie. outside building footprints) beneath ground | | L | | | | | | | | | | | | | | | | | | | Input from Civil Engineer |
| 3.22 | Underground drainage design (incl through and to top of the first slab above ground or internal face of (retaining) walls) | | | | L | | | | | | | | | | | | | | | | | Setout dimensions for the pop-ups on slabs and walls to be coordinated with Services Engineer and/or Architect and show them on structure (eg. slab) drawings |
| 3.23 | Above ground slab drainage design including rainwater | L | L | | | | | | | | | | | | | | | | | | | For rainwater, the Services Engineer is to design including showing the setout dimensions on the services drawings. Visual requirements for feature rainwater goods to be provided by the Architect |
| 3.24 | Building plant replacement strategy and design | | L | | | | | | | | | | | | | | | | | | | |
| 3.25 | Electrical systems security strategy and design intent (eg. CCTV and access control) | | L | | | | | | | | | | | | | | | | | | | Assisted by the Architect/Supply Chain |
| 3.26 | Review and incorporation of Architectural Specialist Subcontractor design information | L | | | | | | | | | | | | | | | | | | | | |
| 3.27 | Review of Building Services Specialist Subcontractor design information | | L | | | | | | | | | | | | | | | | | | | |

**NHS GREATER GLASGOW AND CLYDE**
**NEW SOUTH GLASGOW HOSPITALS (NSGH)**

**BROOKFIELD CONSTRUCTION (UK)**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.28 | Review of Structural Specialist Subcontractor design information | | | | L | | | | | | | | | | | | | | | | | |
| 3.29 | Special waste drainage – top of ground slab and below and intenal face of walls (eg. grease traps, petrol interceptors) | | | | L | | | | | | | | | | | | | | | | | Setout dimensions for the pop-ups on slabs and walls (referenced off the grids) to be coordinated with Services Engineer and/or Architect and show them on structure (eg. slab) drawings |
| 3.30 | Special waste drainage – above ground slab (eg. grease traps) | | L | | | | | | | | | | | | | | | | | | | |
| 3.31 | Integrated data/comms services design intent | | L | | | | | | | | | | | | | | | | | | | MEP Subcontractor to undertake the sizing/location of hub rooms and coordinate to prepare the installation drawings |
| 3.32 | Design intent and integration of satellite and cable services | | L | | | | | | | | | | | | | | | | | | | Detailed design from Supply Chain |
| 3.33 | Building services management system design | | L | | | | | | | | | | | | | | | | | | | Detailed design from Supply Chain |
| 3.34 | Thermal insulation specifications | L | | | | | | | | | | | | | | | | | | | | Input from Services Engineer |
| 3.35 | U-value simulations and calculations | | L | | | | | | | | | | | | | | | | | | | |
| 3.36 | Part L equivalent Building Regulation performance simulations and calculations | | L | | | | | | | | | | | | | | | | | | | |
| 3.37 | BREEAM assessment and certification | | | | | | | L | | | | | | | | | | | | | | Input from Other Consultants |
| 3.38 | Building air leak/pressurization testing strategy | | | | | | | | | | | | | | | | | | | | L | Supported by the Architect and Services Engineer |
| 3.39 | Energy performance certification and certificate | | L | | | | | | | | | | | | | | | | | | | |
| 3.40 | Waterproofing design below ground up to the underside of the ground slab/DPC | | | | L | | | | | | | | | | | | | | | | | |
| 3.41 | Waterproofing design above ground including the DPC | L | | | | | | | | | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.42 | Lightning protection design intent | | L | | | | | | | | | | | | | | | | | | | Detailed design by Supply Chain |
| 3.43 | Structure corrosion protection design | | | | L | | | | | | | | | | | | | | | | | Helicopter Consultant to provide input for the helipad |
| 3.44 | Structural fire protection design | | | | L | | | | | | | | | | | | | | | | | Input from other Consultants as necessary |
| 3.45 | Plant support design and co-ordination with primary structure | | | | L | | | | | | | | | | | | | | | | | |
| 3.46 | Integration of temporary works design into permanent works where required | | | | L | | | | | | | | | | | | | | | | | |
| 3.47 | Secondary steelwork design | | | | | | | | | | | | | | | | | | | | L | Subcontractor's design. Structural Engineer to check and confirm acceptable to the primary structure |
| 3.48 | Masonry wall stability design including wind posts | | | | L | | | | | | | | | | | | | | | | | |
| 3.49 | Lintel specification | | | | L | | | | | | | | | | | | | | | | | Supply Chain to detail the Lintel schedule if necessary |
| 3.50 | Movement joint design (in structure) | | | | L | | | | | | | | | | | | | | | | | |
| 3.51 | Movement joint design (in finishes) | L | | | | | | | | | | | | | | | | | | | | Structural Engineer input required |
| 3.52 | Fire engineered solutions including reports, design notes and deviation requests | | | | | | | | | L | | | | | | | | | | | | |
| 3.53 | Incorporation of the fire engineering related design onto the documentation eg. compartmentation and fire zones etc | L | L | | L | | | | | | | | | | | | | | | | | For their respective design discipline with input from the Fire Engineer |
| 3.54 | Incorporation of acoustic, noise and vibration design into the design documentation | L | L | | L | | | | | | | | | | | | | | | | | For their respective design discipline with input from the Acoustic Engineer |
| 3.55 | Fire extinguisher and exit sign location and quantity | | | | | | | | | L | | | | | | | | | | | | Fire Engineer to draft brief. Architect to provide drawings |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.56 | Wind load study and design | | | | L | | | | | | | | | | | | | | | | | CFD and wind tunnel testing if required is an additional scope |
| 3.57 | Façade (external cladding, roofing etc) and envelope design coordination | L | | | | | | | | | | | | | | | | | | | | Input from Supply Chain and Other Consultants |
| 3.58 | Roofing purlins and wall cladding girts design (eg. for plantrooms) | | | | | | | | | | | | | | | | | | | | L | Detailed design from Supply Chain |
| 3.59 | Enabling works and project staging documentation | | | | | | | | | | | | | | | | | | | | L | Architect and Landscape Architect to assist with documentation |
| 3.60 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 3.61 | Incorporation of major services builders work in connection in structure | | | | L | | | | | | | | | | | | | | | | | Major builders work penetrations are those equivalent to and larger than 100mm diameter area. Input from Supply Chain and Other Consultants |
| 3.62 | Incorporation of services in connection with finishes | L | | | | | | | | | | | | | | | | | | | | Input from the Services Engineer and the Supply Chain |
| 3.63 | Production of co-ordinated BWIC services information | | | | | | | | | | | | | | | | | | | | L | Subcontractor's design |
| 3.64 | Integration of special fixings into design | L | | | L | | | | | | | | | | | | | | | | | Depending on the stage of the project. Based on Subcontractor information. |
| 3.65 | Lift performance/ type/spec design | | | | | | | | | | | | | | L | | | | | | | |
| 3.66 | Lift car interior and other finishes accessories | L | | | | | | | | | | | | | | | | | | | | |
| 3.67 | Building Services drawings for ceiling mounted services | | L | | | | | | | | | | | | | | | | | | | Input from Supply Chain. Services Engineer will show grilles, chilled beams and radiant panels |
| 3.68 | Reflected ceiling plans | L | | | | | | | | | | | | | | | | | | | | Architect to specify grid setout, type, height. MEP Subcontractor to coordinate and provide details and positions of all ceiling mounted services for Architect's coordination review. |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | | | MEP Subcontractor to provide the final coordinated CAD layer for the Architect to import and issue the final RCP |
| 3.69 | Slab recess drawings showing setouts for the slab edges, setdowns, upstands, parapets. | | | | L | | | | | | | | | | | | | | | | | Input from Supply Chain and Other Consultants |
| 3.70 | Building loading drawings (including for the equipment loading) | | | | L | | | | | | | | | | | | | | | | | |
| 3.71 | Screed requirements | L | | | L | | | | | | | | | | | | | | | | | Screed/topping requiring reinforcement by the Structural Engineer |
| 3.72 | Tenancy Fit Out Design Guidelines | | | | | | | | | | | | | | | | | | | | L | Client/Contractor to provide Brief. Architect to produce drawings with input from Other Consultants. |
| 3.73 | Not used | | | | | | | | | | | | | | | | | | | | | |
| 3.74 | Mock up/prototype design and documentation | L | | | | | | | | | | | | | | | | | | | | |
| 3.75 | Specialist construction input management | | | | | | | | | | | | | | | | | | | | L | |
| 3.76 | Preparation, submission, receipt and analysis of subcontract tenders | | | | | | | | | | | | | | | | | | | | L | Input from relevant Consultants |
| 3.77 | Inspection of works on site | L | L | | L | L | L | L | L | L | L | L | L | L | L | | L | | | | | For their respective design discipline |
| 3.78 | Off site inspections as requested | L | L | | L | L | L | L | L | L | L | L | L | L | L | | L | | | | | For their respective design discipline |
| 3.79 | Medical waste discharge | | L | | | | | | | | | | | | | | | | | | | With the Board (Specialist) input |
| 3.80 | Green roof | | | | | L | | | | | | | | | | | | | | | | Design intent by the Landscape Architect. Performance specifications from other Consultants for their respective design discipline. Drainage design by the Services Engineer with Specialist input |
| 3.81 | Food waste system | | L | | | | | | | | | | | | | | | | | | | With input from the relevant Consultants |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **4.0 Specific Design Schedules (to be progressively updated) which may be provided in a drawing format** | | | | | | | | | | | | | | | | | | | | | | |
| 4.1 | Below ground drainage showing setout coordinates, manholes, diversions etc | | | | L | | | | | | | | | | | | | | | | | |
| 4.2 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.3 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.4 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.5 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.6 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.7 | Room Data Sheets | | | L | | | | | | | | | | | | | | | | | | |
| 4.8 | Schedule of Accommodation | | | L | | | | | | | | | | | | | | | | | | |
| 4.9 | Louvre schedules | L | | | | | | | | | | | | | | | | | | | | Input from Other Consultants (especially the Services Engineer and the Supply Chain) |
| 4.10 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.11 | Door and Ironmongery schedules including Masterkeying | L | | | | | | | | | | | | | | | | | | | | Input from Supply Chain |
| 4.12 | Windows / internal screen schedules | L | | | | | | | | | | | | | | | | | | | | |
| 4.13 | Hatches schedule | L | | | | | | | | | | | | | | | | | | | | Input from Other Consultants |
| 4.14 | Finishes schedules | L | | | | | | | | | | | | | | | | | | | | |
| 4.15 | Equipment, Fixtures and Fittings schedules | L | | | | | | | | | | | | | | | | | | | | Architect to provide wall elevations for each exemplar room type in addition to standard wall elevations for the remaining rooms. Architect to highlight substantial fixing requirements (eg. drug cupboards). |
| 4.16 | Signage and wayfinding schedules | L | | | L | L | | | | | | | | | | | | | | | | Split as 1.40a, 1.40b and 1.40c above |
| 4.17 | Sanitary ware schedules | L | | | | | | | | | | | | | | | | | | | | Input from Supply Chain |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.18 | Building services plant and equipment schedules | | L | | | | | | | | | | | | | | | | | | | Input from Supply Chain |
| 4.19 | Luminaries schedules | | L | | | | | | | | | | | | | | | | | | | Services Engineer to provide the performance specifications. MEP Subcontractor(s) to produce the final schedule for installation to comply with the Services Engineer's requirements |
| 4.20 | Grilles schedules | | L | | | | | | | | | | | | | | | | | | | Services Engineer to provide the selection parameters. MEP Subcontractor(s) to produce the final schedule for installation to comply with the Services Engineer's requirements |
| 4.21 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.22 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.23 | Reinforcement detailing instructions and scheduling | | | | L | | | | | | | | | | | | | | | | | |

## SCHEDULE 2, PART 3

## PROGRAMME

NHS Greater Glasgow and Clyde

# New South Glasgow Hospitals Project

## Stage 2 Detailed Design to Full Business Case Appendix K

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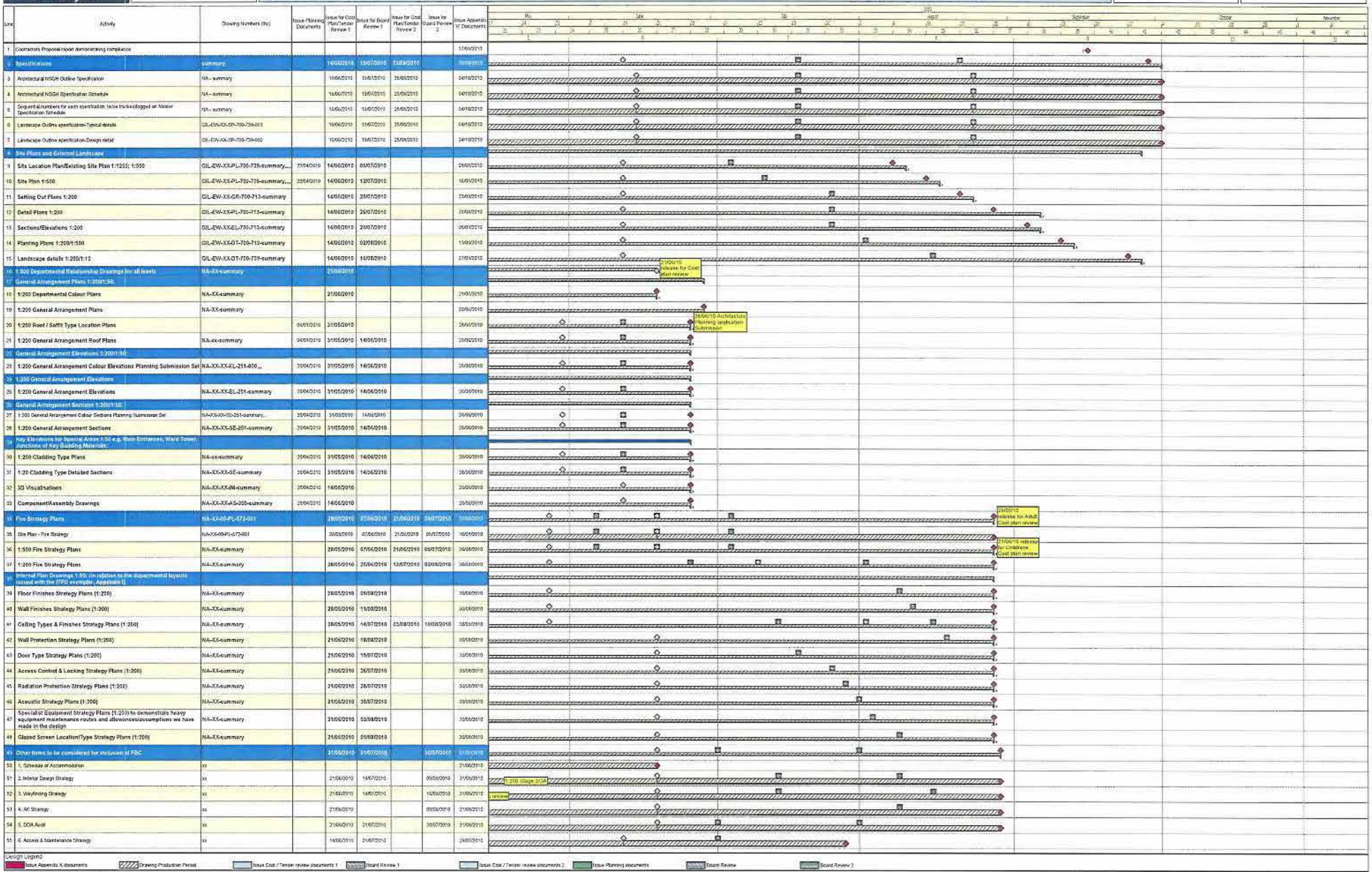


| Line | Activity | Drawing Numbers (No) | Issue Planning Documents | Issue for Cost Plan/Tender Review 1 | Issue for Board Review 1 | Issue for Cost Plan/Tender Review 2 | Issue for Board Review 2 | Issue Appendix K Documents |
|---|---|---|---|---|---|---|---|---|
| 1 | Contractors Proposal report demonstrating compliance | | | | | | | 17/09/2010 |
| 2 | **Specifications** | summary | | 14/05/2010 | 19/07/2010 | 23/08/2010 | | 30/08/2010 |
| 3 | Architectural NSGH Outline Specification | NA - summary | | 14/05/2010 | 19/07/2010 | 25/08/2010 | | 04/10/2010 |
| 4 | Architectural NSGH Specification Schedule | NA - summary | | 14/05/2010 | 19/07/2010 | 25/08/2010 | | 04/10/2010 |
| 5 | Sequential numbers for each specification to be tracked/logged on Master Specification Schedule | NA - summary | | 14/05/2010 | 19/07/2010 | 25/08/2010 | | 04/10/2010 |
| 6 | Landscape Outline specification-Typical details | GIL-EW-XX-SP-700-739-001 | | 14/05/2010 | 19/07/2010 | 25/08/2010 | | 04/10/2010 |
| 7 | Landscape Outline specification-Design detail | GIL-EW-XX-SP-700-739-002 | | 14/05/2010 | 19/07/2010 | 25/08/2010 | | 04/10/2010 |
| 8 | **Site Plans and External Landscape** | | | | | | | |
| 9 | Site Location Plan/Existing Site Plan 1:1251; 1:500 | GIL-EW-XX-PL-700-735-summary,... | 20/04/2010 | 14/05/2010 | 05/07/2010 | | | 05/05/2010 |
| 10 | Site Plan 1:500 | GIL-EW-XX-PL-700-736-summary,... | 23/04/2010 | 14/05/2010 | 12/07/2010 | | | 10/05/2010 |
| 11 | Setting Out Plans 1:200 | GIL-EW-XX-GR-700-713-summary | | 14/05/2010 | 26/07/2010 | | | 23/05/2010 |
| 12 | Detail Plans 1:200 | GIL-EW-XX-PL-700-713-summary | | 14/05/2010 | 26/07/2010 | | | 30/05/2010 |
| 13 | Sections/Elevations 1:200 | GIL-EW-XX-EL-700-713-summary | | 14/05/2010 | 26/07/2010 | | | 05/07/2010 |
| 14 | Planting Plans 1:200/1:500 | GIL-EW-XX-DT-700-712-summary | | 14/05/2010 | 02/08/2010 | | | 13/07/2010 |
| 15 | Landscape details 1:200/1:10 | GIL-EW-XX-DT-700-739-summary | | 14/05/2010 | 16/08/2010 | | | 27/08/2010 |
| 16 | **1:500 Departmental Relationship Drawings for all levels** | NA-XX-summary | | 21/06/2010 | | | | |
| 17 | **General Arrangement Plans 1:200/1:50** | | | | | | | |
| 18 | 1:200 Departmental Colour Plans | NA-XX-summary | | 21/06/2010 | | | | 21/06/2010 |
| 19 | 1:200 General Arrangement Plans | NA-XX-summary | | | | | | 30/06/2010 |
| 20 | 1:200 Roof / Soffit Type Location Plans | | 04/01/2010 | 31/05/2010 | | | | 28/06/2010 |
| 21 | 1:200 General Arrangement Roof Plans | NA-xx-summary | 04/01/2010 | 31/05/2010 | 14/06/2010 | | | 28/06/2010 |
| 22 | **General Arrangement Elevations 1:200/1:50** | | | | | | | |
| 23 | 1:200 General Arrangement Colour Elevations Planning Submission Set | NA-XX-XX-EL-251-000... | 20/04/2010 | 31/05/2010 | 14/06/2010 | | | 28/06/2010 |
| 24 | **1:200 General Arrangement Elevations** | | | | | | | |
| 25 | 1:200 General Arrangement Elevations | NA-XX-XX-EL-251-summary | 20/04/2010 | 31/05/2010 | 14/06/2010 | | | 28/06/2010 |
| 26 | **General Arrangement Sections 1:200/1:50** | | | | | | | |
| 27 | 1:200 General Arrangement Colour Sections Planning Submission Set | NA-XX-XX-SE-251-summary,... | 20/04/2010 | 31/05/2010 | 14/06/2010 | | | 28/06/2010 |
| 28 | 1:200 General Arrangement Sections | NA-XX-XX-SE-251-summary | 20/04/2010 | 31/05/2010 | 14/06/2010 | | | 28/06/2010 |
| 29 | **Key Elevations for Special Areas 1:50 e.g. Main Entrances, Ward Tower Junctions of Key Building Materials** | | | | | | | |
| 30 | 1:200 Cladding Type Plans | NA-xx-summary | 20/04/2010 | 31/05/2010 | 14/06/2010 | | | 28/06/2010 |
| 31 | 1:20 Cladding Type Detailed Sections | NA-XX-XX-SE-summary | 20/04/2010 | 31/05/2010 | 14/06/2010 | | | 28/06/2010 |
| 32 | 3D Visualisations | NA-XX-XX-IM-summary | 20/04/2010 | 14/06/2010 | | | | 28/06/2010 |
| 33 | Component/Assembly Drawings | NA-XX-XX-AS-200-summary | 20/04/2010 | 14/06/2010 | | | | 28/06/2010 |
| 34 | **Fire Strategy Plans** | NA-XX-00-PL-673-001 | | 28/05/2010 | 07/06/2010 | 21/06/2010 | 05/07/2010 | 19/08/2010 |
| 35 | Site Plan - Fire Strategy | NA-XX-00-PL-673-001 | | 28/05/2010 | 07/06/2010 | 21/06/2010 | 05/07/2010 | 19/08/2010 |
| 36 | 1:500 Fire Strategy Plans | NA-XX-summary | | 28/05/2010 | 07/06/2010 | 21/06/2010 | 05/07/2010 | 30/08/2010 |
| 37 | 1:200 Fire Strategy Plans | NA-XX-summary | | 28/05/2010 | 25/06/2010 | 12/07/2010 | 02/08/2010 | 30/08/2010 |
| 38 | **Internal Plan Drawings 1:50; (in relation to the departmental layouts issued with the ITPD exemplar, Appendix I)** | | | | | | | |
| 39 | Floor Finishes Strategy Plans (1:200) | NA-XX-summary | | 28/05/2010 | 05/08/2010 | | | 30/08/2010 |
| 40 | Wall Finishes Strategy Plans (1:200) | NA-XX-summary | | 28/05/2010 | 11/08/2010 | | | 30/08/2010 |
| 41 | Ceiling Types & Finishes Strategy Plans (1:200) | NA-XX-summary | | 28/05/2010 | 14/07/2010 | 03/08/2010 | 16/08/2010 | 30/08/2010 |
| 42 | Wall Protection Strategy Plans (1:200) | NA-XX-summary | | 21/06/2010 | 18/08/2010 | | | 30/08/2010 |
| 43 | Door Type Strategy Plans (1:200) | NA-XX-summary | | 21/06/2010 | 19/07/2010 | | | 30/08/2010 |
| 44 | Access Control & Locking Strategy Plans (1:200) | NA-XX-summary | | 21/06/2010 | 26/07/2010 | | | 30/08/2010 |
| 45 | Radiation Protection Strategy Plans (1:200) | NA-XX-summary | | 21/06/2010 | 26/07/2010 | | | 30/08/2010 |
| 46 | Acoustic Strategy Plans (1:200) | NA-XX-summary | | 21/06/2010 | 26/07/2010 | | | 30/08/2010 |
| 47 | Specialist Equipment Strategy Plans (1:200) to demonstrate heavy equipment maintenance routes and allowances/assumptions we have made in the design | NA-XX-summary | | 21/06/2010 | 02/08/2010 | | | 30/08/2010 |
| 48 | Glazed Screen Location/Type Strategy Plans (1:200) | NA-XX-summary | | 21/06/2010 | 09/08/2010 | | | 30/08/2010 |
| 49 | **Other Items to be considered for inclusion at FBC** | | | 21/06/2010 | 21/07/2010 | | 30/07/2010 | 31/08/2010 |
| 50 | 1. Schedule of Accommodation | xx | | | | | | 21/06/2010 |
| 51 | 2. Interior Design Strategy | xx | | 21/06/2010 | 14/07/2010 | | 09/08/2010 | 31/08/2010 |
| 52 | 3. Wayfinding Strategy | xx | | 21/06/2010 | 14/07/2010 | | 16/08/2010 | 31/08/2010 |
| 53 | 4. Art Strategy | xx | | 21/06/2010 | | | 09/08/2010 | 31/08/2010 |
| 54 | 5. DDA Audit | xx | | 21/06/2010 | 21/07/2010 | | 30/07/2010 | 31/08/2010 |
| 55 | 6. Access & Maintenance Strategy | xx | | 14/06/2010 | 21/07/2010 | | | 28/07/2010 |

Design Legend: Issue Appendix K documents; Drawing Production Period; Issue Cost / Tender review documents 1; Board Review 1; Issue Cost / Tender review documents 2; Issue Planning documents; Board Review; Board Review 2

Date of Issue: 20/04/2010 Drawn By: DAB
Print Date: 08/06/2010 Page 1 of 1

Comments: Appendix K - Architectural deliverables Summary

Programme No.: BCL-GS2-WK-0005
Revision: 02 Revision Date: 08/06/2010

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NHS Greater Glasgow and Clyde

# New South Glasgow Hospitals Project

Stage 2 Detailed Design to Full Business Case Appendix K

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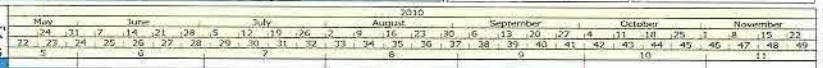
| Line | Activity | Drawing Numbers (tbc) | Issue Planning Documents | Issue for Cost Plan/Tender Review 1 | Issue for Board Review 1 | Issue for Cost Plan/Tender Review 2 | Issue for Board Review 2 | Issue Appendix 'K' Documents |
|---|---|---|---|---|---|---|---|---|
| 1 | Roads | | | | | | | |
| 2 | General Arrangement - 700 | WSP - summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 3 | Road Geometry - 713 | WSP - summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 4 | Road Construction - 714 | WSP - summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 5 | Signs and Road Markings - 715 | WSP - summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 6 | Street Lighting - 716 | WSP - summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 7 | Traffic Signals and controls - 717 | WSP - summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 8 | Drainage | | | | | | | |
| 9 | Underslab Drainage - 770 | WSP - summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 10 | External Drainage - 771 | WSP - summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 11 | Amendments to Public Sewerage System | WSP- summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 12 | Structures / Trees Within 10m of Proposed Drainage | WSP- summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 13 | Temporary Works / Phasing | WSP- summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 14 | Reports - Varies | WSP- summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 15 | Main Adult's and Children's | | | | | | | |
| 16 | Piles Pile Caps and Slab GA - 210 / 220 | WSP- summary | | 30/06/10 | 17/09/10 | | | 04/10/10 |
| 17 | Concrete Framing | WSP- summary | | 30/06/10 | 17/09/10 | | | 04/10/10 |
| 18 | Steelwork | WSP- summary | | 30/06/10 | 17/09/10 | | | 04/10/10 |
| 19 | Energy Centre | | | | | | | |
| 20 | Energy Centre | WSP- summary | | 30/06/10 | 17/09/10 | | | 04/10/10 |




Design Legend

Drawing Production Period | Issue Cost / Tender review documents 1 | Board Review 1 | Issue Appendix K documents

Date of Issue: 06/05/10 Drawn By: DAB

Print Date: 23/05/10 Page 1 of 1

Comments: Appendix K - Civil & Structural deliverables Summary

Programme No.: BCL-GS2-WK-0006

Revision: 01 Revision Date:

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NHS Greater Glasgow and Clyde

# New South Glasgow Hospitals Project

Stage 2 Detailed Design to Full Business Case Appendix K

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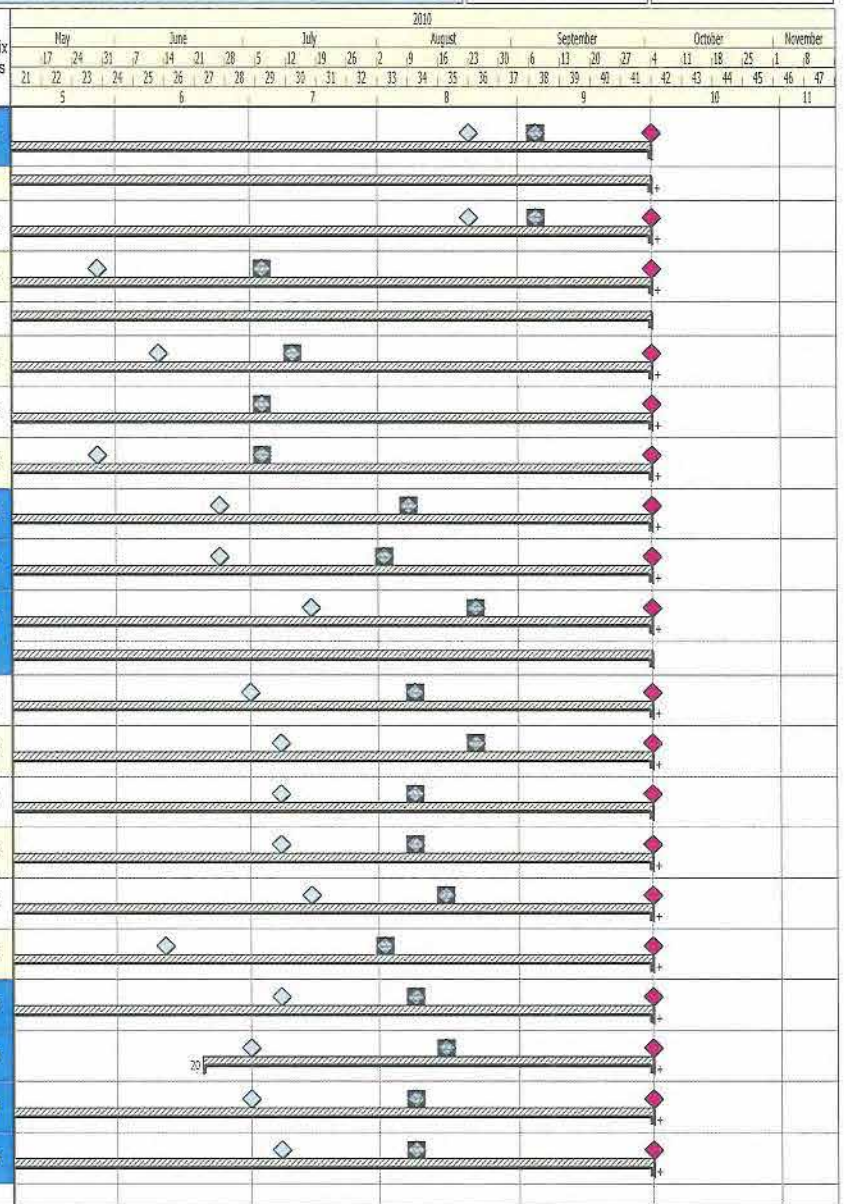
Brookfield

| Line | Activity | Drawing Numbers (tbc) | Issue Planning Documents | Issue for Cost Plan/Tender Review 1 | Issue for Board Review 1 | Issue for Cost Plan/Tender Review 2 | Issue for Board Review 2 | Issue Appendix 'K' Documents |
|---|---|---|---|---|---|---|---|---|
| 1 | Main Adults & Childrens Hospital Specifications | ZBP-XX-XX-SP- | | 23/08/2010 | 06/09/2010 | | | 04/10/2010 |
| 2 | Mechanical Services Specifications | | | | | | | |
| 3 | Schedules of Equipment | ZBP-XX-XX-SH-600-summary | | 23/08/2010 | 06/09/2010 | | | 04/10/2010 |
| 4 | Automated Controls and BMS | ZBP-XX-XX-SP-660-summary | | 28/05/2010 | 05/07/2010 | | | 04/10/2010 |
| 5 | Electrical Services Specifications | | | | | | | |
| 6 | Detailed Design | ZBP-XX-XX-SP-541-summary | | 11/06/2010 | 12/07/2010 | | | 04/10/2010 |
| 7 | Performance Specifications | ZBP-XX-XX-SP-557-summary | | 05/05/2010 | 05/07/2010 | | | 04/10/2010 |
| 8 | LV Cable Schedules | ZBP-XX-XX-SH-600-summary | | 28/05/2010 | 05/07/2010 | | | 04/10/2010 |
| 9 | Mechanical Services Drawings" | ZBP-ZD-00-PL-512-summary | | 25/06/2010 | 06/08/2010 | | | 04/10/2010 |
| 10 | Main Adults & Childrens Hospital Electrical Services Drawings | ZBP-ZD-02-PL-532-summary | | 25/06/2010 | 02/08/2010 | | | 04/10/2010 |
| 11 | Main Adults & Childrens Hospital Public Health Services Drawings | ZBP-ZD-00-PL-600-summary | | 16/07/2010 | 23/08/2010 | | | 04/10/2010 |
| 12 | Specifications for External Services and Energy Centre. | | | | | | | |
| 13 | Mechanical Services Specifications | ZBP-EW-XX-SP-511-summary | | 02/07/2010 | 09/08/2010 | | | 04/10/2010 |
| 14 | Schedules of Equipment | ZBP-XX-XX-SH-600-summary | | 09/07/2010 | 23/08/2010 | | | 04/10/2010 |
| 15 | Electrical Services Specifications | ZBP-EW-XX-SP-761-summary | | 09/07/2010 | 09/08/2010 | | | 04/10/2010 |
| 16 | Detailed Design | ZBP-EW-XX-SP-761-summary | | 09/07/2010 | 09/08/2010 | | | 04/10/2010 |
| 17 | Schedules | ZBP-EW-XX-SH-600-summary | | 16/07/2010 | 16/08/2010 | | | 04/10/2010 |
| 18 | Fire Protection Systems | ME-XX-0-PL-572-summary | | 14/06/2010 | 02/08/2010 | | | 04/10/2010 |
| 19 | External Services & Energy Centre Mechanical Services Drawings | ZBP-EC-XX-SC-513-summary | | 09/07/2010 | 09/08/2010 | | | 04/10/2010 |
| 20 | External Services & Energy Centre Electrical Services Drawings | ZBP-EC-XX-SC-532-summary | | 02/07/2010 | 16/08/2010 | | | 04/10/2010 |
| 21 | External Services & Energy Centre Public Health Services Drawings | ZBP-EC-XX-SC-500-summary | | 02/07/2010 | 09/08/2010 | | | 04/10/2010 |
| 22 | External Services & Energy Centre Site Services Drawings | ZBP-EW-XX-PL-591-summary | | 09/07/2010 | 09/08/2010 | | | 04/10/2010 |




Design Legend

Drawing Production Period | Issue Cost / Tender review documents 1 | Board Review 1 | Issue Appendix K documents

Date of Issue: 20/04/2010 Drawn By: DAB
Print Date: 01/06/2010 Page 1 of 1

Comments: Appendix K - M & E deliverables Summary

Programme No.: BCL-GS2-WK-0007
Revision: 02 Revision Date: 28/05/2010

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# New South Glasgow Hospitals Project

## Stage 3 Adults & Childrens Hospital Procurement Programme

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| Line | Package | Issue 'For Tender' documents T2 | Issue "T2 Docs & Bill of Quantities to Procurement | Out to Tender Date | Tender Return / Negotiate | Issue 'For Construction' Documents T3 | Place order / Appoint Sub-Contractor | Lead Time | Earliest Start on Site |
|---|---|---|---|---|---|---|---|---|---|
| 1 | **Preliminaries Procurement** | | | | | | | | |
| 2 | Temp Electrics & Plumbing | | | 02/08/2010 | 31/08/2010 | | 27/09/2010 | 5w | 02/11/2010 |
| 3 | Tower Cranes | | | | | | | 16w | 07/09/2011 |
| 4 | Scaffolding | | | 18/05/2011 | 16/06/2011 | | 13/07/2011 | 4w | 11/08/2011 |
| 5 | Hoists | | | 29/11/2011 | 10/01/2012 | | 06/02/2012 | 5w,16w | 13/07/2012 |
| 6 | **Supply Chain Partners** | | | | | | | | |
| 7 | Excavation & Earthworks (incl Drainage) | | | | | 09/12/2010 | | 8w | 28/09/2011 |
| 8 | Concrete Substructure & Super-Structure (Dunne) | | | | | 03/12/2010 | | 16w | 03/05/2011 |
| 9 | Lifts Installation BMC and M&E Design | | | | | 18/03/2011 | | 9w 4d | 14/06/2011 |
| 10 | Mechanical Installations (Mercury) | | | | | 18/03/2011 | | 40w | 24/01/2012 |
| 11 | Electrical Installations (Mercury) | | | | | 18/03/2011 | | 40w | 24/01/2012 |
| 12 | Robotics | | | | | 20/05/2011 | | 30w | 10/01/2012 |
| 13 | Lifts Installation (Cars) (Schindler) | | | | | 13/06/2011 | | 25w | 19/09/2012 |
| 14 | Partitions & Dry Lining | | | | | 27/06/2011 | | 12w | 21/02/2012 |
| 15 | Unitised Curtain Walling & Doors (incl link) | | | | | 29/11/2011 | | 40w | 08/10/2012 |
| 16 | **Structural** | | | | | | | | |
| 17 | Remaining Site Works (incl. Lighthouse Burn Diversion) | 05/08/2010 | 20/08/2010 | 06/09/2010 | 01/11/2010 | 08/11/2010 | 28/11/2010 | 10w | 28/02/2011 |
| 18 | Piling | 05/10/2010 | 19/10/2010 | 02/11/2010 | 30/11/2010 | 07/12/2010 | 17/01/2011 | 10w | 28/03/2011 |
| 19 | Diamond Drilling | 02/12/2010 | 16/12/2010 | 25/01/2011 | 17/02/2011 | 07/04/2011 | 06/05/2011 | 4w | 07/06/2011 |
| 20 | Bosuns Chair / Cleaning Cradles | 02/03/2011 | 16/03/2011 | 30/03/2011 | 06/06/2011 | 04/07/2011 | 15/07/2011 | 25w | 07/02/2012 |
| 21 | Structural Steelwork (Plantroom) | 03/07/2011 | 23/07/2011 | 05/09/2011 | 03/10/2011 | 24/10/2011 | 11/11/2011 | 12w | 03/04/2012 |
| 22 | Movement Joints (Floor Finishes) | 28/11/2011 | 13/12/2011 | 10/01/2012 | 06/02/2012 | 27/03/2012 | 24/04/2012 | 12w | 03/09/2012 |
| 23 | Passive Fire Protection | 31/01/2012 | 14/02/2012 | 28/03/2012 | 02/05/2012 | 24/05/2012 | 14/06/2012 | 8w | 24/09/2012 |
| 24 | Atria Roof | 02/05/2012 | 16/05/2012 | 01/06/2012 | 27/07/2012 | 17/08/2012 | 07/09/2012 | 16w | 25/02/2013 |
| 25 | Helipad | 05/07/2012 | 19/07/2012 | 02/08/2012 | 29/09/2012 | 19/10/2012 | 09/11/2012 | 12w | 09/04/2013 |
| 26 | **Envelope** | | | | | | | | |
| 27 | Mersec & Wall Liner | 03/11/2010 | 17/11/2010 | 01/12/2010 | 15/03/2011 | 07/03/2011 | 29/03/2011 | 8w | 07/06/2011 |
| 28 | Roof Edge Protection | 03/12/2010 | 16/12/2010 | 28/01/2011 | 17/03/2011 | 18/04/2011 | 09/05/2011 | 4w | 07/06/2011 |
| 29 | Canopies | 03/12/2010 | 16/12/2010 | 28/01/2011 | 17/03/2011 | 18/04/2011 | 09/05/2011 | 14w | 16/08/2011 |
| 30 | Sundry Glass Structures | 03/12/2010 | 16/12/2010 | 28/01/2011 | 17/03/2011 | 18/04/2011 | 09/05/2011 | 14w | 16/08/2011 |
| 31 | Rainscreen Cladding (Eternit) | 24/02/2011 | 10/03/2011 | 24/03/2011 | 31/05/2011 | 20/06/2011 | 11/07/2011 | 12w | 02/11/2011 |
| 32 | Insulated Render | 24/02/2011 | 10/03/2011 | 24/03/2011 | 31/05/2011 | 20/06/2011 | 11/07/2011 | 12w | 02/11/2011 |
| 33 | Windows (ribbon) | 24/02/2011 | 10/03/2011 | 24/03/2011 | 31/05/2011 | 20/06/2011 | 11/07/2011 | 16w | 02/11/2011 |
| 34 | Doors (external) | 24/02/2011 | 10/03/2011 | 24/03/2011 | 31/05/2011 | 20/06/2011 | 11/07/2011 | 16w | 02/11/2011 |
| 35 | Brickwork & Blockwork | 24/03/2011 | 18/03/2011 | 01/04/2011 | 09/06/2011 | 29/06/2011 | 19/07/2011 | 12w | 13/10/2011 |
| 36 | Copper Metal Cladding | 21/04/2011 | 16/05/2011 | 31/05/2011 | 26/07/2011 | 15/08/2011 | 05/09/2011 | 16w | 05/02/2012 |
| 37 | Aluminium Cladding (Plantroom & Flue) | 21/04/2011 | 16/05/2011 | 31/05/2011 | 26/07/2011 | 15/08/2011 | 05/09/2011 | 12w | 05/02/2012 |
| 38 | Single Ply Membrane Roofing | 21/04/2011 | 16/05/2011 | 31/05/2011 | 26/07/2011 | 15/08/2011 | 05/09/2011 | 12w | 07/02/2012 |
| 39 | Louvres | 21/04/2011 | 16/05/2011 | 31/05/2011 | 26/07/2011 | 15/08/2011 | 05/09/2011 | 12w | 03/04/2012 |
| 40 | Rubber Roof / Resin Bound Gravel | 21/04/2011 | 16/05/2011 | 31/05/2011 | 26/07/2011 | 15/08/2011 | 05/09/2011 | 10w | 05/03/2012 |
| 41 | Green Roofing | 21/04/2011 | 16/05/2011 | 31/05/2011 | 26/07/2011 | 15/08/2011 | 05/09/2011 | 10w | 02/04/2012 |
| 42 | ETFE Membrane Roofing | 21/04/2011 | 16/05/2011 | 31/05/2011 | 26/07/2011 | 15/08/2011 | 05/09/2011 | 12w | 31/05/2012 |
| 43 | Facade cleaning | 27/06/2011 | 11/07/2011 | 25/07/2011 | 20/09/2011 | 11/10/2011 | 31/10/2011 | 12w | 07/02/2012 |
| 44 | Specialist Finishes to Heli-pad Deck and CAA Works | 05/08/2011 | 22/08/2011 | 06/09/2011 | 15/11/2011 | 06/12/2011 | 09/01/2012 | 16w | 10/05/2012 |
| 45 | **Finishes** | | | | | | | | |
| 46 | M&E Access Metalwork/Riser floor decks | 20/04/2011 | 13/05/2011 | 27/05/2011 | 25/07/2011 | 15/08/2011 | 05/09/2011 | 12w | 24/01/2012 |
| 47 | Radiation Protection | 27/05/2011 | 13/06/2011 | 27/06/2011 | 22/08/2011 | 13/09/2011 | 03/10/2011 | 12w | 21/03/2012 |
| 48 | Plantroom Screeds | 11/07/2011 | 25/07/2011 | 05/08/2011 | 04/10/2011 | 25/10/2011 | 14/11/2011 | 8w | 06/03/2012 |
| 49 | Blastracking | 05/08/2011 | 22/08/2011 | 06/09/2011 | 01/11/2011 | 22/11/2011 | 12/12/2011 | 8w | 03/04/2012 |
| 50 | Resin Floors - Plantrooms | 05/08/2011 | 22/08/2011 | 06/09/2011 | 01/11/2011 | 22/11/2011 | 12/12/2011 | 8w | 03/04/2012 |
| 51 | General Metalwork | 31/08/2011 | 19/09/2011 | 26/09/2011 | 25/11/2011 | 14/12/2011 | 17/01/2012 | 12w | 04/06/2012 |
| 52 | Fire Rated Screens (Childrens to atria) | 11/10/2011 | 25/10/2011 | 08/11/2011 | 17/01/2012 | 07/02/2012 | 27/02/2012 | 18w | 24/08/2012 |
| 53 | Sundry Joinery (skirtings / window boards) | 25/10/2011 | 10/10/2011 | 02/11/2011 | 11/01/2012 | 31/02/2012 | 21/03/2012 | 12w | 09/07/2012 |
| 54 | Suspended Ceilings | 11/11/2011 | 25/11/2011 | 09/12/2011 | 17/02/2012 | 09/03/2012 | 29/03/2012 | 10w | 01/08/2012 |
| 55 | Internal Glazed Screens | 15/11/2011 | 29/11/2011 | 13/12/2011 | 21/02/2012 | 13/03/2012 | 02/04/2012 | 18w | 01/10/2012 |
| 56 | Internal Doors & Ironmongery | 15/11/2011 | 29/11/2011 | 13/12/2011 | 21/02/2012 | 13/03/2012 | 02/04/2012 | 18w | 01/10/2012 |
| 57 | Painting & Decorating | 20/12/2011 | 16/12/2011 | 13/01/2012 | 24/02/2012 | 16/03/2012 | 05/04/2012 | 8w | 29/07/2012 |

Date of Issue: 14/12/2009 Drawn By: DAB

Print Date: 17/06/2010 Page 1 of 2

Comments:

Programme No.: BCL-GS3-PR02-0002

Revision: 05 Revision Date: 17/06/2010

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# New South Glasgow Hospitals Project

## Stage 3 Adults & Childrens Hospital Procurement Programme

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| Line | Package | Issue 'For Tender' documents T2 | Issue T2 Docs & Bill of Quantities to Procurement | Out to Tender Date | Tender Return / Negotiate | Issue 'For Construction' Documents T3 | Place order / Appoint Sub-Contractor | Lead Time | Earliest Start on Site |
|---|---|---|---|---|---|---|---|---|---|
| 58 | Soft Floor & Wall Finishes(Incl.dcm & thin bed screed) | 10/01/2012 | 24/01/2012 | 07/02/2012 | 03/04/2012 | 02/05/2012 | 23/05/2012 | 8w | 05/09/2012 |
| 59 | MRI Fit Out | 10/01/2012 | 24/01/2012 | 07/02/2012 | 03/04/2012 | 02/05/2012 | 23/05/2012 | 16w | 29/10/2012 |
| 60 | Reception Desks & Counters | 17/01/2012 | 31/01/2012 | 14/02/2012 | 16/04/2012 | 16/05/2012 | 31/05/2012 | 16w | 24/09/2012 |
| 61 | Roller Shutter Doors | 30/01/2012 | 13/02/2012 | 27/02/2012 | 01/05/2012 | 23/05/2012 | 13/06/2012 | 18w | 30/11/2012 |
| 62 | Demountable Partitions | 30/01/2012 | 13/02/2012 | 27/02/2012 | 01/05/2012 | 23/05/2012 | 13/06/2012 | 18w | 30/11/2012 |
| 63 | Hatches ? Specialist | 13/02/2012 | 27/02/2012 | 12/03/2012 | 16/05/2012 | 07/06/2012 | 27/06/2012 | 16w | 30/11/2012 |
| 64 | Mobile Racking | 28/02/2012 | 13/03/2012 | 27/03/2012 | 01/06/2012 | 22/06/2012 | 12/07/2012 | 18w | 14/01/2013 |
| 65 | Fire Stopping | 23/02/2012 | 07/03/2012 | 21/03/2012 | 25/05/2012 | 18/06/2012 | 05/07/2012 | 8w | 16/10/2012 |
| 66 | Laboratory Fit out (Furniture) | 28/02/2012 | 13/03/2012 | 27/03/2012 | 01/06/2012 | 22/06/2012 | 12/07/2012 | 18w | 14/01/2013 |
| 67 | Blinds / Curtains | 01/03/2012 | 15/03/2012 | 29/03/2012 | 25/06/2012 | 28/06/2012 | 18/07/2012 | 12w | 21/11/2012 |
| 68 | Toilet Cubicles | 01/03/2012 | 15/03/2012 | 29/03/2012 | 25/06/2012 | 28/06/2012 | 18/07/2012 | 12w | 21/11/2012 |
| 69 | Signage (Internal & External) | 15/03/2012 | 29/03/2012 | 20/04/2012 | 19/06/2012 | 10/07/2012 | 30/07/2012 | 10w | 21/11/2012 |
| 70 | Hygenic Wall Coverings | 22/03/2012 | 05/04/2012 | 27/04/2012 | 12/06/2012 | 03/07/2012 | 23/07/2012 | 8w | 31/10/2012 |
| 71 | Mastic Pointing | 22/03/2012 | 05/04/2012 | 27/04/2012 | 12/06/2012 | 03/07/2012 | 23/07/2012 | 8w | 31/10/2012 |
| 72 | Wall Protection | 29/03/2012 | 20/04/2012 | 04/05/2012 | 03/07/2012 | 24/07/2012 | 13/08/2012 | 8w | 21/11/2012 |
| 73 | Acoustic Sliding Partition / Folding Partitions | 17/04/2012 | 01/05/2012 | 15/05/2012 | 12/07/2012 | 02/08/2012 | 22/08/2012 | 8w | 30/11/2012 |
| 74 | Cubical Tracks | 10/05/2012 | 24/05/2012 | 08/06/2012 | 03/08/2012 | 24/08/2012 | 14/09/2012 | 12w | 04/02/2013 |
| 75 | Fire Extinguisher | 05/05/2012 | 22/05/2012 | 05/07/2012 | 03/09/2012 | 24/09/2012 | 12/10/2012 | 20w | 08/05/2013 |
| 76 | Audiology Rooms | 15/06/2012 | 29/06/2012 | 13/07/2012 | 10/09/2012 | 01/10/2012 | 18/10/2012 | 16w | 16/04/2013 |
| 77 | Architectural Metalwork | 28/05/2012 | 12/07/2012 | 26/07/2012 | 21/09/2012 | 28/09/2012 | 18/10/2012 | 16w | 29/04/2013 |
| 78 | Linac Wall Paneling | 14/06/2012 | 28/06/2012 | 12/09/2012 | 07/11/2012 | 28/11/2012 | 18/12/2012 | 12w | 17/05/2013 |
| 79 | CSSD Fit Out | 17/09/2012 | 01/10/2012 | 15/11/2012 | 12/12/2012 | 14/01/2013 | 01/02/2013 | 16w | 19/07/2013 |
| 80 | Hard Floor Coverings Including Screed | 23/10/2012 | 06/11/2012 | 20/11/2012 | 29/01/2013 | 19/02/2013 | 11/03/2013 | 12w | 26/07/2013 |
| 81 | Scissor Lift | 07/02/2013 | 21/02/2013 | 07/03/2013 | 13/05/2013 | 11/06/2013 | 24/06/2013 | 16w | 27/11/2013 |
| 82 | **External Works** | | | | | | | | |
| 83 | Section 75 Works | 21/02/2012 | 06/03/2012 | 20/03/2012 | 24/05/2012 | 22/06/2012 | 05/07/2012 | 16w | 10/12/2012 |
| 84 | Site Roads & Drainage | 21/02/2012 | 06/03/2012 | 20/03/2012 | 24/05/2012 | 22/06/2012 | 05/07/2012 | 16w | 10/12/2012 |
| 85 | Fencing / Gates | 20/03/2012 | 04/04/2012 | 25/04/2012 | 23/06/2012 | 20/07/2012 | 03/08/2012 | 12w | 10/12/2012 |
| 86 | Hard Landscaping | 20/03/2012 | 04/04/2012 | 25/04/2012 | 23/06/2012 | 20/07/2012 | 03/08/2012 | 12w | 10/12/2012 |
| 87 | Street Lighting | 02/10/2012 | 16/10/2012 | 30/10/2012 | 08/01/2013 | 29/01/2013 | 18/02/2013 | 16w | 03/09/2013 |
| 88 | Street Furniture / Bike Shelter | 12/10/2012 | 26/10/2012 | 09/11/2012 | 18/01/2013 | 08/02/2013 | 28/02/2013 | 16w | 14/09/2013 |
| 89 | Soft Landscaping | 17/01/2013 | 31/01/2013 | 14/02/2013 | 18/04/2013 | 13/05/2013 | 03/06/2013 | 12w | 09/10/2013 |
| 90 | Car Park Equipment | 07/02/2013 | 21/02/2013 | 07/03/2013 | 13/05/2013 | 04/06/2013 | 24/06/2013 | 16w | 27/11/2013 |
| 91 | **Ancillary Structures** | | | | | | | | |
| 92 | Bin Stores | 05/09/2012 | 19/09/2012 | 03/10/2012 | 28/11/2012 | 19/12/2012 | 22/01/2013 | 12w | 10/05/2013 |
| 93 | Oil Tank Building / Store | 05/09/2012 | 19/09/2012 | 03/10/2012 | 28/11/2012 | 19/12/2012 | 22/01/2013 | 12w | 10/05/2013 |
| 94 | Gas Bottle Store | 05/09/2012 | 19/09/2012 | 03/10/2012 | 28/11/2012 | 19/12/2012 | 22/01/2013 | 12w | 10/05/2013 |
| 95 | **Construction - Services** | | | | | | | | |
| 96 | Specialist Cold Rooms | 05/11/2011 | 22/11/2011 | 06/12/2011 | 14/02/2012 | 13/03/2012 | 28/03/2012 | 18w | 24/09/2012 |
| 97 | Laboratory Equipment (Fume Cupboards / Safety Cup) | 28/02/2012 | 13/03/2012 | 27/03/2012 | 01/06/2012 | 22/06/2012 | 12/07/2012 | 18w | 14/01/2013 |
| 98 | Clean Rooms / Cat III Fit Out | 27/02/2012 | 13/03/2012 | 26/03/2012 | 31/05/2012 | 21/06/2012 | 11/07/2012 | 18w | 11/01/2013 |
| 99 | Catering Equipment | 20/03/2012 | 03/04/2012 | 25/04/2012 | 22/06/2012 | 13/07/2012 | 02/08/2012 | 16w | 04/02/2013 |
| 100 | **Utilities - Power** | | | | | | | | |
| 101 | **Utilities - Water** | | | | | | | | |
| 102 | **Utilities - Gas** | | | | | | | | |
| 103 | **Utilities - Comms** | | | | | | | | |
| 104 | **Utilities - Sewer** | | | | | | | | |
| 105 | **Equipment** | | | | | | | | |
| 106 | Equipment 1 - HTM Furniture - Joinery | 27/02/2012 | 12/03/2012 | 26/03/2012 | 31/05/2012 | 21/06/2012 | 11/07/2012 | 18w | 11/01/2013 |
| 107 | Specialist Equipment | 03/04/2012 | 25/04/2012 | 10/05/2012 | 06/07/2012 | 27/07/2012 | 16/08/2012 | 16w | 04/02/2013 |
| 108 | Equipment 2 - Fixtures & Fittings | 03/05/2012 | 18/05/2012 | 04/06/2012 | 30/07/2012 | 20/08/2012 | 10/09/2012 | 18w | 12/03/2013 |
| 109 | Equipment 3 - Loose Furniture | 22/06/2012 | 06/07/2012 | 20/07/2012 | 17/09/2012 | 08/10/2012 | 29/10/2012 | 18w | 09/09/2013 |
| 110 | Core Equipment | 06/07/2012 | 20/07/2012 | 03/08/2012 | 01/10/2012 | 22/10/2012 | 09/11/2012 | 16w | 09/05/2013 |
| 111 | Art | 09/06/2012 | 22/06/2012 | 06/07/2012 | 03/09/2012 | 24/09/2012 | 12/10/2012 | 20w | 09/05/2013 |

Design and Procurement Legend

Tender | Negotiate & Award | Lead Time | Earliest Start On Site | Issue 'For Construction' Documents T3 | Issue 'For Tender documents' T2 | Issue T2 Docs & Bill of Quantities to Procurement

Date of Issue: 14/12/2009 Drawn By: DAB

Print Date: 17/06/2010 Page 2 of 2

Comments:

Programme No.: BCL-GS3-PR02-0002

Revision: 05 Revision Date: 17/06/2010

File Path: C:\Documents and Settings\Documents\Programmes\Glasgow Hospitals\Glasgow Programmes\NSGH project programme week 12.asp

**SCHEDULE THREE**

**DESIGN DELIVERABLES**

"Design Deliverables" are those elements of the *services* that need to be completed by the *Consultant* during Stage 2 to enable the following milestones to be achieved:

- To achieve 85% User Group sign off to 1:200 Drawings for Adult Hospital (Current Programme Completion Date for Milestone is 17 May 2010)
- To achieve 85% User Group sign off to 1:200 Drawings for Children's Hospital (Current Programme Completion Date for Milestone is 27 May 2010)
- To achieve 95% sign off to Standard Room Type ADB sheets and 1:50 Drawings (Current Programme Completion Date for Milestone is 27 August 2010)
- Conclusion of Planning Submission – Final Reserved Matters Approvals (Current Programme Completion Milestone is 30 June 2010)
- Achieve Formal Planning Consent from Glasgow City Council (Current Programme Completion for Milestone is 6 October 2010).

Retention will be released pursuant to clause Z30 on a pro rata basis upon the achievement of each milestone.

Other Key Performance Indicators are set out in the *services*.

**CONTRACT DATA PART TWO —**

**DATA PROVIDED BY *THE CONSULTANT***

- The *Consultant* is.....

  Name: Nightingale Architects Limited.

  Address: 87-91 Newman Street, London W1T3EY

- The *key persons* are (name, job, responsibilities, qualifications, experience):

| Name | Title | Role | Qualification | Experience |
|---|---|---|---|---|
| Neil Murphy | Principal | Project Executive | Arch, Tech, Dip | 23 |
| Emma White | Senior Director | Project Lead | BA (Hons) Arch, Part 3, ARB | 12 |
| Jonathan Hendrick | Clinical Design Manager | Clinical Lead | BA (Hons), Dip Arch, RIBA, ARB | 20 |
| Terry Sullivan | Senior Director | Clinical Planner | BA (Arch), ONC, Dip Arch ARB | 25 |
| John Knape | Senior Director | Clinical Planner | Dip Arch, RIBA | 27 |
| Neil Evans | Senior Director | Clinical Planner | RIBA Part 3 | 24 |
| Graham Harris | Senior Director | Clinical Planner | BA Arch, ARB | 13 |
| Matt Cromack | Associate Director | Clinical Planner | MA (Hons), Dip Arch, ARB | 10 |
| Garry Howard | Studio Director | Clinical Planner | BA (Hons) Arch, Dip Arch, ARB | 19 |
| Jamie Brewster | Studio Director | Master Planning/Design Lead | BA (Hons), Dip Arch, RIBA | 12 |
| Alex Van Den Berg | Director | RDS/1:50 Planning Lead | BArch, Registered SACAP | 10 |
| Anna Brown | Architectural Assistant | Project Lead Internal | BArch, BAS | 8 |
| John Wiggett | Architect | Project Leader External | ARB Registered, Architectural Professional Practice PGDip | 7 |

| | | | | |
|---|---|---|---|---|
| Elizabeth Petrovitch | Architectural Assistant | Interior Design, art and way finding Lead | BA Hons Arch MA Interior Architecture | 8 |

- The *staff rates* are:

| Name/Designation | Rate (£/hour) |
|---|---|
| Principal | [redacted] |
| Senior Director | |
| Associate Director/Director/Studio Director | |
| Clinical Design Manager | |
| Team Leader/Senior Architect | |
| Architect | |
| Architectural Assistant | |
| Technician | |

**If Option A is used**

The *activity schedule* is (expressed as a cashflow forecast in accordance with Clause 51.6 and subject to the provisions of Clauses 50 and 51) attached hereto and marked Attachment A.

- The tendered total of the Prices is: [redacted]

**ATTACHMENT A**

**Brookfield Construction (UK) LTD**

**Attachment A**

**New South Glasgow Hospital**

**Nightingales: Cash Drawdown**
**FINAL**

| No. | Month | Concept Design | Stage 2 | Stage 3 | Stage 3A | Notes |
|---|---|---|---|---|---|---|
| | Dec-09 | [redacted] | [redacted] | | | |
| 0 | Jan-10 | | | | | |
| 1 | Feb-10 | | | | | |
| 2 | Mar-10 | | | | | |
| 3 | Apr-10 | | | | | |
| 4 | May-10 | | | | | Key Design deliverables |
| 5 | Jun-10 | | | | | Key Design deliverables |
| 6 | Jul-10 | | | | | |
| 7 | Aug-10 | | | | | Key Design deliverables |
| 8 | Sep-10 | | | | | |
| 9 | Oct-10 | | | | | |
| 10 | Nov-10 | | | | | FBC submission Stage 3 Detailed Design commences |
| 11 | Dec-10 | | | | | Stage 3 Detailed Design commences |
| 12 | Jan-11 | | | [redacted] | | |
| 13 | Feb-11 | | | | | Stage 3 start on site |
| 14 | Mar-11 | | | | | |
| 15 | Apr-11 | | | | | |
| 16 | May-11 | | | | | |
| 17 | Jun-11 | | | | | |
| 18 | Jul-11 | | | | | |
| 19 | Aug-11 | | | | | |
| 20 | Sep-11 | | | | | |
| 21 | Oct-11 | | | | | |
| 22 | Nov-11 | | | | | |
| 23 | Dec-11 | | | | | |
| 24 | Jan-12 | | | | | |
| 25 | Feb-12 | | | | | |
| 26 | Mar-12 | | | | | Assumed M&E starts onsite |
| 27 | Apr-12 | | | | | |
| 28 | May-12 | | | | | |
| 29 | Jun-12 | | | | | |
| 30 | Jul-12 | | | | | |
| 31 | Aug-12 | | | | | |
| 32 | Sep-12 | | | | | |
| 33 | Oct-12 | | | | | |
| 34 | Nov-12 | | | | | |
| 35 | Dec-12 | | | | | |
| 36 | Jan-13 | | | | | |
| 37 | Feb-13 | | | | | |
| 38 | Mar-13 | | | | | |
| 39 | Apr-13 | | | | | |
| 40 | May-13 | | | | | |
| 41 | Jun-13 | | | | | |
| 42 | Jul-13 | | | | | |
| 43 | Aug-13 | | | | | |
| 44 | Sep-13 | | | | | |
| 45 | Oct-13 | | | | | |
| 46 | Nov-13 | | | | | |
| 47 | Dec-13 | | | | | |
| 48 | Jan-14 | | | | | |
| 49 | Feb-14 | | | | | |
| 50 | Mar-14 | | | | | |
| 51 | Apr-14 | | | | | |
| 52 | May-14 | | | | | |
| 53 | Jun-14 | | | | | |
| 54 | Jul-14 | | | | | |
| 55 | Aug-14 | | | | | |
| 56 | Sep-14 | | | | | |
| 57 | Oct-14 | | | | | |
| 58 | Nov-14 | | | | | |
| 59 | Dec-14 | | | | | |
| 60 | Jan-15 | | | | | Stage 3 Completion |
| 61 | Feb-15 | | | | | |
| 62 | Mar-15 | | | | | |
| 63 | Apr-15 | | | | | |
| 64 | May-15 | | | | | |
| 65 | Jun-15 | | | | | |
| 66 | Jul-15 | | | | [redacted] | Stage 3A Commencement |
| 67 | Aug-15 | | | | | |
| 68 | Sep-15 | | | | | |
| 69 | Oct-15 | | | | | |
| 70 | Nov-15 | | | | | |
| 71 | Dec-15 | | | | | |
| 72 | Jan-16 | | | | | |
| 73 | Feb-16 | | | | | |
| 74 | Mar-16 | | | | | |
| 75 | Apr-16 | | | | | |
| 76 | May-16 | | | | | |
| 77 | Jun-16 | | | | | |
| 78 | Jul-16 | | | | | Stage 3A Completion |
| 79 | Jan-17 | | | [redacted] | | Expiry of 24 month DLP Period Stage 3 |
| 80 | Jul-19 | | | | | Expiry of 24 month DLP Period Stage 3A |

**Stage Totals** [redacted]

**Total fee inclusive of all disbursments but excluding VAT** [redacted]

**Retention 10% Stage 2 to be released as per Design Deliverable key milestones**

| Total | Summary | Total Fee | [redacted] |
|---|---|---|---|
| 2.32% | Concept Design | | [redacted] |
| | Stage 1 | Not applicable | |
| 44.32% | Stage 2 | | [redacted] |
| 50.00% | Stage 3 | | |
| 3.36% | Stage3 A | | |
| | | | |
| 100.00% | Total | | |

16 June 2011

NIGHTINGALE associates

architects

Paul Serkis
Bid Director - Construction
Brookfield Multiplex Europe Limited
23 Hanover Square
London
W1S 1JB

Princes Manor Barn
Reading Road
Harwell
Oxon OX11 0LU

Tel: [redacted]
Fax: [redacted]

www.nightingaleassociates.com

Dear Paul

**New South Glasgow Hospital Project**

We acknowledge receipt of the instruction document (Appendix 2 of the Agreement for the above project) from you to continue to provide the *services*, as defined in the Agreement dated 18 June 2010, by commencing and carrying out Stage 3 and Stage 3A of the *services*.

Please find attached a copy of this document, duly signed by Nightingale Associates.

We would refer to our discussion during week commencing 06 June 2011, and in particular our email to you dated 09 June 2011, regarding the ongoing resolution of the programme. Notwithstanding the reference and attachment to this instruction, of programme 'BCL-GS3-PR3-0004', Brookfield Multiplex and Nightingale Associates are working together to establish the exact timings for the delivery of Stage 3 and Stage 3A *services*.

Yours sincerely

[redacted]

**Paul Hewes**
UK Business Director
Nightingale Associates

Att

cc: Neil Murphy, Principal – London Office, Nightingale Associates (letter and attachment)

**This is Appendix 2 to the foregoing Agreement between Brookfield Construction (UK) Limited**

**and**

**Nightingale Associates Limited**

**BROOKFIELD CONSTRUCTION (UK) LIMITED** of 23 Hanover Square, London, United Kingdom W1S1JL ("the *Employer*"); and

**NIGHTINGALE ASSOCIATES LTD** having its Registered Office at 87-91 Newman Street, London, W1T 3EY (the "*Consultant*").

WHEREAS

1. The *Employer* and the *Consultant* entered into the Agreement dated 18 June 2010 whereby the *Consultant* is to Provide the Services in connection with the New South Glasgow Hospital Project.
2. The *Employer* wishes the *Consultant* to continue to Provide the Services by commencing and carrying out:

| | | |
|---|---|---|
| Stage 3 | Final design and construction of the New Hospitals Building | Final design and construction of the New Adult Acute and New Children's Hospitals and Energy Centre. Consecutive to Stage 2. |
| Stage 3A | Demolition and Final Landscaping | Demolition of surgical block and associated buildings and completion of soft landscaping. |

NOW IT IS AGREED THAT

1. The *Employer* hereby authorises the *Consultant* to commence and carry out Stage 3 and Stage 3A of the *services* ie the Final design and construction of the New Adult Acute and New Children's Hospitals and *services* in connection with the demolition of the surgical block and associated buildings.

NIGHTINGALE ASSOCIATES
2 4 MAY 2011
ACTION
TO
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2. The *Consultant* will continue to Provide the Services in accordance with the Agreement.

3. The Parties agree and acknowledge that there shall be no adjustment to the Prices as a result of the issue of this Notice to Proceed.

4. The Agreement is amended and modified to reflect and/or incorporate the following:-

   - Notice to Proceed dated 16th December 2010 between the Employer and Greater Glasgow and Clyde Health Board. (attached as Appendix One)
   - The *activity schedule* contained within Attachment A in Contract Data Part Two shall be replaced by the attached revised payment profile (attached as Appendix Two).
   - The Programme contained within Schedule 2 Part Three of Contract Data Part One shall be replaced by the attached programme (attached as Appendix Three)

EXECUTE [redacted] d on behalf of the *Employer* at 24 January 2011 as follows:-

[redacted]

(Authorised official)

Before this witness: -

PAUL SERKIS ..... Full name

23 HANOVER SQUARE Address
LONDON W1S 1JL

EXECUTED for and on behalf of the Consultant acting by its duly appointed attorneys in the presence of a witness

Name: RICHARD HARRINGTON.

Signature: [redacted]

Name: ANDREW JACKSON

[redacted]

Witness Signature:

Name: PAUL HEWES.

Address: [redacted]

**This is Appendix 2 & 3 to the foregoing Agreement between Greater Glasgow and Clyde Health Board**

**and**

**Brookfield Construction (UK) Limited**

**GREATER GLASGOW AND CLYDE HEALTH BOARD** of J B Russell House, Gartnavel Royal Hospital, 1055 Great Western Road, Glasgow G12 0XH ("the *Employer*"); and

**BROOKFIELD CONSTRUCTION (UK) LIMITED** having its principal place of business at 23 Hanover Square, London, W1S 1JB (the "*Contractor*").

WHEREAS

1. The *Employer* and the *Contractor* entered into the Agreement dated 18th December 2009 whereby the *Contractor* is to Provide the Works in connection with the New South Glasgow Hospital Project.
2. The *Employer* wishes the *Contractor* to continue to Provide the Works by commencing and carrying out:

| | | |
|---|---|---|
| Stage 3 | Design and Construct New Hospitals Building | Design and Construction of the New Adult Acute and Children Hospitals Building and Energy Centre. |
| Stage 3A | Demolition of Surgery Block | Demolition of surgical block and associated buildings and completion of soft landscaping |

NOW IT IS AGREED THAT

1. The *Employer* hereby authorises the *Contractor* to commence and carry out Stage 3 and Stage 3 A of the *works* i.e. the Design and Construction of the New Hospitals Building, and demolition of the surgical block and associated buildings and completion of soft landscaping.
2. The *Contractor* will continue to Provide the Works in accordance with the Agreement.

3. The Agreement Is amended and modifled to the followlng extent:-

i. The Base Date for monitoring the *Employer* Accepted Risk on Inflation for all Stages will be 1st January 2011.

ii. The Start on Site date for Stage 3 Is amended from 28th February 2011 to 28th March 2011 at which point the *Employer* will ensure the provision of a totally clear site for access by the *Contractor*. It is accepted by the *Employer* that the *Contractor* shall be entitled to undertake enablIng works prior to this date.

iii. The Start on Site Date for Stage 3A is amended from 20th July 2015 to 17th August 2015

iv. Option X5 Clause, the Completion Date for Section 2 (Stage 3 New Hospital) is amended from 31st January 2015 to 28th February 2015 and the Completion Date for Section 3 (Stage 3A Demolition) Is amended from 19th July 2016 to 16th August 2016

v. Contract Data Part One and Contract Data Part Two forming part of executed Contract dated 18th December 2009, is amended and supplemented as follows:-

Employers Requirements Supplemental Information –

- BIW Log (as included within Folder B1 of the Instruction to Proceed Bible titled The BIW Log (2010 ItP) – (FINAL) )
- RFI Log (as included within Folder B1 of the Instruction to Proceed Bible titled The RFI Log (2010 ItP) – (FINAL) )
- Clarification Log (as included withIn Folder B1 of the Instruction to Proceed Bible titled The Clarification Log (2010 ItP) – (FINAL))
- M+E Clarification Log (as included within Folder B1 of the Instruction to Proceed Bible titled The M&E Clarification Log (2010 ItP) – (FINAL))
- Laboratory Log (as Included withIn Folder B1 of the Instruction to Proceed BIble) (as executed Agreement 18th December 2009)
- Sustainability Log (as included within Folder B1 of the Instruction to Proceed Bible titled The Sustainability Log (2010 ItP) – (FINAL))

- Stage 3 Instruction to Proceed Log December 2010 (new) (as included within Folder S of the Instruction to Proceed Bible)

Contractors Proposals –

- Volume 1 (as included with Folder C1 of the Instruction to Proceed Bible) – Schedule of Accommodation titled SOA 1:200 Drawings. By reference to the 1:200 drawings included within Volume 13 of this agreement the areas denoted on the drawings represent the agreed position between the Parties to the Contract. The Parties agree to use reasonable endeavours to prove functionality and to maintain the overall areas as currently indicated and the *Employer* agrees that any adjustments to areas during the remaining 1:50 review process (excluding Plantrooms and Service Risers with the exception of those adjustments due to a change within the Employer's Requirements) that cannot be accommodated within the Departmental areas or within the overall building envelope that give rise to an increase in area will be an additional Employer Risk. The Parties accept that the 0.5% risk accepted by the Contractor within the Agreement of 18th December 2009 has already been absorbed by the Contractor.
- Volume 2 (as included within Folder D1 of the Instruction to Proceed Folder) – Drawings.
- Volume 3 (as included within Folder F1 of the Instruction to Proceed Bible) – Design Narratives
- Volume 4 (as included within Folder G1 of the Instruction to Proceed Bible) – Specifications
- Volume 5 (as included within Folder H1 of the Instruction to Proceed Bible) – Components titled 2010 ItP Project Bible - Folder H1 – Components (FINAL)
- Volume 6 (as included within Folder T of the Instruction to Proceed Bible) – Equipment (as amended 16th December 2010). These revised Equipment Schedules define the current position agreed between the Parties to the Contract and thus the quantities and coding identified therein take precedence over the Drawings included

within Volumes 2, 13, 14, and 15 of this Appendix 2 and 3 agreement. For purpose of clarity any change in quantity or coding will be an Employer Risk pursuant to Risk Items 25, 39 and 40 on the Stage 3 NSGH Board Risk Schedule included within the Contract.

- Volume 7 (as included within Folder I1 of the Instruction to Proceed Bible) – SHTM (as executed Agreement 18th December 2009)
- Volume 8 (as Included within Folder J1 of the Instruction to Proceed Bible) – ADB titled EDS ItP Batch 1 - ZBP updates_141210" & "EDS ItP Batch 2 - ZBP updates_141210" & "2900-NSGH-Environmental matrix_comments-011210 (Final)
- Volume 9 (as included within Folder K1 of the Instruction to Proceed Bible) – Programme titled Stage 3 Summary Master Programme, BCL-GSM-CN02-0001 (FINAL)
- Volume 10 (as included within Folder L1 of the Instruction to Proceed Bible) – Logistics (as amended 16th December 2010)
- Volume 11 – Not Used
- Volume 12 – Commercial (as executed Agreement 18th December 2009 unless amended by this Appendix 2 & 3, or Compensation Event already issued, or Project Managers Instruction already issued)
- Volume 13 (as Included within Folder U of the Instruction to Proceed Bible) (new) – Masterplan & Architecture Proposals (Agreed Appendix k drawing schedule)
- Volume 14 (as included within Folder V of the Instruction to Proceed Bible) (new) – M&E Engineering Proposals (Agreed Appendix k drawing schedule)
- Volume 15 (as included within Folder W of the Instruction to Proceed Bible) (new) – Civil / Structural Engineering Proposals (Agreed Appendix k drawing schedule)
- Volume 16 Critical Failures (as included within Folder X of the Instruction to Proceed Bible titled Appendix X1 (FINAL)

- Volume 17Planning Consents Pack (as included within Folder Y of the Instruction to Proceed Bible)

vi. Compensation Events and Project Managers Instructions as issued prior to execution date of this Appendix 2 & 3

EXECUTED for and on behalf of the *Employer* at 16th day of December 2010 as follows:-

[redacted]

(Authorised official)

Before this witness:- [redacted]

ALAN SEABOURNE..... Full name
CONSTRUCTION SITE, HARDGATE ROAD,
GOVAN, GLASGOW, G51 4SX Address

EXECUTED for and on behalf of the *Contractor* at 16th day of December 2010 as follows:-

[redacted]

(~~Director/~~Authorised Signatory)

Before this witness:-

[redacted] Full name

Address [redacted]

Brookfield Construction (UK) LTD

Attachment A

New South Glasgow Hospital

Nightingales: Cash Drawdown
FINAL

| No. | Month | Concept Design | Stage 2 | Stage 3 | Stage 3A | Notes |
|---|---|---|---|---|---|---|
| | [redacted] | | | | | |
| | Dec-09 | | | | | |
| 0 | Jan-10 | | | | | |
| 1 | Feb-10 | | | | | |
| 2 | Mar-10 | | | | | |
| 3 | Apr-10 | | | | | |
| 4 | May-10 | | | | | Key Design deliverables |
| 5 | Jun-10 | | | | | Key Design deliverables |
| 6 | Jul-10 | | | | | |
| 7 | Aug-10 | | | | | Key Design deliverables |
| 8 | Sep-10 | | | | | |
| 9 | Oct-10 | | | | | |
| 10 | Nov-10 | | | | | FBC submission Stage 3 Detailed Design commences |
| 11 | Dec-10 | | | | | |
| 12 | Jan-11 | | | | | Stage 3 Detailed Design commences |
| 13 | Feb-11 | | | | | |
| 14 | Mar-11 | | | | | Stage 3 start on site |
| 15 | Apr-11 | | | | | |
| 16 | May-11 | | | | | |
| 17 | Jun-11 | | | | | |
| 18 | Jul-11 | | | | | |
| 19 | Aug-11 | | | | | |
| 20 | Sep-11 | | | | | |
| 21 | Oct-11 | | | | | |
| 22 | Nov-11 | | | | | |
| 23 | Dec-11 | | | | | |
| 24 | Jan-12 | | | | | |
| 25 | Feb-12 | | | | | |
| 26 | Mar-12 | | | | | Assumed M&E starts onsite |
| 27 | Apr-12 | | | | | |
| 28 | May-12 | | | | | |
| 29 | Jun-12 | | | | | |
| 30 | Jul-12 | | | | | |
| 31 | Aug-12 | | | | | |
| 32 | Sep-12 | | | | | |
| 33 | Oct-12 | | | | | |
| 34 | Nov-12 | | | | | |
| 35 | Dec-12 | | | | | |
| 36 | Jan-13 | | | | | |
| 37 | Feb-13 | | | | | |
| 38 | Mar-13 | | | | | |
| 39 | Apr-13 | | | | | |
| 40 | May-13 | | | | | |
| 41 | Jun-13 | | | | | |
| 42 | Jul-13 | | | | | |
| 43 | Aug-13 | | | | | |
| 44 | Sep-13 | | | | | |
| 45 | Oct-13 | | | | | |
| 46 | Nov-13 | | | | | |
| 47 | Dec-13 | | | | | |
| 48 | Jan-14 | | | | | |
| 49 | Feb-14 | | | | | |
| 50 | Mar-14 | | | | | |
| 51 | Apr-14 | | | | | |
| 52 | May-14 | | | | | |
| 53 | Jun-14 | | | | | |
| 54 | Jul-14 | | | | | |
| 55 | Aug-14 | | | | | |
| 56 | Sep-14 | | | | | |
| 57 | Oct-14 | | | | | |
| 58 | Nov-14 | | | | | |
| 59 | Dec-14 | | | | | |
| 60 | Jan-15 | | | | | |
| 61 | Feb-15 | | | | | Stage 3 Completion |
| 62 | Mar-15 | | | | | |
| 63 | Apr-15 | | | | | |
| 64 | May-15 | | | | | |
| 65 | Jun-15 | | | | | |
| 66 | Jul-15 | | | | | |
| 67 | Aug-15 | | | | | Stage 3A Commencement |
| 68 | Sep-15 | | | | | |
| 69 | Oct-15 | | | | | |
| 70 | Nov-15 | | | | | |
| 71 | Dec-15 | | | | | |
| 72 | Jan-16 | | | | | |
| 73 | Feb-16 | | | | | |
| 74 | Mar-16 | | | | | |
| 75 | Apr-16 | | | | | |
| 76 | May-16 | | | | | |
| 77 | Jun-16 | | | | | |
| 78 | Jul-16 | | | | | |
| 79 | Aug-16 | | | | | Stage 3A Completion |
| 80 | Feb-17 | | | | | Expiry of 24 month DLP Period Stage 3 |
| 81 | Aug-19 | | | | | Expiry of 24 month DLP Period Stage 3A |

Stage Totals [redacted]

Total fee inclusive of all disbursements but excluding VAT [redacted]

Retention 10% Stage 2 to be released as per Design Deliverable key milestones

| Total | Summary | Total Fee [redacted] |
|---|---|---|
| 2.32% | Concept Design | [redacted] |
| | Stage 1 | Not applicable |
| 44.32% | Stage 2 | |
| 50.00% | Stage 3 | [redacted] |
| 3.36% | Stage3 A | |
| 100.00% | Total | |

NHS Greater Glasgow and Clyde

# New South Glasgow Hospitals Project

Stage 3 Adult & Childrens Hospital Procurement Programme

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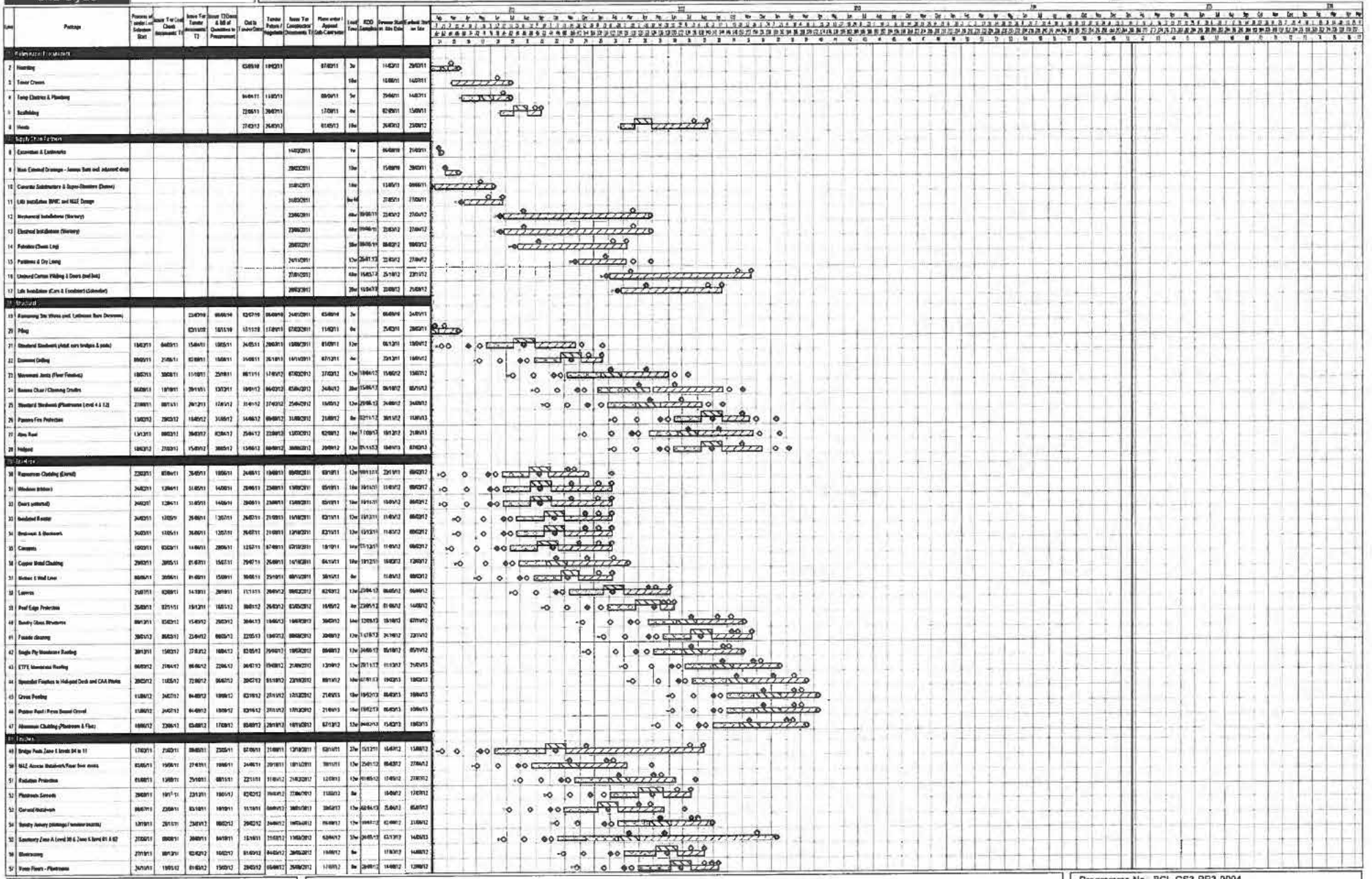
Brookfield



Date of Issue: 16/02/2011 Drawn By: AB

Print Date: 17/02/2011 Page 1 of 2

Comments:

Programme No.. BCL-GS3-PR3-0004

Revision: Revision Date: 16/02/2011

NHS Greater Glasgow and Clyde

# New South Glasgow Hospitals Project

## Stage 3 Adult & Childrens Hospital Procurement Programme

"This programme is copyright and the property of Brookfield Construction (UK) Ltd and must not be used with out written approval".



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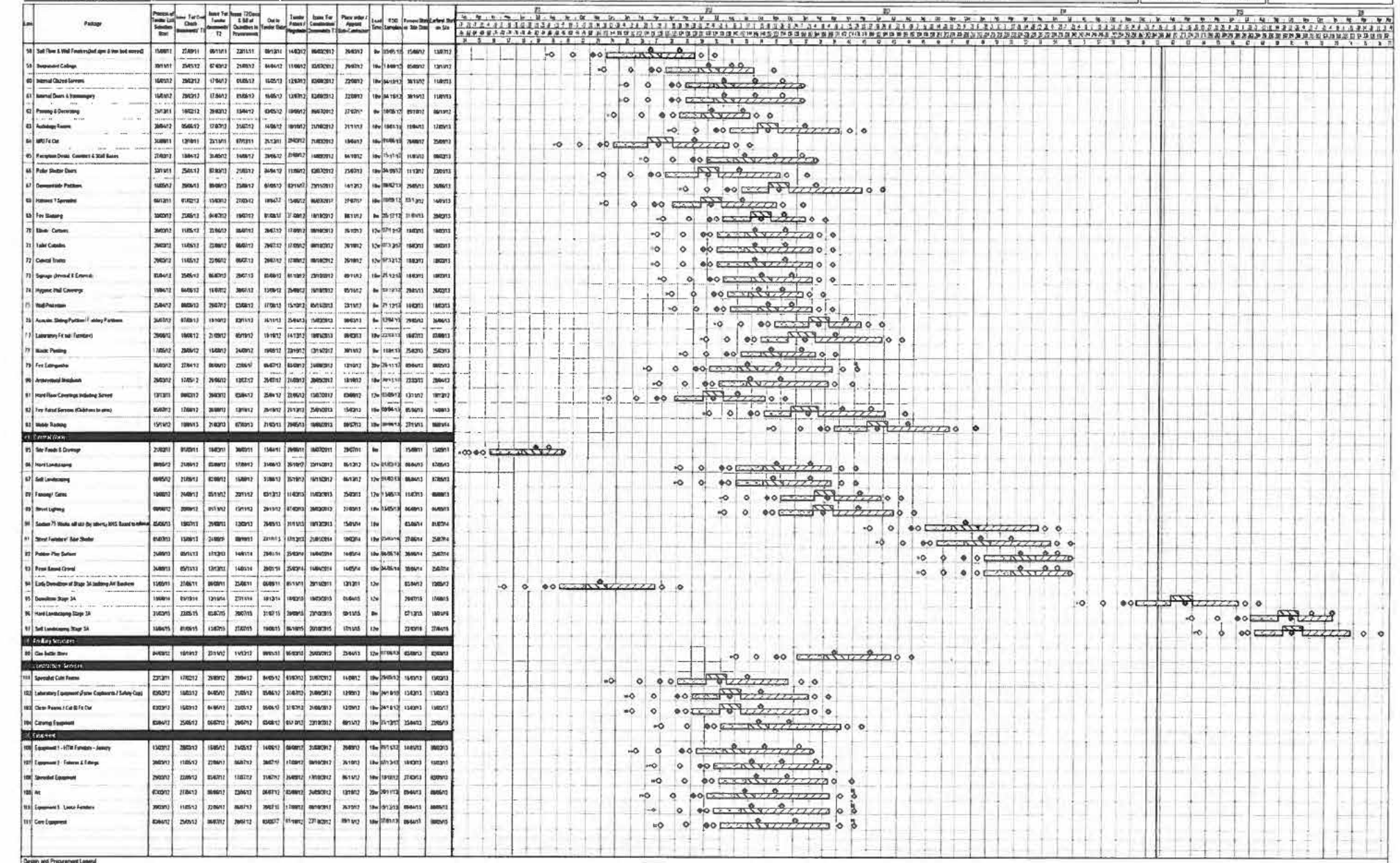

Date of Issue: 16/02/2011 Drawn By: AB
Print Date: 17/02/2011 Page 2 of 2

Comments:

Programme No.: BCL-GS3-PR3-0004
Revision: Revision Date: 16/02/2011

DATED 28 Sept 2010

**BROOKFIELD CONSTRUCTION (UK) LIMITED**

- and -

**ZISMAN BOWYER & PARTNERS LLP**

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# PROFESSIONAL SERVICES CONTRACT

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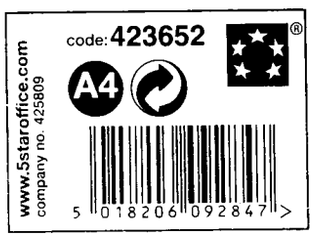
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www.5staroffice.com
company no. 425809
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A49342285

**AGREEMENT**

between

**BROOKFIELD CONSTRUCTION (UK) LIMITED** of 23 Hanover Square, London, United Kingdom W1S 1IB ("the *Employer*"); and

**ZISMAN BOWYER & PARTNERS LLP** having its Registered Office at 1 Eton Street, Richmond, Surrey TW91EF (the "*Consultant*").

WHEREAS: -

The *Employer* has been appointed to carry out the design and construction of the New South Glasgow Hospital ("the Project") and wishes to have the *Consultant* Provide the *services* in connection with the same as follows: -

| Stage | Heading | Outline Activities |
|---|---|---|
| Stage 1 | Design and Construct Laboratories | Detailed design and construction of the Laboratories and FM Hub. Concurrent with Stage 2. |
| Stage 2 | Design Development - New Hospitals Building | Detailed design of New Adult Acute and New Children's Hospitals to Full Business Case Submission. Concurrent with Stage 1. |
| Stage 3 | Final Design of the New Hospitals Building | Completion of detailed design of New Adult Acute and New Children's Hospitals and Energy Centre. Consecutive to Stage 2. |
| Stage 3A | Demolition and Final | Demolition of surgical block and |

| Stage | Heading | Outline Activities |
|---|---|---|
| | Landscaping | associated buildings and completion of soft landscaping. |

**NOW IT IS AGREED THAT**

1. The *Consultant* will Provide the Services in accordance with the NEC Professional Services Contract, Option A: Priced Contract with activity schedule June 2005 (as the same are amended in by the Contract Data) ("*the conditions of contract*") and the principles stated in Appendix 1 of this Agreement.
2. The *Employer* will pay the *Consultant* in accordance with Section 5 of the *conditions of contract.*
3. The *Consultant* acknowledges and agrees that as at the Contract Date the Consultant shall be authorised to proceed with the *services* in connection with Stage 2 only. The *Consultant* is authorised to commence and proceed with Stages 3 and 3A upon written authorisation given by the *Employer* in the form attached as Appendix 2 hereto. In the event that the *Consultant* undertakes any work in connection with Stages 3 or 3A without such written authority from the *Employer*, the *Consultant* does so at his own cost and risk.
6. The documents forming part of this contract are:
   - 6.1 this Agreement
   - 6.2 the *conditions of contract*,
   - 6.3 Contract Data part one — data provided by the *Employer*
   - 6.4 Contract Data part two - Data provided by the *Consultant*
7. In the event of conflict between the documents forming part of this contract the following order of priority will apply:-
   - 7.1 This Agreement (excluding Appendix 1)
   - 7.2 The *conditions of contract*,
   - 7.3 Contract Data Part One (including the Scope).
   - 7.4 Contract Data Part Two
   - 7.5 Appendix 1 of this Agreement

IN WITNESS WHEREOF these presents consisting of this and the 2 preceding pages together with Appendices 1 and 2 and the Contract Data part one (including its Appendices) and Contract Data part two are executed as follows: -

**EXECUTED** as a **DEED** by )
**BROOKFIELD CONSTRUCTION (UK)** )
**LIMITED** )
and signed accordingly by )

Director [redacted]

Director/Secretary [redacted]

**EXECUTED** as a **DEED** by )
**ZISMAN BOWYER AND PARTNERS LLP** )
and signed accordingly by )

Director D.H. SAFFIN

Director/Secretary R. J. BROWN

[redacted]

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**This is Appendix 1 to the foregoing Agreement between Brookfield Construction (UK) Limited**

**and**

**Zisman Bowyer & Partners LLP**

**Principles governing the Agreement**

**Definitions**

| **Defined Term** | **Definition** |
|---|---|
| "Building Contract" | means the contract between or to be entered into between the Employer and Greater Glasgow and Clyde Health Board in relation to the design and construction of the New South Glasgow Hospital. |
| "Overriding Objective" | means the objective set out in Paragraph 4. |
| "Overriding Principle" | means principle set out in Paragraph 1. |
| "Professional Advisor" | means any party providing specialist advice to the *Employer*. |

1. The Overriding Principle of this Agreement is to work together with the *Employer* and its Professional Advisers in a co-operative and collaborative manner to achieve the Overriding Objective acting in good faith and in the spirit of mutual trust and respect.
2. In order to work together in co-operative and collaborative manner the *Employer* and the *Consultant* agree that they should each give to and welcome from each other, and any Professional Adviser, feedback on performance and shall share information openly and highlight any difficulties at the earliest practical time. The parties shall support collaborative behaviour and confront behaviour that does not comply with the Overriding Principle.
3. The terms of the Agreement shall be interpreted according to their natural meaning but in the event of any ambiguity in their natural meaning they shall be interpreted so as to give best effect to the Overriding Principle.
4. In entering into the Agreement the parties' Overriding Objective is by working together in accordance with the terms of the Agreement to achieve the successful delivery by the *Consultant* of the *services*: -

4.1 carry out the services exercising reasonable skill and care having due regard to the standard and functionality defined within the Employer's Requirements as set out in the Building Contract;

4.2 at a cost that offers best value for money taking into account whole life (as well as capital) costs over the proposed design life of the *works* through the application of the principles of value engineering; and

4.3 to use reasonable endeavours to achieve the timescale acceptable to the *Employer* and agreed between the parties without compromising health and safety or the *Employer*'s required standards and the quality of the completed *works* and in any event before the Completion Dates set out in the Building Contract.

5. The *Consultant* shall carry out the management and be responsible for the delivery of the *services* in accordance with the Agreement and shall work and liaise with the *Employer* and any of its Professional Advisers as necessary or appropriate or as requested by the *Employer* in order to achieve the Overriding Objective.

6. The *Consultant* shall engage persons from the key people set out in the Contract Data — Part two in the performance of the *services* to be provided by the *Consultant* under the Agreement and shall not replace any of the key people without the approval of the *Employer* (such approval not to be unreasonably withheld). The *Consultant* will ensure that where a member of its key personnel is replaced that they have the skills, qualifications, experience and ability to provide the best service to the *Employer*.

7. Throughout the period of the Agreement the performance of the *Consultant* shall in relation to the *services* be monitored against the Key Performance Indicators defined in the Scope and/or the Contract Data and/or the Contract Data to the Building Contract.

8. During the period of the Agreement amendments may be made to the Key Performance Indicators by agreement between the *Employer* and the *Consultant* except where the Client is required by the Scottish Government or regulatory bodies to provide Key Performance Indicators. In such cases the *Employer* will provide information on any requirements to the *Consultant* as soon as reasonably practicable.

9. At 2 monthly intervals or at such other intervals as the parties may agree during the performance of the Agreement, the *Employer* and the *Consultant* shall undertake formal reviews of the performance of the *Consultant* against its Key Performance Indicators. The *Employer* and the *Consultant* will discuss any way in which the performance of the *Consultant* may be improved.

10. The *Consultant* shall keep a comprehensive record as specified by the *Employer* of all performance monitoring carried out under the Agreement in such form as the *Employer* may reasonably request for a period of 6 years after the expiry or earlier termination of this

Agreement and shall provide copies of such records to the *Employer* for the *services* to enable him to record, disseminate and compare the performance of the *Consultant*. Each record shall be retained in a format that can be read and copied and kept with the IT requirements on an electronic based database.

11. The *Consultant* shall throughout the period of the Agreement look for and seek to achieve continuous improvement in the quality of the *services* while reducing whole life costs, wastage (in accordance with WRAP guidance), and the time taken to deliver the *services*. Innovation and best practice will be shared with the *Employer*.

12. To achieve the aim set out in Clause 11 the *Consultant* shall actively participate in the continuous improvement "learning sets" with the Employer in relation to the Agreement. This commitment is likely to involve meetings at least once every 3 months in relation to the *services* and meetings at least once every 6 months in relation to the lessons to be learned. The *Consultant* shall also use reasonable endeavours to procure the involvement of any of its subconsultants in such learning sets where considered appropriate.

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**This is Appendix 2 to the foregoing Agreement between Brookfield Construction (UK) Limited**

**and**

**Zisman Bowyer & Partners LLP**

**BROOKFIELD CONSTRUCTION (UK) LIMITED** of 23 Hanover Square, London, United Kingdom W1S 1JB ("the *Employer*"); and

**ZISMAN BOWYER & PARTNERS LLP** having its Registered Office at 1 Eton Street, Richmond, Surrey TW91EF (the "*Consultant*").

WHEREAS

1. The *Employer* and the *Consultant* entered into the Agreement dated [ ] whereby the *Consultant* is to Provide the Services in connection with the New South Glasgow Hospital Project.
2. The *Employer* wishes the *Consultant* to continue to Provide the Services by commencing and carrying out:

| | | |
|---|---|---|
| Stage 3 | Detailed design of the New Hospitals Building | Detailed design of the New Adult Acute and New Children's Hospitals and Energy Centre. Consecutive to Stage 2. |
| Stage 3A | Demolition and Final Landscaping | Demolition of surgical block and associated buildings and completion of soft landscaping. |

NOW IT IS AGREED THAT

1. The *Employer* hereby authorises the *Consultant* to commence and carry out Stage 3 and Stage 3A of the *services* ie the Final design of the New Adult Acute and New Children's Hospitals and *services* in connection with the demolition of the surgical block and associated buildings.
2. The *Consultant* will continue to Provide the Services in accordance with the Agreement.
3. The Agreement is amended and modified to the following extent:-

*Any amendments to the Scope and/or Contract Data which will have come about during Stage 2*

EXECUTED for and on behalf of the *Employer* at [ ] 20 [ ] as follows:-

.....

(Authorised official)

Before this witness: -

..... ..... Full name

..... ..... Address

EXECUTED for and on behalf of the *Consultant* at [ ] day of [ ] 20 [ ] as follows: -

.....

(Director/Authorised Signatory)

Before this witness: -

..... Full name

..... Address

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**CONTRACT DATA PART ONE —**

**DATA PROVIDED BY *THE EMPLOYER***

**Contract Data Part one - Data provided by the *Employer***

**1. General**

- The *conditions of contract* are the core clauses for main Option A, dispute resolution Option W2 and Secondary Options — X2, X5, X8, X18.3, Y(UK)2 and Z of the NEC3 Engineering and Construction Contract (June 2005).
- The services are management and delivery of design services for the New South Glasgow Hospital Project as the *services* are more specifically referred to in the Scope.
- The *Employer* is

  Name: Brookfield Construction (UK) Limited

  Address: 23 Hanover Square, London, United Kingdom W1S1JB
- The *Adjudicator* is: to be nominated by the Nominating Body
- The *Services* are: set out in Schedule 2.
- The Scope is in: Schedule 2.
- The *language* of the contract is English.
- The *law of the contract* is the law of Scotland subject to the jurisdiction of the Courts of Scotland.
- The *period for reply* to a communication is
  - to *Consultant's* submission of particulars of design for acceptance - Four (4) weeks
  - Reply to all other communications unless otherwise stated in this contract three (3) weeks
- The *Adjudicator* nominating body is:

  The Scottish Branch of the Royal Institute of Chartered Surveyors
- The *tribunal* is the Scottish Courts

**2. The Parties' main responsibilities:**

Not used

**3. Time**

- The *starting date* is 18 December 2009

- The Consultant submits revised programmes at intervals no longer than three (3) weeks.

**4. Quality**

- The quality policy statement and quality plan are provided within 3 weeks of the Contract Date.
- The *defects date* is 104 Weeks after Completion of the *services*.

**5. Payment**

- The *assessment interval* is four (4) weeks alternatively calendar monthly in accordance with the cashflow set out in Contract Data Part Two.
- The *currency of this contract* is the pound sterling (£)
- The interest rate is 5% per annum

**8. Indemnity, insurance and liability**

The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the works, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the Consultant) caused by activity in connection with this contract for any one event is

**£10,000,000.00 (ten million pounds sterling)**

The minimum limit of indemnity for insurance in respect of death or bodily injury to employees of the *Consultant* arising out of and in the course of their employment in connection with this contract for any one event is

**£10,000,000.00 (ten million pounds sterling)**

The amount of the minimum limit of indemnity for Professional Indemnity Insurance for design liability in connection with this contract for any one event is

**in any one event of £10,000,000 (twenty million pounds sterling)**

for a period of twelve years from Completion of the whole of the *services*.

Consultant to provide documentary evidence to which insurance option is being provided

The *Consultant* provides all other insurances required by the *law of the contract*

**Optional Statements**

**If the Employer has decided the completion date for the whole of the *works***

The *completion date* for the whole of the *services* is 19th July 2016

**If no programme is identified in part two of the Contract Data**

The Consultant is to comply with the programme contained in Schedule 2 Part 3.

**If the Employer has identified work which is to meet a stated *condition* by a *key date***

The *key dates* and *conditions* to be met are

| **Condition to be met** | **key date** |
|---|---|
| Stage 2: Completion of Detailed design to allow FBC to be submitted to Scottish Government by 8 November 2010. | 31 October 2010 |

•

**If Option X5 is used**

- The *completion date* for each *section* of the *services* is

| Section | Description | *completion date* |
|---|---|---|
| 1 – Stage 1 | Laboratories | 10 March 2012 |
| 1 - Stage 2 | Design of Adult and Childrens for FBC | 8 Nov 2010 |
| 2 - Stage 3 | New Hospital | 31st January 2015 |
| 4 – Stage 3A | Demolition of surgical block | 19 July 2016 |

**If Option X8 is used**

- The *collateral warranty agreements* are:

| Agreement reference | Third Party |
|---|---|
| Form as set out in Schedule 1 | Greater Glasgow Health Board<br>Others as required by the Client and requested by the *Employer* |

**If Option X18 is used**

The *end of liability date* is twelve (12) years after the Completion of the whole of the *services*.

**If Option Z is used**

*The additional conditions of contract are*

**Amendments and additions to existing Clauses:**

**Z 1 Additions to Clause 11.2 - Identified and Defined Terms**

11.2(14) "Agreement" is the form of agreement entered into between the *Employer* and the *Consultant* in respect of the services forming part of this contract

11.2(15) "the Client" is the Greater Glasgow Health Board.

11.2(16) "Full Business Case" is the Client's submission to the Scottish Government for approval to proceed with Stage 3.

11.2(17) "Laboratories" is the new laboratory block as the same is more particularly described in the Scope.

11.2(18) "Stage" has the meaning ascribed to it in the recital to the Agreement.

11.2(19) "*conditions of contract*" is the NEC Professional Services Contract, Option A: Priced contract with activity schedules, June 2005 (as the same are amended in by the Contract Data.

11.2(20) "Design Deliverables" are those elements of design to be delivered by the *Consultant* to the *Employer* during Stage 2 as set out in Schedule 3.

11.2(21) "Documents" includes, without limitation, all technical information (whether or not stored in computer systems), drawings, models, calculations, specifications, schedules, details, plans, programs, budgets, reports or other documents, work or other things provided or to be provided by or on behalf of the *Consultant* in connection with the *services*.

**Z2 Amendment to clause 11.2 (4) - Identified and Defined Terms**

Delete and replace with "the Contract Date is the date of execution of this contract"

**Z3 Amendment to Clause 16.1 – Ambiguities and inconsistencies**

Add the following sentence to the end of Clause 16.1

"Instructions issued under this clause do not necessarily give rise to a compensation event"

**Z4 Addition to Clause 16 – Ambiguities and inconsistencies**

"16.2 Inconsistencies and ambiguities between (a) the NHS Mandatory Documentation and NHS Guidance Documentation and building control or (b) between the NHS Mandatory Documentation and NHS Guidance Documentation and the Schedules of Accommodation or (c) between the NHS Mandatory Documentation and NHS Guidance Documentation and any information issued to the Consultant by the Employer, are to be dealt with in accordance with the procedures set out in the Scope."

**Z5 Amendment to Clause 18 – Prevention**

Add new Clause 18.2

"Notwithstanding the provisions of Clause 60 and subject to Clause 18.4, the *Consultant*'s sole right to payment in respect of the occurrence of an event under Clause 18.1 is as provided in Clause 92."

Add new Clause 18.3

"The *Consultant* and the *Employer* take all reasonable steps to mitigate the effect of the occurrence of an event under Clause 18.1."

Add new Clause 18.4

"If the *Employer* instructs the *Consultant* to take steps to Provide the Services in a manner not prevented by the occurrence of an event under Clause 18.1, and such instruction changes the Scope, the *Consultant* is entitled to notify a compensation event under clause 60."

**Z6 Amendment to Clause 21.2 - The *Consultant's* design**

Delete and replace with: "The *Consultant's* obligation is to perform the *services* using the degree of skill and care that would reasonably be expected of a competent professional designer experienced in carrying out design activities of a similar nature, scope and complexity to those comprised in the *services*.

**Z7 Addition to Clause 31 – The programme**

"31.4 The *Consultant* complies with section 6.8 of Volume 2/1 of the Employers Requirements Section of the Works Information in the Building Contract in connection with commissioning and handover for the whole of the *works*. "

**Z 8 Addition to Clause 51 - Payment**

51.6 If the amount to be paid at an assessment date exceeds the amount for the assessment interval as shown in the *Consultant*'s cash flow forecast (as contained in Contract Data Part Two), then the *Employer* certifies payment up to the amount forecast. Any amount exceeding the forecast is not certified but held over to the next assessment interval, where if amount to be paid at the next assessment date again exceeds the *Consultant*'s cash flow forecast for the assessment interval the process is repeated. This clause does not apply where the *Consultant* provides a valid and acceptable reason for an exception to the limitation of the *Employer's* assessment certification.

**Z9 Amendment to Clause 60.1(11)**

Add new bullet point 6, "does not arise from a sub-consultant ceasing to trade or becoming insolvent (or other equivalent event)"

Add at the end, "provided that the occurrence of such event only entitles the Consultant to a change to the Completion Date or a change to a Key Date and not to a change in the Prices and Clauses 61 – 65 are interpreted accordingly."

**Z10 Amendment to Clause 61.4 - Notifying of Compensation events**

In line 15 delete "two" and substitute "four"

**Z11 Amendment to Clause 70 – the Parties' use of material**

Delete and replace with: -

"70.1 The copyright and all intellectual property rights in the Documents remain vested in the *Consultant* or the person responsible for the production (as the case may be).

70.2 Where documentation (including drawings) is (or are) provided by the *Employer* copyright and such documentation and drawings remain vested in the *Employer*.

70.3 The *Employer* has an irrevocable, non-exclusive royalty free licence to copy and use the Documents and to reproduce the designs contained in them for any purpose relating to the *works* including (but without limitation) the

construction, completion, maintenance, promotion, advertisement, reinstatement, repair, any extension of the *works* and for dissemination within the NHS as part of the feedback of information to better or enable the NHS to realise improvements in its methods and practice of construction and in the design and procurement of its construction.

70.4 The *Consultant* shall not be liable for any use of the *Employer* of the Documents for any purpose other than that for which the same is prepared and provided."

**Z12 Addition to Clause 81.1 – Insurance cover**

Add to the Insurance Table:

| | |
|---|---|
| Liability for negligent management or design – professional indemnity insurance | The amount specified in the Contract Data for any one claim or series of claims arising out of one single incident (save in relation to claims relating to pollution and contamination, date recognition, and asbestos for which the indemnity limit is £5 million in the aggregate) during any period of insurance which shall not be more than 12 months from the date the *Consultant* starts to Provide the Services for a period of twelve years from Completion of the whole of the *services*, with insurers of good repute carrying on business in the European Union provided always that such insurance is available at rates and terms which are commercially reasonable to Consultants of a similar size and standing in the UK In determining whether or not insurance is available as aforesaid, the financial |

| | |
|---|---|
| | characteristics and claims' record of the Consultant shall be ignored. |

**Z13 Amendment to Clause 82.1**

Delete.

**Z14 Amendment to Clause 90.4 – Reasons for Termination**

Add at the end "notwithstanding that a delay to the Completion Date has previously been notified to the *Consultant* in respect of such event"

**Z15 Addition to Clause 90**

90.5 The *Employer* may terminate the *Consultant's* obligations to Provide the Services for Stages 3 and/or 3A either (i) on completion of Stage 2 or (ii) if the Full Business Case is not approved by the Scottish Government.

**Z16 Addition to 91 - Procedures on termination**

"91.2 The *Consultant* hands over to the *Employer* all hard copy and electronic data for the *Consultant's* design including material prepared by a sub-consultant, so far as prepared at termination. At such termination the *Employer* has the right to use such material for completion of the *services.*

**Z17 Amendment to Clause 92 - Payment on Termination**

92.3 : - "On termination the *Employer* shall not be liable to the *Consultant* for loss of profit, loss of expectation of profit, loss of use, loss of production or indirect and consequential damages."

**Z18 Addition to Clause W2.1(1) – Dispute Resolution**

Add at the end: - "The word "dispute" in this Clause W2 includes any difference under or in connection with this contract".

**Z19 Addition to Clause W2.3(8) – the adjudication**

After "reasons" add the words, "(which will be in writing)"

**Z20 Addition to Clause W2.3(11) – The adjudication**

Delete the first sentence and replace with, "The decision of the *Adjudicator* is binding until the dispute is finally determined by the *tribunal* or by agreement."

**Z21 Amendment to Clause X8 – Collateral Warranty Agreements**

Add at the end: "and provides them to the *Employer* within 5 days of the *Employer's* written request".

**Z22 New Clause - Confidentiality**

Z22.1 The *Consultant* shall not append their name or give authority to the appending of their name to any publicity concerning this agreement or the services or indulge in any publicity concerning the services without the prior written consent of the *Employer*.

Z22.2 The *Consultant* warrants the accuracy of all information of a legal, commercial or financial nature provided by them to the *Employer*. Details must be provided by the *Consultant* to the *Employer* regarding any matter as and when they take place, which affects the legal, commercial or financial standing of the *Consultant*.

Z22.3 The *Consultant* undertakes to treat any information derived from or obtained in the course of the Agreement as confidential and to take all the necessary precautions to reasonably ensure that its employees and sub-consultants and their employees treat any information as confidential and in doing so the *Consultant* shall ensure that its employees and sub-consultants and their employees keep secret and do not disclose information of a confidential nature by him or them by reason of the Agreement.

**Z23 New Clause – Data Protection**

Z23.1 The *Consultant* warrants and will at all times comply with the provisions of the Data Protection Act 1998 ("the 1998 Act") and any other subordinate legislation enacted pursuant thereto.

Z23.2 The *Consultant* shall only undertake such processing of personal data as is reasonably required in connection with the performance of its obligations under pursuant to the Agreement. To the extent required by the 1998 Act the *Consultant* shall notify the Information Commissioner of any processing which is being carried out and maintain any such notification in full force and effect.

Z23.3 The *Consultant* in its role as Data Processor undertakes to comply with the obligations imposed on a Data Controller under the 7th Data Protection Principle as set out in Part 1 of Schedule 1 of the 1998 Act in respect of all personal data processed pursuant to this Contract.

Z23.4 The *Consultant* shall not, other than in accordance with the 1998 Act, transfer any personal data to any country or territory outside the European Economic Area.

Z23.5 Terms defined within the 1998 Act shall have the same meaning when used in this clause.

**Z24 New Clause – Failure to deliver Collateral Warranty Agreements**

When any Collateral Warranty Agreement is not delivered as required pursuant to Clause X8, one quarter of any amount due to the *Consultant* is retained in assessments of the amount due until the *Consultant* has delivered such Collateral Warranty Agreement to the *Employer*.

**Z25 New Clause – Third Parties**

The *Consultant* performs its obligations under this contract in such a manner and at such times that no act, omission or default of the *Consultant* in relation thereto constitutes, causes or contributes to any breach by the *Employer* of any third party agreement or any other obligation it may owe to a third party relating to the works or the Project, details of which the *Consultant* was made aware of prior to the Contract Date.

**Z26 New Clause - Inconsistencies**

In the case of any inconsistency between these *additional conditions of contract* and the other terms of the contract, the *additional conditions of contract* prevail. In the event of any inconsistency between the Core Clauses and any other term of this contract (except these *additional conditions of contract*) the Core Clauses prevail.

**Z27 New Clause – Approval**

No inspection, testing, approval or review nor any omission to inspect, test, approve or review on the part of the *Employer* diminishes any duty or liability under this contract of the *Consultant*.

**Z28 New Clause – Set off**

Without derogating from its rights under this contract or under the *law of the contract*, whenever any sum of money is recoverable by the *Employer* against the *Consultant*, such sum is deducted from any sum due or which may become due to the *Consultant*.

**Z29 New Clause – Security**

Z29.1 The *Consultant* acknowledges that the Site forms part of the larger Southern General Hospital site and that the Southern General Hospital is a live and functioning acute hospital. The Consultant takes measures to prevent its employees, sub-consultants and suppliers of the Consultant from entering into or otherwise interfering with the operation of the existing Southern General hospital, except for access to or egress from the Site.

Z29.2 The *Employer* may instruct the *Consultant* to take reasonable measures to prevent unauthorised persons being admitted on the Site.

Z29.3 The *Consultant* does not take photographs of the Site or the works or any part of them unless he has obtained the approval of the *Employer*.

Z29.4 The *Consultant* takes the reasonable measures needed to prevent his and his sub-consultants' people taking, publishing or otherwise circulating such photographs.

**Z30 New Clause – Retention**

In respect of each invoice issued by the *Consultant* pursuant to Clause 5 during Stage 2 the *Employer* shall be entitled to retain 10% of the amount due which shall be released on delivery of the Design Deliverables to the *Employer*. No amount shall be retained by the *Employer* following the completion of the *services* relating to Stage 2.

**SCHEDULE 1**

**FORM OF COLLATERAL WARRANTY AGREEMENT**

22

**CONSULTANT'S COLLATERAL WARRANTY**

This Agreement is among

(4) **GREATER GLASGOW HEALTH BOARD** of Dalian House, 350 St Vincent Street Glasgow, G3 8YZ ("the Beneficiary" which expression shall include its successors In title or permitted assignees under this Agreement)

(5) **BROOKFIELD CONSTRUCTION (UK) LIMITED** (Registered number 3808946 of 23 Hanover Square, London, United Kingdom, W1S 1JB ("Main Contractor" which term shall include any successor including any parties taking over the obligations of Main Contractor. under the Project Agreement)

(8) **ZISMAN BOWYER & PARNERS LLP**, (registered number OC310053) whose registered office is at 1 Eton Street, Richmond, Surrey, TW19 1EF ("the Consultant")

WHEREAS:

A The Beneficiary has entered or is about to enter into an agreement with the Main Contractor (°the Building Contract") In connection with the design and construction of the New South Glasgow Hospital, Govan, Glasgow ("the Project").

B The Main Contractor has engaged or is about to engage the Consultant under an appointment ("the Appointment), which expression shall Include all documents incorporated therein and any agreed amendment thereto, to carry out mechanical and electrical design services as more particularly described in the Appointment ("the Services"), which expression shall Include any additional services performed by the Consultant under the Appointment including In connection with any modifications or variations made thereunder.

C It is a condition precedent of the Building Contract that the Consultant, the Main Contractor and the Beneficiary enter into this agreement ("this Agreement").

NOW IT IS AGREED:

1. The Consultant warrants and undertakes to the Beneficiary that it has compiled and will continue to comply with all the terms and obligations under the Appointment on the Consultant's part to be performed and observed and shall complete the Services in accordance with the Appointment.

2. Without prejudice to Clause 1 of this Agreement, the Consultant further warrants and

undertakes to the Beneficiary that:

2.1 it has exercised and will continue to exercise all the reasonable skill, care and diligence to be expected from a competent and qualified professional designer experienced in carrying out services similar in nature, size and complexity to the Services including in the selection of goods and materials for the Project; and

2.2 it has not and will not specify for use in relation to the Project any products or materials not in conformity with relevant British or European standards or Codes of Practice or which are at the time of specification generally known within the United Kingdom to an experienced professional designer of works such as the Project to be deleterious to health and safety or to the durability of buildings and/or other structures and/or finishes and/or plant and machinery in the particular circumstances in which they are used;

Provided that:

2.3.1 the obligations of the Consultant under this Agreement shall be no greater in extent or quantity than if the Beneficiary had been named as joint employer with Main Contractor under the Appointment; and

2.3.2 the Consultant shall be entitled in any action or proceedings brought by the Beneficiary to rely on any limitation in the Appointment and to raise the equivalent rights in defence of liability (excluding counterclaim and set-off in respect of amounts due to the Consultant under the Appointment) as it would have if the Beneficiary had been named as joint employer with the Main Contractor under the Appointment.

3. The Beneficiary has no authority to issue any direction or Instruction to the Consultant in relation to the Appointment unless and until the Beneficiary has given notice under Clauses 4 or 5 below. The Beneficiary or its appointee has no liability to the Consultant in relation to amounts due under the Appointment unless and until the Beneficiary has given notice under Clauses 4 or 5.

4. The Consultant agrees that it will, if so required by notice in writing given by the Beneficiary, subject to Clause 6, below, accept the Instructions of the Beneficiary or its appointee, as the case may be, (which for the avoidance of doubt and without limitation may include a third party appointed by the Beneficiary to act as "the Employer" under this Appointment) to the

exclusion of the Main Con tractor in respect of the Project upon the terms and conditions of the Appointment. The Main Contractor acknowledges that the Consultant shall be entitled to rely on a notice given to the Consultant by the Beneficiary under this Clause 4 and further acknowledges that such acceptance of the Instructions of the Beneficiary or its appointee, as the case may be, to the exclusion of the Main Contractor shall not constitute any breach of the Consultant's obligations to the Main Contractor under the Appointment.

5. The Consultant further agrees that It MI not without first giving the Beneficiary not less than 35 days notice in writing exercise any right or purported right it may have to determine its employment tinder the Appointment, treat the same as having been repudiated by the Main Contractor, or discontinue the performance of any duties or obligations thereunder. Further, the Consultant shall within 14 days of giving the said notice, provide statements to the Beneficiary containing the following:

5.1 all amounts properly due and payable to the Consultant under the Appointment on or before the date of Issue of the said notice which remain unpaid;

5.2 in the reasonable estimation of the Consultant, the amount of any monetary claim (it any) asserted by the Consultant against the Main Contractor under the Appointment arising out of or in connection with the breach for which the said notice was served; and

5.3 where the Consultant intends to terminate the Appointment due to some default or breach of contract of a non-financial nature:

5.3.1 the provision of the Appointment alleged to have been breached or not fulfilled;

5.3.2 supporting information In reasonable detail to enable the Beneficiary to Identify the material facts;

5.3.3 the steps reasonably required to remedy the specified breaches or conditions not fulfilled;

5.3.4 the time within which the specified steps can reasonably be expected to be taken;

5.3.5 (if applicable) the amount of damages claimed and the basis of their calculation; and

5.3.6 (if applicable) the relief to be sought.

The Consultant warrants to the Beneficiary that to the best of the Consultant's knowledge and belief, having made all proper and appropriate enquiries, the statements submitted under this Clause 5 shall be true, complete and accurate statements of the amounts to which the Consultant considers Itself entitled. In the event that the Consultant shall delay in giving such notice and Information within the said 14 days, the period of 35 days shall be extended to correspond with the period of any such delay. The Consultant's right to determine its employment under the Appointment or to treat the same as having been repudiated or to discontinue performance shall cease if, within the said 35 day period (extended as appropriate) and subject to Clause 8 the Beneficiary shall give notice in writing to the Consultant requiring the Consultant to accept the instructions of the Beneficiary or its appointee to the exclusion of the Main Contractor in respect of the Project upon the terms and conditions of the Appointment.

6. It shall be a condition of any notice given by the beneficiary under clauses 4 or 5 above, that the beneficiary or its appointee, as the case may be, accepts liability for payment of the sums due under the appointment and detailed in the statement provided under clause 5 (and makes payment within a period of 28 days of such notice from the beneficiary), and for subsequent performance of the main contractor's obligations. Upon the Issue of any notice by the beneficiary under clauses 4 or 5, the appointment shall remain in full force and effect as if no right of determination of its employment under the appointment, or any right of the consultant to treat the appointment as having been repudiated by the main contractor. Had arisen and the consultant shall be liable to the beneficiary and/or its appointee, as the case may be, under the appointment in lieu of its liability to the main contractor.

7. The beneficiary may at any time following the issue of any notice by the beneficiary under clauses 4 or 5, serve a further notice that following the expiry. of 28 days from the giving of such notice the beneficiary will have no liability (save in respect of the beneficiary's antecedent breach) for any SUMB due or to become due to the consultant in respect of the period following expiry of the last mentioned 28 day period. The beneficiary may exercise any of its rights pursuant to clauses 4 or 5 on more than one occasion.

8. The consultant shall maintain for the period expiring 12 years after completion of the services

or until termination of the consultant's employment under the appointment, professional Indemnity insurance in an amount of not less than £.(101m [(ten million pounds)] sterling for any one claim or series of claims arising out of one single incident during any period of insurance which shall not be more than 12 months with insurers of good repute canting on business in the European union provided always that such insurance is available at rates and terms which are commercially reasonable to consultants of a similar size and standing in the UK. In determining whether or not insurance is available as aforesaid, the financial characteristics and claims' record of the consultant shall be ignored. The consultant shall immediately Inform the beneficiary if such insurance ceases to be available at rates and terms which are commercially reasonable in order that the consultant and the beneficiary can consider alternative means of best protecting their respective positions in respect of the project In the absence of such insurance provided that the beneficiary shall be entitled to require the consultant to maintain such lesser amount of professional Indemnity insurance as is available to the consultant at rates and terms which are commercially reasonable. As and when it Is reasonably requested to do so by the beneficiary (but not more than once in any period of Insurance) the consultant shall produce; for inspection documentary evidence satisfactory to the beneficiary (acting reasonably) that its professional indemnity insurance Is being maintained.

9. The consultant hereby grants to the beneficiary or Its appointee and all those authorised by the beneficiary an irrevocable, non-exclusive and royalty-free licence (which shall be capable of assignation) to use and reproduce all technical Information (whether or not stored in computer systems), drawings, models, calculations, specifications, schedules, details, plans, programs, budgets, reports or other documents, work or other things whatsoever provided or to be provided by the sub-contractor in connection with the project (the 'documents") for any purpose relating to the project including (but without limitation) the construction, completion, maintenance, promotion, advertisement, reinstatement, repair and any extension of the project and for dissemination within the NHS as part of the feedback of Information to better or enable the NHS to realise improvements in its methods and practice of construction and In the design and procurement of its construction. Such licence shall carry the right to grant sub-licenses and shall subsist notwithstanding that the appointment is terminated or the obligations and duties thereunder have been completed. For the avoidance of doubt, the grant of such licence or sub-licences shall not impose any additional liability on the

consultant. The consultant not assign or agree to assign the copyright in any of the documents without the prior written consent of the beneficiary. The consultant shall on reasonable demand provide to the beneficiary or its appointee and those authorised by the beneficiary additional copies of any documents on receipt of reasonable copying costs. The consultant shall not be liable for any use by the beneficiary of any of the documents for any purpose other than those authorised by this clause.

10. This agreement may be assigned on a maximum of two occasions in whole or in part by the beneficiary to any party to whom the beneficiary's interest In the main contract or any part thereof is assigned or disponed to without the consent of the main contractor or the consultant being required and any such assignation shall be effective upon written notice thereof being given to the main contractor and to the consultant. No other or further assignation of this agreement, other than permitted by this clause, by the beneficiary or any other party shall be permitted. The consultant shall not be entitled to assignor transfer any rights or obligations hereunder without the consent of the beneficiary.

11. The consultant undertakes that it will not raise as a defence to any action by the beneficiary far alleged breach of this agreement the fact that the obligations of the main contractor to the beneficiary in respect of the services have been released as a result of the termination of the building contract.

12. No failure, approval, act or forbearance on the part of the beneficiary in respect of any right of the beneficiary pursuant to this agreement shall constitute any waiver of any right of the beneficiary under raising out of this agreement nor relieve the consultant of any of its duties or obligations under or arising out of this agreement.

13. Any notice, consent or demand to be given or made by any party under this agreement (hereinafter called a "notice") shall only be validly served if In writing and delivered personally or sent by pre-paid first class recorded delivery post to the following address and marked for the attention of the following person in the case of each party:

| Party: | Address: | Person: |
|---|---|---|

| | | |
|---|---|---|
| Beneficiary | Dalian House, 350 St Vincent Street Glasgow, G3 8YZ | Head of Board Administration |
| Main Contractor | 23 Hanover Square, London W1S!JB | Paul Serkis |
| Consultant | 1 Eton Street, Richmond, Surrey, TW19 1EF | Steven Pardy |

Any party may by Notice to the other party/parties change its address or the title of the person for whose attention Notices are to be given or made pursuant to this Clause. Any such Notice shall be deemed to have been received:

13.1 if delivered personally, at the time of delivery;

13.2 in the case of pre-paid first class recorded delivery post, on the first Business Day after the date of posting.

If any Notice Is delivered after 5 p.m. on a Business Day, or at any time during a day which is not a Business Day, that Notice shall be deemed to have been received at 9 am, on the next Business Day. For the purposes of this Clause, "Business Day" means any day which is not a Saturday, a Sunday or a public holiday in Scotland. In proving service it shall be sufficient to prove that the envelope containing such Notice was properly addressed to the relevant party·and either delivered personally to that address or delivered into the custody of the postal authorities as a pre-paid first class recorded delivery letter. For the avoidance of doubt, Notices shall not be validly served if sent by email or fax.

14. No action or proceedings for any breach of this Agreement shall be commenced against the Consultant after the expiry of twelve years from Completion or earlier termination of the Consultant's employment under the Appointment.

15. The definitions of words and phrases used in this Agreement shall be those set out in the Appointment except where expressly defined in this Agreement.

16. This Agreement shall be governed by and construed in accordance with Scots Law and the parties hereto submit to the exclusive jurisdiction of the Scottish Courts.

IN WITNESS WHEREOF these presents consisting of this and the preceding 8 pages have been executed as follows:

**SUBSCRIBED** for and on behalf of the said **GREATER GLASGOW HEALTH BOARD** at on the [ ] day of [ ] 2010:

..... Authorised Signatory

..... Full Name

.....Authorised Signatory

..... Full Name

**SUBSCRIBED** for and on behalf of the said **BROOKFIELD CONSTRUCTION (UK) LIMITED** at 23 Hanover Square, London, W1S 1JB on the [ ] day of [ ] 2010 by:

..... DIRECTOR

..... FULL NAME

before this witness

..... Witness

..... Full Name

.....Address

**SUBSCRIBED** for and on behalf of the said **ZISMAN BOWYER & PARTNERS LLP** at 1 Eton Street, Richmond, Surrey, TW19 1EF on the [ ] day of [ ] 2010:

..... DIRECTOR

..... FULL NAME

before this witness

..... Witness

..... Full Name

.....Address

## SCHEDULE 2

## DEFINITION OF SCOPE AND *SERVICES*

## SCHEDULE 2, PART 1

## DEFINITION OF SCOPE AND *SERVICES*

Contract Data Part 1

Appendix 2

Schedule 1

# SCOPE OF SERVICES

NEW SOUTH GLASGOW HOSPITALS (NSGH)

## (MEP) Services Engineer

## ZISMAN BOWYER & PARTNERS LLP

May 2010

## Table of Contents

1. Outline
2. Concept Design and Design Development
3. Construction Documentation and Construction Phase
4. Documentation Deliverables
5. Commissioning, Completion and Post Completion

# 1. OUTLINE

## Introduction

1.1 The New South Glasgow Hospitals (NSGH) Project consists of new adult acute and children's hospitals, new laboratories, energy centre and associated support facilities and infrastructure for the NHS Greater Glasgow and Clyde (the Client/Board).

The Project is located on the existing hospital site at the Southern General in Govan, Glasgow which is required to remain operational during the execution of the Works. The Project is to provide in the order of 175,000m2 of internal area comprising approximately 1,400 beds in addition to the development of the external spaces.

This Scope of Services excludes the new laboratory block (which comprises of the laboratories building and the FM facility to its rear), unless highlighted as otherwise.

1.2 The Services shall be the provision of professional labour, supplies, systems and other resources as necessary to design, specify, document, inspect, report and certify the building services elements of the Works for the Project. The Services outlined herein are the basic scope of works specifically applicable for this Project and are completely allowed for in the initial total fee.

1.3 Key Performance Indicators (KPIs) – The quantitive KPIs for Stage 2 Works (leading to the Full Business Case) are defined in the Contract Data Part 1 Appendix 3 in addition to the Design Programme contained in Contract data Part 1 Appendix 4 and the Cost Plan referenced in the Building Contract. This Scope of Services represents the qualititive KPIs to be achieved by the Consultant.

1.4 The Consultant shall adequately and timely coordination, cooperation and liaison with other consultants, subcontractors, suppliers, Authorities and other relevant parties/stakeholders to clearly define the relevant Project works, which minimises the Project costs, time and risk.

1.5 The Consultant's coordinated design and documentation shall be fully integrated with all relevant designs and advice from other consultants, the subcontractors (where arranged by the Employer) and Statutory Authorities.

1.6 The Services are to be provided in the following Work Stages:

- Concept Design and Design Development
- Construction Documentation and Construction Phase
- Commissioning, Completion and Post Completion

Note: Notwithstanding the entry point to an individual scheme or design task, the Consultant is required to review all the previous information for the scheme made available by the Employer in addition to those sourced by the Consultant and undertake the Services irrespective of where the Services is listed in order to enable the Employer to complete the Works.

## Performance Standards

1.7 The Consultant shall submit its Quality Plan for review by the Employer. The Consultant shall amend its Quality Plan as reasonably required by the Employer. The Quality Plan shall explain

how the design and documentation work are to be planned to the standard specified in ISO 9001:2008 particularly the Section 7.3 and shall include:

- The design and documentation stages
- The review, verification and validation that are appropriate to each design and documentation stages
- The responsibilities and authority for design and documentation

The Consultant shall review and comment on the Quality Plans (especially the Quality Inspection and Test Plans) from the subcontractors and suppliers as reasonably required by the Employer.

1.8 The Documentation (or Documents) to be provided by the Consultant shall be all that is required in order that the Project can be completed in the most time and cost efficient manner and shall include but not be limited to:

- Drawings (including 3D as required)
- Schedules
- Specifications
- Working models, illustrations and other presentation materials
- Calculations and sketches
- Reports (including Progress Status)
- Certifications (including Compliance)
- Meeting minutes, file notes etc.

1.9 Conform with the Project specific documentation protocols as updated from time to time by the Employer (or its designate) including the CAD parameters and electronic documentation transfer facilities such as the FTP websites or as requested by the Employer.

1.10 In respect of all Work Stages, the Consultant shall:

a) Perform the Services in a diligent manner with the standard of skill and care and undertake any work falling within the level of Services to be reasonably expected of a Consultant appointed for a Project of a similar size, scope and complexity.

b) Ensure that it has the necessary skill and resources to provide the Services and acknowledges that in reliance on this obligation, the Employer has agreed to engage the Consultant to perform the Services.

c) Take all necessary steps on an ongoing basis so that all persons engaged for the Services are properly qualified, competent and experienced for the size, scope and complexity of the Project.

d) Inform itself of the Project requirements by regularly consulting with other relevant parties and the Employer. Review all relevant documents and immediately inform the Employer of any apparent errors or ambiguities contained in such documents and make recommendations for the correction of such ambiguities.

e) Keep secure the Employer materials and documents and return them at the end of this Appointment.

f) Strictly remain within the scope of the authority granted by the Employer and not act beyond its authority or hold out that it has authority beyond this Appointment.

g) Seek the Employer's prior consent to any proposed sub-letting or employing outside agency and/or self employed staff.

h) Comply with all policies relating to the use of the Employer office premises and facilities when using them.

i) Permit the Employer to carry out agreed and scheduled visits to the Consultant's business premises in connection with the Services.

j) Keep proper commercial records and accounts for any claims it makes on the Employer including if applicable, for reimbursement of expenses and remuneration of fees based on time charged billing and permit the Employer auditors to inspect such records and accounts.

k) Nominate a person or persons who have authority to receive notices and take instruction under this Appointment and not change such nominees without the consent of the Employer.

l) Liaise and cooperate with the other consultants employed (and likely to be employed) by the Employer for the purpose fulfilling its obligation that the Project shall be designed in compliance with the Project requirements.

m) Coordinate and manage the sequence of design and documentation production.

n) Provide Technical Advisory role to the Employer for design works provided by others associated with the Project.

**Performance Obligations**

1.11 The Consultant shall:

a) Carry out the Services using proven best up-to-date practice and to appropriate standards (having regard to the nature of the Project) and consistent with the intended use of the Project.

b) Comply with the requirements of Planning consent for the Project and with all Statutory Authorities requirements and regulations and with all other legislation applicable to the Services and/or to the Works.

c) Comply with all specific standards contained in this Appointment. If no such standards are stated in this Appointment and if they cannot be reasonably inferred from the Project Documents, the standards shall be those required by relevant British Standards and/or UK Building Regulations and/or any relevant applicable legislation and/or relevant local Statutory Authority requirements.

d) Comply with the Employer's Requirements and the Contractor's Proposals.

e) In the event of any discrepancies, ambiguities and inconsistencies within and/or between the Project documents, such discrepancies shall be decided on by the Employer and the Consultant shall at no cost to the Employer and that the Services and any Documentation prepared by the Consultant in relation thereto shall comply with and meet the requirements as decided by the Employer.

f) Progressively submit the Consultant's Documentation and any other documentation included within the ambit of the Services to the Employer by the dates specified in the Programme or if no dates are specified, in accordance with the progress of the Works and the Employer's reasonable requirements.

g) In respect to all drawings produced as part of the Documentation are computer generated and capable of being transferred into 'tiff', 'pdf, and 'dwg' formats or other format approved by the Employer. The Consultant shall send and receive written correspondence, drawings, schedules and specifications and any other relevant documentation by a controlled web

based document management system (Aconex) in accordance with the rules and procedures (updated from time to time) as provided by the Employer.

h) In reference to the specifications as referred to in the definition of Documentation are in A4, double sided and comprising of two bound copies and one copy on a portable memory storage device. The Consultant shall also upload one copy onto a web based document control system (Aconex). The specifications shall be in full compliance with the Project requirements and shall be complete and coordinated with all other consultants in a format agreed by the Employer. The specifications shall be in trade sections and capable and suitable for the Employer to invite tenders for the various packages of work and for the subsequent construction and completion of the Project. The specifications shall also incorporate, but not be limited to, materials, finishes workmanship and quality standards and other items as may be reasonably required by the Employer.

i) Include all those duties that are set out in this Schedule together with those duties that can be reasonably expected from the Consultant, preparing design and documentation for works of a similar size, scope, nature, value and complexity of the Project.

j) Specify the materials and its method of use, fixing or working that do not infringe any patent, registered design, copyright or other protection rights.

k) Review and comment on all relevant temporary works as reasonably requested by the Employer in completing the Project.

l) Send, receive, review and comment all information in relation to O&M manuals which may be by a controlled web based management system.

m) Provide advice and documents as required to assist the Employer in the maintenance of the building to ensure whole-life costs are minimised.

n) Provide information as requested by the Building Owner, Funders, Facilities Manager, Operators and the like.

o) Coordinate, incorporate and document where relevant to the building services, all fire protection and acoustic treatment measures in consultation with the Fire Engineer and Acoustic Engineer respectively.

p) Proactively endeavours to maximise the BREEAM rating of the Project and develop energy efficient strategies.

q) Evaluate, design, specify and document Secure by Design, acoustical and fire protection measures related to their Services and where applicable to satisfy building insurance requirements. Should there be exceptional insurance requirements, such information to be made available to the Consultant in a timely manner during the design period.

r) In reference to CDM 2007 Regulations and in particular Regulation 11 that requires the Designers to eliminate hazards which may give rise to risks to those undertaking construction work or subsequently using the building, and to reduce any hazards which cannot be eliminated. The Consultant shall produce information to the Employer, other Designers and Contractors in this regard and where possible this information shall be included in all Documentation especially the drawings issued by the Consultant.

s) Submit evidence of competence to comply with the CDM 2007 Regulations as per Regulation 4 and as set out in Appendix 4 of the Regulations.

t) In providing the Services, the Consultant shall aim to minimise any adverse impacts that construction has on the environment. This shall be through the design process, materials selection, construction techniques and operational methods. Specific information on the Employer's policy which the Consultant is required to comply is set out in the Environmental Policy Statement (as set out below).

The Consultant shall work towards to reduce waste and use materials efficiently and

proactively assist in reaching the Employer's objective as outlined in the Waste Policy Statement (as set out below). The Consultant shall support this Policy by:

- Assist in developing the Site Waste Management Plan from an early design stage, including waste forecasts and data on reduction targets and actions.
- Assist in implementing the Site Waste Management Plans throughout the design and construction period that comply with the applicable Regulatory requirements and include in such Plans project-specific targets for waste recovery and reused and recycled content and for waste reduction;
- Identifying methods to reduce waste and waste to landfill and increase reused and recycled content, throughout the duration of providing the Services and report to the Employer. In this regard, the Consultant shall use site waste management software nominated by the Employer which shall be WRAP's Designing out Waste Tools or Net Waste Tool (accessible at www.wrap.org.uk/nwtool) unless notified otherwise;
- Work with the Project team to ensure that design actions to reduce construction waste and increase reused / recycled content are implemented;
- Agree with the Employer which level of waste reduction and reuse to pursue.

Note: The Consultant should refer to the WRAP Designing out Waste guidance to identify, prioritise and implement ways of meeting Project targets for waste.

**Brookfield** Environmental Policy Statement UK/EHS/F/001a rev 07

# BROOKFIELD CONSTRUCTION (UK) LTD

# ENVIRONMENTAL POLICY STATEMENT

This policy statement is valid from May 2010 to 31st December 2010.

## Introduction

Brookfield Construction (UK) Ltd is focused on the construction of significant landmark projects. Our overall mission is to build high quality construction projects using materials and processes that respect the environment.

We firmly believe that the delivery of high quality construction projects requires active consideration of the environmental and social impacts associated with construction. High standards of environmental performance in these areas can also deliver benefits to the environment, society and economy.

## Environmental Policy

At Brookfield Construction (UK) Ltd, our aim is to:

- Work to prevent pollution and minimise the overall impact of our activities on the environment, from the sourcing of our materials to the recycling and disposal of wastes.
- Make more efficient use of energy and natural resources and minimise emissions and waste, focusing on those activities which have the most significant impacts.
- Comply with applicable legal requirements and other requirements to which Brookfield subscribes which relate to its environmental aspects. Such requirements include WRAP's (Waste & Resources Action Programme) initiative for "Halving construction waste to landfill", BREEAM, Considerate Constructors and Considerate Contractors in London.
- Apply environmental management practices across the business which protect and enhance our reputation and meet the expectations of our stakeholders.
- Pursue continual improvement in our environmental performance.

In order to deliver this aim we will:

- Implement a formal Environment Management System.
- Provide information and training to enable environmental impacts and opportunities to be identified, prioritised and managed effectively.
- Promote joint consultation with employees, contractors, the Environment Agency, Environmental Health Officers and other relevant organisations.
- Work proactively with the local communities in which we operate.
- Set environmental objectives and targets relevant to our significant environmental aspects and monitor our progress against these; year on year.

## Organisation and General Responsibilities

The UK Health and Safety Manager and UK Environmental Advisor are responsible for environmental issues and report to the Brookfield Europe Safety Director. Environment, Health and Safety Managers are allocated to projects and report to the Project Director whilst retaining a functional reporting link to the UK Health and Safety Manager.

Detailed descriptions of our organisation and responsibilities are available in the Environmental Management System which is integrated with the Health and Safety Management System. This integrated system forms a part of a larger suite of documents which also includes the Quality Management System. This larger system is referred to as "CoSHEQ". This document is available on the Brookfield Europe Intranet, which is accessible to all employees.

**Brookfield** **Environmental Policy Statement** UK/EHS/F/001a rev 07

**Arrangements**

*Management Systems*
The Environmental Management System sets out through Procedures, Forms, Risk Registers, Management Plan Templates and Best Practice Standards (the "Supervisors Manual") the way in which environmental issues are managed on our projects.

*Sustainability Strategy*
Our appointed designers are required to meet the guidance given in the Brookfield Europe Sustainability Strategy.

*Third Party Certification*
The company is third party certified to ISO 14001:2004 Environmental Management Systems.

*Code of Conduct*
The behaviour expected from Brookfield employees and our subcontractors is set out in our Code of Conduct. Copies of this are displayed on notice boards at Head Office and at each project.

This document is available to the public on the Brookfield Europe website and is communicated to all employees.

**12 month objectives January 2010 to December 2010 for Environment and Sustainability**

- As signatories to WRAP's initiative for halving construction waste to landfill by 2012, taking 2009 as the baseline year, we will take measures to divert construction waste from landfill sites.
  **Target** – For construction, demolition and excavation waste corporate targets see our Waste Policy Statement

- Promoting the ethical and environmentally sustainable management of the world's forests we will endeavour as far as practicable to only use FSC-certified timber products on all our projects.
  **Target** – Publish percentage of FSC-certified timber employed on our projects

- In order to reduce our environmental impact we will reduce the amount of our office waste going to landfill. A new office waste management strategy will be introduced and implemented in 2010 that will involve segregating recyclable waste at source and phasing out individual desk bins.
  **Target** – 90% of all office waste to be diverted from landfill and relevant data to be published

[redacted]

Ashley Muldoon
Managing Director
Brookfield Construction (UK) Ltd
May 2010

**Brookfield** Waste Policy Statement UK/EHS/F/001c rev 01

# BROOKFIELD CONSTRUCTION (UK) LTD

## WASTE POLICY STATEMENT

**Scope**
This Policy Statement applies to Brookfield Construction (UK) Ltd for 2010 and must be read in conjunction with the Brookfield Construction Environmental Policy Statement.

**Introduction**
Brookfield Construction (UK) Ltd is focused on the development, construction, management and ownership of significant landmark projects. In all of its development work, Brookfield aims to minimise any adverse impacts that construction has on the environment. We seek this through the design process, materials selection, construction techniques, and operational methods.

From 2010 all organisations appointed to work on our behalf are required to work in accordance with these principles.

**Achievements**
We have set waste targets since 2007. Each year the target for recycling has been increased as follows:

**2007** to recycle 70% waste concrete, bricks and ceramics over the course of a project and 50% of general waste over the course of a project.

**2008 and 2009** to recycle 80% of construction waste (combined Construction, Refurbishment, Demolition and Excavation).

The company has succeeded in meeting these targets.

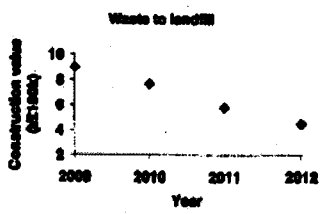
**The WRAP Initiative**
Committed to continual improvement in 2009 Brookfield Construction (UK) Ltd became a signatory to the "Halve waste to landfill by 2012" initiative for the construction industry of the Waste and Resources Action Programme, (WRAP) a government-backed body set up to facilitate waste minimisation in the UK. There are two strands to this commitment:

1 To generally reduce the amount of waste generated from a construction project by exploring possibilities in design and procurement.

2 Following on from this, to increase the percentage of residual waste that is recycled.

WRAP proposes that waste data is measured against each £100k construction value[1]. This will then capture both reductions that are obtained from design and procurements in addition to the residual waste figures.

**The Baseline Year: 2009**
To meet the WRAP Commitment, Brookfield Construction has selected 2009 as its baseline year. The WRAP typical figure for waste sent to landfill was 10 tonnes per £100k and the Brookfield Construction target waste figure to be sent to landfill was 9 tonnes per £100k.




**Our target for 2012**
Brookfield Construction will set a 2012 target of 50% of the 2009 target. This is 4.5 tonnes per £100k.

The targets for 2010 and 2011 will be based on a linear progression from 2009 through to 2012.

[1] Construction value is the price in the accepted tender or, if there is no tender, the cost of labour, plant and materials, overheads and profit.

**Brookfield** **Waste Policy Statement** UK/EHS/F/001c rev 01

We will work to adopt and implement standards for good practice in reducing waste, recycling and reusing more. This will support national policy goals e.g. halving waste to landfill by 2012, adopted in England by the Government's Strategy for Sustainable Construction and Zero Waste in Scotland, and will be achieved by reducing waste, recovering more materials and using more recovered material in new construction.

**Policy**
Any contractual and client requirements will be taken into account to form the project-specific requirements, but as a minimum on projects commencing in 2010 our design and construction project teams will be required to:

- forecast waste quantities and waste recovery and set targets for waste reduction from an early design stage (for instance by using WRAP's Designing out Waste Tools and Net Waste Tool[2] or the Building Research Establishment's SMARTWaste benchmark calculator[3]).
- before starting on site, the project team shall submit a copy of the Site Waste Management Plan identifying the actions to be taken to reduce waste and increase recovery, as well as the corresponding roles and responsibilities, and quantifying the resulting changes.
- implement Site Waste Management Plans throughout the design and construction period that comply with regulatory requirements and include in such Plans project-specific targets for waste recovery and for waste reduction.
- where there is sufficient space the project teams should plan for and implement waste segregation on site. Otherwise the volume of waste that is recovered will be maximised by using third party contractors.
- measure and report progress against the corporate targets for the quantity of waste produced and the quantity of waste sent to landfill (in tonnes per £100k construction value). The information will be annually reported on the WRAP Waste to Landfill Reporting Portal[4] and guidance.
- on completion of the Works, the project team shall submit a copy of the completed Site Waste Management Plan, reporting the forecast and actual performance for waste quantities, disposal routes, and reused and recycled content used in construction.

**Target for 2010**
- recover at least 83% of construction materials demolition, strip-out and excavation materials.

[redacted]

Ashley Muldoon
Managing Director
Brookfield Construction (UK) Ltd
May 2010

*This policy statement is valid from May 2010 to 31st December 2010.*

[2] The Designing out Waste Tools for Buildings and for Civil Engineering and the Net Waste Tool are freely accessible at www.wrap.org.uk/nwtool

[3] The SMARTWaste Plan is freely accessible at http://www.smartwaste.co.uk/swmp

[4] Accessible at www.wrap.org.uk/reportingportal

**Meetings**

1.12 The Consultant shall:

a) Attend and issue records of the meetings and workshops for those in relation to the design, construction, value engineering, risk management and co-ordination of the building services as required by the Employer.

b) Attendance may be required for factory visits and design and or construction meetings at off site locations.

c) Attend and issue records of the design meetings with other consultants as necessary to integrate, coordinate and clarify the Works during the Project as reasonably required by the Employer.

d) Attend and issue records of the meetings with Statutory Authorities as reasonably required by the Employer.

e) Attend and issue records of the meetings with the Employer as reasonably required on all relevant Project issues.

f) Provide draft minutes for all of the above meetings, workshops and the like as required for review by the Employer or distribute as requested by the Employer.

**Reports**

1.13 The Consultant shall:

a) Provide periodic status reports (fortnightly and/or monthly to be agreed with the Employer) in a form reasonably required by the Employer which shall include as a minimum, a summary documenting the progress of the Services against the Design Programme and Documentation Schedules. Highlight areas of difficulty being experienced with progress of the Services, design co-ordination issues, Statutory Authority approvals status and the like including the proposed mitigating measures.

b) Undertake site inspection as reasonably required or as requested by the Employer and provide inspection reports including tracker schedules to monitor close-out of issues identified which will require revisiting the site.

c) Prepare report or documentation required (on a reasonable and realistic basis) for the assessment of design alternatives and in contemplation of envisaged change to the Project requirements.

d) Not used.

e) Progressively compile and provide design risk registers.

f) Provide compliance reports confirming compliance with the Project documents such as the Employer's Requirements and other compliance reports as requested by the Employer.

g) Provide non compliance reports in relation to the construction works when requested by the Employer in a workable electronic format including photographs.

h) Provide draft reports for all of the above for review by the Employer prior to the formal issue.

i) Not used.

j) Provide reports on energy performance during the 24 months Defect Liability Period based on the information provided by the Employer.

**Certification**

1.14 On a periodic basis (once a month as a minimum) or when requested by the Employer, provide a progress certification that the design and documentation work done to that period is in accordance with and complies with the Project requirements such as the Employer's Requirements, the Cost Plan, the Programme, Contractor's Proposals and with all relevant Statutory Authority requirements.

**Authorities**

1.15 The Consultant shall:

a) Liaise with the Employer, other consultants and all relevant Statutory Authorities for the purpose of confirming that the design complies with all Planning consent conditions.

b) Liaise with the Employer, other consultants, and others involved in the Works, including without limitation the CDM Coordinator, subcontractors and all relevant Statutory Authorities for the purpose of confirming that the design complies with all relevant Statutory Authority requirements and for obtaining all necessary permits and approvals. Incorporate all relevant Statutory Authority requirements into the design and documentation.

c) Advise on the need to obtain further Planning permissions, Building Regulation approvals and any other Statutory approvals and prepare all necessary associated applications for consideration by the Employer.

d) Liaise closely with all relevant utility companies, service providers and others involved in the identification, relocation and modification of utility services affected by the Project.

e) Prepare coordinated Documentation in conjunction with other consultants for submission to the relevant Authorities. All such Documentation is to be discussed with the Employer prior to submission to the Statutory Authority.

f) Revise and re-submit submissions to the Planning Authority as required where the development of the design has varied from the original Planning consented scheme. Amend Documentation in conjunction with other consultants for resubmission to other relevant Statutory Authorities arising from any directives, requirements or comments from the Employer or Statutory Authorities including those on the previous submissions.

g) Review all relevant Statutory Authority approvals and conditions. Contribute to a schedule/checklist for review by the Employer to monitor timely discharge of all conditions and actions to be carried out by the Consultant in conjunction with other consultants and to be incorporated into the Project.

h) Liaise with all relevant Authorities for expeditious approval and attend all meetings as required by the Employer. Update and amend documentation in conjunction with others as required, to obtain all regulation modifications, approvals and permits.

i) Highlight opportunities to the Employer in respect to alternative means of achieving the Statutory compliance for the benefit of the Project including waivers, relaxations and dispensations. Where requested by the Employer, negotiate the same with the Authorities.

j) Revise documentation as necessary to reflect the outcome of the negotiations with the Statutory Authorities.

k) Assist the Employer with any relevant tests and inspections required by the Statutory Authorities and in obtaining all permits, approvals and certificates required for the lawful use of the Project.

l) Complete all relevant certificates associated with the Services as and when required by the Employer and liaise with Statutory Authorities for the purpose of assisting in obtaining staged building permits and other approvals.

m) Prepare design certification necessary for the completion of the Project and/or the granting of relevant Statutory Authority for Completion, occupancy and title.

**Specific Designs**

1.16 The Services to be provided by the Consultant shall include the design and documentation for the following elements of the Works but not necessarily be limited to:

**Mechanical and Public Health Systems**

The Consultant's design shall cover all works associated with the mechanical and public health systems to comply with the fire strategy, acoustic requirements and all systems necessary as set out below for a fully operational building.

- Chilled water system including high efficient chillers, pumps, heat exchangers etc.
- MTHW & LTHW systems including plant and equipment, valves and pipe systems and interfaces with the Stage 1 Laboratory / FM buildings.
- CHP system with all plant and equipment including interface connections with the Stage 1 Laboratory & FM building.
- Condensate drainage systems including all condensate pumps, pipework and traps.
- Air conditioning systems including all air handling units, chilled beams, fan coil units, distributed ducted system, diffusers, return air plenums, fresh air intake and exhaust etc.
- Under floor heating systems including all pipework and valves.
- Thermal insulation applied to the engineering services systems.
- Heat recovery systems.
- Consideration of borehole water, ground source energy.
- Renewable energy systems integrated with electrical systems including wind turbines, photovoltaic systems and the like.
- Generator cooling.
- Lift pressure relief and pressurisation systems as required.
- Staircase pressurisation systems as required.
- Lift motor room cooling systems.
- Electrical and UPS ventilation and cooling systems.
- Packaged split air conditioning systems including all pipework, electrical systems between fan coil and condenser units.
- Communications rooms and ICT Node rooms cooling systems and ventilation.
- The main communications and secondary communication rooms containing network core switches and main servers to be provided with positive pressurised filtered fresh air systems.
- High specification air conditioning systems.

- Smoke extract system including all fire rated ductwork, smoke dampers, and smoke damper control and power interface with the fire alarm system.
- Misc ventilation systems such as toilets, storage areas, plant rooms, generator ventilation, gas meter room etc.
- Local exhaust ventilation systems.
- Basement mechanical ventilation systems including all plant, equipment, ductwork, dampers.
- Natural ventilation systems where practical.
- Water filtration systems.
- Not used.
- Hot water calorifiers, pumps, valves, piped distribution systems and dead leg (legionnaires) protection.
- Cold water storage tanks, pumps, valves and piped distribution systems including dead leg (legionnaires) protection.
- Mechanical water systems, including all pipework and valves.
- Softened water treatment systems where required.
- Rainwater and roof drainage systems including all pipework, roof outlets.
- Power, water and drainage to Green roof water feed and any fertiliser systems as required by the Green roof specialist.
- Landscape water supply and drain systems (if necessary) including automatic irrigation system.
- Internal soil vent, waste drainage systems including acid resistant systems connected to below ground drainage connections points provided.
- Basement level drainage systems including all sump pumps, pipework and control system.
- Assist in designing the integrated plumbing solutions systems, if any.
- Above ground specialist drainage systems.
- Floor wastes in suspended floors for all wet areas, design coordinated with plant locations etc.
- Automatic flushing systems, pipework, valves and sensors.
- Gas suppression system serving communication and ICT nodal rooms as required.
- Helipad intrinsically safe electrical and fire protection systems.
- Any special medical fixtures and fittings (eg. Pendants).
- Bulk fuel oil storage system including all pipework, valves, filling points and control system.
- Gas distribution systems.
- Compressed air systems.
- Distributed medical gas systems.
- Steam and condensate systems as required.
- Cleaning, flushing and treatment systems.
- Acoustic and vibration treatments and systems.
- Utilities gas, water including interface with Stage 1 Laboratory requirements.

**Electrical Systems**

The Consultant's design shall cover all works associated with the electricity supply and reticulation including incoming supply, all ducting and supply from the Supply Authority's network. The incoming supplies from the Supply Authority's network are to be reviewed for the substation requirements and mains, power factor correction and power quality. The electrical reticulation system will be provided with an electrical management control system.

- HV electrical systems from primary substation HV switchboard including protection requirements and coordination with utility provider and local authority requirements.
- HV consumer network electrical systems including all protection, electrical distribution system, cables/busbar, switchgear, distribution boards etc.
- LV electrical systems including all busbar/cables, distribution boards etc.
- Electrical HV / LV management control systems.
- Earthing & bonding systems.
- Lightning protection system.
- Power factor and power quality requirements.
- HV Generators and LV to HV step up transformers for temporary LV generator interface with electrical system.
- Lighting control system using presence and absence lighting control.
- Emergency lighting.
- Aircraft warning lights system.
- External lighting and secondary external lighting system.
- Electrical and control systems containment.
- BMU (Cradle) power and water supplies and communications systems (terminated at BMU landing points).
- Services to the automatic barriers where relevant.
- Utilities including electrical power including interface with Stage 1 Laboratory / FM building requirements and communications conduit systems.

**Other**

The Consultant shall contribute to the design coordination and documentation including all interface requirements and Technical Advice for the following, but not necessarily be limited to:

- Group 1, 2 and interface where applicable with Group 3 Equipments.
- Lighting layout design.
- Development of reflective ceiling plans.
- Pneumatic tube system.
- Medical gas.
- Renal water systems including de-ionised water systems.
- Coordination with Radiation protection specialist requirements.

- X-ray systems interface including all associated systems such as warning lights.
- Catering equipment and layout.
- Robotics.
- Food waste processing system.
- Vertical transportation systems.
- Sprinkler protection system, including all plant and equipment, pipework and valves.
- Gas suppression systems electrical rooms including; all plant and equipment, gas bottles, and control systems.
- Wet / Dry riser systems including all plant and equipment, pipework and valves.
- Sprinkler and wet riser water storage tanks including water level control.
- Fire protection electrical installation from control panels to all plant and equipment.
- Main and secondary fire control panels.
- Fireman's general smoke ventilation override system and panel.
- Cause and effect matrix developed by relevant subcontractor(s) which is to outline the interfaces with the relevant systems such as the mechanical control panels, control of smoke dampers, generator control panel, security Access Control remote panels, sprinkler system, building management control system, electrical management control system, disabled alarm system, lift and escalator control systems etc.
- Fire Hydrants.
- Fire alarms and detection system
- Integrated extra low voltage systems.
- Information communication technology and distribution systems.
- Access control and Intruder detection system.
- External and Internal CCTV.
- Building Management Control system Interfaces with the building management control system, fire alarm system and the like
- Mechanical electrical systems including motor control panels etc.
- Public Address
- Telecommunication systems.
- Optic fibre backbone network system.
- IT / Data systems network and systems.
- Telephone distribution system including the fire telephone system.
- Not used.
- Equipment alarms systems.
- Nurse call system.
- Disabled alarm system interfaced with the fire alarm network.
- Induction loops and hand held portable system.
- Television system.

- Central dictation systems.
- Paging and personal attack system.
- Tagging system.
- Telemedicine system.
- Leak detection system.
- Energy metering management system.
- Cold rooms including all plant and equipment

**Compliance and Compatibility**

The Consultant's design and documentation shall ensure compliance with and/or encompass the following, but not necessarily be limited to:

- Employer's Requirements.
- Compliance with Health Service Notes and Memorandums such as the SHTM's, HTM's, HBN's, SHBN's, SHGN's SHPN's and HGN's.
- Codes and Standards.
- Local authority requirements.
- CIBSE guides.
- IEE regulations.
- Utility provider requirements.
- Compliance with Planning and Building Regulations.
- HVCA TR17.
- Health & Safety.
- Aircraft authority and specialist.
- Specialist medical.
- NHS/ Board objectives.
- Quality Assurance and Quality Control.
- Environmental management plan including WRAP waste management organisation system.
- Fire strategy.
- Cold water system to comply with Hai-Scribe infection control requirements.
- Acoustic and vibration requirements.
- Radio Frequency and Electro Magnetic Frequency requirements.
- Not used.
- Carbon foot print compliance.
- BREEAM Excellence rating compliance.
- Input to life cycle analysis and selection.
- Interface with Laboratory / FM buildings.

- Plant, equipment, materials and ICT, including IELVS systems to be compatible with Stage 1 Laboratory systems.
- MEP building services systems configured to promote flexibility to enable future maintenance, re-modelling, re-planning and replacement without disruption to adjacent areas.

# 2. Concept Design and Design Development

## Overview

2.1 It is a fundamental requirement that all Documentation produced during the Concept Design and Design Development stages are in full compliance with the parameters of the Project requirements such as the Planning consents, the Employer's Requirements, the Cost Plan and the Programmes as these may be amended from time to time.

2.2 The Design Development stage involves the development of the Concept Design and enables the tendering and construction of the Project to be executed, particularly for the enabling works and the early release packages. Consequently the particulars highlighted below require the Consultant to undertake iterative Services and revisit the work carried out under Concept Design which must be amended or otherwise.

## Tasks

The Consultant shall:

2.3 Supplement Project details provided by the Employer by sourcing relevant information about the Site. Based on these documents make appraisals and establish constraints for the Works.

2.4 Seek clarification or direction on Project requirements as necessary.

2.5 Visit site in addition to as requested by the Employer.

2.6 Contribute to site appraisals and surveys and (re)evaluate Project requirements including the preparation of options/recommendations for consideration by the Employer highlighting advantages and disadvantages (financial and technical) and where relevant any long lead-in procurement building elements.

2.7 Evaluate any amendments to the Project requirements and advise the Employer on options for development of the design having regard to the effect on the Employer's Requirements, the Cost Plan, the Programme and any other relevant Statutory Authority requirements.

2.8 As when requested by the Employer, provide a Documentation Schedule for review by the Employer. This Documentation Schedule shall support the Full Business Case timeline, the Employer's tender letting schedule and construction programme and shall set out the Documentation to be produced by the Consultant including the sequence and the dates for the production of same.

2.9 Update or amend the Documentation Schedule as required by the Employer. Complete/populate the master documentation matrix if utilised by the Employer. This matrix indicates to which tender package each of the Consultant's documents relates to.

2.10 Provide assistance and support the Architect, Structural Engineer and other consultants in the preparation, design, specification and installation details of their respective discipline.

2.11 Prepare the Documentation incorporating the architectural, structural and other consultants' requirements and/or information into the building services design having regards at all times to the Planning constraints, the Employer's Requirements, the Cost Plan and the construction

programme. In conjunction with the other consultants, establish all relevant Statutory Authority requirements and incorporate into the design.

2.12 Prepare design studies and make presentations to the Employer. The Consultant shall take account of any comments from the Employer and amend the Documentation as necessary. The Consultant shall also consult with local or other Statutory Authorities and with other interest groups as reasonably required by the Employer.

2.13 In accordance with the agreed Documentation Schedule, prepare and submit to the Employer in a timely manner, the adequately coordinated and progressed design and as the Lead Consultant for the specific design responsibilities, coordinate tasks and submissions from other consultants. Note: all CAD drawings are to be at an appropriate scale as reasonably required by the Employer.

2.14 In conjunction with the other consultants, develop the design incorporating the design solutions and where required, provide documentation for submissions to the relevant Statutory Authorities including for the discharge of Planning consent conditions and/or to seek conditions of approval for Building Regulations compliance.

2.15 Liaise with other consultants and coordinate the provision of information and data as reasonably required by the Cost consultant and the Employer for use in connection with the Cost Plan.

2.16 Prepare and provide Documentation (on a reasonable and realistic basis) in respect of alternative designs and/or construction solutions for the purpose of value engineering and reviewing costs. Repeat the process as reasonably required by the Employer in terms of the construction costs remaining within the Cost Plan.

2.17 Assess and provide comment on alternatives offered by the Employer, its subcontractors and suppliers. Provide design details and information as required by the Cost consultant in pricing options / alternatives. This may be subject to additional fee to be discussed and agreed between the Consultant and the Employer on a case by case basis.

2.18 Provide studies and information on maintenance, lifecycle and other costs for the Project as required by the Employer.

2.19 Assist the Employer in the preparation of Scope of Work packages on a trade by trade basis for inclusion in subcontract and supply procurement.

2.20 Prepare and issue drawings, specifications, schedules and the like as required by the Employer for market testing, tender and costing purposes. The specification is to include the requirements for testing, commissioning, benchmarks and workmanship standards.

2.21 Prepare schedules, perspectives, computer generated images and other similar presentation materials as reasonably required by the Employer to illustrate the proposed design.

2.22 Review and comment on the temporary works in relation to such activities as the crane locations, materials handling areas, storage and compound areas and the like. It is noted that the Consultant have made allowances in the permanent state design to accommodate the normally envisaged temporary loads during the course of the construction works.

2.23 Continuously review the design against the Project requirements including the Employer's Requirements and all relevant Statutory Authority requirements and immediately notify the Employer of any non-compliance together with associated remedial recommendations.

2.24 Prepare and issue a fully coordinated set of Documentation for these design stages in a report format to the Employer. The Documentation shall be at suitable including coordination information such as the overlay drawings as requested by the Employer.

# 3. Construction Documentation and Construction Phase

## Overview

3.1 This Work Stage shall be the Construction Documentation and Construction Phase of the Project. This Work Stage continues from the Concept Design and Design Development Work Stage and shall enable the remaining tendering and construction of the Project to be progressed. Where necessary, this Work Stage is undertaken in conjunction with the ongoing design development tasks. Consequently all items scheduled below are a continuation of and are in addition to the items scheduled in the Design Development (and where necessary, Concept Design) Work Stage(s) and to the extent that any of the Services carried out under Design Development (and where necessary, Concept Design) must be amended or otherwise, such work shall be deemed to be part of/concurrent to this Work Stage.

3.2 It is a fundamental objective of the Employer that all Documentation produced during this Work Stage is suitable for properly constructing the Project and shall fully reflect the developed design in full compliance with the parameters of the Project requirements such as the Planning consents, Employer's Requirements, the Cost Plan and the Programme as these may be amended from time to time, especially the construction programme.

## Tasks

The Consultant shall:

3.3 Receive further Project details and requirements from the Employer if any and together with other relevant information sourced by the Consultant, make further appraisals of Project constraints.

3.4 Evaluate any amendments to the Project requirements and advise on options for consideration by the Employer having regard to the effect on the Employer's Requirements, the Cost Plan, the Programme and any other relevant Statutory Authority requirements

3.5 Visit site in addition to as requested reasonably by the Employer.

3.6 As when requested by the Employer, update and issue the Documentation Schedule for review by the Employer. The Documentation Schedule shall be consistent with the Employer's construction programme and shall set out the Documentation to be produced by the Consultant including the sequence and the dates for production of same.

3.7 Liaise with other consultants to provide integrated and coordinated design information and data as required by the Employer to comply with the Employer's tender letting schedule and with the construction programme to ensure that there is no delay in providing information to subcontractors or in constructing the Works.

3.8 Update or amend the Documentation Schedule as required by the Employer. Update the master documentation matrix in a format requested by the Employer.

3.9 Produce a monthly update of the Documentation Schedule, or at other times as reasonably required by the Employer, showing the Consultant's actual and proposed delivery against the programmed issue dates for each Documentation including the details of the mitigation measures where the Consultant has fallen behind in providing the design information and/or the Documentation was inadequate.

3.10 Provide Documentation in accordance with the Documentation Schedule. All Documentation to be in compliance with the Project requirements. The Documentation shall be suitable of being used for preparing trade packages (including trade bills of quantities) and used for inviting tenders from trade subcontractors and updated to provide adequate details to allow each design element to be constructed which must for example, take due regard of good health and safety practices, buildability requirements such as construction sequencing and access and construction tolerances.

3.11 Review all relevant subcontractors and/or suppliers' submissions of samples and technical data as requested and report to the Employer in respect of compliance with the Project requirements.

3.12 Evaluate alternatives proposed by the trade subcontractors and in conjunction with other consultants, coordinate and integrate all such preferred alternatives into the Documentation as requested by the Employer. This may be subject to additional fee to be discussed and agreed between the Consultant and the Employer on a case by case basis.

3.13 In conjunction with the other consultants, review and comment on shop drawings, specifications, prototypes, samples and technical data submissions and other information prepared by potential and/or engaged subcontractors or suppliers for compliance with the Project requirements where relevant to the building services design. Provide such comments within 7 days of receipt. However, the Consultant shall endeavour to review, comment and return such submissions earlier should the specific need arise as to be discussed between the Consultant and the Employer.

3.14 Review and comment on the documentation of other consultants and subcontractors within 7 days of receipt and where warranted, fully update all Consultant's Documentation where necessary. However, the Consultant shall endeavour to review, comment and return such submissions earlier should the specific need arise as to be discussed between the Consultant and the Employer.

3.15 Notify the Employer in writing, once the Consultant becomes aware of any amendments or additions/deletions in the Documentation which may increase the cost of construction and/or whole life cost of the Project.

3.16 Not used.

3.17 Provide updated, coordinated and dimensioned drawings at suitable scales showing all major in a timely manner for services and other builder's works in connection details including coordination information such as the overlay drawings as requested by the Employer.

3.18 Produce supplementary documentation as may be required by the Employer to clarify the Documentation during construction, including issuing sketches, details, clarifications, further Documentation, investigating site based construction issues related to the Documentation and preparing and issuing design solutions in conjunction with other consultants where applicable.

3.19 Provide Construction Documentation ("For Contract") drawings incorporating all information issued as advices or sketches so that the latest information is shown on the Documentation to be used for construction. All Documentation must be completed and issued in compliance with the Programme and with the general progress of the Works to ensure that such progress is not delayed and/or disrupted.

3.20 Issue updated drawings, specifications, schedules, details and other design information as the Employer may require.

3.21 Revise and resubmit Planning consent submissions to the Planning Authority as required where the progressed design has varied from the original permit approval.

3.22 Regularly check the Documentation against the Project requirements such as the Employer's Requirements all relevant Statutory Authority requirements and immediately notify the Employer of any non-compliance together with associated remedial recommendations.

3.23 Assist in the updating of design and construction programmes as required by the Employer.

3.24 Respond to all correspondence including (but not limited to) Requests for Information within 5 days. However, the Consultant shall endeavour to review, comment and return such submissions earlier should the specific need arise as to be discussed between the Consultant and the Employer.

3.25 Undertake any off-site inspections reasonably requested by the Employer.

3.26 Review mock-ups and samples for compliance with the Project requirements such as the Planning consent and the Employer's Requirements and recommend benchmarks for finish and workmanship with the Employer in respect of subcontractors, suppliers and manufacturers.

3.27 Undertake regular inspections of the Works and provide non conformance report on same to the Employer.

3.28 Assist in the preparation of full documentation and detailing for a marketing and display facilities as appropriate for the Project or as reasonably required by the Employer.

# 4. Documentation Deliverables

## Overview

4.1 The Employer intends to engage specialist subcontractors for the following trades to design (For Construction details only) and construct that form part of the Works. Some of these are early release packages. For these trades, the Consultant is to provide documentation that outline the design intent and the performance requirements from which the subcontractor(s) will prepare their construction design (ie. shop drawings):

- Piling
- Structural steel (connection design only)
- Architectural precast concrete
- Major building (M&E) services
- Medical gases (including Pneumatic tube system and Renal water systems)
- Lifts and escalators
- Unitised curtain wall system
- Special/feature glazing such as the entrance glass doors and canopy
- Courtyard cladding including ribbon windows
- Podium (rainscreen) cladding
- Plantroom cladding
- Louvres
- ETFE roof coverings
- Glass roof structures
- BMU/Cleaning cradle and gantry systems
- Robotics
- Radiation protection
- Catering

The Lead Consultant for a given package (refer to the Design Consultant Responsibility Matrix) is to coordinate with other consultants in reviewing the design by these specialist subcontractors and confirm that they are acceptable for coordination with the Services and that the design intent and performance specification has been satisfied.

4.2 Not used.

4.3 In some instances, it is intended that elements of the design are undertaken by specialist subcontractors whereby the subcontractor will assume responsibility for the installation documentation of the Consultant's design intent. However, the Consultant will retain responsibility to review and comment on such design proposals and documentation. For example:

- Spacial coordination – The Consultant shall provide in sufficient detail to establish and confirm the coordinated zoning requirement such as the ceiling voids, risers and the like. The detailed design information from the Consultant is to show the spatial inter-relationship of the

engineering systems for the production of installation drawings by the relevant subcontractor(s).

- Selection plant and equipment – The Consultant shall provide a description of the main/critical performance requirements and essential design features of plant and equipment. For example: Input/output capacities of plant, the range of operating duties, details of the required quality of construction and finishes, any essential energy saving features, the acoustic performance and the availability of spares. Based on these parameters, the relevant subcontract(s) will propose their plant and equipment selection.
- Commissioning – The Consultant shall incorporate into various systems designs and provide specifications outlining the essential components and features necessary to enable proper preparation and commissioning of the building services.
- Handover information – The Consultant shall provide specifications that define the scope, content and format of operating and maintenance manuals and record drawings appropriate to the Project. The Consultant shall also define the level of documentation, commissioning results and other information to be made available by the relevant subcontract(s) for a proper handover of the Works.

This design task demarcation between the (MEP) Services Engineer (ie. the Consultant) and the subcontractor(s) is further clarified below as a guide:

| No. | Specific Design Task Examples | (MEP) Services Engineer Shall Provide: | MEP Subcontractor Shall Undertake: | Notes |
|---|---|---|---|---|
| 1 | Acoustical design and treatment for engineering services | All plant and equipment selection criteria based on internal and external noise limitations. Acoustic attentuators and anti-vibration treatment specifications based on insertions losses and vibration limitation. Ducting and pipe systems to comply with limiting velocities. Specify acoustic sealant treatment and locations | Final equipment selection based on Engineer's criteria | Site and internal acoustic parameters by Acoustic Consultant |
| 2 | Air compressors and compressed air supplies | Performance specification, distribution strategy and detailed design coordination of pipe runs and plant | Selection of plant to meet performance criteria, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |
| 3 | Air-conditioning and mechanical ventilation systems | Schematic arrangements for each of the systems required for the facility. Block planning for plantrooms and risers to departmental boundaries. Floor GAs, plantroom and riser ductwork layouts. Sizing and routing indicated on detailed design drawings showing positions of grilles, dampers and other in-line components. Specify plant and equipment duty performance criteria | Selection of plant and scheduling of equipment to meet design criteria and spatial constraints, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | Fire strategy by Fire Consultant |

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| 4 | Automatic blinds and shutters | Coordinate power supplies, BMS and any fire alarm interface points. Provide solar control blinds operational performance requirements | Coordinate final location including controls and power wiring | |
| 5 | Bedpan washing or disposal equipment | Coordinate power supplies, drainage and water supplies to suit equipment requirements | Final coordination and preparation of installation drawings | |
| 6 | Boiler plant and auxiliaries | Specification, design and resilience criteria, sizing of plant and coordination of spatial constraints on plantroom layout drawings at scale 1:50. Specify pump duty performance criteria | Selection of plant to meet design criteria and spatial constraints, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |
| 7 | Building management system and automatic controls | Detailed functional description of operation for all system including typical AHUs and plant details. Detailed performance specification and a system schematics, block diagrams giving operational requirements. Design arterial containment route requirements | Installation design of systems, points schedule, location of sensors, sizing and routing of containment and power cabling to motor drives, etc. Coordination of protective devices. Final coordination and preparation of installation drawings | |
| 8 | Calorifiers and heat exchangers | Specification, design and resilience criteria and sizing of plant and coordination on plantroom layout drawings at scale 1:50 | Selection of plant to meet design criteria, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |
| 9 | Clocks | Performance specification giving operational requirements. Applicable to operating theatre panels only. All other clocks battery operated | Installation design of systems and coordinate location of components | Groups 1 and 2 only |
| 10 | Cold water service | External - pipe sizes and routes, schematic arrangements and coordinated layout drawings. Internal - schematic arrangements for each plant area with indicative main pipe sizes. Location of key main risers. Specification, design criteria and resilience, sizing of plant and coordination of spatial constraints on plantrooms and layout drawings. Specify pump duty performance criteria. Pipe sizing and routing GAs for coordination showing all terminal positions | Selection of plant and scheduling of equipment to meet design criteria and spatial constraints, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |
| 11 | Combined heat and power plant/s | Analysis of sizes, integration into schematics and GA drawings. Specification, design criteria and sizing of plant and coordination on plantroom layout drawings at scale 1:50 | Selection of plant to meet design criteria, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |

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| 12 | Chilled water system/s | Primary Chilled Water - Major pipe sizes and routes, schematic arrangements. Equipment schedules for chillers, pumps and pressurisation equipment, heat exchangers. Secondary Chilled Water – schematic arrangements. Specification, design and resilience criteria, sizing of plant and coordination of spatial constraints on plantroom layout drawings. Specify pump duty performance criteria. Pipe sizing and routing GAs for coordination showing positions of terminal devices and valves | Selection of plant and equipment to meet design criteria and spatial constraints, scheduling of equipment, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |
| 13 | Generator plant and systems including fuel oil | Sizes, schematics and GA drawings. Detailed description of operation. Specification, design and resilience criteria, sizing of plant and coordination of spatial constraints on plantroom layout drawings at scale 1:50 | Selection of plant to meet design criteria and spatial constraints, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |
| 14 | Electric lighting and power installation/s, including luminaries | Detailed design drawings showing luminaire layouts, circuitry and switching arrangements. Performance specification giving key design criteria.. | All calculations based on requirements of Room Data Sheets, selection and scheduling of luminaires to meet design criteria and photometric data confirmation. Layout drawings and switching/control appearance. Detailed lighting layouts complete with CFD lux level modelling and emergency lighting levels, locations and switching | |
| 15 | Electric small power installation/s | Circuitry details and medical equipment supplies | Final coordination and preparation of installation drawings | |
| 16 | Electrical distribution system | Detailed specification of HV and LV switchgear, cable/busbar sizing, distribution boards and all HV and LV schematics. Detailed design drawings for all plant rooms and layouts. Theoretical HV/LV discrimination study based on generic protection devices and design cable lengths. Provide HV protection grading philosophy. Provide final calculations and study report based on as installed information from the MEP Subcontractor | Final selection of switchgear, final HV/LV discrimination study and coordination of protective devices based on final selection of protective devices and installed cable lengths. Final coordination and preparation of installation drawings | |
| 17 | Electrical sub-station | Specification, design and resilience criteria, sizing of plant and coordination of spatial constraints on plantroom layout drawings at scale 1:50. Transformer sizes, cable/busbar sizes and routes, switchgear details, schematics and GA drawings. HV/LV control systems and interface requirements with utility provider. | Selection of plant to meet design criteria and spatial constraints, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |

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| 18 | Escape lighting and fixed medical lighting | Detailed design drawings showing circuitry and switching arrangements. Performance specification giving key design criteria. Review and comment on proposals for compliance with design criteria | All calculations based on requirements of Room Data Sheets, selection and scheduling of luminaires to meet design criteria and photometric data confirmation. Layout drawings and switching/control appearance. Coordinated lighting layouts completed with CFD lux level modelling and emergency lighting levels, locations and switching. | |
| 19 | Exhaust gas handling systems/flues/chimneys | Clean Air Act submission. Specify sizes and routing for coordination on plantroom layout drawings at scale 1:50. Chimney height calculations and location on plans | Final chimney sizing, structural support information including any cladding. Final coordination and preparation of installation drawings | |
| 20 | Fire detection and alarm system/s | Performance specification giving operational requirements. Design arterial containment routes. | Design of systems, selection of components to meet Engineer's criteria, and the final location of components to be coordinated with the Architect. Provision of Fire Certificate. Develop fire alarm cause and effect. Design coordination drawings for all plant rooms and layouts. Coordinate all equipment required to be located on the reflective ceilings | Fire strategy by Fire Consultant |
| 21 | Fire fighting/protection system/s (including gas suppression system) | Performance specification and distribution strategy including coordination of pipe runs. Study into potential consequential damage associated with discharge of sprinklers (e.g floors below) and operational impact | Fire water tank sizing and location, pump sizing. Selection of plant to meet performance criteria, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings. | Fire strategy by Fire Consultant |
| 22 | Food preparation, cooking, conveying and serving equipment | Sizing of services to meet catering specialist's requirements. Routing of services to suit specialist's equipment layout | Final location of supplies to suit specialist's requirements. Final coordination and preparation of installation drawings | Catering specialist responsible for selection of equipment, layout. Termination, and sizing of final connections. Extract hood air volumes |
| 23 | Fuel gas supply and distribution | Specification and design criteria, sizing and routing for coordination of spatial constraints at scale 1:100 showing positions of valves meters, etc. Pipe sizes, routes and schematic arrangement. | Selection of equipment to meet design criteria and spatial constraints, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |
| 24 | Fuel oil supply and distribution system/s | Specification, design criteria, sizing of plant and coordination of spatial constraints on plantroom layout drawings at scale 1:50. Specify pump duty performance criteria. Pipe sizing and routing for coordination at scale 1:100 showing positions of valves, pumps and fuel oil tank locations. Schematic arrangement for oil delivery system with pipe sizes. | Selection of plant and equipment to meet design criteria and spatial constraints, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |

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| 25 | Fume extract/handling system/s | Air volumes to suit equipment supplier's requirements. Sizing and routing of ductwork considering the spatial constraints as for ventilation systems. Location and heights of discharges | Selection of equipment to meet design criteria and spatial constraints, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |
| 26 | Heating system/s | Specification, design criteria, sizing of plant and coordination of spatial constraints on plantroom layout drawings. Specify pump duty performance criteria. Pipe sizing and routing GAs for coordination showing positions of terminal devices and valves. LTHW Heating System schematic arrangements for each plant area and main system | Selection of plant and equipment to meet design criteria and spatial constraints, scheduling of equipment, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings. Coordination of reflected ceiling plans locating all services items for example, luminaries, grilles, smoke detectors etc | |
| 27 | Hot water service | Specification, design criteria, sizing of plant and coordination of spatial constraints on plantroom layout drawings. Specify pump duty performance criteria. Pipe sizing and routing for coordination showing positions of valves. Schematic arrangements for each plant area with pipe sizes and main system schematic. Location of key main risers. | Selection of plant and equipment to meet design criteria and spatial constraints, scheduling of equipment, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |
| 28 | 11kV System / HV Distribution | Specification, design and resilience criteria, sizing of plant, switchgear, main distribution, cables/busbar and coordination of spatial constraints on plantroom and layout drawings. Functional description and detailed design of HV /LV control system. Coordinate routing outside plantrooms and the requirements of the utility provider. Theoretical HV/LV discrimination study based on generic protection devices and design cable lengths. Provide HV protection grading philosophy. Provide final calculations and study report based on as installed information from the MEP Subcontractor | Final selection of switchgear, HV/LV control system, final discrimination study and coordination of protective devices based on final selection of protective devices and installed cable lengths. Final coordination and preparation of installation drawings | |
| 29 | Incoming electrical supply/s | Undertake load assessment. Initial enquires and technical liaison with the utility supplier leading to a final quotation. Seek and assist in arranging the programme requirements and liaise with Client. Provide design documentation | | |

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| 30 | Incoming water supply/s | Undertake load assessment. Initial enquires and technical liaison with the utility supplier leading to a final quotation. Seek and assist in arranging the programme requirements and liaise with Client. Provide design documentation | | |
| 31 | Incoming gas supply/s | Undertake load assessment. Initial enquires and technical liaison with the utility supplier leading to a final quotation. Seek and assist in arranging the programme requirements and liaise with Client. Provide design documentation | | |
| 32 | Information technology (IT) systems | Coordination of containment to specialist's requirements. Power and cooling provision to specialist's requirements. Liaison with the Client/Board IT representatives | Final siting/location of hub rooms and cooling and power requirements. Final coordination and preparation of installation drawings. Liaise with the Client/Board IT representatives | |
| 33 | Intruder detection/alarm systems | Performance specification. | Design of systems, location of components to be coordinated with the Architect in accordance with the performance specification. Schedule all required system components and hardware. Coordinate in developing the door schedule | |
| 34 | Laboratory gases | Performance specification. Coordination and routing of pipework, plant and equipment to specialist's requirements. | Final coordination and preparation of installation drawings | |
| 35 | Lifts, hoists, escalators & travelators | Power supplies, ventilation, pressure relief lift pressurisation and lift motor room cooling in accordance with Lift Subcontractor's requirements | Fire alarm, security and access control, BMS interfaces. Final coordination and location of supply point with Lift Subcontractor | All ventilation and cooling of lift cars within Lift subcontractor's package |
| 36 | Lightning protection | Performance specification giving operational requirements, lighting protection routes, conductor sizing, test points and connections to earth requirements | Final coordination and preparation of installation drawings | |
| 37 | Weather louvres | Coordination with cladding specialist on connection details. Provide performance criteria; free area, pressure drop and size based on assumed free area ratio | Final coordination with cladding specialist on connection details and preparation of installation drawings | Aesthetics selected by the Architect. Final selection by cladding specialist |
| 38 | Medical equipment - pre-installation works | Sizing of services to meet medical equipment specialist's requirements. Attendance at relevant 'Equipment Selection Group' meetings | Final location of supplies to suit specialist's requirements. Final coordination and preparation of installation drawings | |

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| 39 | Medical gas services including medical vacuum, AGSS and dental services | Performance specification, distribution strategy and coordination of pipe runs and plant. Coordinate location and size of accommodation for VIE plant and manifold rooms. Develop a distribution strategy for the main medical gas systems | Selection of plant to meet performance criteria, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |
| 40 | Nurse call installation | Performance specification, coordination of containment to specialist's requirements. Provide details of the arterial containment routes | Installation design of systems, location of components to be coordinated with the Architect. Final coordination and preparation of installation drawings | |
| 41 | Pneumatic-tube conveying installation | Distribution strategy and coordination of pipe runs and plant | Installation design of systems, location of components to be coordinated with the Architect. Final coordination and preparation of installation drawings | |
| 42 | Power operated smoke louvres | Performance specification and accompanying system schematics giving operational requirements. Provide details of power supplies, BMS and fire alarm interfaces | Final location coordinated with the Architect. Integration with specialist providers requirements. Control and interface wiring installation drawings | Size and location by Fire Consultant |
| 43 | Public address, personnel-location and call system/s | Performance specification giving detailed operational requirements. Coordination of arterial containment routes to specialist's requirements. | Installation design of systems, location of components to be coordinated with the Architect. Final coordination and preparation of installation drawings | |
| 44 | Public health above ground sanitary plumbing | Specification and design criteria, sizing and routing for coordination at scale 1:100. Design to show flow rates and drainage connection points. BWIC details | Installation coordination and preparation of installation drawings and final BWIC details | |
| 45 | Public health above ground chemical drainage | Specification and design criteria, sizing and routing for coordination at scale 1:100. Design to show flow rates and drainage connection points. BWIC details | Installation coordination and preparation of installation drawings and final BWIC details | |
| 46 | Public health above ground rain water installation | Coordinate roof discharge rates and outlet locations. Specification and design criteria, sizing and routing for coordination at scale 1:100. BWIC details | Installation coordination and preparation of installation drawings and final BWIC details | Roof finishes and falls by Architect. |
| 47 | Public health below ground foul drainage | Provide flow rate information and positions of connection points in relation to sanitaryware and partitions | Coordinate final position of connection points to suit setting out of sanitaryware and partitions | Based on the information from Services Engineer, the Civil Engineer to design drainage reticulation below ground |

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| 48 | Public health below ground storm water drainage | Provide flow rate information and positions of connection points | Coordinate final position of connection points to suit setting out and partitions | Based on the information from Services Engineer, the Civil Engineer to design drainage reticulation below ground |
| 49 | Radio and television installation/s | Performance specification, coordination of containment to specialist's requirements. Coordinate power supplies to specialist's requirements | Installation design of systems. Coordinate location of components and prepare installation drawings | |
| 50 | Refrigeration installation and cold stores | Coordination of pipework/containment to specialist's requirements. Power supplies, BMS interfaces etc to specialist's requirements. | Installation design of systems, sizing of refrigerant pipework, location of components to be coordinated with the Architect. Final coordination and preparation of installation drawings | For DX system and the like (eg. in server rooms) |
| 51 | Renewable energy sources | Develop strategy to successfully comply with the project objectives. Specification, design and resilience criteria, sizing of plant and coordination on plantroom layout drawings at scale 1:50. | Installation design of systems. Coordinate location of components and prepare installation drawings | |
| 52 | Sanitary fittings and fixtures | Provide connection arrangement details for each type or equipment. Detail all automatic flushing systems sensor requirements including power supplies locations | Final coordination and preparation of installation drawings | Architect to specify sanitary fittings and fixtures |
| 53 | Security Access and Control Systems | Performance specification, coordination of containment to specialist's requirements. Power supplies to specialist's requirements. Provide details of arterial containment routes indicating all access controlled doors and head ends. Specifications for all required systems components and hardware. Coordinate in developing the door schedule | Installation design of systems, final coordination of the location of component. Interfaces to external control centre if applicable. Final coordination and location of supply point in agreement with specialist. Final coordination and preparation of installation drawings. Schedule all required systems components and hardware. Coordinate in developing the door schedule | |
| 54 | Smoke extract/clearance systems | Specification and sizing duct system and fans to meet performance criteria and spatial constraints | Selection of plant and equipment to meet design criteria and spatial constraints, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | Design strategy and criteria by Fire Consultant |
| 55 | Sound attenuation of services equipment | Equipment selection criteria and location | Final selection and attenuator schedules against procured plant details. Final coordination and preparation of installation drawings | Overall performance criteria by Acoustic Consultant |
| 56 | Specialist water services (e.g Renal RO) | Performance specification, distribution strategy and coordination of pipe runs and plant | Selection of plant to meet performance criteria, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |

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| 57 | Steam and condensate system/s | Performance specification, distribution strategy and coordination of pipe runs and plant | Selection of plant to meet performance criteria, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |
| 58 | Street/external lighting/floodlighting | Carry out lighting level calculations. Specification and design criteria. Locate power supplies in relation to the CCTV and lighting locations | Final coordination of power supplies and CCTV locations. Final coordination and preparation of installation drawings | Selection by Landscape Architect |
| 59 | Telephone equipment and wiring | Coordination of containment to specialist's requirements. Power and cooling provision to specialist's requirements. Liaison with Client representatives. | Final coordination of siting/location of hub rooms, cooling and power requirements. Final coordination and preparation of installation drawings. Liaise with Client/Board representatives | |
| 60 | Thermal insulation for services | Specifications | Final selection to meet specifications | |
| 61 | Vibration control | Specifications and equipment selection criteria | Final selection and schedules against procured plant and equipment details | Overall performance criteria by Acoustic Consultant |
| 62 | Water treatment and filtration | Specification, design criteria and sizing of plant including water storage tanks, filtration plant and coordination on plantroom and layout drawing | Selection of plant to meet design criteria, installation details to suit manufacturer's requirements | |
| 63 | Window cleaning trolleys etc. | Power, water and communication supplies to specialist's requirements | Final coordination and location of supply point. Preparation of installation drawings | Specialist to provide power supply requirements and characteristics and location of interface point(s) |
| 64 | Specifications | Final specifications as described under the individual service elements. All systems to be provided with specifications based on NBS to reflect extent of design | Final coordination | |
| 65 | Thermal modelling, Part L Compliance Report, EPC | Undertake thermal modelling using IES Virtual Environment software to obtain heat loss and gain requirements. Use model to assess the thermal performance of the building fabric and summertime temperature predictions. Prepare a SPP6 Compliance Report. IES CFD model to be updated during the project design phase and upon project completion. At the end of detailed design update the model to incorporate plant specifications and use the model to produce an Energy Performance Certificate (EPC) for use by the Client | Final selection to meet specifications | |

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| 66 | Energy Consumption Modelling | Energy model in line with design development and prepare specifications to match assumptions. Energy model to be updated upon completion of design and during commissioning prior to project completion | Final coordination and preparation of installation drawings | |
| 67 | Structural Builder's work | Define and coordinate builder's work critical for the structural integrity of the building(s). This normally applies to all openings, trenches, ducts in concrete. This typically applies to vertical stacks, downpipes. Assist in sanitaryware setout | Define and coordinate all builder's work not critical for the structural integrity of the building(s). This normally applies to all chases, plant bases and openings less than 100mm | Architect to specify grid setout, type, height. MEP Subcontractor to |
| 69 | Reflected Ceiling Plans | Agree and coordinate types of ceilings and heights with the Architect. | Coordinate criteria/rules and grid for setting out. Final coordination and setting out regarding lighting, heating, cooling and ventilation, nurse call, security, CCTV and other specialist designed systems. Provide final details and positions of all ceiling mounted services for Architect's coordination review. Provide final coordinated CAD layer for the Architect to import/issue the final RCP. . | |
| 70 | Detailed design drawings | Detailed design drawings will show the coordinated locations of plant items and service routes in such detail as to indicate the design intent. The main features of detailed design drawings will be as follows:<br><br>• Plan layouts will be to a scale of at least 1:100. Plant areas will be to a scale of at least 1:50, and will be accompanied by cross sections.<br><br>• The drawings will indicate the position of services that are feasible to install and spatially coordinated. It will be possible to produce the final installation drawings without major re-routing of the services.<br><br>• Pipework and cable containment will be represented by single line layouts. Ductwork will be represented by either double line or single line layouts as required to demonstrate that the routes indicated are feasible.<br><br>• The drawing will indicate the space available for major service routing in both horizontal and vertical planes. | Final coordination and preparation of installation drawings | |

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| 71 | Installation and shop drawings | Review and comment on all subcontractor produced coordinated installation drawings | Installation and shop drawings will show the inter-relationship of two or more engineering services and their relation to the structure and building fabric. The main features of coordinated working drawings will be as follows:<br><br>• Plan layouts will be to a scale of at least 1:50 and be accompanied by cross sections to a scale of at least 1:20 for all congested areas.<br><br>• The drawing will make allowance for installation working space and space to facilitate commissioning and maintenance.<br><br>• The drawings will be spatially coordinated and there should be no physical clashes between the system components when installed. Critical dimensions, datum levels and invert levels will be provided.<br><br>• The spaces between pipe and duct runs shown on the drawing will make allowance for the service at its widest points considering the insulation, standard fitting dimensions and joint widths.<br><br>• The drawing will indicate positions of all fixing points and supports necessary to install the works, and where they have significance to the structural design or spatial constraints. | |
| 72 | (As-Built) Record drawings | Review and comment on all subcontractor produced as-built drawings | Prepare record drawings based upon the installation drawings which are marked up on site to reflect any changes occurring during construction. Incorporate these changes to generate the As-Built drawings | |
| 73 | Drain and vent point locations and pipe work gradients | Specification stating venting, drain points and required pipe fall for all building services | Final coordination and preparation of installation drawings | |
| 74 | Locations of brackets and supports | To be defined within the specifications | Final coordination and preparation of installation drawings | |
| 75 | Expansion joints, anchors and guide locations | Specify and indicate locations of expansion joints and anchor points required for major services runs | Final coordination and preparation of installation drawings | |
| 76 | Valve, damper and access point locations | To be defined within the specifications | Final coordination and preparation of installation drawings | |
| 77 | Final fan and pump system resistances | Design resistances based on detailed design drawings and specifications | Verify resistances following completion of the installation drawings and selection of all materials and prior to final procurement of plant items | |

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| 78 | Selection of plant and equipment | Specify main performance requirements and essential design features of plant items. Specify values for the nominal capacities of plant, the range of operating duties anticipated, details of the expected quality of construction and finishes, any essential energy saving features, and the acoustic performance. | Selection of plant and equipment in accordance with the essential design features specified, taking account of final system characteristics once coordinated installation drawings have been adequately developed. Provision of all detailed information in support of proposed selections including, where appropriate, associated system resistance calculations. | |
| 81 | Operational and departmental policies | Review and incorporate requirements into engineering services designs | For performance specified systems, review and incorporate requirements into engineering services designs. Final coordination and preparation of installation drawings | |
| 84 | Major plant and equipment selections | Review and comment on subcontractor's submissions for compliance with key performance requirements as set out in the Equipment Schedules | Submit proposals with supporting information. Consider review comments from the Consultant and undertake final coordination and preparation of installation drawings | |
| 85 | Specialist performance specified systems | Review and comment on specialist's technical submissions for compliance with key performance criteria as set out in the specifications | Submit proposals with supporting information. Consider review comments from the Consultant and undertake final coordination and preparation of installation drawings | |
| 86 | Monitoring the installation for compliance | Attend site to inspect ongoing construction works to confirm that the design intent is generally complied with and to report any observations | | |
| 87 | Commissioning | Agree a commissioning plan and review commissioning data for compliance with the specifications. Attend commissioning activities and meetings in order to witness and sign off key commissioning results | Submit proposals with supporting information. Consider review comments from the Consultant and undertake commissioning | |
| 88 | Energy metering monitoring system | Strategy and performance specification. Indicate all meter locations. | Final coordination and preparation of installation drawings | |
| 89 | BREEAM Excellence rating | Provide all management and input for all aspects of compliance with BREEAM Excellence rating. | Final coordination and preparation of installation drawings | |
| 90 | User Group meetings | Attend key User Group meetings to receive briefing information and input from the building services design aspect | Attend key User Group meetings to receive briefing information and input from the building services design aspect | |

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| 91 | Technical and sample submissions | Review and comment all subcontractor technical and sample submissions to confirm compliance with design intentions, BREEAM rating, energy model, quality etc. | Submit proposals with supporting information. Consider review comments from the Consultant and undertake final coordination and preparation of installation drawings | |

**Documentation**

4.4 The Documentation Deliverables shall be fully coordinated with other consultants and other relevant parties prior to issue. The Deliverables are to be provided in trade package format.

In addition to the above, please note the following general principal requirements:

a) Drawings are to be prepared in a digital form on standard A size sheet (ie. A0, A1, A2, A3). Drawings are not to be any larger than the A0 size.

b) Building Orientation: North to top of sheet, part floors details to be drawn with North to top of sheet. North arrow must be shown on the drawing title block.

c) Each Documents must contain/show:

- Unique document number
- Full title with no abbreviation
- Drawn (or prepared) by and checked by – sign offs
- All details to have scale identified for each
- Denote full (sheet) size
- Changes from the previous drawing revision are to be numbered individually and highlighted with a bold cloud. Once the drawing is revised again, these clouds will be removed and new/latest clouds added to highlight the new drawing amendments
- Detailed description of the change(s) under each number with a date in the title block (to match the cloud number) so that the change(s) can be easily understood from the previous issue
- All documents to be prepared in black and white and not colour unless advised otherwise by the Employer
- The orientation of all drawings when submitted electronically shall be checked that they are landscape and uploaded in the correct orientation (e.g. not scanned upside down)

d) The text on all Documents including the drawings shall be in UK English. All dimensions shall be given in metric format. Calendar dates shall follow the Day/Month/Year format.

e) When revising a document, such as specifications, the full version is to be issued (ie. do not issue just an addenda/extract of the pages that changed).

f) Revisions to text documents will have the revised text in bold and italics (***this is an example***). Text that has been deleted will be in italics and struck through (~~*another example*~~). The Table of Contents shall also highlight in bold italic sections modified. Revised text highlighted must be removed by the Originator prior to issuing the next revision or prior to issuing a document For Tender/Contract and For Construction purposes.

g) Text documents will be prepared on standard A4 size sheets. All text documents will have a title page displaying the relevant information. Each page of the document must show (as a minimum) - document number and its revision, the page number and the total number of pages (ie. page X of Y).

4.5 The following sample list of documents for the building services design as provided by the Consultant indicates the level of design documentation proposed. However, the Consultant shall provide any additional documentation which is not listed below which would be required by the Employer to construct the Works in addition to the Design Development and Overall Design Document Deliverables required by the Board as listed under the agreed Appendix K of the Building Contract which includes those Deliverables required in advance of (Stage 2) Full Business Case:

| Documentation | Scale (indicative) |
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| **Appendix K Deliverables** | |
| Mechanical Services Drawings | |
| Medical Gases Layouts | |
| Plantrooms Medical Gases | |
| Medical Gas Services Schematics | |
| Heating System Zoning Philosophy | |
| Chilled Water System Zoning Philosophy | |
| HTG and CHW Layouts | |
| Plantrooms HTB and CHW | |
| MTHW Heating Schematics | |
| Secondary Heating Schematics Plantrooms | |
| Primary Chilled Water Schematics | |
| Secondary Chilled Water Schematics Plantrooms | |
| Ventilation System Zoning Philosophy | |
| Ventilation Layouts | |
| Plantrooms Ventilation | |
| Ventilation Schematics | |
| Environmental Treatment Layouts | |
| Pneumatic Tube System Schematics | |
| Food Waste System Schematics | |
| Electrical Systems Zoning Philosophy | |
| Plantrooms LV Power | |
| Containment/Sub-main Layouts | |
| Low Voltage Schematics | |
| Lighting Layouts | |
| Security Layouts | |
| Earthing Schematics | |
| UPS Schematics | |

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| Fire Alarm Layouts | |
| Nurse Call Layouts | |
| Public Health Water Services Layouts | |
| Plantrooms Public Health Water Services | |
| Hot Water System Zoning Philosophy | |
| Sanitation and Rainwater Layouts | |
| Primary Public Health Water Services Schematics | |
| Secondary Public Health Water Services Schematics | |
| Renal Water Schematics | |
| Fire Protection Systems | |
| Fire Protection Plans | |
| Sprinkler System Schematics | |
| Wet Riser System Schematics | |
| External Services and Energy Centre Mechanical Services | |
| Oil System Schematics | |
| Natural Gas System Schematics | |
| Energy Centre Sections | |
| External Services and Energy Centre Electrical Services | |
| Utility Primary Intake Substation Schematics | |
| MV Power Schematics | |
| Energy Centre LV Schematics Substations | |
| External Services and Energy Centre Public Health Services | |
| External Services and Energy Centre Site Services | |
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| **Drawings** | |
| **Electrical, Communication and Security Services:** | |
| Legend and symbols | |
| Existing services diversion plans, sections and details | 1:100 / 1:50 |
| Floor plans | 1:100 |
| Plant room and service area layouts | 1:100 |
| Service areas | 1:100 |
| Toilets, tearooms, breakout areas and showers | 1:100 |
| External areas | 1:100 |
| Transformer schedules | |

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| Fire services schematic | |
| Substation | 1:100 / 1:50 |
| Equipment and containment for PABX/communications systems | |
| HV and LV distribution | |
| Main switch rooms | 1:50 |
| Cable tray reticulation | 1:100 |
| Power, communication and security services riser layouts (if applicable) | 1:50 |
| Services reticulation such as cable tray layout | 1:100 |
| Power, lighting and access control layout including to plant and distribution boards for each level | 1:100 |
| Single line diagrams – main switchboards | |
| Riser details | |
| Electrical control systems | |
| Earthing and bonding | |
| UPS and other back-up power management system | |
| Induction loops containment shown on general power drawings | |
| Essential and non-essential fire services switchboards | |
| Emergency lighting | |
| Riser coordination documentation | 1:50 |
| Façade blinds and windows control schematic | |
| BMU provisions (as per Specialist requirements) | |
| Small power and ancillary services circuitry for each level including 'add-in' supplies shown on Architects 1:50s | |
| Room layouts, sections and elevations | |
| | |
| **Public Health and Fire Protection Services:** | |
| Legend and symbols | |
| Existing services diversion plans, sections and details | 1:100 / 1:50 |
| Floor plans indicating sewer; storm water; rainwater; tundishes; and down pipes. | 1:100 |
| Plant room and service area layouts | 1:100 |
| Basement services layouts | 1:100 |
| Toilets, tearooms, breakout areas and showers | 1:100 |
| External areas | 1:100 |
| Public health and fire protection services schematic | |
| Public health and fire protection services riser layouts | 1:100 |
| Services reticulation layout | 1:100 |
| Public health and fire protection services layout - all levels | 1:100 |
| Riser schematic | |

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| Entry lobby and public spaces | 1:100 |
| Public health and fire protection services control systems | |
| Awnings and canopies rainwater drainage | 1:100 |
| Typical drainage details | 1:100 |
| Wet or Dry Riser | |
| Sanitary pipework | |
| Stormwater pipework | |
| Water tank room layout | |
| Foul drainage pump room layout | |
| Water intake and meter room layout | |
| Hot water diagram | |
| Cold water diagram | |
| Riser co-ordination documentation indicated on mechanical core drawings | |
| | |
| **Mechanical Services:** | |
| Legend and symbols | |
| Floor plans | 1:100 |
| Plant room and service area layouts | 1:100 |
| Toilets, tearooms, breakout areas and showers | 1:100 |
| Mechanical services layout for each level | |
| Sections and elevations | |
| Substation ventilation | 1:100; 1:50 |
| PABX ventilation | 1:50 |
| Main switch room ventilation | 1:50 |
| Services reticulation layout | 1:100 |
| Mechanical riser layouts | 1:50 |
| Mechanical layout for each level | 1:100 |
| Chilled water schematics | |
| Condenser water schematic | |
| LPHW schematic | |
| Ventilation schematic | |
| Smoke and extract schematic | |
| Lift and stair pressurization schematic | |
| Generator oil and bio fuel oil schematic | |
| Typical details | |
| Entry lobby and public spaces | 1:100 |
| Riser co-ordination documentation | 1:50 |
| | |

| **Specifications and Reports** |
|---|
| Services diversions |
| Underground services (excluding drainage) |
| Electrical services |
| Public health services |
| Mechanical services |
| Fire protection and alarm services |
| Future provisions |
| BMS |
| Part SPP6 Report |
| Maintenance and plant replacement strategy |
| Energy metering strategy |
| CDM Hazard control sheets |
| Design risk registers |
| |
| **Schedules** |
| HV & LV Switchboard |
| Plant and equipment |
| HV/LV cable Schedules |
| HV/LV Protective Device Schedules |
| Distribution Board Schedules (Small Power) |
| |

# 5. Commissioning, Completion and Post Completion

## Overview

5.1 This Work Stage shall be the Commissioning, Completion and Post Completion Phase of the Project and shall enable the Project to be commissioned and occupied. Consequently all items scheduled below are a continuation of and are in addition to the items scheduled in the Design Development, the Construction Documentation and the Construction Phases Work Stages.

5.2 It is a fundamental objective of the Employer that all Documentation produced during this Work Stage are suitable for properly constructing, commissioning and completing the Project in full compliance with the Project requirements such as the Planning consents, the Employer's Requirements, the Cost Plan and the construction and completion programmes.

## Tasks

The Consultant shall:

5.3 Receive further Project details and requirements from the Employer if any and together with other relevant information sourced by the Consultant, make further appraisals of Project constraints.

5.4 Visit site in addition to as requested reasonably by the Employer.

5.5 Evaluate any amendments to the Project requirements and advise on options for consideration by the Employer having regard to the effect on the Employer's Requirements, the Cost Plan, the Programme and any other relevant Statutory Authority requirements.

5.6 In conjunction with the other consultants, review as reasonably required by the Employer all subcontractor proposed commissioning procedures and report to the Employer.

5.7 Not used.

5.8 Review and comment on all relevant guarantees, warranties and O & M manuals prepared by subcontractors and suppliers.

5.9 In preparation for Completion, inspect the benchmark areas as required by the Employer and prepare non conformance reports to describe in the opinion of the Consultant the Works that may prevent them to be certified as completed together with recommendations for rectification of them. If required by the Employer and in conjunction with the Employer, the Consultant shall re-inspect the Works to verify that the non conformances have been rectified. These tasks are to be provided in a timely manner and where requested by the Employer, make appropriate representations on Employer's behalf to the Board in regards to the non conformances and their remedial works.

5.10 Review and comment within 7 days, all relevant "As-Built" documents as prepared by the other consultants and/or subcontractors including drawings, specifications, schedules, manuals and maintenance instructions or any other documents as required by the Employer.

5.11 Attend commissioning and witness testing to review the satisfactory function and completion of relevant systems for compliance with the Consultant's design intent and specifications in accordance with the Project requirements.

5.12 Assist the Employer with the preparation and provision of the Project operation and maintenance manuals and as-built record information and the like as necessary for the Completion of the Project.

5.13 Assist in the preparing and updating of completion programmes as required by the Employer.

5.14 Liaise with other consultants and coordinate the provision of information and data as required by the Employer to comply with the construction and/or commissioning programme to ensure that there is no delay in providing information to the relevant parties.

5.15 Check the Documentation produced during this Work Stage against the Planning consents and other Project requirements such as the Employer's Requirements. Report on any non-compliance and provide mitigation recommendations on same.

5.16 Provide all necessary information to the CDM Coordinator to be included in the Health and Safety File for the purposes of the CDM Regulations.

5.17 Provide the updated specifications to reflect the as-built building services works..

5.18 Not used.

5.19 Provide the Employer with a written statement certifying that the Works are consistent with the Consultant's latest design Documentation and the Project requirements such as the Employer's Requirements as demonstrated on the testing and commissioning results.

5.20 Participate in inspections which shall be conducted at reasonable points during the first 52 weeks, if not at 52 weeks after the date of Completion.

5.21 Reasonably assist the Employer in the settlement of differences in relation to the building services works that may arise between the Board and the Employer or between the Employer and any subcontractor or supplier. Should such differences enter into adjudication or arbitration, the Consultant's assistance may be subject to additional fee which is to be discussed and agreed between the Consultant and the Employer on a case by case basis.

**End**

**SCHEDULE 2, PART 2**

**CONSULTANT COORDINATION MATRIX**

NHS GREATER GLASGOW AND CLYDE
NEW SOUTH GLASGOW HOSPITALS (NSGH)

BROOKFIELD CONSTRUCTION (UK)

# Design Consultant Responsibility Matrix

## June 2010

**NHS GREATER GLASGOW AND CLYDE**
**NEW SOUTH GLASGOW HOSPITALS (NSGH)**

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The Consultant with the primary lead responsibilities including the overall coordination for the various design tasks are as follows, but not necessarily limited to:

Note:

1. All other Consultants are required to assist by providing definitive and complete design advice and information in a timely manner to the Lead Consultant responsible for that design task.
2. The responsibilities below exclude the design tasks associated with the Laboratory Building.

| **Lead Consultant : L** | | Architect and Medical Planners - **Nightingale** | Services Engineer - **ZBP** | Healthcare Planner - **Tribal** | Structural /Civil Engineer - **WSP** | Landscape Architect and Masterplanners - **Gillespies** | Art Strategy - **Gingko** | Environmental Engineer incl BREEAM - **WSP** | Acoustic Consultant – **Acoustic Logic** | Fire Engineering - **WSP** | Radiation Protection - **TBA** | Kitchen Consultant - **TBA** | EMC Consultant - **TBA** | Helicopter Consultant – **Peter Rover** | Lift Engineers - **Schindler** | Cost Planner – **Doig & Smith** | Building Control – **Glasgow City Council** | Planning Consultant - **Ironside Farrar** | CDM Coordinator - **URS** | Client – **NSGH Board** | Contractor / Employer - **Brookfield** | **Notes** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.0 Overall Duties** | | | | | | | | | | | | | | | | | | | | | | |
| 1.1 | Design brief development and confirmation | | | | | | | | | | | | | | | | | | | | L | |
| 1.2 | Design brief compliance | L | L | L | L | L | L | L | L | L | L | L | | L | L | | | | | | | For their respective design discipline |
| 1.3a | Master plan – Review, testing and development | | | | | L | | | | | | | | | | | | | | | | |
| 1.3b | Master plan - Ongoing coordination to ensure integration of changes and consistency | | | | | L | | | | | | | | | | | | | | | | |
| 1.3c | Master plan – Prepare, review and submit revised Master plans | | | | | L | | | | | | | | | | | | | | | | Assisted by other Consultants where required |
| 1.3d | Landscape Visual Impact Assessment as necessary | | | | | L | | | | | | | | | | | | | | | | Assisted by other Consultants where required especially from Planning Consultant |
| 1.3e | Update Environmental Impact Statements | | | | | | | | | | | | | | | | | L | | | | Input from other Consultants especially from the Landscape Architect |
| 1.4 | Design presentations | L | | | | | | | | | | | | | | | | | | | | Assisted by other Consultants where required |
| 1.5 | Overall design and documentation coordination | L | | | | | | | | | | | | | | | | | | | | |
| 1.6 | Site and Building grids and setting out | L | | | | | | | | | | | | | | | | | | | | Coordinate/consider grid requirements with the Structural Engineer and Landscape/Masterplanning Consultant |
| 1.7 | Architectural design and specifications | L | | | | | | | | | | | | | | | | | | | | |
| 1.8 | Healthcare planning (including user | | | L | | | | | | | | | | | | | | | | | | Healthcare Planner to lead in SoA, RDS and |

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| | group adjacencies) | | | | | | | | | | | | | | | | | | | | | other associated issues |
| 1.9 | Substructure (incl foundation) design and specifications | | | | L | | | | | | | | | | | | | | | | | |
| 1.10 | Superstructure design and specifications | | | | L | | | | | | | | | | | | | | | | | |
| 1.11 | Building Services design and specifications | | L | | | | | | | | | | | | | | | | | | | Supply Chain input |
| 1.12 | IT, data and audio visual design intent | | L | | | | | | | | | | | | | | | | | | | MEP Subcontractor to undertake the sizing/location of hub rooms and coordinate to prepare the installation drawings. Services Engineer to provide wireways to Specialist requirements |
| 1.13 | Infrastructure services design (including incoming services) and specifications | | L | | | | | | | | | | | | | | | | | | | From the (connection) point of Utility Provider |
| 1.14 | Traffic study and design | | | | L | | | | | | | | | | | | | | | | | |
| 1.15 | Site wide road way, paths, civic space concept design | | | | | L | | | | | | | | | | | | | | | | |
| 1.16 | Site wide road way, paths, civic space detailed design | | | | L | | | | | | | | | | | | | | | | | With input from the Architect and Landscape Architect for setting out |
| 1.17a | Site phasing, logistics, concept | | | | | | | | | | | | | | | | | | | | L | Landscape Architect to provide support role in associated graphics |
| 1.17b | Site wide temporary road way, paths, car parks – detailed design | | | | L | | | | | | | | | | | | | | | | | Construction related traffic signage by the Contractor |
| 1.18 | Landscaping design (hard and soft) | | | | | L | | | | | | | | | | | | | | | | |
| 1.19 | Secure by Design compliance | L | | | | | | | | | | | | | | | | | | | | |
| 1.20 | Anti-terrorism design issues – non structural | L | | | | | | | | | | | | | | | | | | | L | Contractor to seek clarification from Board |

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| 1.21 | Anti-terrorism design issues – structural | | | | L | | | | | | | | | | | | | | | | L | Contractor to seek clarification from Board |
| 1.22 | Interior (Fitout and FF&E) design and specifications | L | | | | | | | | | | | | | | | | | | | | For their respective design discipline - as applicable to Group 1 (supply and install) and Group 2 ("free issue" from the Board for installation) |
| 1.23 | Acoustic, noise and vibration criteria and design | | | | | | | | L | | | | | | | | | | | | | |
| 1.24 | Vertical transportation study and design | | | | | | | | | | | | | | L | | | | | | | |
| 1.25 | Fire engineering strategy and design | | | | | | | | | L | | | | | | | | | | | | |
| 1.26 | Access and Disability related design | L | | | | | | | | | | | | | | | | | | | | To comply with Part M and other relevant legislations |
| 1.27 | Helipad facility design/brief strategy | | | | | | | | | | | | | L | | | | | | | | |
| 1.28 | Helipad detailed design documentation to meet brief | L | L | | L | | | | | | | | | | | | | | | | | For their respective design discipline |
| 1.29 | Radiation protection design strategy brief | | | | | | | | | | L | | | | | | | | | | | |
| 1.30 | Radiation protection detailed design documentation to meet brief | L | L | | L | | | | | | | | | | | | | | | | | For their respective design discipline |
| 1.31 | Electro magnetic compatibility | | | | | | | | | | | | L | | | | | | | | | |
| 1.32 | Kitchen concept design | | | | | | | | | | | L | | | | | | | | | | |
| 1.33 | Kitchen detailed design documentation to meet brief | L | L | | | | | | | | | | | | | | | | | | | For their respective design discipline |
| 1.34 | Clean room design | L | L | | | | | | | | | | | | | | | | | | | For their respective design discipline for shell. Clean Room design by Specialist. Design interfaces to be provided by the relevant Consultants |

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| 1.35 | Building cleaning maintenance access strategy and design | L | | | | | | | | | | | | | | | | | | | | |
| 1.36 | Specialist lighting design (internal) | L | | | | | | | | | | | | | | | | | | | | Engineering by the Services Engineer |
| 1.37a | External areas lighting design | | | | | L | | | | | | | | | | | | | | | | Engineering (ie. power supply) by the Services Engineer. Lighting for roads by the Civil Engineer. All other lighting design intent by the Landscape Architect |
| 1.37b | External lighting design for building envelope | | L | | | | | | | | | | | | | | | | | | | Design intent by the Architect. Engineering (eg. power reticulation) by the Services Engineer. |
| 1.38 | Public Artwork strategy | | | | | | L | | | | | | | | | | | | | | | Landscape Architect to integrate in Master plan and external detail design. |
| 1.39 | All other artwork | L | | | | L | L | | | | | | | | | | | | | | | Architect to integrate into internal design. Landscape Architect to integrate in external design. |
| 1.40a | Signage and wayfinding - Internal | L | | | | | | | | | | | | | | | | | | | | Requirements such as the location, type etc by the Architect. Final manufacturing design by the Supply Chain |
| 1.40b | Signage and wayfinding - External | | | | | L | | | | | | | | | | | | | | | | Requirements such as the location, type etc by the Landscape Architect. Final manufacturing design by the Supply Chain |
| 1.40c | Signage and wayfinding - Traffic | | | | L | | | | | | | | | | | | | | | | | |
| 1.41 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 1.42 | Expansion/flexibility strategy contained in the bid submission | L | L | | L | L | | | | | | | | | | | | | | | L | For their respective design discipline. Contractor to clarify Board requirements (if any in addition to the ERs) |
| 1.43 | Trade package scope of works | | | | | | | | | | | | | | | | | | | | L | Assisted by the Consultants |
| 1.44 | Design programming | | | | | | | | | | | | | | | | | | | | L | With input from relevant Consultants |

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| 1.45 | Documentation management | | | | | | | | | | | | | | | | | | | | L | With respect to Aconex |
| 1.46 | Monthly design reporting | L | L | L | L | L | | | | | | | | | | | | L | L | | | For their respective design discipline |
| 1.47 | Design meetings and workshops | L | | | | | | | | | | | | | | | | | | | | With input from all Consultants |
| 1.48 | Quality assurance and control | L | L | L | L | L | | L | L | L | L | L | L | L | L | L | L | L | L | L | L | For their respective design discipline |
| 1.49 | Cost plan | | | | | | | | | | | | | | | L | | | | | | |
| 1.50 | Cost management | | | | | | | | | | | | | | | | | | | | L | With input from all Consultants |
| 1.51 | Risk management scheduling and management | | | | | | | | | | | | | | | | | | | | L | Assisted by the Cost Planner |
| 1.52 | Design change administration | | | | | | | | | | | | | | | | | | | | L | Supported by Consultants |
| 1.53 | Submission of design information to Client | | | | | | | | | | | | | | | | | | | | L | Supported by Consultants |
| 1.54 | Schedule of Derogations | | | | | | | | | | | | | | | | | | | | L | Input from Consultants |
| 1.55 | CDM risk assessments | | | | | | | | | | | | | | | | | | L | | | |
| 1.56 | Health and Safety File | | | | | | | | | | | | | | | | | | L | | | With input from all Consultants |
| 1.57 | Commissioning Specification | | L | | | | | | | | | | | | | | | | | | | Strategy and methodology input from the MEP Subcontractor(s) |
| 1.58 | O&M and Handover strategy | | | | | | | | | | | | | | | | | | | | | Supported by Consultants and Supply Chain |
| 1.59 | Updating the final design drawings and documents for Completion/Occupation | L | L | L | L | L | | L | L | L | | | | | L | | | | | | | For their respective design discipline with marked up drawings supplied by Contractor (ie. from Subcontractors). Services Engineer to provide final updated performance specifications for the building services works |
| 1.60 | On site neighbour liaison | | | | | | | | | | | | | | | | | | | | L | |
| 1.61 | Client liaison | | | | | | | | | | | | | | | | | | | | L | |
| 1.62 | Site Waste Management Plan (incl | | | | L | | | | | | | | | | | | | | | | | Assisted by others where required |

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| | use of WRAP) | | | | | | | | | | | | | | | | | | | | | |
| 1.63 | Facilities management strategy | | | | | | | | | | | | | | | | | | | L | | |
| 1.64 | Facilities management requirements – incorporation into design | L | L | L | L | L | L | L | L | L | L | L | | L | L | | | | | | | For their respective tasks |
| **2.0 Authorities** | | | | | | | | | | | | | | | | | | | | | | |
| 2.1 | Environment Agency liaison and consents | | | | L | | | | | | | | | | | | | | | | | |
| 2.2 | Planning conditions negotiations and approvals including deviation requests and change audit submissions | | | | | | | | | | | | | | | | | L | | | | Supported by the Design Consultants for their respective discipline |
| 2.3 | S75 Agreement input | | | | L | | | | | | | | | | | | | | | | | Lead by the Board |
| 2.4 | Building Control negotiations and conditions of approvals including deviation requests | L | L | | L | L | | L | L | L | L | L | | L | L | | | | | | | For their respective design discipline |
| 2.5 | Building Regulation compliance | L | L | | L | L | | L | L | L | | L | | | L | | L | | | | | For their respective design discipline guided by Building Control |
| 2.6 | Environmental Health Officer liaison and consent | | | | | | | | | | | | | | | | | | | | L | All Consultants to liaise for their respective design discipline |
| 2.7 | Local Transport liaison and consents Authority | | | | L | | | | | | | | | | | | | | | | | |
| 2.8 | Public Utilities liaison and consents for Incoming (Electricity, Water, Gas) | | L | | | | | | | | | | | | | | | | | | | Telecom order placed by Board |
| 2.9 | Public Utilities liaison and consents for Out going foul and stormwater discharge | | | | L | | | | | | | | | | | | | | | | | |
| 2.10 | Public Utilities legal agreements (way leaves/leases/licences) | | | | | | | | | | | | | | | | | | | L | | |
| **3.0 Specific Tasks** | | | | | | | | | | | | | | | | | | | | | | |

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| 3.1 | Site boundary definition | | | | | | | | | | | | | | | | | | | L | | |
| 3.2 | General site context analysis | | | | | L | | | | | | | | | | | | | | | | Input from Architect and Engineers |
| 3.3 | Dimensional topographical surveys analysis | | | | L | L | | | | | | | | | | | | | | | L | |
| 3.4 | Geotechnical investigation and analysis | | | | | | | L | | | | | | | | | | | | | | |
| 3.5 | Ground contamination investigation and analysis | | | | | | | | | | | | | | | | | | | L | | Board to provide contamination free site. Civil Engineer allowed for supporting the discharging of the planning condition |
| 3.6 | Contamination advice and statutory liaison coordination and consents | | | | | | | L | | | | | | | | | | | | | | |
| 3.7 | Ground modelling to establish building formation levels | | | | L | | | | | | | | | | | | | | | | | Input from Contractor in relation to phasing/construction sequence. |
| 3.8 | Asbestos investigations and analysis | | | | | | | | | | | | | | | | | | | L | | |
| 3.9 | Environmental surveys to discharge planning approval conditions | | | | | | | | | | | | | | | | | L | | | | With input from the relevant Consultants |
| 3.10 | Environmental remediation certification | | | | | | | | | | | | | | | | | | | L | | Board to provide contamination free site. Civil Engineer allowed for supporting the discharging of the planning condition |
| 3.11 | Archaeological liaisons, coordination and consents | | | | | | | | | | | | | | | | | L | | | | Input from Archaeological specialist. Other Consultants to assist in coordination |
| 3.12 | Liaise coordination of services off site | | L | | | | | | | | | | | | | | | | | | | |
| 3.13 | Flood study and design | | | | L | | | | | | | | | | | | | | | | | |
| 3.14 | Integration of available existing structural design information | | | | L | | | | | | | | | | | | | | | | | |
| 3.15 | Integration of available existing services design information | | L | | L | | | | | | | | | | | | | | | | | |
| 3.16 | Integration of other available existing design information | L | | | | | | | | | | | | | | | | | | | | |

**NHS GREATER GLASGOW AND CLYDE**
**NEW SOUTH GLASGOW HOSPITALS (NSGH)**

**BROOKFIELD CONSTRUCTION (UK)**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.17 | Integration of Site staging (eg. parking controls) and appropriate liaison | | | | | | | | | | | | | | | | | | | | L | Contractor logistics and phasing plans. Input from Consultants as required. |
| 3.18 | Sub/superstructure (interface) design coordination | L | | | L | | | | | | | | | | | | | | | | | |
| 3.19 | Spatial coordination of Building Services | | L | | | | | | | | | | | | | | | | | | | MEP Subcontractor(s) to take this detailed design from the Services Engineer in preparing the final installation drawings |
| 3.20 | Detailed coordination of Building Services | | L | | | | | | | | | | | | | | | | | | | MEP Subcontractor/Services Engineer |
| 3.21 | Coordination of external services (ie. outside building footprints) beneath ground | | L | | | | | | | | | | | | | | | | | | | Input from Civil Engineer |
| 3.22 | Underground drainage design (incl through and to top of the first slab above ground or internal face of (retaining) walls) | | | | L | | | | | | | | | | | | | | | | | Setout dimensions for the pop-ups on slabs and walls to be coordinated with Services Engineer and/or Architect and show them on structure (eg. slab) drawings |
| 3.23 | Above ground slab drainage design including rainwater | L | L | | | | | | | | | | | | | | | | | | | For rainwater, the Services Engineer is to design including showing the setout dimensions on the services drawings. Visual requirements for feature rainwater goods to be provided by the Architect |
| 3.24 | Building plant replacement strategy and design | | L | | | | | | | | | | | | | | | | | | | |
| 3.25 | Electrical systems security strategy and design intent (eg. CCTV and access control) | | L | | | | | | | | | | | | | | | | | | | Assisted by the Architect/Supply Chain |
| 3.26 | Review and incorporation of Architectural Specialist Subcontractor design information | L | | | | | | | | | | | | | | | | | | | | |
| 3.27 | Review of Building Services Specialist Subcontractor design information | | L | | | | | | | | | | | | | | | | | | | |

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| 3.28 | Review of Structural Specialist Subcontractor design information | | | | L | | | | | | | | | | | | | | | | | |
| 3.29 | Special waste drainage – top of ground slab and below and intenal face of walls (eg. grease traps, petrol interceptors) | | | | L | | | | | | | | | | | | | | | | | Setout dimensions for the pop-ups on slabs and walls (referenced off the grids) to be coordinated with Services Engineer and/or Architect and show them on structure (eg. slab) drawings |
| 3.30 | Special waste drainage – above ground slab (eg. grease traps) | | L | | | | | | | | | | | | | | | | | | | |
| 3.31 | Integrated data/comms services design intent | | L | | | | | | | | | | | | | | | | | | | MEP Subcontractor to undertake the sizing/location of hub rooms and coordinate to prepare the installation drawings |
| 3.32 | Design intent and integration of satellite and cable services | | L | | | | | | | | | | | | | | | | | | | Detailed design from Supply Chain |
| 3.33 | Building services management system design | | L | | | | | | | | | | | | | | | | | | | Detailed design from Supply Chain |
| 3.34 | Thermal insulation specifications | L | | | | | | | | | | | | | | | | | | | | Input from Services Engineer |
| 3.35 | U-value simulations and calculations | | L | | | | | | | | | | | | | | | | | | | |
| 3.36 | Part L equivalent Building Regulation performance simulations and calculations | | L | | | | | | | | | | | | | | | | | | | |
| 3.37 | BREEAM assessment and certification | | | | | | | L | | | | | | | | | | | | | | Input from Other Consultants |
| 3.38 | Building air leak/pressurization testing strategy | | | | | | | | | | | | | | | | | | | | L | Supported by the Architect and Services Engineer |
| 3.39 | Energy performance certification and certificate | | L | | | | | | | | | | | | | | | | | | | |
| 3.40 | Waterproofing design below ground up to the underside of the ground slab/DPC | | | | L | | | | | | | | | | | | | | | | | |
| 3.41 | Waterproofing design above ground including the DPC | L | | | | | | | | | | | | | | | | | | | | |

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**BROOKFIELD CONSTRUCTION (UK)**

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| 3.42 | Lightning protection design intent | | L | | | | | | | | | | | | | | | | | | | Detailed design by Supply Chain |
| 3.43 | Structure corrosion protection design | | | | L | | | | | | | | | | | | | | | | | Helicopter Consultant to provide input for the helipad |
| 3.44 | Structural fire protection design | | | | L | | | | | | | | | | | | | | | | | Input from other Consultants as necessary |
| 3.45 | Plant support design and co-ordination with primary structure | | | | L | | | | | | | | | | | | | | | | | |
| 3.46 | Integration of temporary works design into permanent works where required | | | | L | | | | | | | | | | | | | | | | | |
| 3.47 | Secondary steelwork design | | | | | | | | | | | | | | | | | | | | L | Subcontractor's design. Structural Engineer to check and confirm acceptable to the primary structure |
| 3.48 | Masonry wall stability design including wind posts | | | | L | | | | | | | | | | | | | | | | | |
| 3.49 | Lintel specification | | | | L | | | | | | | | | | | | | | | | | Supply Chain to detail the Lintel schedule if necessary |
| 3.50 | Movement joint design (in structure) | | | | L | | | | | | | | | | | | | | | | | |
| 3.51 | Movement joint design (in finishes) | L | | | | | | | | | | | | | | | | | | | | Structural Engineer input required |
| 3.52 | Fire engineered solutions including reports, design notes and deviation requests | | | | | | | | | L | | | | | | | | | | | | |
| 3.53 | Incorporation of the fire engineering related design onto the documentation eg. compartmentation and fire zones etc | L | L | | L | | | | | | | | | | | | | | | | | For their respective design discipline with input from the Fire Engineer |
| 3.54 | Incorporation of acoustic, noise and vibration design into the design documentation | L | L | | L | | | | | | | | | | | | | | | | | For their respective design discipline with input from the Acoustic Engineer |
| 3.55 | Fire extinguisher and exit sign location and quantity | | | | | | | | | L | | | | | | | | | | | | Fire Engineer to draft brief. Architect to provide drawings |

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| 3.56 | Wind load study and design | | | | L | | | | | | | | | | | | | | | | | CFD and wind tunnel testing if required is an additional scope |
| 3.57 | Façade (external cladding, roofing etc) and envelope design coordination | L | | | | | | | | | | | | | | | | | | | | Input from Supply Chain and Other Consultants |
| 3.58 | Roofing purlins and wall cladding girts design (eg. for plantrooms) | | | | | | | | | | | | | | | | | | | | L | Detailed design from Supply Chain |
| 3.59 | Enabling works and project staging documentation | | | | | | | | | | | | | | | | | | | | L | Architect and Landscape Architect to assist with documentation |
| 3.60 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 3.61 | Incorporation of major services builders work in connection in structure | | | | L | | | | | | | | | | | | | | | | | Major builders work penetrations are those equivalent to and larger than 100mm diameter area. Input from Supply Chain and Other Consultants |
| 3.62 | Incorporation of services in connection with finishes | L | | | | | | | | | | | | | | | | | | | | Input from the Services Engineer and the Supply Chain |
| 3.63 | Production of co-ordinated BWIC services information | | | | | | | | | | | | | | | | | | | | L | Subcontractor's design |
| 3.64 | Integration of special fixings into design | L | | | L | | | | | | | | | | | | | | | | | Depending on the stage of the project. Based on Subcontractor information. |
| 3.65 | Lift performance/ type/spec design | | | | | | | | | | | | | | L | | | | | | | |
| 3.66 | Lift car interior and other finishes accessories | L | | | | | | | | | | | | | | | | | | | | |
| 3.67 | Building Services drawings for ceiling mounted services | | L | | | | | | | | | | | | | | | | | | | Input from Supply Chain. Services Engineer will show grilles, chilled beams and radiant panels |
| 3.68 | Reflected ceiling plans | L | | | | | | | | | | | | | | | | | | | | Architect to specify grid setout, type, height. MEP Subcontractor to coordinate and provide details and positions of all ceiling mounted services for Architect's coordination review. |

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| | | | | | | | | | | | | | | | | | | | | | | MEP Subcontractor to provide the final coordinated CAD layer for the Architect to import and issue the final RCP |
| 3.69 | Slab recess drawings showing setouts for the slab edges, setdowns, upstands, parapets. | | | | L | | | | | | | | | | | | | | | | | Input from Supply Chain and Other Consultants |
| 3.70 | Building loading drawings (including for the equipment loading) | | | | L | | | | | | | | | | | | | | | | | |
| 3.71 | Screed requirements | L | | | L | | | | | | | | | | | | | | | | | Screed/topping requiring reinforcement by the Structural Engineer |
| 3.72 | Tenancy Fit Out Design Guidelines | | | | | | | | | | | | | | | | | | | | L | Client/Contractor to provide Brief. Architect to produce drawings with input from Other Consultants. |
| 3.73 | Not used | | | | | | | | | | | | | | | | | | | | | |
| 3.74 | Mock up/prototype design and documentation | L | | | | | | | | | | | | | | | | | | | | |
| 3.75 | Specialist construction input management | | | | | | | | | | | | | | | | | | | | L | |
| 3.76 | Preparation, submission, receipt and analysis of subcontract tenders | | | | | | | | | | | | | | | | | | | | L | Input from relevant Consultants |
| 3.77 | Inspection of works on site | L | L | | L | L | L | L | L | L | L | L | L | L | L | | L | | | | | For their respective design discipline |
| 3.78 | Off site inspections as requested | L | L | | L | L | L | L | L | L | L | L | L | L | L | | L | | | | | For their respective design discipline |
| 3.79 | Medical waste discharge | | L | | | | | | | | | | | | | | | | | | | With the Board (Specialist) input |
| 3.80 | Green roof | | | | | L | | | | | | | | | | | | | | | | Design intent by the Landscape Architect. Performance specifications from other Consultants for their respective design discipline. Drainage design by the Services Engineer with Specialist input |
| 3.81 | Food waste system | | L | | | | | | | | | | | | | | | | | | | With input from the relevant Consultants |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **4.0 Specific Design Schedules (to be progressively updated) which may be provided in a drawing format** | | | | | | | | | | | | | | | | | | | | | | |
| 4.1 | Below ground drainage showing setout coordinates, manholes, diversions etc | | | | L | | | | | | | | | | | | | | | | | |
| 4.2 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.3 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.4 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.5 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.6 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.7 | Room Data Sheets | | | L | | | | | | | | | | | | | | | | | | |
| 4.8 | Schedule of Accommodation | | | L | | | | | | | | | | | | | | | | | | |
| 4.9 | Louvre schedules | L | | | | | | | | | | | | | | | | | | | | Input from Other Consultants (especially the Services Engineer and the Supply Chain) |
| 4.10 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.11 | Door and Ironmongery schedules including Masterkeying | L | | | | | | | | | | | | | | | | | | | | Input from Supply Chain |
| 4.12 | Windows / internal screen schedules | L | | | | | | | | | | | | | | | | | | | | |
| 4.13 | Hatches schedule | L | | | | | | | | | | | | | | | | | | | | Input from Other Consultants |
| 4.14 | Finishes schedules | L | | | | | | | | | | | | | | | | | | | | |
| 4.15 | Equipment, Fixtures and Fittings schedules | L | | | | | | | | | | | | | | | | | | | | Architect to provide wall elevations for each exemplar room type in addition to standard wall elevations for the remaining rooms. Architect to highlight substantial fixing requirements (eg. drug cupboards). |
| 4.16 | Signage and wayfinding schedules | L | | | L | L | | | | | | | | | | | | | | | | Split as 1.40a, 1.40b and 1.40c above |
| 4.17 | Sanitary ware schedules | L | | | | | | | | | | | | | | | | | | | | Input from Supply Chain |

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| 4.18 | Building services plant and equipment schedules | | L | | | | | | | | | | | | | | | | | | | Input from Supply Chain |
| 4.19 | Luminaries schedules | | L | | | | | | | | | | | | | | | | | | | Services Engineer to provide the performance specifications. MEP Subcontractor(s) to produce the final schedule for installation to comply with the Services Engineer's requirements |
| 4.20 | Grilles schedules | | L | | | | | | | | | | | | | | | | | | | Services Engineer to provide the selection parameters. MEP Subcontractor(s) to produce the final schedule for installation to comply with the Services Engineer's requirements |
| 4.21 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.22 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.23 | Reinforcement detailing instructions and scheduling | | | | L | | | | | | | | | | | | | | | | | |

NHS GREATER GLASGOW AND CLYDE
NEW SOUTH GLASGOW HOSPITALS (NSGH)

BROOKFIELD CONSTRUCTION (UK)

# Design Consultant Responsibility Matrix

## June 2010

**NHS GREATER GLASGOW AND CLYDE**
**NEW SOUTH GLASGOW HOSPITALS (NSGH)**

**BROOKFIELD CONSTRUCTION (UK)**

The Consultant with the primary lead responsibilities including the overall coordination for the various design tasks are as follows, but not necessarily limited to:
Note:

1. All other Consultants are required to assist by providing definitive and complete design advice and information in a timely manner to the Lead Consultant responsible for that design task.
2. The responsibilities below exclude the design tasks associated with the Laboratory Building.

| **Lead Consultant : L** | | Architect and Medical Planners - **Nightingale** | Services Engineer - **ZBP** | Healthcare Planner - **Tribal** | Structural /Civil Engineer - **WSP** | Landscape Architect and Masterplanners - **Gillespies** | Art Strategy - **Gingko** | Environmental Engineer incl BREEAM - **WSP** | Acoustic Consultant – **Acoustic Logic** | Fire Engineering - **WSP** | Radiation Protection - **TBA** | Kitchen Consultant - **TBA** | EMC Consultant - **TBA** | Helicopter Consultant – **Peter Rover** | Lift Engineers - **Schindler** | Cost Planner – **Doig & Smith** | Building Control – **Glasgow City Council** | Planning Consultant - **Ironside Farrar** | CDM Coordinator - **URS** | Client – **NSGH Board** | Contractor / Employer - **Brookfield** | **Notes** |
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| **1.0 Overall Duties** | | | | | | | | | | | | | | | | | | | | | | |
| 1.1 | Design brief development and confirmation | | | | | | | | | | | | | | | | | | | | L | |
| 1.2 | Design brief compliance | L | L | L | L | L | L | L | L | L | L | L | | L | L | | | | | | | For their respective design discipline |
| 1.3a | Master plan – Review, testing and development | | | | | L | | | | | | | | | | | | | | | | |
| 1.3b | Master plan - Ongoing coordination to ensure integration of changes and consistency | | | | | L | | | | | | | | | | | | | | | | |
| 1.3c | Master plan – Prepare, review and submit revised Master plans | | | | | L | | | | | | | | | | | | | | | | Assisted by other Consultants where required |
| 1.3d | Landscape Visual Impact Assessment as necessary | | | | | L | | | | | | | | | | | | | | | | Assisted by other Consultants where required especially from Planning Consultant |
| 1.3e | Update Environmental Impact Statements | | | | | | | | | | | | | | | | | L | | | | Input from other Consultants especially from the Landscape Architect |
| 1.4 | Design presentations | L | | | | | | | | | | | | | | | | | | | | Assisted by other Consultants where required |
| 1.5 | Overall design and documentation coordination | L | | | | | | | | | | | | | | | | | | | | |
| 1.6 | Site and Building grids and setting out | L | | | | | | | | | | | | | | | | | | | | Coordinate/consider grid requirements with the Structural Engineer and Landscape/Masterplanning Consultant |
| 1.7 | Architectural design and specifications | L | | | | | | | | | | | | | | | | | | | | |
| 1.8 | Healthcare planning (including user | | | L | | | | | | | | | | | | | | | | | | Healthcare Planner to lead in SoA, RDS and |

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| | group adjacencies) | | | | | | | | | | | | | | | | | | | | | other associated issues |
| 1.9 | Substructure (incl foundation) design and specifications | | | | L | | | | | | | | | | | | | | | | | |
| 1.10 | Superstructure design and specifications | | | | L | | | | | | | | | | | | | | | | | |
| 1.11 | Building Services design and specifications | | L | | | | | | | | | | | | | | | | | | | Supply Chain input |
| 1.12 | IT, data and audio visual design intent | | L | | | | | | | | | | | | | | | | | | | MEP Subcontractor to undertake the sizing/location of hub rooms and coordinate to prepare the installation drawings. Services Engineer to provide wireways to Specialist requirements |
| 1.13 | Infrastructure services design (including incoming services) and specifications | | L | | | | | | | | | | | | | | | | | | | From the (connection) point of Utility Provider |
| 1.14 | Traffic study and design | | | | L | | | | | | | | | | | | | | | | | |
| 1.15 | Site wide road way, paths, civic space concept design | | | | | L | | | | | | | | | | | | | | | | |
| 1.16 | Site wide road way, paths, civic space detailed design | | | | L | | | | | | | | | | | | | | | | | With input from the Architect and Landscape Architect for setting out |
| 1.17a | Site phasing, logistics, concept | | | | | | | | | | | | | | | | | | | | L | Landscape Architect to provide support role in associated graphics |
| 1.17b | Site wide temporary road way, paths, car parks – detailed design | | | | L | | | | | | | | | | | | | | | | | Construction related traffic signage by the Contractor |
| 1.18 | Landscaping design (hard and soft) | | | | | L | | | | | | | | | | | | | | | | |
| 1.19 | Secure by Design compliance | L | | | | | | | | | | | | | | | | | | | | |
| 1.20 | Anti-terrorism design issues – non structural | L | | | | | | | | | | | | | | | | | | | L | Contractor to seek clarification from Board |

**NHS GREATER GLASGOW AND CLYDE**
**NEW SOUTH GLASGOW HOSPITALS (NSGH)**

**BROOKFIELD CONSTRUCTION (UK)**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.21 | Anti-terrorism design issues – structural | | | | L | | | | | | | | | | | | | | | | L | Contractor to seek clarification from Board |
| 1.22 | Interior (Fitout and FF&E) design and specifications | L | | | | | | | | | | | | | | | | | | | | For their respective design discipline - as applicable to Group 1 (supply and install) and Group 2 ("free issue" from the Board for installation) |
| 1.23 | Acoustic, noise and vibration criteria and design | | | | | | | | L | | | | | | | | | | | | | |
| 1.24 | Vertical transportation study and design | | | | | | | | | | | | | | L | | | | | | | |
| 1.25 | Fire engineering strategy and design | | | | | | | | | L | | | | | | | | | | | | |
| 1.26 | Access and Disability related design | L | | | | | | | | | | | | | | | | | | | | To comply with Part M and other relevant legislations |
| 1.27 | Helipad facility design/brief strategy | | | | | | | | | | | | | L | | | | | | | | |
| 1.28 | Helipad detailed design documentation to meet brief | L | L | | L | | | | | | | | | | | | | | | | | For their respective design discipline |
| 1.29 | Radiation protection design strategy brief | | | | | | | | | | L | | | | | | | | | | | |
| 1.30 | Radiation protection detailed design documentation to meet brief | L | L | | L | | | | | | | | | | | | | | | | | For their respective design discipline |
| 1.31 | Electro magnetic compatibility | | | | | | | | | | | | L | | | | | | | | | |
| 1.32 | Kitchen concept design | | | | | | | | | | | L | | | | | | | | | | |
| 1.33 | Kitchen detailed design documentation to meet brief | L | L | | | | | | | | | | | | | | | | | | | For their respective design discipline |
| 1.34 | Clean room design | L | L | | | | | | | | | | | | | | | | | | | For their respective design discipline for shell. Clean Room design by Specialist. Design interfaces to be provided by the relevant Consultants |

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| 1.35 | Building cleaning maintenance access strategy and design | L | | | | | | | | | | | | | | | | | | | | |
| 1.36 | Specialist lighting design (internal) | L | | | | | | | | | | | | | | | | | | | | Engineering by the Services Engineer |
| 1.37a | External areas lighting design | | | | | L | | | | | | | | | | | | | | | | Engineering (ie. power supply) by the Services Engineer. Lighting for roads by the Civil Engineer. All other lighting design intent by the Landscape Architect |
| 1.37b | External lighting design for building envelope | | L | | | | | | | | | | | | | | | | | | | Design intent by the Architect. Engineering (eg. power reticulation) by the Services Engineer. |
| 1.38 | Public Artwork strategy | | | | | | L | | | | | | | | | | | | | | | Landscape Architect to integrate in Master plan and external detail design. |
| 1.39 | All other artwork | L | | | | L | L | | | | | | | | | | | | | | | Architect to integrate into internal design. Landscape Architect to integrate in external design. |
| 1.40a | Signage and wayfinding - Internal | L | | | | | | | | | | | | | | | | | | | | Requirements such as the location, type etc by the Architect. Final manufacturing design by the Supply Chain |
| 1.40b | Signage and wayfinding - External | | | | | L | | | | | | | | | | | | | | | | Requirements such as the location, type etc by the Landscape Architect. Final manufacturing design by the Supply Chain |
| 1.40c | Signage and wayfinding - Traffic | | | | L | | | | | | | | | | | | | | | | | |
| 1.41 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 1.42 | Expansion/flexibility strategy contained in the bid submission | L | L | | L | L | | | | | | | | | | | | | | | L | For their respective design discipline. Contractor to clarify Board requirements (if any in addition to the ERs) |
| 1.43 | Trade package scope of works | | | | | | | | | | | | | | | | | | | | L | Assisted by the Consultants |
| 1.44 | Design programming | | | | | | | | | | | | | | | | | | | | L | With input from relevant Consultants |

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| 1.45 | Documentation management | | | | | | | | | | | | | | | | | | | | L | With respect to Aconex |
| 1.46 | Monthly design reporting | L | L | L | L | L | | | | | | | | | | | | L | L | | | For their respective design discipline |
| 1.47 | Design meetings and workshops | L | | | | | | | | | | | | | | | | | | | | With input from all Consultants |
| 1.48 | Quality assurance and control | L | L | L | L | L | | L | L | L | L | L | L | L | L | L | L | L | L | L | L | For their respective design discipline |
| 1.49 | Cost plan | | | | | | | | | | | | | | | L | | | | | | |
| 1.50 | Cost management | | | | | | | | | | | | | | | | | | | | L | With input from all Consultants |
| 1.51 | Risk management scheduling and management | | | | | | | | | | | | | | | | | | | | L | Assisted by the Cost Planner |
| 1.52 | Design change administration | | | | | | | | | | | | | | | | | | | | L | Supported by Consultants |
| 1.53 | Submission of design information to Client | | | | | | | | | | | | | | | | | | | | L | Supported by Consultants |
| 1.54 | Schedule of Derogations | | | | | | | | | | | | | | | | | | | | L | Input from Consultants |
| 1.55 | CDM risk assessments | | | | | | | | | | | | | | | | | | L | | | |
| 1.56 | Health and Safety File | | | | | | | | | | | | | | | | | | L | | | With input from all Consultants |
| 1.57 | Commissioning Specification | | L | | | | | | | | | | | | | | | | | | | Strategy and methodology input from the MEP Subcontractor(s) |
| 1.58 | O&M and Handover strategy | | | | | | | | | | | | | | | | | | | | | Supported by Consultants and Supply Chain |
| 1.59 | Updating the final design drawings and documents for Completion/Occupation | L | L | L | L | L | | L | L | L | | | | | L | | | | | | | For their respective design discipline with marked up drawings supplied by Contractor (ie. from Subcontractors). Services Engineer to provide final updated performance specifications for the building services works |
| 1.60 | On site neighbour liaison | | | | | | | | | | | | | | | | | | | | L | |
| 1.61 | Client liaison | | | | | | | | | | | | | | | | | | | | L | |
| 1.62 | Site Waste Management Plan (incl | | | | L | | | | | | | | | | | | | | | | | Assisted by others where required |

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| | use of WRAP) | | | | | | | | | | | | | | | | | | | | | |
| 1.63 | Facilities management strategy | | | | | | | | | | | | | | | | | | | L | | |
| 1.64 | Facilities management requirements – incorporation into design | L | L | L | L | L | L | L | L | L | L | L | | L | L | | | | | | | For their respective tasks |
| **2.0 Authorities** | | | | | | | | | | | | | | | | | | | | | | |
| 2.1 | Environment Agency liaison and consents | | | | L | | | | | | | | | | | | | | | | | |
| 2.2 | Planning conditions negotiations and approvals including deviation requests and change audit submissions | | | | | | | | | | | | | | | | | L | | | | Supported by the Design Consultants for their respective discipline |
| 2.3 | S75 Agreement input | | | | L | | | | | | | | | | | | | | | | | Lead by the Board |
| 2.4 | Building Control negotiations and conditions of approvals including deviation requests | L | L | | L | L | | L | L | L | L | L | | L | L | | | | | | | For their respective design discipline |
| 2.5 | Building Regulation compliance | L | L | | L | L | | L | L | L | | L | | | L | | L | | | | | For their respective design discipline guided by Building Control |
| 2.6 | Environmental Health Officer liaison and consent | | | | | | | | | | | | | | | | | | | | L | All Consultants to liaise for their respective design discipline |
| 2.7 | Local Transport liaison and consents Authority | | | | L | | | | | | | | | | | | | | | | | |
| 2.8 | Public Utilities liaison and consents for Incoming (Electricity, Water, Gas) | | L | | | | | | | | | | | | | | | | | | | Telecom order placed by Board |
| 2.9 | Public Utilities liaison and consents for Out going foul and stormwater discharge | | | | L | | | | | | | | | | | | | | | | | |
| 2.10 | Public Utilities legal agreements (way leaves/leases/licences) | | | | | | | | | | | | | | | | | | | L | | |
| **3.0 Specific Tasks** | | | | | | | | | | | | | | | | | | | | | | |

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| 3.1 | Site boundary definition | | | | | | | | | | | | | | | | | | | L | | |
| 3.2 | General site context analysis | | | | | L | | | | | | | | | | | | | | | | Input from Architect and Engineers |
| 3.3 | Dimensional topographical surveys analysis | | | | L | L | | | | | | | | | | | | | | | L | |
| 3.4 | Geotechnical investigation and analysis | | | | | | | L | | | | | | | | | | | | | | |
| 3.5 | Ground contamination investigation and analysis | | | | | | | | | | | | | | | | | | | L | | Board to provide contamination free site. Civil Engineer allowed for supporting the discharging of the planning condition |
| 3.6 | Contamination advice and statutory liaison coordination and consents | | | | | | | L | | | | | | | | | | | | | | |
| 3.7 | Ground modelling to establish building formation levels | | | | L | | | | | | | | | | | | | | | | | Input from Contractor in relation to phasing/construction sequence. |
| 3.8 | Asbestos investigations and analysis | | | | | | | | | | | | | | | | | | | L | | |
| 3.9 | Environmental surveys to discharge planning approval conditions | | | | | | | | | | | | | | | | | L | | | | With input from the relevant Consultants |
| 3.10 | Environmental remediation certification | | | | | | | | | | | | | | | | | | | L | | Board to provide contamination free site. Civil Engineer allowed for supporting the discharging of the planning condition |
| 3.11 | Archaeological liaisons, coordination and consents | | | | | | | | | | | | | | | | | L | | | | Input from Archaeological specialist. Other Consultants to assist in coordination |
| 3.12 | Liaise coordination of services off site | | L | | | | | | | | | | | | | | | | | | | |
| 3.13 | Flood study and design | | | | L | | | | | | | | | | | | | | | | | |
| 3.14 | Integration of available existing structural design information | | | | L | | | | | | | | | | | | | | | | | |
| 3.15 | Integration of available existing services design information | | L | | L | | | | | | | | | | | | | | | | | |
| 3.16 | Integration of other available existing design information | L | | | | | | | | | | | | | | | | | | | | |

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| 3.17 | Integration of Site staging (eg. parking controls) and appropriate liaison | | | | | | | | | | | | | | | | | | | | L | Contractor logistics and phasing plans. Input from Consultants as required. |
| 3.18 | Sub/superstructure (interface) design coordination | L | | | L | | | | | | | | | | | | | | | | | |
| 3.19 | Spatial coordination of Building Services | | L | | | | | | | | | | | | | | | | | | | MEP Subcontractor(s) to take this detailed design from the Services Engineer in preparing the final installation drawings |
| 3.20 | Detailed coordination of Building Services | | L | | | | | | | | | | | | | | | | | | | MEP Subcontractor/Services Engineer |
| 3.21 | Coordination of external services (ie. outside building footprints) beneath ground | | L | | | | | | | | | | | | | | | | | | | Input from Civil Engineer |
| 3.22 | Underground drainage design (incl through and to top of the first slab above ground or internal face of (retaining) walls) | | | | L | | | | | | | | | | | | | | | | | Setout dimensions for the pop-ups on slabs and walls to be coordinated with Services Engineer and/or Architect and show them on structure (eg. slab) drawings |
| 3.23 | Above ground slab drainage design including rainwater | L | L | | | | | | | | | | | | | | | | | | | For rainwater, the Services Engineer is to design including showing the setout dimensions on the services drawings. Visual requirements for feature rainwater goods to be provided by the Architect |
| 3.24 | Building plant replacement strategy and design | | L | | | | | | | | | | | | | | | | | | | |
| 3.25 | Electrical systems security strategy and design intent (eg. CCTV and access control) | | L | | | | | | | | | | | | | | | | | | | Assisted by the Architect/Supply Chain |
| 3.26 | Review and incorporation of Architectural Specialist Subcontractor design information | L | | | | | | | | | | | | | | | | | | | | |
| 3.27 | Review of Building Services Specialist Subcontractor design information | | L | | | | | | | | | | | | | | | | | | | |

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| 3.28 | Review of Structural Specialist Subcontractor design information | | | | L | | | | | | | | | | | | | | | | | |
| 3.29 | Special waste drainage – top of ground slab and below and intenal face of walls (eg. grease traps, petrol interceptors) | | | | L | | | | | | | | | | | | | | | | | Setout dimensions for the pop-ups on slabs and walls (referenced off the grids) to be coordinated with Services Engineer and/or Architect and show them on structure (eg. slab) drawings |
| 3.30 | Special waste drainage – above ground slab (eg. grease traps) | | L | | | | | | | | | | | | | | | | | | | |
| 3.31 | Integrated data/comms services design intent | | L | | | | | | | | | | | | | | | | | | | MEP Subcontractor to undertake the sizing/location of hub rooms and coordinate to prepare the installation drawings |
| 3.32 | Design intent and integration of satellite and cable services | | L | | | | | | | | | | | | | | | | | | | Detailed design from Supply Chain |
| 3.33 | Building services management system design | | L | | | | | | | | | | | | | | | | | | | Detailed design from Supply Chain |
| 3.34 | Thermal insulation specifications | L | | | | | | | | | | | | | | | | | | | | Input from Services Engineer |
| 3.35 | U-value simulations and calculations | | L | | | | | | | | | | | | | | | | | | | |
| 3.36 | Part L equivalent Building Regulation performance simulations and calculations | | L | | | | | | | | | | | | | | | | | | | |
| 3.37 | BREEAM assessment and certification | | | | | | | L | | | | | | | | | | | | | | Input from Other Consultants |
| 3.38 | Building air leak/pressurization testing strategy | | | | | | | | | | | | | | | | | | | | L | Supported by the Architect and Services Engineer |
| 3.39 | Energy performance certification and certificate | | L | | | | | | | | | | | | | | | | | | | |
| 3.40 | Waterproofing design below ground up to the underside of the ground slab/DPC | | | | L | | | | | | | | | | | | | | | | | |
| 3.41 | Waterproofing design above ground including the DPC | L | | | | | | | | | | | | | | | | | | | | |

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| 3.42 | Lightning protection design intent | | L | | | | | | | | | | | | | | | | | | | Detailed design by Supply Chain |
| 3.43 | Structure corrosion protection design | | | | L | | | | | | | | | | | | | | | | | Helicopter Consultant to provide input for the helipad |
| 3.44 | Structural fire protection design | | | | L | | | | | | | | | | | | | | | | | Input from other Consultants as necessary |
| 3.45 | Plant support design and co-ordination with primary structure | | | | L | | | | | | | | | | | | | | | | | |
| 3.46 | Integration of temporary works design into permanent works where required | | | | L | | | | | | | | | | | | | | | | | |
| 3.47 | Secondary steelwork design | | | | | | | | | | | | | | | | | | | | L | Subcontractor's design. Structural Engineer to check and confirm acceptable to the primary structure |
| 3.48 | Masonry wall stability design including wind posts | | | | L | | | | | | | | | | | | | | | | | |
| 3.49 | Lintel specification | | | | L | | | | | | | | | | | | | | | | | Supply Chain to detail the Lintel schedule if necessary |
| 3.50 | Movement joint design (in structure) | | | | L | | | | | | | | | | | | | | | | | |
| 3.51 | Movement joint design (in finishes) | L | | | | | | | | | | | | | | | | | | | | Structural Engineer input required |
| 3.52 | Fire engineered solutions including reports, design notes and deviation requests | | | | | | | | | L | | | | | | | | | | | | |
| 3.53 | Incorporation of the fire engineering related design onto the documentation eg. compartmentation and fire zones etc | L | L | | L | | | | | | | | | | | | | | | | | For their respective design discipline with input from the Fire Engineer |
| 3.54 | Incorporation of acoustic, noise and vibration design into the design documentation | L | L | | L | | | | | | | | | | | | | | | | | For their respective design discipline with input from the Acoustic Engineer |
| 3.55 | Fire extinguisher and exit sign location and quantity | | | | | | | | | L | | | | | | | | | | | | Fire Engineer to draft brief. Architect to provide drawings |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.56 | Wind load study and design | | | | L | | | | | | | | | | | | | | | | | CFD and wind tunnel testing if required is an additional scope |
| 3.57 | Façade (external cladding, roofing etc) and envelope design coordination | L | | | | | | | | | | | | | | | | | | | | Input from Supply Chain and Other Consultants |
| 3.58 | Roofing purlins and wall cladding girts design (eg. for plantrooms) | | | | | | | | | | | | | | | | | | | | L | Detailed design from Supply Chain |
| 3.59 | Enabling works and project staging documentation | | | | | | | | | | | | | | | | | | | | L | Architect and Landscape Architect to assist with documentation |
| 3.60 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 3.61 | Incorporation of major services builders work in connection in structure | | | | L | | | | | | | | | | | | | | | | | Major builders work penetrations are those equivalent to and larger than 100mm diameter area. Input from Supply Chain and Other Consultants |
| 3.62 | Incorporation of services in connection with finishes | L | | | | | | | | | | | | | | | | | | | | Input from the Services Engineer and the Supply Chain |
| 3.63 | Production of co-ordinated BWIC services information | | | | | | | | | | | | | | | | | | | | L | Subcontractor's design |
| 3.64 | Integration of special fixings into design | L | | | L | | | | | | | | | | | | | | | | | Depending on the stage of the project. Based on Subcontractor information. |
| 3.65 | Lift performance/ type/spec design | | | | | | | | | | | | | | L | | | | | | | |
| 3.66 | Lift car interior and other finishes accessories | L | | | | | | | | | | | | | | | | | | | | |
| 3.67 | Building Services drawings for ceiling mounted services | | L | | | | | | | | | | | | | | | | | | | Input from Supply Chain. Services Engineer will show grilles, chilled beams and radiant panels |
| 3.68 | Reflected ceiling plans | L | | | | | | | | | | | | | | | | | | | | Architect to specify grid setout, type, height. MEP Subcontractor to coordinate and provide details and positions of all ceiling mounted services for Architect's coordination review. |

| **Lead Consultant : L** | | Architect and Medical Planners - **Nightingale** | Services Engineer - **ZBP** | Healthcare Planner - **Tribal** | Structural /Civil Engineer - **WSP** | Landscape Architect and Masterplanners - **Gillespies** | Art Strategy - **Gingko** | Environmental Engineer incl BREEAM - **WSP** | Acoustic Consultant – **Acoustic Logic** | Fire Engineering - **WSP** | Radiation Protection - **TBA** | Kitchen Consultant - **TBA** | EMC Consultant - **TBA** | Helicopter Consultant – **Peter Rover** | Lift Engineers - **Schindler** | Cost Planner – **Doig & Smith** | Building Control – **Glasgow City Council** | Planning Consultant - **Ironside Farrar** | CDM Coordinator - **URS** | Client – **NSGH Board** | Contractor / Employer - **Brookfield** | **Notes** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | | | MEP Subcontractor to provide the final coordinated CAD layer for the Architect to import and issue the final RCP |
| 3.69 | Slab recess drawings showing setouts for the slab edges, setdowns, upstands, parapets. | | | | L | | | | | | | | | | | | | | | | | Input from Supply Chain and Other Consultants |
| 3.70 | Building loading drawings (including for the equipment loading) | | | | L | | | | | | | | | | | | | | | | | |
| 3.71 | Screed requirements | L | | | L | | | | | | | | | | | | | | | | | Screed/topping requiring reinforcement by the Structural Engineer |
| 3.72 | Tenancy Fit Out Design Guidelines | | | | | | | | | | | | | | | | | | | | L | Client/Contractor to provide Brief. Architect to produce drawings with input from Other Consultants. |
| 3.73 | Not used | | | | | | | | | | | | | | | | | | | | | |
| 3.74 | Mock up/prototype design and documentation | L | | | | | | | | | | | | | | | | | | | | |
| 3.75 | Specialist construction input management | | | | | | | | | | | | | | | | | | | | L | |
| 3.76 | Preparation, submission, receipt and analysis of subcontract tenders | | | | | | | | | | | | | | | | | | | | L | Input from relevant Consultants |
| 3.77 | Inspection of works on site | L | L | | L | L | L | L | L | L | L | L | L | L | L | | L | | | | | For their respective design discipline |
| 3.78 | Off site inspections as requested | L | L | | L | L | L | L | L | L | L | L | L | L | L | | L | | | | | For their respective design discipline |
| 3.79 | Medical waste discharge | | L | | | | | | | | | | | | | | | | | | | With the Board (Specialist) input |
| 3.80 | Green roof | | | | | L | | | | | | | | | | | | | | | | Design intent by the Landscape Architect. Performance specifications from other Consultants for their respective design discipline. Drainage design by the Services Engineer with Specialist input |
| 3.81 | Food waste system | | L | | | | | | | | | | | | | | | | | | | With input from the relevant Consultants |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **4.0 Specific Design Schedules (to be progressively updated) which may be provided in a drawing format** | | | | | | | | | | | | | | | | | | | | | | |
| 4.1 | Below ground drainage showing setout coordinates, manholes, diversions etc | | | | L | | | | | | | | | | | | | | | | | |
| 4.2 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.3 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.4 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.5 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.6 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.7 | Room Data Sheets | | | L | | | | | | | | | | | | | | | | | | |
| 4.8 | Schedule of Accommodation | | | L | | | | | | | | | | | | | | | | | | |
| 4.9 | Louvre schedules | L | | | | | | | | | | | | | | | | | | | | Input from Other Consultants (especially the Services Engineer and the Supply Chain) |
| 4.10 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.11 | Door and Ironmongery schedules including Masterkeying | L | | | | | | | | | | | | | | | | | | | | Input from Supply Chain |
| 4.12 | Windows / internal screen schedules | L | | | | | | | | | | | | | | | | | | | | |
| 4.13 | Hatches schedule | L | | | | | | | | | | | | | | | | | | | | Input from Other Consultants |
| 4.14 | Finishes schedules | L | | | | | | | | | | | | | | | | | | | | |
| 4.15 | Equipment, Fixtures and Fittings schedules | L | | | | | | | | | | | | | | | | | | | | Architect to provide wall elevations for each exemplar room type in addition to standard wall elevations for the remaining rooms. Architect to highlight substantial fixing requirements (eg. drug cupboards). |
| 4.16 | Signage and wayfinding schedules | L | | | L | L | | | | | | | | | | | | | | | | Split as 1.40a, 1.40b and 1.40c above |
| 4.17 | Sanitary ware schedules | L | | | | | | | | | | | | | | | | | | | | Input from Supply Chain |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.18 | Building services plant and equipment schedules | | L | | | | | | | | | | | | | | | | | | | Input from Supply Chain |
| 4.19 | Luminaries schedules | | L | | | | | | | | | | | | | | | | | | | Services Engineer to provide the performance specifications. MEP Subcontractor(s) to produce the final schedule for installation to comply with the Services Engineer's requirements |
| 4.20 | Grilles schedules | | L | | | | | | | | | | | | | | | | | | | Services Engineer to provide the selection parameters. MEP Subcontractor(s) to produce the final schedule for installation to comply with the Services Engineer's requirements |
| 4.21 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.22 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.23 | Reinforcement detailing instructions and scheduling | | | | L | | | | | | | | | | | | | | | | | |

## SCHEDULE 2, PART 3

## PROGRAMME

NHS Greater Glasgow and Clyde

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# New South Glasgow Hospitals Project

## Stage 3 Adults & Childrens Hospital Procurement Programme

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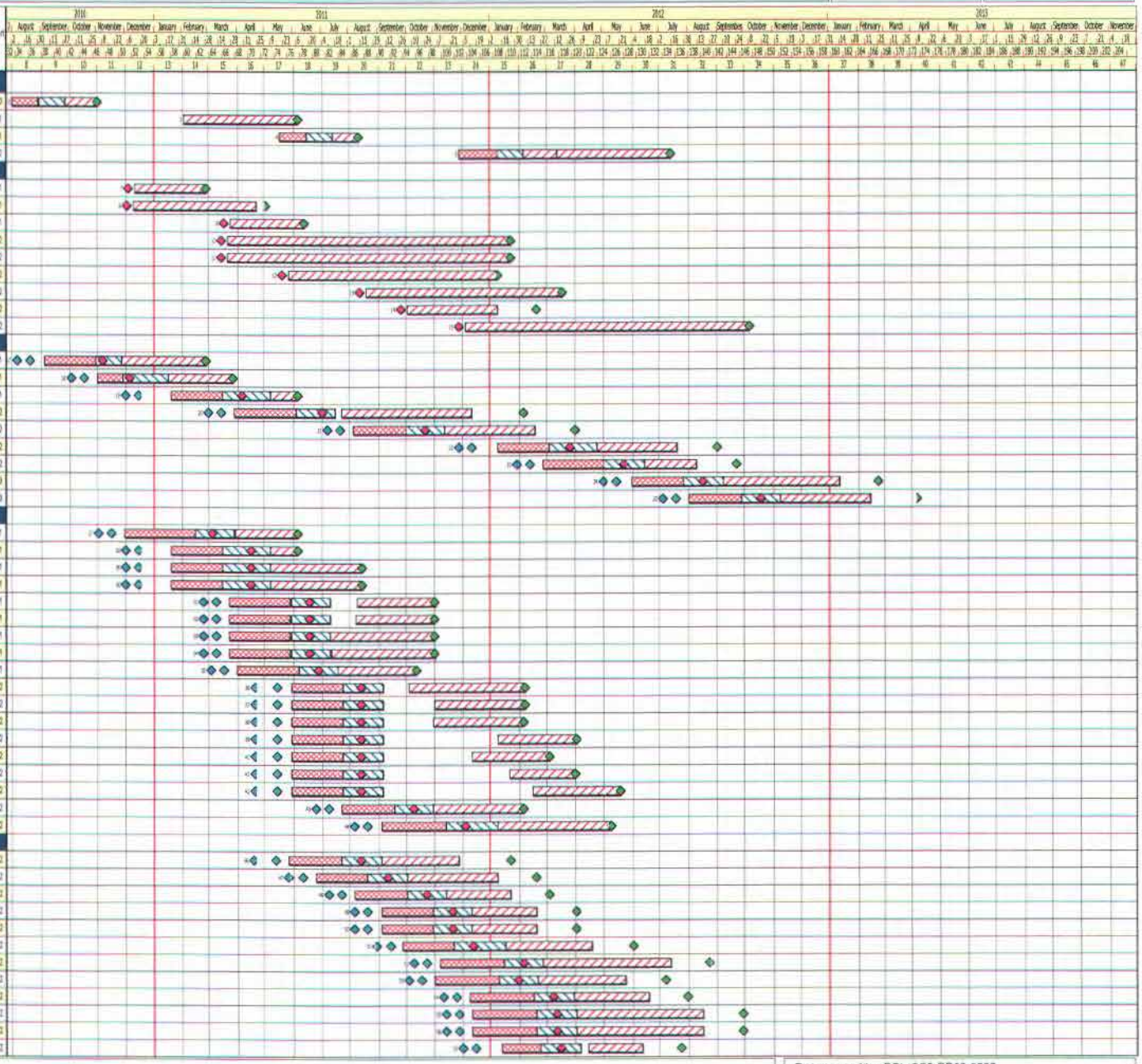
| Line | Package | Issue 'For Tender' documents T2 | Issue T2 Docs & Bill of Quantities to Procurement | Out to Tender Date | Tender Return / Negotiate | Issue 'For Construction' Documents T3 | Place order / Appoint Sub-Contractor | Lead Time | Earliest Start on Site |
|---|---|---|---|---|---|---|---|---|---|
| | **Preliminaries Procurement** | | | | | | | | |
| 2 | Temp Electrics & Plumbing | | | 02/08/2010 | 31/08/2010 | | 27/09/2010 | 5w | 03/11/2010 |
| 3 | Tower Cranes | | | | | | | 18w | 07/06/2011 |
| 4 | Scaffolding | | | 18/05/2011 | 16/06/2011 | | 13/07/2011 | 4w | 11/08/2011 |
| 5 | Hoists | | | 29/11/2011 | 16/01/2012 | | 06/02/2012 | 5w 16w | 13/07/2012 |
| | **Supply Chain Partners** | | | | | | | | |
| 7 | Excavation & Earthworks (incl Drainage) | | | | | 08/12/2010 | | 8w | 28/02/2011 |
| 8 | Concrete Substructure & Super-Structure (Dunne) | | | | | 03/12/2010 | | 18w | 03/05/2011 |
| 9 | Lifts Installation BWIC and M&E Design | | | | | 15/03/2011 | | 3w 4d | 14/06/2011 |
| 10 | Mechanical Installations (Mercury) | | | | | 15/03/2011 | | 40w | 24/01/2012 |
| 11 | Electrical Installations (Mercury) | | | | | 15/03/2011 | | 40w | 24/01/2012 |
| 12 | Robotics | | | | | 20/05/2011 | | 30w | 10/01/2013 |
| 13 | Lifts Installation (Cars) (Schindler) | | | | | 12/08/2011 | | 28w | 19/03/2013 |
| 14 | Partitions & Dry Lining | | | | | 27/09/2011 | | 12w | 21/02/2013 |
| 15 | Unitised Curtain Walling & Doors (incl link) | | | | | 29/11/2011 | | 40w | 06/10/2012 |
| | **Structural** | | | | | | | | |
| 17 | Remaining Site Works (incl. Linthouse Burn Diversion) | 06/08/2010 | 20/08/2010 | 06/09/2010 | 01/11/2010 | 06/11/2010 | 28/11/2010 | 10w | 28/02/2011 |
| 18 | Piling | 05/10/2010 | 19/10/2010 | 02/11/2010 | 30/11/2010 | 07/12/2010 | 17/01/2011 | 10w | 28/03/2011 |
| 19 | Diamond Drilling | 02/12/2010 | 16/12/2010 | 20/01/2011 | 17/03/2011 | 07/04/2011 | 06/05/2011 | 4w | 07/06/2011 |
| 20 | Bosuns Chair / Cleaning Cradles | 02/03/2011 | 16/03/2011 | 30/03/2011 | 06/06/2011 | 04/07/2011 | 15/07/2011 | 20w | 07/02/2012 |
| 21 | Structural Steelwork (Plantroom) | 06/07/2011 | 20/07/2011 | 05/08/2011 | 03/10/2011 | 24/10/2011 | 11/11/2011 | 12w | 02/04/2012 |
| 22 | Movement Joints (Floor Finishes) | 28/11/2011 | 13/12/2011 | 10/01/2012 | 06/03/2012 | 27/03/2012 | 24/04/2012 | 12w | 05/09/2012 |
| 23 | Passive Fire Protection | 31/01/2012 | 14/02/2012 | 28/02/2012 | 02/05/2012 | 24/05/2012 | 14/06/2012 | 5w | 24/09/2012 |
| 24 | Atria Roof | 02/05/2012 | 16/05/2012 | 01/06/2012 | 27/07/2012 | 17/08/2012 | 07/09/2012 | 18w | 25/02/2013 |
| 25 | Helipad | 05/07/2012 | 19/07/2012 | 02/08/2012 | 28/09/2012 | 19/10/2012 | 09/11/2012 | 12w | 08/04/2013 |
| | **Envelope** | | | | | | | | |
| 27 | Metsec & Wall Liner | 03/11/2010 | 17/11/2010 | 01/12/2010 | 16/02/2011 | 07/03/2011 | 29/03/2011 | 8w | 07/06/2011 |
| 28 | Roof Edge Protection | 03/12/2010 | 16/12/2010 | 20/01/2011 | 17/03/2011 | 18/04/2011 | 06/05/2011 | 4w | 07/06/2011 |
| 29 | Canopies | 02/12/2010 | 16/12/2010 | 20/01/2011 | 17/03/2011 | 18/04/2011 | 06/05/2011 | 14w | 19/08/2011 |
| 30 | Sundry Glass Structures | 03/12/2010 | 16/12/2010 | 20/01/2011 | 17/03/2011 | 18/04/2011 | 06/05/2011 | 14w | 19/08/2011 |
| 31 | Rainscreen Cladding (Client) | 24/02/2011 | 10/03/2011 | 24/03/2011 | 31/05/2011 | 23/06/2011 | 11/07/2011 | 12w | 02/11/2011 |
| 32 | Insulated Render | 24/02/2011 | 10/03/2011 | 24/03/2011 | 31/05/2011 | 23/06/2011 | 11/07/2011 | 12w | 02/11/2011 |
| 33 | Windows (inborn) | 24/02/2011 | 10/03/2011 | 24/03/2011 | 31/05/2011 | 23/06/2011 | 11/07/2011 | 18w | 02/11/2011 |
| 34 | Doors (external) | 24/02/2011 | 10/03/2011 | 24/03/2011 | 31/05/2011 | 23/06/2011 | 11/07/2011 | 18w | 02/11/2011 |
| 35 | Brickwork & Blockwork | 04/03/2011 | 18/03/2011 | 01/04/2011 | 08/06/2011 | 29/06/2011 | 19/07/2011 | 12w | 13/10/2011 |
| 36 | Copper Metal Cladding | 21/04/2011 | 19/05/2011 | 31/05/2011 | 26/07/2011 | 15/08/2011 | 06/09/2011 | 18w | 06/02/2012 |
| 37 | Aluminium Cladding (Plantroom & Flue) | 21/04/2011 | 19/05/2011 | 31/05/2011 | 26/07/2011 | 15/08/2011 | 06/09/2011 | 12w | 06/02/2012 |
| 38 | Single Ply Membrane Roofing | 21/04/2011 | 19/05/2011 | 31/05/2011 | 26/07/2011 | 15/08/2011 | 06/09/2011 | 12w | 07/02/2012 |
| 39 | Louvres | 21/04/2011 | 19/05/2011 | 31/05/2011 | 26/07/2011 | 15/08/2011 | 06/09/2011 | 12w | 03/04/2012 |
| 40 | Rubber Roof / Resin Bound Gravel | 21/04/2011 | 19/05/2011 | 31/05/2011 | 26/07/2011 | 15/08/2011 | 06/09/2011 | 10w | 06/03/2012 |
| 41 | Green Roofing | 21/04/2011 | 19/05/2011 | 31/05/2011 | 26/07/2011 | 15/08/2011 | 06/09/2011 | 10w | 02/04/2012 |
| 42 | ETFE Membrane Roofing | 21/04/2011 | 19/05/2011 | 31/05/2011 | 26/07/2011 | 15/08/2011 | 06/09/2011 | 12w | 21/05/2012 |
| 43 | Facade cleaning | 27/06/2011 | 11/07/2011 | 25/07/2011 | 26/09/2011 | 11/10/2011 | 31/10/2011 | 12w | 07/02/2012 |
| 44 | Specialist Finishes to Heli-pad Deck and CAA Works | 08/08/2011 | 22/08/2011 | 06/09/2011 | 15/11/2011 | 06/12/2011 | 09/01/2012 | 18w | 10/05/2013 |
| | **Finishes** | | | | | | | | |
| 46 | M&E Access Metalwork/Riser floor decks | 20/04/2011 | 13/05/2011 | 27/05/2011 | 25/07/2011 | 15/08/2011 | 05/09/2011 | 12w | 24/01/2012 |
| 47 | Radiation Protection | 27/05/2011 | 13/06/2011 | 27/06/2011 | 22/08/2011 | 13/09/2011 | 03/10/2011 | 12w | 21/02/2012 |
| 48 | Plantroom Screens | 11/07/2011 | 25/07/2011 | 08/08/2011 | 04/10/2011 | 25/10/2011 | 14/11/2011 | 8w | 09/03/2012 |
| 49 | Blastwalling | 08/08/2011 | 22/08/2011 | 06/09/2011 | 01/11/2011 | 22/11/2011 | 13/12/2011 | 8w | 03/04/2012 |
| 50 | Resin Floors - Plantrooms | 08/08/2011 | 22/08/2011 | 06/09/2011 | 01/11/2011 | 22/11/2011 | 13/12/2011 | 8w | 03/04/2012 |
| 51 | General Metalwork | 31/08/2011 | 15/09/2011 | 29/09/2011 | 25/11/2011 | 14/12/2011 | 17/01/2012 | 12w | 04/06/2012 |
| 52 | Fire Rated Screens (Childrens to atria) | 11/10/2011 | 25/10/2011 | 08/11/2011 | 17/01/2012 | 07/02/2012 | 27/02/2012 | 15w | 24/08/2012 |
| 53 | Sundry Joinery (skirtings / window boards) | 05/10/2011 | 19/10/2011 | 02/11/2011 | 11/01/2012 | 31/02/2012 | 21/02/2012 | 12w | 28/07/2013 |
| 54 | Suspended Ceilings | 11/11/2011 | 25/11/2011 | 09/12/2011 | 17/02/2012 | 28/02/2012 | 28/03/2012 | 10w | 01/08/2012 |
| 55 | Internal Glazed Screens | 15/11/2011 | 29/11/2011 | 13/12/2011 | 21/02/2012 | 13/03/2012 | 02/04/2012 | 18w | 01/10/2012 |
| 56 | Internal Doors & Ironmongery | 15/11/2011 | 29/11/2011 | 13/12/2011 | 21/02/2012 | 13/03/2012 | 02/04/2012 | 18w | 01/10/2012 |
| 57 | Painting & Decorating | 02/01/2012 | 16/01/2012 | 13/01/2012 | 24/02/2012 | 16/03/2012 | 05/04/2012 | 8w | 29/07/2013 |

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Comments:

Programme No.: BCL-GS3-PR02-0002
Revision: 05
Revision Date: 17/06/2010

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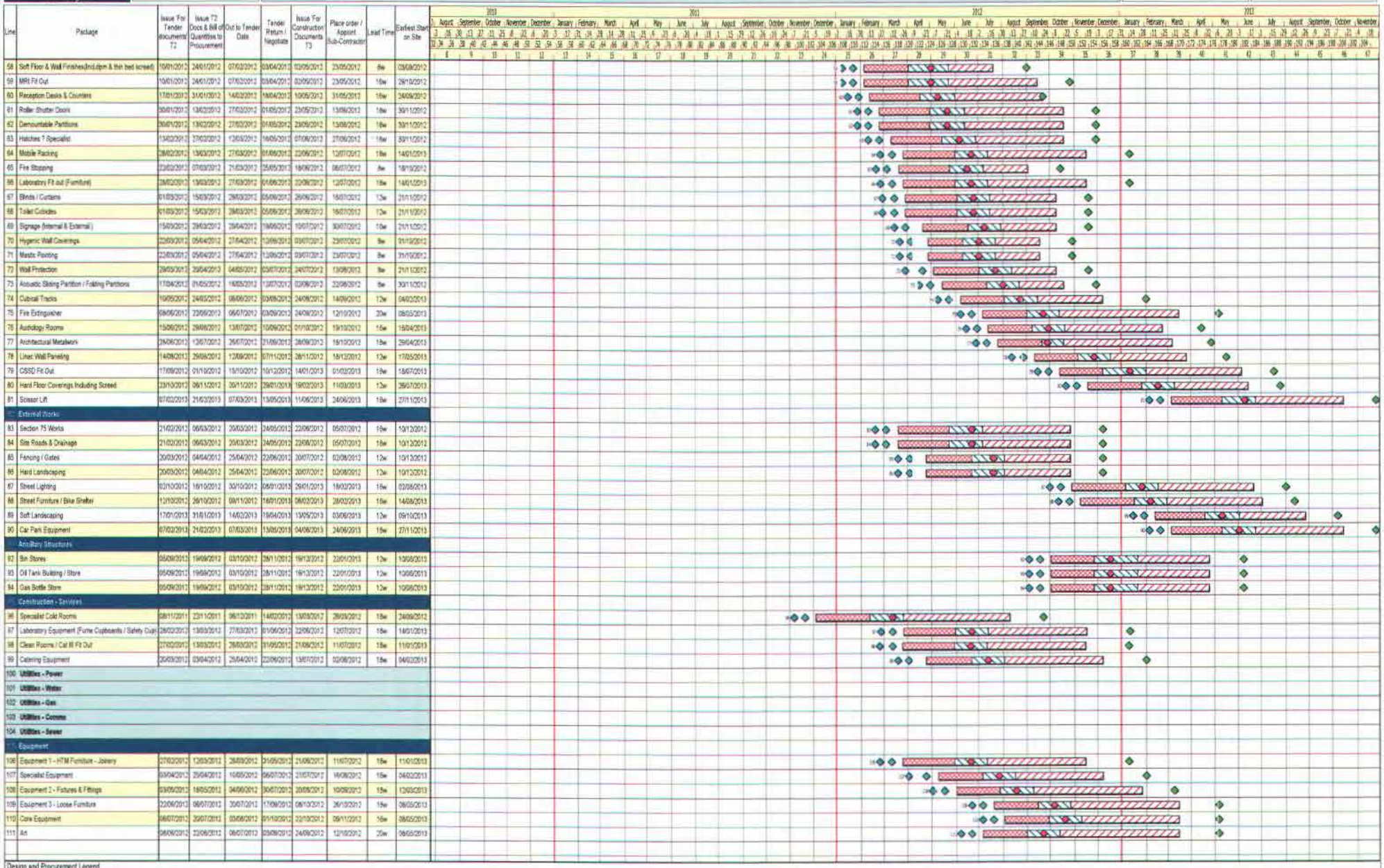

| Line | Package | Issue For Tender documents T2 | Issue T2 Docs & Bill of Quantities to Procurement | Out to Tender Date | Tender Return / Negotiate | Issue For Construction Documents T3 | Place order / Appoint Sub-Contractor | Lead Time | Earliest Start on Site |
|---|---|---|---|---|---|---|---|---|---|
| 58 | Soft Floor & Wall Finishes(Incl.dpm & thin bed screed) | 10/01/2012 | 24/01/2012 | 07/02/2012 | 03/04/2012 | 02/05/2012 | 23/05/2012 | 8w | 03/08/2012 |
| 59 | MRI Fit Out | 10/01/2012 | 24/01/2012 | 07/02/2012 | 03/04/2012 | 02/05/2012 | 23/05/2012 | 16w | 26/10/2012 |
| 60 | Reception Desks & Counters | 17/01/2012 | 31/01/2012 | 14/02/2012 | 16/04/2012 | 16/05/2012 | 31/05/2012 | 16w | 24/09/2012 |
| 61 | Roller Shutter Doors | 30/01/2012 | 13/02/2012 | 27/02/2012 | 01/05/2012 | 23/05/2012 | 13/06/2012 | 16w | 30/11/2012 |
| 62 | Demountable Partitions | 30/01/2012 | 13/02/2012 | 27/02/2012 | 01/05/2012 | 23/05/2012 | 13/06/2012 | 16w | 30/11/2012 |
| 63 | Hatches ? Specialist | 13/02/2012 | 27/02/2012 | 13/03/2012 | 16/05/2012 | 07/06/2012 | 27/06/2012 | 16w | 30/11/2012 |
| 64 | Mobile Racking | 28/02/2012 | 13/03/2012 | 27/03/2012 | 01/06/2012 | 22/06/2012 | 12/07/2012 | 18w | 14/01/2013 |
| 65 | Fire Stopping | 23/02/2012 | 07/03/2012 | 21/03/2012 | 25/05/2012 | 18/06/2012 | 08/07/2012 | 8w | 16/10/2012 |
| 66 | Laboratory Fit out (Furniture) | 28/02/2012 | 13/03/2012 | 27/03/2012 | 01/06/2012 | 22/06/2012 | 12/07/2012 | 18w | 14/01/2013 |
| 67 | Blinds / Curtains | 01/03/2012 | 15/03/2012 | 29/03/2012 | 05/06/2012 | 26/06/2012 | 16/07/2012 | 12w | 21/11/2012 |
| 68 | Toilet Cubicles | 01/03/2012 | 15/03/2012 | 29/03/2012 | 05/06/2012 | 26/06/2012 | 16/07/2012 | 12w | 21/11/2012 |
| 69 | Signage (Internal & External) | 15/03/2012 | 29/03/2012 | 29/04/2012 | 19/06/2012 | 10/07/2012 | 30/07/2012 | 10w | 21/11/2012 |
| 70 | Hygenic Wall Coverings | 22/03/2012 | 05/04/2012 | 27/04/2012 | 12/06/2012 | 03/07/2012 | 23/07/2012 | 8w | 31/10/2012 |
| 71 | Mastic Pointing | 22/03/2012 | 05/04/2012 | 27/04/2012 | 12/06/2012 | 03/07/2012 | 23/07/2012 | 8w | 31/10/2012 |
| 72 | Wall Protection | 29/03/2012 | 29/04/2012 | 04/05/2012 | 03/07/2012 | 24/07/2012 | 13/08/2012 | 8w | 21/11/2012 |
| 73 | Acoustic Sliding Partition / Folding Partitions | 17/04/2012 | 01/05/2012 | 16/05/2012 | 13/07/2012 | 02/08/2012 | 22/08/2012 | 8w | 30/11/2012 |
| 74 | Cubicall Tracks | 19/05/2012 | 24/05/2012 | 08/06/2012 | 03/08/2012 | 24/08/2012 | 14/09/2012 | 12w | 04/02/2013 |
| 75 | Fire Extinguisher | 09/06/2012 | 22/06/2012 | 06/07/2012 | 03/09/2012 | 24/09/2012 | 12/10/2012 | 20w | 08/05/2013 |
| 76 | Audiology Rooms | 15/06/2012 | 29/06/2012 | 13/07/2012 | 10/09/2012 | 01/10/2012 | 19/10/2012 | 16w | 16/04/2013 |
| 77 | Architectural Metalwork | 29/06/2012 | 13/07/2012 | 26/07/2012 | 21/09/2012 | 08/09/2012 | 18/10/2012 | 19w | 29/04/2013 |
| 78 | Linac Wall Paneling | 14/08/2012 | 29/08/2012 | 12/09/2012 | 07/11/2012 | 28/11/2012 | 18/12/2012 | 12w | 17/05/2013 |
| 79 | CSSD Fit Out | 17/09/2012 | 01/10/2012 | 15/10/2012 | 16/12/2012 | 14/01/2013 | 01/02/2013 | 18w | 18/07/2013 |
| 80 | Hard Floor Coverings Including Screed | 23/10/2012 | 06/11/2012 | 20/11/2012 | 29/01/2013 | 19/02/2013 | 11/03/2013 | 12w | 26/07/2013 |
| 81 | Scissor Lift | 07/02/2013 | 21/02/2013 | 07/03/2013 | 13/05/2013 | 11/06/2013 | 24/06/2013 | 18w | 27/11/2013 |
| | External Works | | | | | | | | |
| 83 | Section 75 Works | 21/02/2012 | 06/03/2012 | 20/03/2012 | 24/05/2012 | 22/06/2012 | 05/07/2012 | 16w | 10/12/2012 |
| 84 | Site Roads & Drainage | 21/02/2012 | 06/03/2012 | 20/03/2012 | 24/05/2012 | 22/06/2012 | 05/07/2012 | 16w | 10/12/2012 |
| 85 | Fencing / Gates | 20/03/2012 | 04/04/2012 | 25/04/2012 | 22/06/2012 | 20/07/2012 | 02/08/2012 | 12w | 10/12/2012 |
| 86 | Hard Landscaping | 20/03/2012 | 04/04/2012 | 25/04/2012 | 22/06/2012 | 20/07/2012 | 02/08/2012 | 12w | 10/12/2012 |
| 87 | Street Lighting | 02/10/2012 | 16/10/2012 | 30/10/2012 | 05/01/2013 | 29/01/2013 | 18/02/2013 | 16w | 02/08/2013 |
| 88 | Street Furniture / Bike Shelter | 12/10/2012 | 26/10/2012 | 09/11/2012 | 16/01/2013 | 06/02/2013 | 28/02/2013 | 16w | 14/08/2013 |
| 89 | Soft Landscaping | 17/01/2013 | 31/01/2013 | 14/02/2013 | 19/04/2013 | 13/05/2013 | 03/06/2013 | 12w | 09/10/2013 |
| 90 | Car Park Equipment | 07/02/2013 | 21/02/2013 | 07/03/2013 | 13/05/2013 | 04/06/2013 | 24/06/2013 | 18w | 27/11/2013 |
| | Ancillary Structures | | | | | | | | |
| 92 | Bin Stores | 05/09/2012 | 19/09/2012 | 03/10/2012 | 28/11/2012 | 18/12/2012 | 22/01/2013 | 12w | 13/05/2013 |
| 93 | Oil Tank Building / Store | 05/09/2012 | 19/09/2012 | 03/10/2012 | 28/11/2012 | 18/12/2012 | 22/01/2013 | 12w | 13/05/2013 |
| 94 | Gas Bottle Store | 05/09/2012 | 19/09/2012 | 03/10/2012 | 28/11/2012 | 18/12/2012 | 22/01/2013 | 12w | 13/05/2013 |
| | Construction - Services | | | | | | | | |
| 96 | Specialist Cold Rooms | 08/11/2011 | 23/11/2011 | 06/12/2011 | 14/02/2012 | 13/03/2012 | 28/03/2012 | 18w | 24/09/2012 |
| 97 | Laboratory Equipment (Fume Cupboards / Safety Cup | 28/02/2012 | 13/03/2012 | 27/03/2012 | 01/06/2012 | 22/06/2012 | 12/07/2012 | 18w | 14/01/2013 |
| 98 | Clean Rooms / Cat III Fit Out | 27/02/2012 | 13/03/2012 | 26/03/2012 | 31/05/2012 | 21/06/2012 | 11/07/2012 | 18w | 11/01/2013 |
| 99 | Catering Equipment | 20/03/2012 | 03/04/2012 | 25/04/2012 | 22/06/2012 | 13/07/2012 | 02/08/2012 | 18w | 04/02/2013 |
| 100 | Utilities - Power | | | | | | | | |
| 101 | Utilities - Water | | | | | | | | |
| 102 | Utilities - Gas | | | | | | | | |
| 103 | Utilities - Comms | | | | | | | | |
| 104 | Utilities - Sewer | | | | | | | | |
| | Equipment | | | | | | | | |
| 106 | Equipment 1 - HTM Furniture - Joinery | 27/02/2012 | 12/03/2012 | 26/03/2012 | 31/05/2012 | 21/06/2012 | 11/07/2012 | 18w | 11/01/2013 |
| 107 | Specialist Equipment | 03/04/2012 | 25/04/2012 | 16/05/2012 | 06/07/2012 | 27/07/2012 | 16/08/2012 | 16w | 04/02/2013 |
| 108 | Equipment 2 - Fixtures & Fittings | 03/05/2012 | 18/05/2012 | 04/06/2012 | 30/07/2012 | 20/08/2012 | 10/09/2012 | 15w | 13/03/2013 |
| 109 | Equipment 3 - Loose Furniture | 22/06/2012 | 06/07/2012 | 20/07/2012 | 17/09/2012 | 08/10/2012 | 26/10/2012 | 15w | 08/05/2013 |
| 110 | Core Equipment | 06/07/2012 | 20/07/2012 | 03/08/2012 | 01/10/2012 | 22/10/2012 | 09/11/2012 | 16w | 08/05/2013 |
| 111 | Art | 06/09/2012 | 22/08/2012 | 06/07/2012 | 03/09/2012 | 24/09/2012 | 12/10/2012 | 20w | 08/05/2013 |

Design and Procurement Legend

Tender | Negotiate & Award | Lead Time | Earliest Start On Site | Issue 'For Construction' Documents T3 | Issue 'For Tender documents' T2 | Issue T2 Docs & Bill of Quantities to Procurement

Date of Issue: 14/12/2009
Print Date: 17/06/2010

Drawn By: DAB
Page 2 of 2

Comments:

Programme No.: BCL-GS3-PR02-0002
Revision: 05
Revision Date: 17/06/2010

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# New South Glasgow Hospitals Project

## Stage 2 Detailed Design to Full Business Case Appendix K

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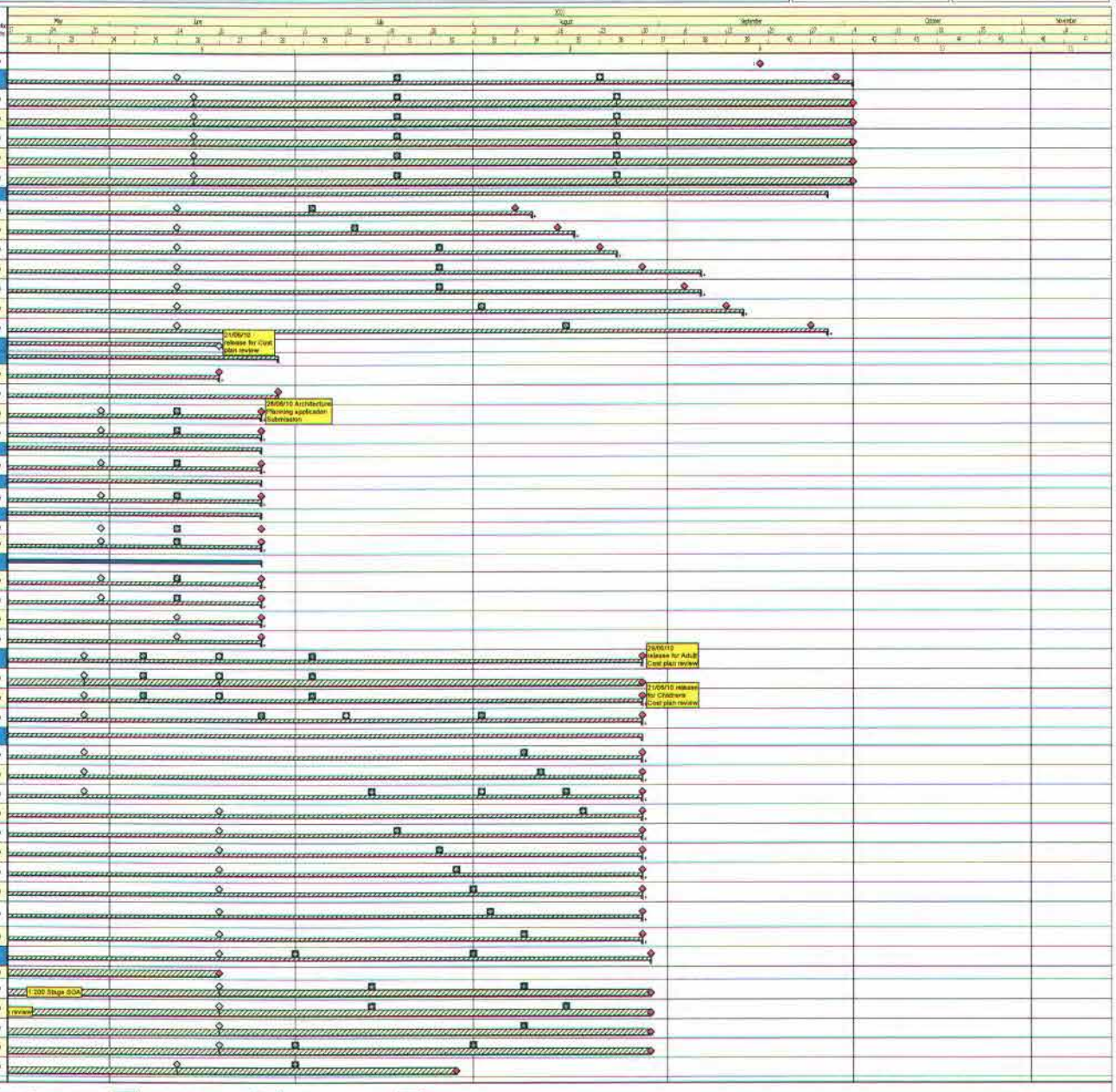
Brookfield

| Line | Activity | Drawing Numbers (Etc) | Issue Planning Documents | Issue for Cost Plan/Tender Review 1 | Issue for Board Review 1 | Issue for Cost Plan/Tender Review 2 | Issue for Board Review 2 | Issue Appendix 'K' Documents |
|---|---|---|---|---|---|---|---|---|
| 1 | Contractors Proposal report demonstrating compliance | | | | | | | 17/09/2010 |
| 2 | Specification | Summary | | 14/06/2010 | 19/07/2010 | 21/08/2010 | | |
| 3 | Architectural NSGH Outline Specification | NA - summary | | 14/06/2010 | 19/07/2010 | 25/08/2010 | | 04/10/2010 |
| 4 | Architectural NSGH Specification Schedule | NA - summary | | 14/06/2010 | 19/07/2010 | 25/08/2010 | | 04/10/2010 |
| 5 | Sequential numbers for each specification, to be tracked/logged on Mivane Specification Schedule | NA - summary | | 14/06/2010 | 19/07/2010 | 25/08/2010 | | 04/10/2010 |
| 6 | Landscape Outline specification-Typical details | GIL-EW-XX-SP-700-739-001 | | 14/06/2010 | 19/07/2010 | 25/08/2010 | | 04/10/2010 |
| 7 | Landscape Outline specification-Design detail | GIL-EW-XX-SP-700-739-002 | | 14/06/2010 | 19/07/2010 | 25/08/2010 | | 04/10/2010 |
| 8 | Site Plans and External Landscape | | | | | | | |
| 9 | Site Location Plan/Existing Site Plan 1:1250; 1:500 | GIL-EW-XX-PL-700-739-summary;... | 22/04/2010 | 14/06/2010 | 05/07/2010 | | | 05/08/2010 |
| 10 | Site Plan 1:500 | GIL-EW-XX-PL-700-739-summary;... | 22/04/2010 | 14/06/2010 | 12/07/2010 | | | 16/08/2010 |
| 11 | Setting Out Plans 1:200 | GIL-EW-XX-GR-700-713-summary | | 14/06/2010 | 26/07/2010 | | | 23/08/2010 |
| 12 | Detail Plans 1:200 | GIL-EW-XX-PL-700-713-summary | | 14/06/2010 | 26/07/2010 | | | 30/08/2010 |
| 13 | Sections/Elevations 1:200 | GIL-EW-XX-EL-700-713-summary | | 14/06/2010 | 26/07/2010 | | | 06/09/2010 |
| 14 | Planting Plans 1:200/1:500 | GIL-EW-XX-DT-700-712-summary | | 14/06/2010 | 02/08/2010 | | | 13/09/2010 |
| 15 | Landscape details 1:200/1:10 | GIL-EW-XX-DT-700-739-summary | | 14/06/2010 | 16/08/2010 | | | 27/09/2010 |
| 16 | 1:50 Departmental Furnishing Drawings (ie. Wards) | NA-XX-summary | | 21/06/2010 | | | | |
| 17 | Detail Drawings (ref Plans 1:200 etc) | | | | | | | |
| 18 | 1:200 Departmental Colour Plans | NA-XX-summary | | 21/06/2010 | | | | 21/06/2010 |
| 19 | 1:200 General Arrangement Plans | NA-XX-summary | | | | | | 30/08/2010 |
| 20 | 1:200 Roof / Soffit Type Location Plans | | 04/01/2010 | 31/05/2010 | | | | 28/06/2010 |
| 21 | 1:200 General Arrangement Roof Plans | NA-xx-summary | 04/01/2010 | 31/05/2010 | 14/06/2010 | | | 28/06/2010 |
| 22 | General Arrangement Elevations (1:200) etc | | | | | | | |
| 23 | 1:200 General Arrangement Colour Elevations Planning Submission Set | NA-XX-XX-EL-251-050_... | 20/04/2010 | 31/05/2010 | 14/06/2010 | | | 28/06/2010 |
| 24 | 1:200 General Arrangement Elevations | | | | | | | |
| 25 | 1:200 General Arrangement Elevations | NA-XX-XX-EL-251-summary | 20/04/2010 | 31/05/2010 | 14/06/2010 | | | 28/06/2010 |
| 26 | General Arrangement Sections 1:200 etc | | | | | | | |
| 27 | 1:200 General Arrangement Colour Sections Planning Submission Set | NA-XX-XX-SE-251-summary_ | 20/04/2010 | 31/05/2010 | 14/06/2010 | | | 28/06/2010 |
| 28 | 1:200 General Arrangement Sections | NA-XX-XX-SE-251-summary | 20/04/2010 | 31/05/2010 | 14/06/2010 | | | 28/06/2010 |
| 29 | Key Elevations for Specific Areas i.e. Main Entrance, Ward Tower Sections of Key Building Materials | | | | | | | |
| 30 | 1:200 Cladding Type Plans | NA-xx-summary | 20/04/2010 | 31/05/2010 | 14/06/2010 | | | 28/06/2010 |
| 31 | 1:20 Cladding Type Detailed Sections | NA-XX-XX-SE-summary | 20/04/2010 | 31/05/2010 | 14/06/2010 | | | 28/06/2010 |
| 32 | 3D Visualisations | NA-XX-XX-VM-summary | 20/04/2010 | 14/06/2010 | | | | 28/06/2010 |
| 33 | Component/Assembly Drawings | NA-ZZ-XX-AS-200-summary | 20/04/2010 | 14/06/2010 | | | | 28/06/2010 |
| 34 | Fire Strategy Plans | NA-XX-XX-PL-473-001 | | 28/05/2010 | 07/06/2010 | 21/06/2010 | 05/07/2010 | 30/08/2010 |
| 35 | Site Plan - Fire Strategy | NA-XX-00-PL-473-001 | | 28/05/2010 | 07/06/2010 | 21/06/2010 | 05/07/2010 | 30/08/2010 |
| 36 | 1:500 Fire Strategy Plans | NA-XX-summary | | 28/05/2010 | 07/06/2010 | 21/06/2010 | 05/07/2010 | 30/08/2010 |
| 37 | 1:200 Fire Strategy Plans | NA-XX-summary | | 28/05/2010 | 28/06/2010 | 12/07/2010 | 02/08/2010 | 30/08/2010 |
| 38 | Internal Plan Drawings (1:50 etc relating to the Apartment Layouts should refer the HPD submittal - Appendix J) | | | | | | | |
| 39 | Floor Finishes Strategy Plans (1:200) | NA-XX-summary | | 28/05/2010 | 09/08/2010 | | | 30/08/2010 |
| 40 | Wall Finishes Strategy Plans (1:200) | NA-XX-summary | | 28/05/2010 | 11/08/2010 | | | 30/08/2010 |
| 41 | Ceiling Types & Finishes Strategy Plans (1:200) | NA-XX-summary | | 28/05/2010 | 14/07/2010 | 03/08/2010 | 16/08/2010 | 30/08/2010 |
| 42 | Wall Protection Strategy Plans (1:200) | NA-XX-summary | | 21/06/2010 | 18/08/2010 | | | 30/08/2010 |
| 43 | Door Type Strategy Plans (1:200) | NA-XX-summary | | 21/06/2010 | 19/07/2010 | | | 30/08/2010 |
| 44 | Access Control & Locking Strategy Plans (1:200) | NA-XX-summary | | 21/06/2010 | 26/07/2010 | | | 30/08/2010 |
| 45 | Radiation Protection Strategy Plans (1:200) | NA-XX-summary | | 21/06/2010 | 26/07/2010 | | | 30/08/2010 |
| 46 | Acoustic Strategy Plans (1:200) | NA-XX-summary | | 21/06/2010 | 30/07/2010 | | | 30/08/2010 |
| 47 | Specialist Equipment Strategy Plans (1:200) to demonstrate heavy equipment maintenance routes and allowances/assumptions we have made in the design | NA-XX-summary | | 21/06/2010 | 03/08/2010 | | | 30/08/2010 |
| 48 | Glazed Screen Location/Type Strategy Plans (1:200) | NA-XX-summary | | 21/06/2010 | 09/08/2010 | | | 30/08/2010 |
| 49 | Other Reports as considered by omission of FBC | | | 21/06/2010 | 26/07/2010 | | 31/08/2010 | |
| 50 | 1. Schedule of Accommodation | cc | | 21/06/2010 | | | | 21/06/2010 |
| 51 | 2. Interior Design Strategy | cc | | 21/06/2010 | 14/07/2010 | | 30/08/2010 | 31/08/2010 |
| 52 | 3. Wayfinding Strategy | cc | | 21/06/2010 | 14/07/2010 | | 16/08/2010 | 31/08/2010 |
| 53 | 4. Art Strategy | cc | | 21/06/2010 | | | 30/08/2010 | 31/08/2010 |
| 54 | 5. DDA Audit | cc | | 21/06/2010 | 05/07/2010 | | 30/07/2010 | 31/08/2010 |
| 55 | 6. Access & Maintenance Strategy | cc | | 14/06/2010 | 31/07/2010 | | | 29/07/2010 |




Design Legend: Issue Appendix K documents; Drawing Production Period; Issue Cost / Tender review documents 1; Board Review 1; Issue Cost / Tender review documents 2; Issue Planning documents; Board Review; Board Review 2

Date of Issue: 20/04/2010 Drawn By: DAB
Print Date: 08/06/2010 Page 1 of 1

Comments: Appendix K - Architectural deliverables Summary

Programme No.: BCL-GS2-WK-0005
Revision: 02 Revision Date: 08/06/2010

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# New South Glasgow Hospitals Project

Stage 2 Detailed Design to Full Business Case Appendix K

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| Line | Activity | Drawing Numbers (tbc) | Issue Planning Documents | Issue for Cost Plan/Tender Review 1 | Issue for Board Review 1 | Issue for Cost Plan/Tender Review 2 | Issue for Board Review 2 | Issue Appendix 'K' Documents |
|---|---|---|---|---|---|---|---|---|
| 1 | Roads | | | | | | | |
| 2 | General Arrangement - 700 | WSP - summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 3 | Road Geometry - 713 | WSP - summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 4 | Road Construction - 714 | WSP - summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 5 | Signs and Road Markings - 715 | WSP - summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 6 | Street Lighting - 716 | WSP - summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 7 | Traffic Signals and controls - 717 | WSP - summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 8 | Drainage | | | | | | | |
| 9 | Underslab Drainage - 770 | WSP - summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 10 | External Drainage - 771 | WSP - summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 11 | Amendments to Public Sewerage System | WSP- summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 12 | Structures / Trees Within 10m of Proposed Drainage | WSP- summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 13 | Temporary Works / Phasing | WSP- summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 14 | Reports - Varies | WSP- summary | | 30/08/10 | 17/09/10 | | | 04/10/10 |
| 15 | Main Adult's and Children's | | | | | | | |
| 16 | Piles Pile Caps and Slab GA - 210 / 220 | WSP- summary | | 30/06/10 | 17/09/10 | | | 04/10/10 |
| 17 | Concrete Framing | WSP- summary | | 30/06/10 | 17/09/10 | | | 04/10/10 |
| 18 | Steelwork | WSP- summary | | 30/06/10 | 17/09/10 | | | 04/10/10 |
| 19 | Energy Centre | | | | | | | |
| 20 | Energy Centre | WSP- summary | | 30/06/10 | 17/09/10 | | | 04/10/10 |

Design Legend

Drawing Production Period | Issue Cost / Tender review documents 1 | Board Review 1 | Issue Appendix K documents

Date of Issue: 06/05/10 Drawn By: DAB

Print Date: 23/05/10 Page 1 of 1

Comments: Appendix K - Civil & Structural deliverables Summary

Programme No.: BCL-GS2-WK-0006

Revision: 01 Revision Date:

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# New South Glasgow Hospitals Project

Stage 2 Detailed Design to Full Business Case Appendix K

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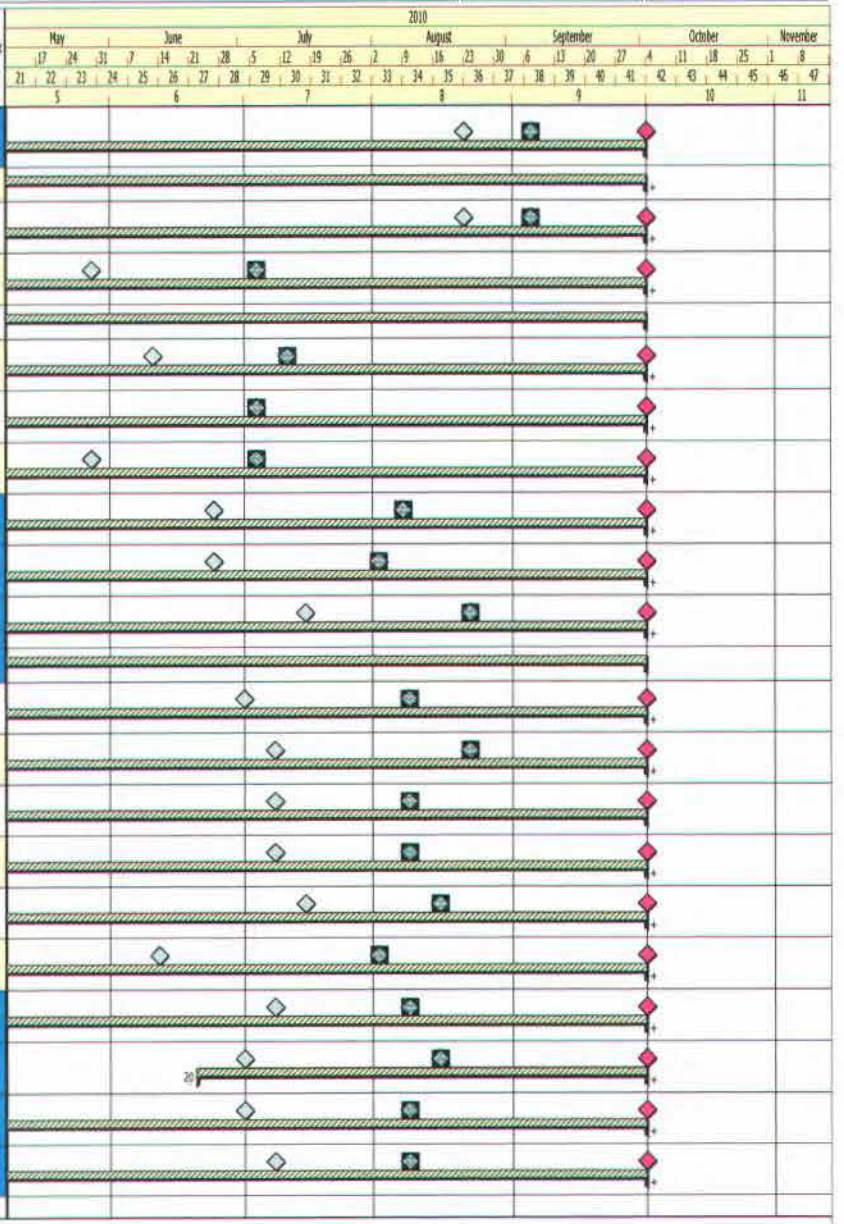
| Line | Activity | Drawing Numbers (tbc) | Issue Planning Documents | Issue for Cost Plan/Tender Review 1 | Issue for Board Review 1 | Issue for Cost Plan/Tender Review 2 | Issue for Board Review 2 | Issue Appendix 'K' Documents |
|---|---|---|---|---|---|---|---|---|
| 1 | Main Adults & Childrens Hospital Specifications | ZBP-XX-XX-SP- | | 23/08/2010 | 06/09/2010 | | | 04/10/2010 |
| 2 | Mechanical Services Specifications | | | | | | | |
| 3 | Schedules of Equipment | ZBP-XX-XX-SH-600-summary | | 23/08/2010 | 06/09/2010 | | | 04/10/2010 |
| 4 | Automated Controls and BMS | ZBP-XX-XX-SP-660-summary | | 28/05/2010 | 05/07/2010 | | | 04/10/2010 |
| 5 | Electrical Services Specifications | | | | | | | |
| 6 | Detailed Design | ZBP-XX-XX-SP-541-summary | | 11/06/2010 | 12/07/2010 | | | 04/10/2010 |
| 7 | Performance Specifications | ZBP-XX-XX-SP-557-summary | | 05/05/2010 | 05/07/2010 | | | 04/10/2010 |
| 8 | LV Cable Schedules | ZBP-XX-XX-SH-600-summary | | 28/05/2010 | 05/07/2010 | | | 04/10/2010 |
| 9 | Mechanical Services Drawings" | ZBP-ZD-00-PL-512-summary | | 25/06/2010 | 06/08/2010 | | | 04/10/2010 |
| 10 | Main Adults & Childrens Hospital Electrical Services Drawings | ZBP-ZD-02-PL-532-summary | | 25/06/2010 | 02/08/2010 | | | 04/10/2010 |
| 11 | Main Adults & Childrens Hospital Public Health Services Drawings | ZBP-ZD-00-PL-500-summary | | 16/07/2010 | 23/08/2010 | | | 04/10/2010 |
| 12 | Specifications for External Services and Energy Centre. | | | | | | | |
| 13 | Mechanical Services Specifications | ZBP-EW-XX-SP-511-summary | | 02/07/2010 | 09/08/2010 | | | 04/10/2010 |
| 14 | Schedules of Equipment | ZBP-XX-XX-SH-600-summary | | 09/07/2010 | 23/08/2010 | | | 04/10/2010 |
| 15 | Electrical Services Specifications | ZBP-EW-XX-SP-761-summary | | 09/07/2010 | 09/08/2010 | | | 04/10/2010 |
| 16 | Detailed Design | ZBP-EW-XX-SP-761-summary | | 09/07/2010 | 09/08/2010 | | | 04/10/2010 |
| 17 | Schedules | ZBP-EW-XX-SH-600-summary | | 16/07/2010 | 16/08/2010 | | | 04/10/2010 |
| 18 | Fire Protection Systems | ME-XX-0-PL-572-summary | | 14/06/2010 | 02/08/2010 | | | 04/10/2010 |
| 19 | External Services & Energy Centre Mechanical Services Drawings | ZBP-EC-XX-SC-513-summary | | 09/07/2010 | 09/08/2010 | | | 04/10/2010 |
| 20 | External Services & Energy Centre Electrical Services Drawings | ZBP-EC-XX-SC-532-summary | | 02/07/2010 | 16/08/2010 | | | 04/10/2010 |
| 21 | External Services & Energy Centre Public Health Services Drawings | ZBP-EC-XX-SC-500-summary | | 02/07/2010 | 09/08/2010 | | | 04/10/2010 |
| 22 | External Services & Energy Centre Site Services Drawings | ZBP-EW-XX-PL-591-summary | | 09/07/2010 | 09/08/2010 | | | 04/10/2010 |




Design Legend

Drawing Production Period | Issue Cost / Tender review documents 1 | Board Review 1 | Issue Appendix K documents

Date of Issue: 20/04/2010 Drawn By: DAB
Print Date: 01/06/2010 Page 1 of 1

Comments: Appendix K - M & E deliverables Summary

Programme No.: BCL-GS2-WK-0007
Revision: 02 Revision Date: 28/05/2010

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## SCHEDULE THREE

## DESIGN DELIVERABLES

"Design Deliverables" are those elements of the design to be delivered by the *Consultant* to the *Employer* during Stage 2 being:

"Design Deliverables" are those elements of the *services* that need to be completed by the *Consultant* during Stage 2 to enable the following milestones to be achieved:

- To achieve 85% User Group sign off to 1:200 Drawings for Adult Hospital (Current Programme Completion Date for Milestone is 17 May 2010)
- To achieve 85% User Group sign off to 1:200 Drawings for Children's Hospital (Current Programme Completion Date for Milestone is 27 May 2010)
- To achieve 95% sign off to Standard Room Type ADB sheets and 1:50 Drawings (Current Programme Completion Date for Milestone is 27 August 2010)
- Conclusion of Planning Submission – Final Reserved Matters Approvals (Current Programme Completion Milestone is 30 June 2010)
- Achieve Formal Planning Consent from Glasgow City Council (Current Programme Completion for Milestone is 6 October 2010).

Retention will be released pursuant to clause Z30 on a pro rata basis upon the achievement of each milestone.

Key Performance Indicators in respect of Stages 3 and 3A are set out in the *services*.

**Helen Minkoff**

**From:** Paul Serkis
**Sent:** 31 January 2011 16:05
**To:** Helen Minkoff
**Subject:** FW: ZBP appointment: Contract data Part Two

Helen

See below. Can you print off email, hand write figures in the required section and also attach email to the document and I will initial the rates inserted.

Thanks

Paul

**Paul Serkis**
Commercial Director - Infrastructure
Brookfield Europe
23 Hanover Square
London, W1S 1JB
[redacted]
www.brookfieldeurope.com

**Brookfield**

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**From:** Steve Pardy [redacted]
**Sent:** 26 January 2011 11:43
**To:** Paul Serkis
**Cc:** Grant Wallace
**Subject:** Re: ZBP appointment: Contract data Part Two

Paul

I have added the rates as discussed.

Regards

**Steve Pardy**
BSc(Hons) CEng MCIBSE MIMechE RMaPS
**Partner**

**"COLLABORATING FOR A SUSTAINABLE FUTURE"**

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Registered in England and Wales - Registered No. OC310053
Tel: [redacted] : www.zbp.co.uk

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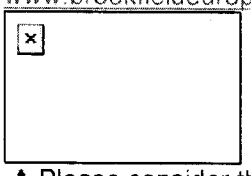

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**CONTRACT DATA PART TWO —**

**DATA PROVIDED BY *THE CONSULTANT***

- The *Consultant* is Zisman Bowyer & Partners LLP

  Name: ZISMAN BOWYER & PARTNERS LLP

  Address: 1 Eton Street, Richmond, Surrey TW91EF

- The *key persons* are (name, job, responsibilities, qualifications, experience):

  Steve Pardy - Partner

  Michael Frain - Associate

  Andrew Percieval – Associate

- The *staff rates* are:

| Name/Designation | Rate |
|---|---|
| Partner | [redacted] |
| Associate. | |
| Electrical Engineer | |
| Mechanical Engineer | |

PS.

**If Option A is used**

The *activity schedule* is (expressed as a cashflow forecast in accordance with Clause 51.6 and subject to the provisions of Clauses 50 and 51) attached hereto and marked Attachment A.

- The tendered total of the Prices is [redacted]

**Attachment A**

**CONSULTANT'S COLLATERAL WARRANTY**

This Agreement is among

(4) **GREATER GLASGOW HEALTH BOARD** of Dalian House, 350 St Vincent Street Glasgow, G3 8YZ ("the Beneficiary" which expression shall include its successors In title or permitted assignees under this Agreement)

(5) **BROOKFIELD CONSTRUCTION (UK) LIMITED** (Registered number 3808946 of 23 Hanover Square, London, United Kingdom, W1S 1JB ("Main Contractor" which term shall include any successor including any parties taking over the obligations of Main Contractor. under the Project Agreement)

(8) **ZISMAN BOWYER & PARNERS LLP**, (registered number OC310053) whose registered office is at 1 Eton Street, Richmond, Surrey, TW19 1EF ("the Consultant")

WHEREAS:

A The Beneficiary has entered or is about to enter into an agreement with the Main Contractor (°the Building Contract") In connection with the design and construction of the New South Glasgow Hospital, Govan, Glasgow ("the Project").

B The Main Contractor has engaged or is about to engage the Consultant under an appointment ("the Appointment), which expression shall Include all documents incorporated therein and any agreed amendment thereto, to carry out mechanical and electrical design services as more particularly described in the Appointment ("the Services"), which expression shall Include any additional services performed by the Consultant under the Appointment including In connection with any modifications or variations made thereunder.

C It is a condition precedent of the Building Contract that the Consultant, the Main Contractor and the Beneficiary enter into this agreement ("this Agreement").

NOW IT IS AGREED:

1. The Consultant warrants and undertakes to the Beneficiary that it has compiled and will continue to comply with all the terms and obligations under the Appointment on the Consultant's part to be performed and observed and shall complete the Services in accordance with the Appointment.

2. Without prejudice to Clause 1 of this Agreement, the Consultant further warrants and

undertakes to the Beneficiary that:

2.1 it has exercised and will continue to exercise all the reasonable skill, care and diligence to be expected from a competent and qualified professional designer experienced in carrying out services similar in nature, size and complexity to the Services including in the selection of goods and materials for the Project; and

2.2 it has not and will not specify for use in relation to the Project any products or materials not in conformity with relevant British or European standards or Codes of Practice or which are at the time of specification generally known within the United Kingdom to an experienced professional designer of works such as the Project to be deleterious to health and safety or to the durability of buildings and/or other structures and/or finishes and/or plant and machinery in the particular circumstances in which they are used;

Provided that:

2.3.1 the obligations of the Consultant under this Agreement shall be no greater in extent or quantity than if the Beneficiary had been named as joint employer with Main Contractor under the Appointment; and

2.3.2 the Consultant shall be entitled in any action or proceedings brought by the Beneficiary to rely on any limitation in the Appointment and to raise the equivalent rights in defence of liability (excluding counterclaim and set-off in respect of amounts due to the Consultant under the Appointment) as it would have if the Beneficiary had been named as joint employer with the Main Contractor under the Appointment.

3. The Beneficiary has no authority to issue any direction or Instruction to the Consultant in relation to the Appointment unless and until the Beneficiary has given notice under Clauses 4 or 5 below. The Beneficiary or its appointee has no liability to the Consultant in relation to amounts due under the Appointment unless and until the Beneficiary has given notice under Clauses 4 or 5.

4. The Consultant agrees that it will, if so required by notice in writing given by the Beneficiary, subject to Clause 6, below, accept the Instructions of the Beneficiary or its appointee, as the case may be, (which for the avoidance of doubt and without limitation may include a third party appointed by the Beneficiary to act as "the Employer" under this

Appointment) to the exclusion of the Main Con tractor in respect of the Project upon the terms and conditions of the Appointment. The Main Contractor acknowledges that the Consultant shall be entitled to rely on a notice given to the Consultant by the Beneficiary under this Clause 4 and further acknowledges that such acceptance of the Instructions of the Beneficiary or its appointee, as the case may be, to the exclusion of the Main Contractor shall not constitute any breach of the Consultant's obligations to the Main Contractor under the Appointment.

5. The Consultant further agrees that It MI not without first giving the Beneficiary not less than 35 days notice in writing exercise any right or purported right it may have to determine its employment tinder the Appointment, treat the same as having been repudiated by the Main Contractor, or discontinue the performance of any duties or obligations thereunder. Further, the Consultant shall within 14 days of giving the said notice, provide statements to the Beneficiary containing the following:

5.1 all amounts properly due and payable to the Consultant under the Appointment on or before the date of Issue of the said notice which remain unpaid;

5.2 in the reasonable estimation of the Consultant, the amount of any monetary claim (it any) asserted by the Consultant against the Main Contractor under the Appointment arising out of or in connection with the breach for which the said notice was served; and

5.3 where the Consultant intends to terminate the Appointment due to some default or breach of contract of a non-financial nature:

5.3.1 the provision of the Appointment alleged to have been breached or not fulfilled;

5.3.2 supporting information In reasonable detail to enable the Beneficiary to Identify the material facts;

5.3.3 the steps reasonably required to remedy the specified breaches or conditions not fulfilled;

5.3.4 the time within which the specified steps can reasonably be expected to be taken;

5.3.5 (if applicable) the amount of damages claimed and the basis of their calculation; and

5.3.6 (if applicable) the relief to be sought.

The Consultant warrants to the Beneficiary that to the best of the Consultant's knowledge and belief, having made all proper and appropriate enquiries, the statements submitted under this Clause 5 shall be true, complete and accurate statements of the amounts to which the Consultant considers Itself entitled. In the event that the Consultant shall delay in giving such notice and Information within the said 14 days, the period of 35 days shall be extended to correspond with the period of any such delay. The Consultant's right to determine its employment under the Appointment or to treat the same as having been repudiated or to discontinue performance shall cease if, within the said 35 day period (extended as appropriate) and subject to Clause 8 the Beneficiary shall give notice in writing to the Consultant requiring the Consultant to accept the instructions of the Beneficiary or its appointee to the exclusion of the Main Contractor in respect of the Project upon the terms and conditions of the Appointment.

6. It shall be a condition of any notice given by the beneficiary under clauses 4 or 5 above, that the beneficiary or its appointee, as the case may be, accepts liability for payment of the sums due under the appointment and detailed in the statement provided under clause 5 (and makes payment within a period of 28 days of such notice from the beneficiary), and for subsequent performance of the main contractor's obligations. Upon the Issue of any notice by the beneficiary under clauses 4 or 5, the appointment shall remain in full force and effect as if no right of determination of its employment under the appointment, or any right of the consultant to treat the appointment as having been repudiated by the main contractor. Had arisen and the consultant shall be liable to the beneficiary and/or its appointee, as the case may be, under the appointment in lieu of its liability to the main contractor.

7. The beneficiary may at any time following the issue of any notice by the beneficiary under clauses 4 or 5, serve a further notice that following the expiry. of 28 days from the giving of such notice the beneficiary will have no liability (save in respect of the beneficiary's antecedent breach) for any SUMB due or to become due to the consultant in respect of the period following expiry of the last mentioned 28 day period. The beneficiary may exercise any of its rights pursuant to clauses 4 or 5 on more than one occasion.

8. The consultant shall maintain for the period expiring 12 years after completion of the

services or until termination of the consultant's employment under the appointment, professional Indemnity insurance in an amount of not less than £.(101m [(ten million pounds)] sterling for any one claim or series of claims arising out of one single incident during any period of insurance which shall not be more than 12 months with insurers of good repute canting on business in the European union provided always that such insurance is available at rates and terms which are commercially reasonable to consultants of a similar size and standing in the UK. In determining whether or not insurance is available as aforesaid, the financial characteristics and claims' record of the consultant shall be ignored. The consultant shall immediately Inform the beneficiary if such insurance ceases to be available at rates and terms which are commercially reasonable in order that the consultant and the beneficiary can consider alternative means of best protecting their respective positions in respect of the project In the absence of such insurance provided that the beneficiary shall be entitled to require the consultant to maintain such lesser amount of professional Indemnity insurance as is available to the consultant at rates and terms which are commercially reasonable. As and when it Is reasonably requested to do so by the beneficiary (but not more than once in any period of Insurance) the consultant shall produce; for inspection documentary evidence satisfactory to the beneficiary (acting reasonably) that its professional indemnity insurance Is being maintained.

9. The consultant hereby grants to the beneficiary or Its appointee and all those authorised by the beneficiary an irrevocable, non-exclusive and royalty-free licence (which shall be capable of assignation) to use and reproduce all technical Information (whether or not stored in computer systems), drawings, models, calculations, specifications, schedules, details, plans, programs, budgets, reports or other documents, work or other things whatsoever provided or to be provided by the sub-contractor in connection with the project (the 'documents") for any purpose relating to the project including (but without limitation) the construction, completion, maintenance, promotion, advertisement, reinstatement, repair and any extension of the project and for dissemination within the NHS as part of the feedback of Information to better or enable the NHS to realise improvements in its methods and practice of construction and In the design and procurement of its construction. Such licence shall carry the right to grant sub-licenses and shall subsist notwithstanding that the appointment is terminated or the obligations and duties thereunder have been completed. For the avoidance of doubt, the grant of such licence or sub-licences shall not impose any

additional liability on the consultant. The consultant not assign or agree to assign the copyright in any of the documents without the prior written consent of the beneficiary. The consultant shall on reasonable demand provide to the beneficiary or its appointee and those authorised by the beneficiary additional copies of any documents on receipt of reasonable copying costs. The consultant shall not be liable for any use by the beneficiary of any of the documents for any purpose other than those authorised by this clause.

10. This agreement may be assigned on a maximum of two occasions in whole or in part by the beneficiary to any party to whom the beneficiary's interest In the main contract or any part thereof is assigned or disponed to without the consent of the main contractor or the consultant being required and any such assignation shall be effective upon written notice thereof being given to the main contractor and to the consultant. No other or further assignation of this agreement, other than permitted by this clause, by the beneficiary or any other party shall be permitted. The consultant shall not be entitled to assignor transfer any rights or obligations hereunder without the consent of the beneficiary.

11. The consultant undertakes that it will not raise as a defence to any action by the beneficiary far alleged breach of this agreement the fact that the obligations of the main contractor to the beneficiary in respect of the services have been released as a result of the termination of the building contract.

12. No failure, approval, act or forbearance on the part of the beneficiary in respect of any right of the beneficiary pursuant to this agreement shall constitute any waiver of any right of the beneficiary under raising out of this agreement nor relieve the consultant of any of its duties or obligations under or arising out of this agreement.

13. Any notice, consent or demand to be given or made by any party under this agreement (hereinafter called a "notice") shall only be validly served if In writing and delivered personally or sent by pre-paid first class recorded delivery post to the following address and marked for the attention of the following person in the case of each party:

| Party: | Address: | Person: |
|---|---|---|
| Beneficiary | Dalian House, 350 St Vincent | Head of Board Administration |

| | | |
|---|---|---|
| | Street Glasgow, G3 8YZ | |
| Main Contractor | 23 Hanover Square, London W1S!JB | Paul Serkis |
| Consultant | 1 Eton Street, Richmond, Surrey, TW19 1EF | Steven Pardy |

Any party may by Notice to the other party/parties change its address or the title of the person for whose attention Notices are to be given or made pursuant to this Clause. Any such Notice shall be deemed to have been received:

13.1 if delivered personally, at the time of delivery;

13.2 in the case of pre-paid first class recorded delivery post, on the first Business Day after the date of posting.

If any Notice Is delivered after 5 p.m. on a Business Day, or at any time during a day which is not a Business Day, that Notice shall be deemed to have been received at 9 am, on the next Business Day. For the purposes of this Clause, "Business Day" means any day which is not a Saturday, a Sunday or a public holiday in Scotland. In proving service it shall be sufficient to prove that the envelope containing such Notice was properly addressed to the relevant party·and either delivered personally to that address or delivered into the custody of the postal authorities as a pre-paid first class recorded delivery letter. For the avoidance of doubt, Notices shall not be validly served if sent by email or fax.

14. No action or proceedings for any breach of this Agreement shall be commenced against the Consultant after the expiry of twelve years from Completion or earlier termination of the Consultant's employment under the Appointment.

15. The definitions of words and phrases used in this Agreement shall be those set out in the Appointment except where expressly defined in this Agreement.

16. This Agreement shall be governed by and construed in accordance with Scots Law and the parties hereto submit to the exclusive jurisdiction of the Scottish Courts.

IN WITNESS WHEREOF these presents consisting of this and the preceding 8 pages have been executed as follows:

**SUBSCRIBED** for and on behalf of the said **GREATER GLASGOW HEALTH BOARD** at on the [ ] day of [ ] 2010:

..... Authorised Signatory

..... Full Name

.....Authorised Signatory

..... Full Name

**SUBSCRIBED** for and on behalf of the said **BROOKFIELD CONSTRUCTION (UK) LIMITED** at 23 Hanover Square, London, W1S 1JB on the [ ] day of [ ] 2010 by:

..... DIRECTOR

..... FULL NAME

before this witness

..... Witness

..... Full Name

.....Address

**SUBSCRIBED** for and on behalf of the said **ZISMAN BOWYER & PARTNERS LLP** at 1 Eton Street, Richmond, Surrey, TW19 1EF on the [ ] day of [ ] 2010:

..... DIRECTOR

..... FULL NAME

before this witness

..... Witness

..... Full Name

.....Address

**Brookfield Construction (UK) LTD**

**New South Glasgow Hospital**

**ZBP Fee Draw Down Schedule**

| No. | Month | Stage 2 FBC | Stage 2 FBC | Stage 3 Design | Stage 3 Construction | Stage 3A | Notes |
|---|---|---|---|---|---|---|---|
| | | ZBP | Mercury* | | | | |
| 0 | Jan-10 | [redacted] | | | | | |
| 1 | Feb-10 | | | | | | |
| 2 | Mar-10 | | | | | | |
| 3 | Apr-10 | | | | | | |
| 4 | May-10 | | | | | | Key Design deliverables |
| 5 | Jun-10 | | | | | | Key Design deliverables |
| 6 | Jul-10 | | | | | | |
| 7 | Aug-10 | | | | | | Key Design deliverables |
| 8 | Sep-10 | | | | | | |
| 9 | Oct-10 | | | | | | FBC Submission |
| 10 | Nov-10 | | | [redacted] | | | Stage 3 Detailed Design commences |
| 11 | Dec-10 | | | | | | |
| 12 | Jan-11 | | | | | | |
| 13 | Feb-11 | | | | | | Stage 3 start on site |
| 14 | Mar-11 | | | | | | |
| 15 | Apr-11 | | | | | | |
| 16 | May-11 | | | | | | |
| 17 | Jun-11 | | | | | | |
| 18 | Jul-11 | | | | | | |
| 19 | Aug-11 | | | | | | |
| 20 | Sep-11 | | | | | | |
| 21 | Oct-11 | | | | | | |
| 22 | Nov-11 | | | | | | |
| 23 | Dec-11 | | | | | | |
| 24 | Jan-12 | | | | | | |
| 25 | Feb-12 | | | [redacted] | | | |
| 26 | Mar-12 | | | | | | Assumed M&E starts onsite |
| 27 | Apr-12 | | | | | | |
| 28 | May-12 | | | | | | |
| 29 | Jun-12 | | | | | | |
| 30 | Jul-12 | | | | | | |
| 31 | Aug-12 | | | | | | |
| 32 | Sep-12 | | | | | | |
| 33 | Oct-12 | | | | | | |
| 34 | Nov-12 | | | | | | |
| 35 | Dec-12 | | | | | | |
| 36 | Jan-13 | | | | | | |
| 37 | Feb-13 | | | | | | |
| 38 | Mar-13 | | | | | | |
| 39 | Apr-13 | | | | | | |
| 40 | May-13 | | | | | | |
| 41 | Jun-13 | | | | [redacted] | | |
| 42 | Jul-13 | | | | | | |
| 43 | Aug-13 | | | | | | |
| 44 | Sep-13 | | | | | | |
| 45 | Oct-13 | | | | | | |
| 46 | Nov-13 | | | | | | |
| 47 | Dec-13 | | | | | | |
| 48 | Jan-14 | | | | | | |
| 49 | Feb-14 | | | | | | |
| 50 | Mar-14 | | | | | | |
| 51 | Apr-14 | | | | | | |
| 52 | May-14 | | | | | | |
| 53 | Jun-14 | | | | | | |
| 54 | Jul-14 | | | | | | |
| 55 | Aug-14 | | | | | | |
| 56 | Sep-14 | | | | | | |
| 57 | Oct-14 | | | | | | |
| 58 | Nov-14 | | | | | | |
| 59 | Dec-14 | | | | | | |
| 60 | Jan-15 | | | | | | Stage 3 Completion |
| 61 | Feb-15 | | | | | | |
| 62 | Mar-15 | | | | | | |
| 63 | Apr-15 | | | | | | |
| 64 | May-15 | | | | | | |
| 65 | Jun-15 | | | | | | |
| 66 | Jul-15 | | | | | [redacted] | Stage 3A Commencement |
| 67 | Aug-15 | | | | | | |
| 68 | Sep-15 | | | | | | |
| 69 | Oct-15 | | | | | | |
| 70 | Nov-15 | | | | | | |
| 71 | Dec-15 | | | | | | |
| 72 | Jan-16 | | | | | | |
| 73 | Feb-16 | | | | | | |
| 74 | Mar-16 | | | | | | |
| 75 | Apr-16 | | | | | | |
| 76 | May-16 | | | | | | |
| 77 | Jun-16 | | | | | | |
| 78 | Jul-16 | | | | | | Stage 3A Completion |
| 79 | Jan-17 | | | | [redacted] | | Expiry of 24 month DLP Period Stage 3 |
| 80 | Jul-19 | | | | | | Expiry of 24 month DLP Period Stage 3A |

**Stage Totals - Mercury** [redacted]

**Stage Totals - ZBP** £ [redacted] £ [redacted] £ [redacted] £ [redacted] £ [redacted]

**Total fee inclusive of disbursments but excluding VAT**

* Mercury Payments made by BCL direct. This is reimbursed to ZBP through Stage 3

Zisman Bowyer & Partners LLP
Consulting Engineers

Ambassador House, Paradise Road,
Richmond, Surrey, TW9 1SQ. UK
[redacted] • [redacted]
Email: zisman@zbp.co.uk • www.zbp.co.uk

Our Ref: SP/jl/2900/L/002

Mr. P. Serkis
Brookfield Construction UK Ltd
23 Hanover Square
London
W1S 1JB

9th June 2011

Dear Paul,

**NEW SOUTH GLASGOW HOSPITALS**
**NOTICE TO PROCEED**

I attach the Notice to Proceed duly signed.

As discussed the fee draw down schedule will need amending to suit the revised programme arrangements and our input post design.

Yours sincerely,

[redacted]

**STEVE PARDY**
**for Zisman Bowyer & Partners LLP**

Enc.

Partners:
D.H.Saffin BSc (Hons) CEng FIET MCIBSE MIoD FRSA FConsE
R.J.Brown CEng MCIBSE FIHEEM FRSPH
R.C.Cunnings DipEE CEng FIET FCIBSE MSLL
S.D.Pardy BSc (Hons) CEng MCIBSE MIMechE RMaPS

Senior Associates:
M.R.Frain BSc CEng MIET MIHEEM
A.J.Percival BSc (Hons) CEng MCIBSE MIMechE
I.G.Skinner BEng (Hons) CEng FCIBSE MIMechE

Consultant:
A.E.Faulkner CEng MCIBSE MInstR

Associates:
P.A.Buggy BEng (Hons) CEng MIMechE
S.D.Claydon MSc BEng (Hons) CEng MIET FIHEEM MCIBSE
P.J.Ellis MASPE
G.Heron CEng MCIBSE
M.H.Layzell IEng MSc MCIBSE
J.J.Pearce BEng (Tech) CEng MCIBSE MIMechE
M.P.Peters BEng CEng MCIBSE MIET MSLL
N.A.Ross BEng (Hons) MIET MIHEEM
M.J.Rothery

BM TRADA CERTIFICATION ISO 9001:2000 LRQA

Building Services Design • Renewable Technologies • Sustainability • Thermal Simulation • Building Information Modelling • Acoustics

Zisman Bowyer & Partners LLP is a Limited Liability Partnership • Registered Office: Ambassador House, Paradise Road, Richmond, Surrey, TW9 1SQ. UK

**This is Appendix 2 to the foregoing Agreement between Brookfield Construction (UK) Limited**

**and**

**Zisman Bowyer & Partners**

**BROOKFIELD CONSTRUCTION (UK) LIMITED** of 23 Hanover Square, London, United Kingdom W1S1JL ("the *Employer*"); and

**ZISMAN BOWYER AND PARTNERS** having its Registered Office at Ambassador House, Paradise Road, Richmond, Surrey TW9 1SQ (the "*Consultant*").

WHEREAS

1. The *Employer* and the *Consultant* entered into the Agreement dated 2010 whereby the *Consultant* is to Provide the Services in connection with the New South Glasgow Hospital Project.
2. The *Employer* wishes the *Consultant* to continue to Provide the Services by commencing and carrying out:

| | | |
|---|---|---|
| Stage 3 | Final design and construction of the New Hospitals Building | Final design and construction of the New Adult Acute and New Children's Hospitals and Energy Centre. Consecutive to Stage 2. |
| Stage 3A | Demolition and Final Landscaping | Demolition of surgical block and associated buildings and completion of soft landscaping. |

NOW IT IS AGREED THAT

1. The *Employer* hereby authorises the *Consultant* to commence and carry out Stage 3 and Stage 3A of the *services* ie the Final design and construction of the New Adult Acute and New Children's Hospitals and *services* in connection with the demolition of the surgical block and associated buildings.

2. The *Consultant* will continue to Provide the Services in accordance with the Agreement.

3. The Parties agree and acknowledge that there shall be no adjustment to the Prices as a result of the issue of this Notice to Proceed.

4. The Agreement is amended and modified to reflect and/or incorporate the following:-

   - Notice to Proceed dated 16th December 2010 between the Employer and Greater Glasgow and Clyde Health Board. (attached as Appendix One)
   - The *activity schedule* contained within Attachment A in Contract Data Part Two shall be replaced by the attached revised payment profile (attached as Appendix Two).
   - The Programme contained within Schedule 2 Part Three of Contract Data Part One shall be replaced by the attached programme (attached as Appendix Three)

EXECUTED for and on behalf of the *Employer* at 24 January 2011 as follows:-

[redacted]

(Authorised official) .....

Before this witness: -

PAUL SERKIS ..... Full name

23 HANOVER SQUARE ..... Address
LONDON W1S 1JL

EXECUTED for and on behalf of the Consultant acting by its duly appointed attorneys in the presence of a witness

Name: S. PARDY

Signature [redacted]

Name: D.H. SAFFIN

Signature [redacted]

Witness Signature: [redacted]

Name: CHRISTINE KUIPER

Address: [redacted]

**This is Appendix 2 & 3 to the foregoing Agreement between Greater Glasgow and Clyde Health Board**

**and**

**Brookfield Construction (UK) Limited**

**GREATER GLASGOW AND CLYDE HEALTH BOARD** of J B Russell House, Gartnavel Royal Hospital, 1055 Great Western Road, Glasgow G12 0XH ("the *Employer*"); and

**BROOKFIELD CONSTRUCTION (UK) LIMITED** having its principal place of business at 23 Hanover Square, London, W1S 1JB (the "*Contractor*").

WHEREAS

1. The *Employer* and the *Contractor* entered into the Agreement dated 18th December 2009 whereby the *Contractor* is to Provide the Works in connection with the New South Glasgow Hospital Project.
2. The *Employer* wishes the *Contractor* to continue to Provide the Works by commencing and carrying out:

| | | |
|---|---|---|
| Stage 3 | Design and Construct New Hospitals Building | Design and Construction of the New Adult Acute and Children Hospitals Building and Energy Centre. |
| Stage 3A | Demolition of Surgery Block | Demolition of surgical block and associated buildings and completion of soft landscaping |

NOW IT IS AGREED THAT

1. The *Employer* hereby authorises the *Contractor* to commence and carry out Stage 3 and Stage 3 A of the *works* i.e. the Design and Construction of the New Hospitals Building, and demolition of the surgical block and associated buildings and completion of soft landscaping.
2. The *Contractor* will continue to Provide the Works in accordance with the Agreement.

3. The Agreement is amended and modifled to the following extent:-

i. The Base Date for monitoring the *Employer* Accepted Risk on Inflation for all Stages will be 1st January 2011.

ii. The Start on Site date for Stage 3 is amended from 28th February 2011 to 28th March 2011 at which point the *Employer* will ensure the provision of a totally clear site for access by the *Contractor*. It is accepted by the *Employer* that the *Contractor* shall be entitled to undertake enabling works prior to this date.

iii. The Start on Site Date for Stage 3A is amended from 20th July 2015 to 17th August 2015

iv. Option X5 Clause, the Completion Date for Section 2 (Stage 3 New Hospital) is amended from 31st January 2015 to 28th February 2015 and the Completion Date for Section 3 (Stage 3A Demolition) is amended from 19th July 2016 to 16th August 2016

v. Contract Data Part One and Contract Data Part Two forming part of executed Contract dated 18th December 2009, is amended and supplemented as follows:-

Employers Requirements Supplemental Information –

- BIW Log (as included within Folder B1 of the Instruction to Proceed Bible titled The BIW Log (2010 ItP) – (FINAL) )
- RFI Log (as included within Folder B1 of the Instruction to Proceed Bible titled The RFI Log (2010 ItP) – (FINAL) )
- Clarification Log (as included within Folder B1 of the Instruction to Proceed Bible titled The Clarification Log (2010 ItP) – (FINAL))
- M+E Clarification Log (as included within Folder B1 of the Instruction to Proceed Bible titled The M&E Clarification Log (2010 ItP) – (FINAL))
- Laboratory Log (as included within Folder B1 of the Instruction to Proceed Bible) (as executed Agreement 18th December 2009)
- Sustainability Log (as included within Folder B1 of the Instruction to Proceed Bible titled The Sustainability Log (2010 ItP) – (FINAL))

- Stage 3 Instruction to Proceed Log December 2010 (new) (as included within Folder S of the Instruction to Proceed Bible)

Contractors Proposals –

- Volume 1 (as included with Folder C1 of the Instruction to Proceed Bible) – Schedule of Accommodation titled SOA 1:200 Drawings. By reference to the 1:200 drawings included within Volume 13 of this agreement the areas denoted on the drawings represent the agreed position between the Parties to the Contract. The Parties agree to use reasonable endeavours to prove functionality and to maintain the overall areas as currently indicated and the *Employer* agrees that any adjustments to areas during the remaining 1:50 review process (excluding Plantrooms and Service Risers with the exception of those adjustments due to a change within the Employer's Requirements) that cannot be accommodated within the Departmental areas or within the overall building envelope that give rise to an increase in area will be an additional Employer Risk. The Parties accept that the 0.5% risk accepted by the Contractor within the Agreement of 18th December 2009 has already been absorbed by the Contractor.
- Volume 2 (as included within Folder D1 of the Instruction to Proceed Folder) – Drawings.
- Volume 3 (as included within Folder F1 of the Instruction to Proceed Bible) – Design Narratives
- Volume 4 (as included within Folder G1 of the Instruction to Proceed Bible) – Specifications
- Volume 5 (as included within Folder H1 of the Instruction to Proceed Bible) – Components titled 2010 ItP Project Bible - Folder H1 – Components (FINAL)
- Volume 6 (as included within Folder T of the Instruction to Proceed Bible) – Equipment (as amended 16th December 2010). These revised Equipment Schedules define the current position agreed between the Parties to the Contract and thus the quantities and coding identified therein take precedence over the Drawings included

within Volumes 2, 13, 14, and 15 of this Appendix 2 and 3 agreement. For purpose of clarity any change in quantity or coding will be an Employer Risk pursuant to Risk Items 25, 39 and 40 on the Stage 3 NSGH Board Risk Schedule included within the Contract.

- Volume 7 (as included within Folder I1 of the Instruction to Proceed Bible) – SHTM (as executed Agreement 18th December 2009)
- Volume 8 (as included within Folder J1 of the Instruction to Proceed Bible) – ADB titled EDS ItP Batch 1 - ZBP updates_141210" & "EDS ItP Batch 2 - ZBP updates_141210" & "2900-NSGH-Environmental matrix_comments-011210 (Final)
- Volume 9 (as included within Folder K1 of the Instruction to Proceed Bible) – Programme titled Stage 3 Summary Master Programme, BCL-GSM-CN02-0001 (FINAL)
- Volume 10 (as included within Folder L1 of the Instruction to Proceed Bible) – Logistics (as amended 16th December 2010)
- Volume 11 – Not Used
- Volume 12 – Commercial (as executed Agreement 18th December 2009 unless amended by this Appendix 2 & 3, or Compensation Event already issued, or Project Managers Instruction already issued)
- Volume 13 (as Included within Folder U of the Instruction to Proceed Bible) (new) – Masterplan & Architecture Proposals (Agreed Appendix k drawing schedule)
- Volume 14 (as included within Folder V of the Instruction to Proceed Bible) (new) – M&E Engineering Proposals (Agreed Appendix k drawing schedule)
- Volume 15 (as included within Folder W of the Instruction to Proceed Bible) (new) – Civil / Structural Engineering Proposals (Agreed Appendix k drawing schedule)
- Volume 16 Critical Failures (as included within Folder X of the Instruction to Proceed Bible titled Appendix X1 (FINAL)

- Volume 17Planning Consents Pack (as included within Folder Y of the Instruction to Proceed Bible)

vi. Compensation Events and Project Managers Instructions as issued prior to execution date of this Appendix 2 & 3

EXECUTED for and on behalf of the *Employer* at 16th day of December 2010 as follows:-

[redacted]

(Authorised official)

Before this witness:- [redacted]

ALAN SEABOURNE ..... Full name

CONSTRUCTION SITE, HARDGATE ROAD,

GOVAN, GLASGOW, G51 4SX Address

EXECUTED for and on behalf of the *Contractor* at 16th day of December 2010 as follows:-

[redacted]

(~~Director/~~Authorised Signatory)

Before this witness:-

[redacted] ..... Full name

[redacted] Address

[redacted]

**Brookfield Construction (UK) LTD**

**New South Glasgow Hospital**

**ZBP Fee Draw Down Schedule**

| No. | Month | Stage 2 FBC ZBP | Stage 2 FBC Mercury* | Stage 3 Design | Stage 3 Construction | Stage 3A | Notes |
|---|---|---|---|---|---|---|---|
| 0 | Jan-10 | [redacted] | | | | | |
| 1 | Feb-10 | | | | | | |
| 2 | Mar-10 | | | | | | |
| 3 | Apr-10 | | | | | | |
| 4 | May-10 | | | | | | Key Design deliverables |
| 5 | Jun-10 | | | | | | Key Design deliverables |
| 6 | Jul-10 | | | | | | |
| 7 | Aug-10 | | | | | | Key Design deliverables |
| 8 | Sep-10 | | | | | | |
| 9 | Oct-10 | | | | | | FBC Submission |
| 10 | Nov-10 | | | | | | Stage 3 Detailed Design commences |
| 11 | Dec-10 | | | | | | |
| 12 | Jan-11 | | | [redacted] | | | |
| 13 | Feb-11 | | | | | | |
| 14 | Mar-11 | | | | | | Stage 3 start on site |
| 15 | Apr-11 | | | | | | |
| 16 | May-11 | | | | | | |
| 17 | Jun-11 | | | | | | |
| 18 | Jul-11 | | | | | | |
| 19 | Aug-11 | | | | | | |
| 20 | Sep-11 | | | | | | |
| 21 | Oct-11 | | | | | | |
| 22 | Nov-11 | | | | | | |
| 23 | Dec-11 | | | | | | |
| 24 | Jan-12 | | | | | | |
| 25 | Feb-12 | | | | | | |
| 26 | Mar-12 | | | | | | Assumed M&E starts onsite |
| 27 | Apr-12 | | | | | | |
| 28 | May-12 | | | | | | |
| 29 | Jun-12 | | | | | | |
| 30 | Jul-12 | | | | | | |
| 31 | Aug-12 | | | | | | |
| 32 | Sep-12 | | | | | | |
| 33 | Oct-12 | | | | | | |
| 34 | Nov-12 | | | | | | |
| 35 | Dec-12 | | | | | | |
| 36 | Jan-13 | | | | | | |
| 37 | Feb-13 | | | | | | |
| 38 | Mar-13 | | | | | | |
| 39 | Apr-13 | | | | | | |
| 40 | May-13 | | | | | | |
| 41 | Jun-13 | | | | | | |
| 42 | Jul-13 | | | [redacted] | | | |
| 43 | Aug-13 | | | | | | |
| 44 | Sep-13 | | | | | | |
| 45 | Oct-13 | | | | | | |
| 46 | Nov-13 | | | | | | |
| 47 | Dec-13 | | | | | | |
| 48 | Jan-14 | | | | | | |
| 49 | Feb-14 | | | | | | |
| 50 | Mar-14 | | | | | | |
| 51 | Apr-14 | | | | | | |
| 52 | May-14 | | | | | | |
| 53 | Jun-14 | | | | | | |
| 54 | Jul-14 | | | | | | |
| 55 | Aug-14 | | | | | | |
| 56 | Sep-14 | | | | | | |
| 57 | Oct-14 | | | | | | |
| 58 | Nov-14 | | | | | | |
| 59 | Dec-14 | | | | | | |
| 60 | Jan-15 | | | | | | |
| 61 | Feb-15 | | | | | | Stage 3 Completion |
| 62 | Mar-15 | | | | | | |
| 63 | Apr-15 | | | | | | |
| 64 | May-15 | | | | | | |
| 65 | Jun-15 | | | | | | |
| 66 | Jul-15 | | | | | | |
| 67 | Aug-15 | | | | | [redacted] | Stage 3A Commencement |
| 68 | Sep-15 | | | | | | |
| 69 | Oct-15 | | | | | | |
| 70 | Nov-15 | | | | | | |
| 71 | Dec-15 | | | | | | |
| 72 | Jan-16 | | | | | | |
| 73 | Feb-16 | | | | | | |
| 74 | Mar-16 | | | | | | |
| 75 | Apr-16 | | | | | | |
| 76 | May-16 | | | | | | |
| 77 | Jun-16 | | | | | | |
| 78 | Jul-16 | | | | | | |
| 79 | Aug-16 | | | | | | Stage 3A Completion |
| 80 | Feb-17 | | | | [redacted] | | Expiry of 24 month DLP Period Stage 3 |
| 81 | Aug-19 | | | | | [redacted] | Expiry of 24 month DLP Period Stage 3A |

| | | | | | |
|---|---|---|---|---|---|
| **Stage Totals - Mercury** | £ [redacted] | | | | |
| **Stage Totals - ZBP** | £ [redacted] | £ [redacted] | £ [redacted] | £ [redacted] | |
| | | | £ | | |
| **Total fee inclusive of disbursments but excluding VAT** | | | | £ | |

* Mercury Payments made by BCL direct. This is reimbursed to ZBP through Stage 3

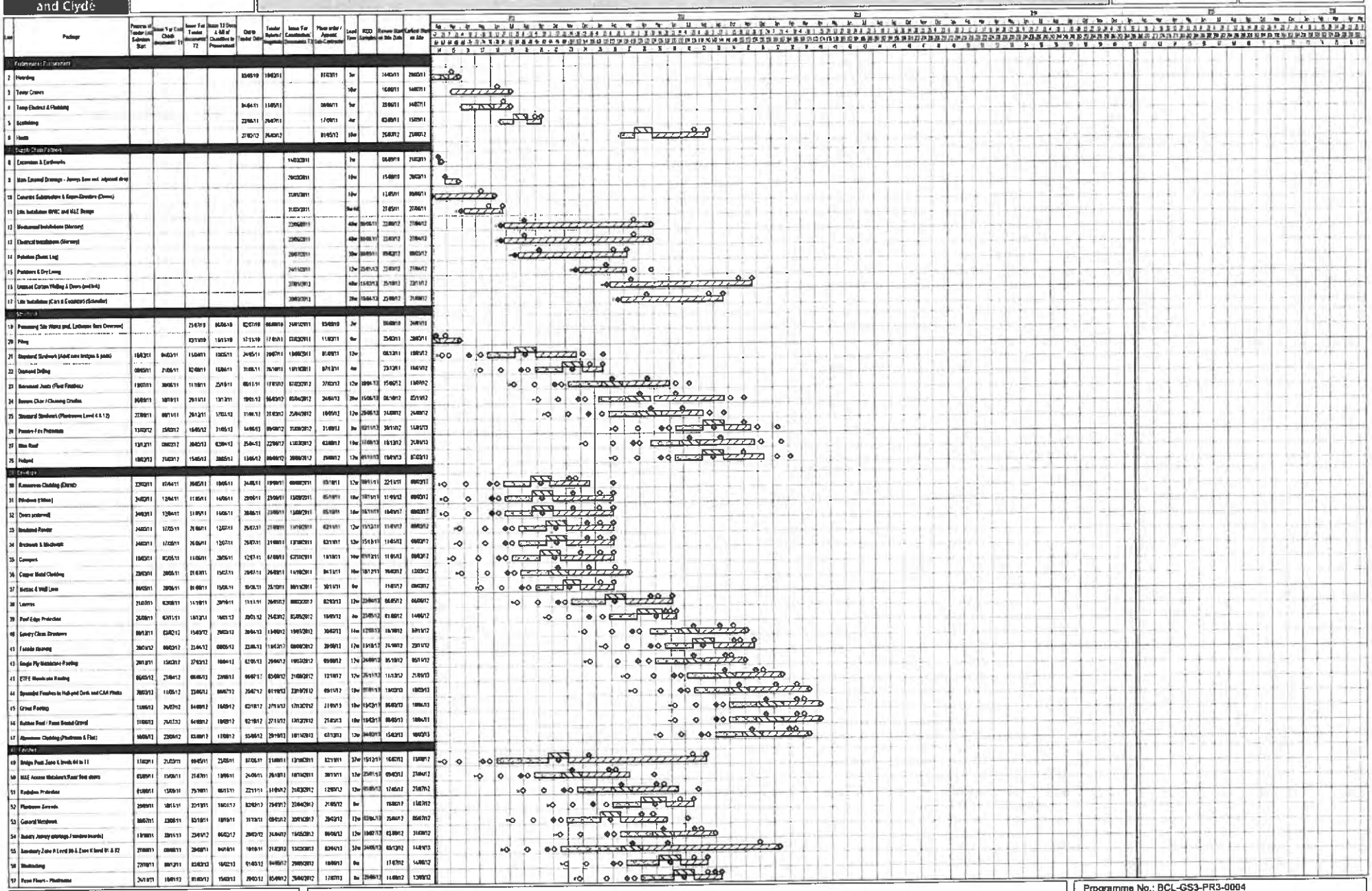
NHS Greater Glasgow and Clyde

# New South Glasgow Hospitals Project

## Stage 3 Adult & Childrens Hospital Procurement Programme

"This programme is copyright and the property of Brookfield Construction (UK) Ltd and must not be used with out written approval".

Brookfield



Date of Issue: 16/02/2011 Drawn By: AB

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Comments:

Programme No.: BCL-GS3-PR3-0004

Revision: Revision Date: 16/02/2011



A49342285

# New South Glasgow Hospitals Project

## Stage 3 Adult & Childrens Hospital Procurement Programme

NHS Greater Glasgow and Clyde

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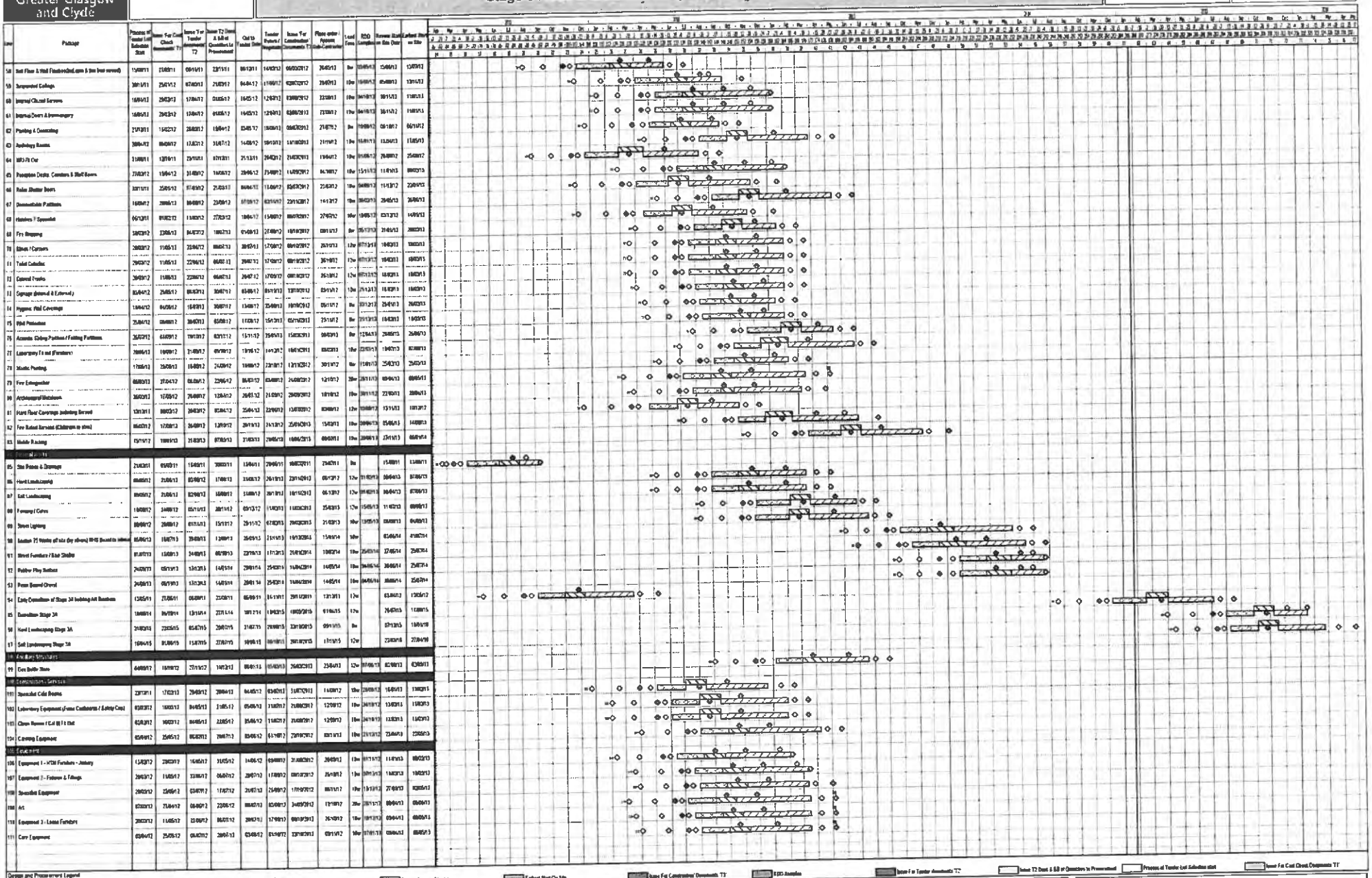

Design and Procurement Legend

Tender | Negotiate & Award | Lead Time | Issue For Construction Documents 'T3' | Issue For Tender documents 'T2' | Issue T2 Dwgs & Bill of Quantities to Procurement | Process of Tender List Selection start | Issue For Cost Check Documents 'T1'

Date of Issue: 16/02/2011
Print Date: 17/02/2011
Drawn By: AB
Page 2 of 2

Comments:

Programme No.: BCL-GS3-PR3-0004
Revision:
Revision Date: 16/02/2011

File Path: G:\1 PROJECTS\1 04 Stage 3 New Hospital Construction Programme Control\Stage 3 Contract Programme 14 01 10.xls

A49342285

DATED 7th March 2013

**BROOKFIELD MULTIPLEX CONSTRUCTION EUROPE LIMITED**

- and –

**TUV SUD LIMITED**
**(trading as "Wallace Whittle")**

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# PROFESSIONAL SERVICES CONTRACT

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CONTENTS


| Clause | Heading |
|---|---|
| 1. | AGREEMENT ..... |
| 2. | APPENDIX 1 – THE OVERRIDING PRINCIPLE ..... |
| 3. | APPENDIX 2 - NOTICE TO PROCEED ..... |
| 4. | CONTRACT DATA PART ONE |
| 5. | SCHEDULE 1 - THE COLLATERAL WARRANTY |
| 6. | SCHEDULE 2 - DEFINITION OF SCOPE AND *SERVICES* |
| 7. | PART ONE - DEFINITION OF SCOPE AND *SERVICES* |
| 8. | PART TWO - CONSULTANT COORDINATION MATRIX |
| 9. | PART THREE - PROGRAMME |
| 10. | SCHEDULE 3 - DESIGN DELIVERABLES |
| 11. | CONTRACT DATA PART TWO |

**AGREEMENT**

between

**BROOKFIELD MULTIPLEX CONSTRUCTION EUROPE LIMITED** (Company No. 03808946) whose registered office is at 23 Hanover Square, London, United Kingdom W1S 1JB ("the *Employer*"); and

**TUV SUD LIMITED (trading as "Wallace Whittle")** (Company No. **SC215164**) whose registered office is at Napier Building, Scottish Enterprise Technology Park, East Kilbride, Glasgow G75 0QF (the "*Consultant*").

WHEREAS: -

The *Employer* has been appointed to carry out the design and construction of the New South Glasgow Hospital ("the Project") and wishes to have the *Consultant* Provide the *services* in connection with the same as follows: -

| Stage | Heading | Outline Activities |
|---|---|---|
| Stage 3 | Final Design of the New Hospitals Building | Completion of detailed design of New Adult Acute and New Children's Hospitals and Energy Centre. Consecutive to Stage 2. |
| Stage 3A | Demolition and Final Landscaping | Demolition of surgical block and associated buildings and completion of soft landscaping. |

**NOW IT IS AGREED THAT**

1. The *Consultant* will Provide the Services in accordance with the NEC Professional Services Contract, Option A: Priced Contract with activity schedule June 2005 (as the same are amended in by the Contract Data) ("*the conditions of contract*") and the principles stated in Appendix 1 of this Agreement. The *Services* include all services performed or to have been performed by Zisman Bowyer & Partners LLP ("ZBP") pursuant to the Professional Services Contract entered into between the *Employer* and Zisman Bowyer & Partners LLP dated 28 September 2010 in respect of the Project ("*ZBP Appointment*").

2. The *Employer* will pay the *Consultant* in accordance with Section 5 of the *conditions of contract.* The *Employer* is not obliged to pay the *Consultant* in respect of *Services* already performed by ZBP pursuant to the *ZBP Appointment.*

3. The *Consultant* acknowledges and agrees that as at the Contract Date the Consultant shall be authorised to proceed with the *services* in connection with Stage 3 only. The *Consultant* is authorised to commence and proceed with Stage 3A upon written authorisation given by the *Employer* in the form attached as Appendix 2 hereto. In the event that the *Consultant* undertakes any work in connection with Stage 3A without such written authority from the *Employer*, the *Consultant* does so at his own cost and risk.

4. The *Consultant* agrees to be responsible for and liable to the *Employer* pursuant to this contract for all of the duties, obligations and services provided or to have been provided by ZBP pursuant to the *ZBP Appointment.* The Consultant warrants to the Employer that all services performed by ZBP pursuant to the *ZBP Appointment* have been carried out in accordance with the requirements and standards required by the *ZBP Appointment.* However, and notwithstanding any other provision of this contract, the *Consultant* shall bear no responsibility or liability for or in respect of delays arising to the Project as a consequence of ZBP's insolvency or the resulting termination of the *ZBP Appointment.*

5. The *Consultant* undertakes not to contend in defence of any claim brought by the *Employer* against the *Consultant* under this contract in respect of duties, obligations and services provided or to have been provided by ZBP pursuant to the *ZBP Appointment* that the liability of the *Consultant* is affected or diminished by reason of the fact that the claim relates to duties, obligations and/or services performed or to have been performed by ZBP under the *ZBP Appointment*, rather than the *Consultant*, under this contract.

6. The documents forming part of this contract are:

   6.1 this Agreement

6.2 the *conditions of contract*,

6.3 Contract Data part one — data provided by the *Employer*

6.4 Contract Data part two - Data provided by the *Consultant*

7. In the event of conflict between the documents forming part of this contract the following order of priority will apply:-

7.1 This Agreement (excluding Appendix 1)

7.2 The *conditions of contract*,

7.3 Contract Data Part One (including the Scope).

7.4 Contract Data Part Two

7.5 Appendix 1 of this Agreement

IN WITNESS WHEREOF these presents consisting of this and the 2 preceding pages together with Appendices 1 and 2 and the Contract Data part one (including its Appendices) and Contract Data part two are executed as follows: -

EXECUTED for and on behalf of the *Employer* ~~at [ ]~~ on the [ 7th ] day of March 2013 as

[redacted] rised Signatory)

Full name THOMAS MARKE

Address 23 HANOVER SQUARE

LONDON W1S 1JB

.....

EXECUTED for and on behalf of the *Consultant* ~~at [ ]~~ on the [ 7th ] day of March 2013 as follows: -

[redacted] (Director/Authorised Signatory)

Before this witness: -

Full name DONNA MILLER

Address 349 BATH STREET

GLASGOW

G2 4AA

# TO WHOM IT MAY CONCERN

## POWER OF ATTORNEY

Brian Mayberry is hereby authorised to sign and bind TUV SUD Ltd, trading as Wallace Whittle

[redacted]

Signed for and on behalf of
TUV SUD Ltd

Name: William McKnight

Position: Director and Company Secretary

Company: TUV SUD Ltd

Date: 26.10.2012

**This is Appendix 1 to the foregoing Agreement between Brookfield Multiplex Construction Europe Limited**

**and**

**TUV SUD LIMITED**

**Principles governing the Agreement**

**Definitions**

| **Defined Term** | **Definition** |
|---|---|
| "Building Contract" | means the contract between the Employer and Greater Glasgow and Clyde Health Board in relation to the design and construction of the New South Glasgow Hospital. |
| "Overriding Objective" | means the objective set out in Paragraph 4. |
| "Overriding Principle" | means principle set out in Paragraph 1. |
| "Professional Advisor" | means any party providing specialist advice to the *Employer*. |

1. The Overriding Principle of this Agreement is to work together with the *Employer* and its Professional Advisers in a co-operative and collaborative manner to achieve the Overriding Objective acting in good faith and in the spirit of mutual trust and respect.
2. In order to work together in co-operative and collaborative manner the *Employe*r and the *Consultant* agree that they should each give to and welcome from each other, and any Professional Adviser, feedback on performance and shall share information openly and highlight any difficulties at the earliest practical time. The parties shall support collaborative behaviour and confront behaviour that does not comply with the Overriding Principle.
3. The terms of the Agreement shall be interpreted according to their natural meaning but in the event of any ambiguity in their natural meaning they shall be interpreted so as to give best effect to the Overriding Principle.
4. In entering into the Agreement the parties' Overriding Objective is by working together in accordance with the terms of the Agreement to achieve the successful delivery by the *Consultant* of the *services*: -

4.1 carry out the *services* exercising reasonable skill and care having due regard to the standard and functionality defined within the Employer's Requirements as set out in the Building Contract;

4.2 at a cost that offers best value for money taking into account whole life (as well as capital) costs over the proposed design life of the *works* through the application of the principles of value engineering; and

4.3 to use reasonable endeavours to achieve the timescale acceptable to the *Employer* and agreed between the parties without compromising health and safety or the *Employer*'s required standards and the quality of the completed *works* and in any event before the Completion Dates set out in the Building Contract.

5. The *Consultant* shall carry out the management and be responsible for the delivery of the *services* in accordance with the Agreement and shall work and liaise with the *Employer* and any of its Professional Advisers as necessary or appropriate or as requested by the *Employer* in order to achieve the Overriding Objective.

6. The *Consultant* shall engage persons from the key people set out in the Contract Data — Part two in the performance of the *services* to be provided by the *Consultant* under the Agreement and shall not replace any of the key people without the approval of the *Employer* (such approval not to be unreasonably withheld). **T**he *Consultant* will ensure that where a member of its key personnel is replaced that they have the skills, qualifications, experience and ability to provide the best service to the *Employer*.

7. Throughout the period of the Agreement the performance of the *Consultant* shall in relation to the *services* be monitored against the Key Performance Indicators defined in the Scope and/or the Contract Data and/or the Contract Data to the Building Contract.

8. During the period of the Agreement amendments may be made to the Key Performance Indicators by agreement between the *Employer* and the *Consultant* except where the Client is required by the Scottish Government or regulatory bodies to provide Key Performance Indicators. In such cases the *Employer* will provide information on any requirements to the *Consultant* as soon as reasonably practicable.

9. At 2 monthly intervals or at such other intervals as the parties may agree during the performance of the Agreement, the *Employer* and the *Consultant* shall undertake formal reviews of the performance of the *Consultant* against its Key Performance Indicators. **T**he *Employer* and the *Consultant* will discuss any way in which the performance of the *Consultant* may be improved.

10. The *Consultant* shall keep a comprehensive record as specified by the *Employer* of all performance monitoring carried out under the Agreement in such form as the *Employer* may reasonably request for a period of 6 years after the expiry or earlier termination of this

Agreement and shall provide copies of such records to the *Employer* for the *services* to enable him to record, disseminate and compare the performance of the *Consultant*. Each record shall be retained in a format that can be read and copied and kept with the IT requirements on an electronic based database.

11. The *Consultant* shall throughout the period of the Agreement look for and seek to achieve continuous improvement in the quality of the *services* while reducing whole life costs, wastage (in accordance with WRAP guidance), and the time taken to deliver the *services*. Innovation and best practice will be shared with the *Employer*.

12. To achieve the aim set out in Clause 11 the *Consultant* shall actively participate in the continuous improvement "learning sets" with the Employer in relation to the Agreement. This commitment is likely to involve meetings at least once every 3 months in relation to the *services* and meetings at least once every 6 months in relation to the lessons to be learned. The *Consultant* shall also use reasonable endeavours to procure the involvement of any of its subconsultants in such learning sets where considered appropriate.

**This is Appendix 2 to the foregoing Agreement between Brookfield Multiplex Construction Europe Limited**

**and**

**TUV SUD LIMITED**

**BROOKFIELD MULTIPLEX CONSTRUCTION EUROPE LIMITED** of 23 Hanover Square, London, United Kingdom W1S 1JB ("the *Employer*"); and

**TUV SUD LIMITED** having its Registered Office at Napier Building, Scottish Enterprise Technology Park, East Kilbride, Glasgow G75 0QF (the "*Consultant*").

WHEREAS

1. The *Employer* and the *Consultant* entered into the Agreement dated [ ] whereby the *Consultant* is to Provide the Services in connection with the New South Glasgow Hospital Project.
2. The *Employer* wishes the *Consultant* to continue to Provide the Services by commencing and carrying out:

| | | |
|---|---|---|
| Stage 3A | Demolition and Final Landscaping | Demolition of surgical block and associated buildings and completion of soft landscaping. |

NOW IT IS AGREED THAT

1. The *Employer* hereby authorises the *Consultant* to commence and carry out Stage 3A of the *services* ie *services* in connection with the demolition of the surgical block and associated buildings.
2. The *Consultant* will continue to Provide the Services in accordance with the Agreement.
3. The Agreement is amended and modified to the following extent:-

   [*Any amendments to the Scope and/or Contract Data which will have come about during Stage 2*]

EXECUTED for and on behalf of the *Employer* at [ ] day of [ ] 20[ ] as follows:-

.....

(Director/Authorised Signatory)

Before this witness: -

..... ..... Full name

..... ..... Address

EXECUTED for and on behalf of the *Consultant* at [ ] day of [ ] 20 [ ] as follows: -

.....

(Director/Authorised Signatory)

Before this witness: -

..... Full name

..... Address

**CONTRACT DATA PART ONE —**

**DATA PROVIDED BY *THE EMPLOYER***

**Contract Data Part one - Data provided by the *Employer***

**1. General**

- The *conditions of contract* are the core clauses for main Option A, dispute resolution Option W2 and Secondary Options — X2, X5, X8, X18.3 and Z of the NEC3 Engineering and Construction Contract (June 2005). Furthermore Option Y(UK)2 of the NEC3 Engineering and Construction Contract (Amendments September 2011) are incorporated into this contract.
- The services are management and delivery of design services for the New South Glasgow Hospital Project as the *services* are more specifically referred to in the Scope.
- The *Employer* is:

  Name: Brookfield Multiplex Construction Europe Limited

  Address: 23 Hanover Square, London, United Kingdom W1S 1JB
- The *Adjudicator* is: to be nominated by the Nominating Body
- The *Services* are: set out in Schedule 2 and shall include any carried out by Zisman Bowyer & Partners LLP pursuant to the ZBP Appointment.
- The Scope is in: Schedule 2.
- The *language* of the contract is English.
- The *law of the contract* is the law of Scotland subject to the jurisdiction of the Courts of Scotland.
- The *period for reply* to a communication is
  - to *Consultant's* submission of particulars of design for acceptance - Four (4) weeks
  - Reply to all other communications unless otherwise stated in this contract three (3) weeks
- The *Adjudicator* nominating body is:

  The Scottish Branch of the Royal Institute of Chartered Surveyors
- The *tribunal* is the Scottish Courts

**2. The Parties' main responsibilities:**

Not used

**3. Time**

- The *starting date* is 1st March 2013.
- The Consultant submits revised programmes at intervals no longer than three (3) weeks.

**4. Quality**

- The quality policy statement and quality plan are provided within 3 weeks of the Contract Date.
- The *defects date* is 104 Weeks after Completion of the *services*.

**5. Payment**

- The *assessment interval* is four (4) weeks alternatively calendar monthly in accordance with the cashflow set out in Contract Data Part Two.
- The *currency of this contract* is the pound sterling (£)
- The interest rate is 5% per annum

**8. Indemnity, insurance and liability**

The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the works, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the Consultant) caused by activity in connection with this contract for any one event is

**£10,000,000.00 (ten million pounds sterling)**

The minimum limit of indemnity for insurance in respect of death or bodily injury to employees of the *Consultant* arising out of and in the course of their employment in connection with this contract for any one event is

**£10,000,000.00 (ten million pounds sterling)**

The amount of the minimum limit of indemnity for Professional Indemnity Insurance for design liability in connection with this contract, including without limitation, liability for any part of the services or Services provided by Zisman Bowyer & Partners LLP pursuant to the ZBP Appointment for any one event is

**in any one event of £10,000,000 (ten million pounds sterling)**

for a period of twelve years from Completion of the whole of the *services*.

Consultant to provide documentary evidence to which insurance option is being provided

The *Consultant* provides all other insurances required by the *law of the contract*

**Optional Statements**

**If the Employer has decided the completion date for the whole of the *works***

The *completion date* for the whole of the *services* is 19th July 2016

**If no programme is identified in part two of the Contract Data**

The Consultant is to comply with the programme contained in Schedule 2 Part 3.

**If the Employer has identified work which is to meet a stated *condition* by a *key date***

Not applicable.

**If Option X5 is used**

- The *completion date* for each *section* of the *services* is

| Section | Description | *completion date* |
|---|---|---|
| 1 - Stage 3 | New Hospital | 31st January 2015 |
| 2 – Stage 3A | Demolition of surgical block | 19 July 2016 |

**If Option X8 is used**

- The *collateral warranty agreements* are:

| Agreement reference | Third Party |
|---|---|
| Form as set out in Schedule 1 | Greater Glasgow Health Board<br>Others as required by the Client and requested by the *Employer* |

**If Option X18 is used**

The *end of liability date* is twelve (12) years after the Completion of the whole of the *services*.

**If Option Z is used**

*The additional conditions of contract are*

**Amendments and additions to existing Clauses:**

**Z 1 Additions to Clause 11.2 - Identified and Defined Terms**

11.2(14) "Agreement" is the form of agreement entered into between the *Employer* and the *Consultant* in respect of the services forming part of this contract

11.2(15) "the Client" is the Greater Glasgow Health Board.

11.2(16) "Full Business Case" is the Client's submission to the Scottish Government for approval to proceed with Stage 3.

11.2(17) "Laboratories" is the new laboratory block as the same is more particularly described in the Scope.

11.2(18) "Stage" has the meaning ascribed to it in the recital to the Agreement.

11.2(19) "*conditions of contract*" is the NEC Professional Services Contract, Option A: Priced contract with activity schedules, June 2005 (as the same are amended in by the Contract Data.

11.2(20) "Design Deliverables" are those elements of design to be delivered by the *Consultant* to the *Employer* as identified as part of the *services*.

11.2(21) "Documents" includes, without limitation, all technical information (whether or not stored in computer systems), drawings, models, calculations, specifications, schedules, details, plans, programs, budgets, reports or other documents, work or other things provided or to be provided by or on behalf of the *Consultant* in connection with the *services*.

**Z2 Amendment to clause 11.2 (4) - Identified and Defined Terms**

Delete and replace with "the Contract Date is the date of execution of this contract"

**Z3 Amendment to Clause 16.1 – Ambiguities and inconsistencies**

Add the following sentence to the end of Clause 16.1

"Instructions issued under this clause do not necessarily give rise to a compensation event"

**Z4 Addition to Clause 16 – Ambiguities and inconsistencies**

"16.2 Inconsistencies and ambiguities between (a) the NHS Mandatory Documentation and NHS Guidance Documentation and building control or (b) between the NHS Mandatory Documentation and NHS Guidance Documentation and the Schedules of Accommodation or (c) between the NHS Mandatory Documentation and NHS Guidance Documentation and any information issued to the Consultant by the Employer, are to be dealt with in accordance with the procedures set out in the Scope."

**Z5 Amendment to Clause 18 – Prevention**

Add new Clause 18.2

"Notwithstanding the provisions of Clause 60 and subject to Clause 18.4, the *Consultant*'s sole right to payment in respect of the occurrence of an event under Clause 18.1 is as provided in Clause 92."

Add new Clause 18.3

"The *Consultant* and the *Employer* take all reasonable steps to mitigate the effect of the occurrence of an event under Clause 18.1."

Add new Clause 18.4

"If the *Employer* instructs the *Consultant* to take steps to Provide the Services in a manner not prevented by the occurrence of an event under Clause 18.1, and such instruction changes the Scope, the *Consultant* is entitled to notify a compensation event under clause 60."

**Z6 Amendment to Clause 21.2 - The *Consultant's* design**

Delete and replace with: "The *Consultant's* obligation is to perform the *services* using the degree of skill and care that would reasonably be expected of a competent professional designer experienced in carrying out design activities of a similar nature, scope and complexity to those comprised in the *services*.

**Z7 Addition to Clause 31 – The programme**

"31.4 The *Consultant* complies with section 6.8 of Volume 2/1 of the Employers Requirements Section of the Works Information in the Building Contract in connection with commissioning and handover for the whole of the *works.* "

**Z 8 Addition to Clause 51 - Payment**

51.6 If the amount to be paid at an assessment date exceeds the amount for the assessment interval as shown in the *Consultant*'s cash flow forecast (as contained in Contract Data Part Two), then the *Employer* certifies payment up to the amount forecast. Any amount exceeding the forecast is not certified but held over to the next assessment interval, where if amount to be paid at the next assessment date again exceeds the *Consultant*'s cash flow forecast for the assessment interval the process is repeated. This clause does not apply where the *Consultant* provides a valid and acceptable reason for an exception to the limitation of the *Employer's* assessment certification.

**Z9 Amendment to Clause 60.1(11)**

Add new bullet point 6, "does not arise from a sub-consultant ceasing to trade or becoming insolvent (or other equivalent event)"

Add at the end, "provided that the occurrence of such event only entitles the Consultant to a change to the Completion Date or a change to a Key Date and not to a change in the Prices and Clauses 61 – 65 are interpreted accordingly."

**Z10 Amendment to Clause 61.4 - Notifying of Compensation events**

In line 15 delete "two" and substitute "four"

**Z11 Amendment to Clause 70 – the Parties' use of material**

Delete and replace with: -

"70.1 The copyright and all intellectual property rights in the Documents remain vested in the *Consultant* or the person responsible for the production (as the case may be).

70.2 Where documentation and/or information (including but not limited to technical information (whether or not stored in computer systems and whether or not in electronic or hard copy format) drawings, designs, models, calculations, specifications, schedules, details, plans, programs, budgets, reports and other documents and information)is (or are) provided by the *Employer* to the *Consultant* for the purposes of performing the Services

copyright and such documentation and drawings remain vested in the *Employer* but the *Employer* grants the Consultant a revocable limited royalty free licence to copy and use such documentation and information solely for the purpose of performing the *Services*. The *Consultant* shall be responsible for obtaining any software licences and/or approvals necessary to use such documentation and/or information to perform the *Services*. The *Employer* shall not be liable for any use by the *Consultant* of the documentation and information for any purpose other than that for which the same is prepared and provided.

70.3 The *Employer* has an irrevocable, non-exclusive royalty free licence to copy and use the Documents and to reproduce the designs contained in them for any purpose relating to the *works* including (but without limitation) the construction, completion, maintenance, promotion, advertisement, reinstatement, repair, any extension of the *works* and for dissemination within the NHS as part of the feedback of information to better or enable the NHS to realise improvements in its methods and practice of construction and in the design and procurement of its construction.

70.4 The *Consultant* shall not be liable for any use of the *Employer* of the Documents for any purpose other than that for which the same is prepared and provided."

**Z12 Addition to Clause 81.1 – Insurance cover**

Add to the Insurance Table:

| | |
|---|---|
| Liability for negligent management or design – professional indemnity insurance | The amount specified in the Contract Data for any one claim or series of claims arising out of one single incident (save in relation to claims relating to pollution and contamination, date recognition, and asbestos for which the indemnity limit is £5 million in the aggregate) during any period of insurance and which shall |

| | |
|---|---|
| | include liability for any services performed by Zisman Bowyer & Partners LLP under the ZBP Appointment which shall not be more than 12 months from the date the *Consultant* starts to Provide the Services for a period of twelve years from Completion of the whole of the *services*, with insurers of good repute carrying on business in the European Union provided always that such insurance is available at rates and terms which are commercially reasonable to Consultants of a similar size and standing in the UK In determining whether or not insurance is available as aforesaid, the financial characteristics and claims' record of the Consultant shall be ignored. |

**Z13 Amendment to Clause 82.1**

Delete.

**Z14 Amendment to Clause 90.4 – Reasons for Termination**

Add at the end "notwithstanding that a delay to the Completion Date has previously been notified to the *Consultant* in respect of such event"

**Z15 Addition to Clause 90**

90.5 The *Employer* may terminate the *Consultant's* obligations to Provide the Services for Stages 3 and/or 3A either (i) on completion of Stage 2 or (ii) if the Full Business Case is not approved by the Scottish Government.

**Z16 Addition to 91 - Procedures on termination**

"91.2 The *Consultant* hands over to the *Employer* all hard copy and electronic data for the *Consultant's* design including material prepared by a sub-consultant, so far as prepared at termination. At such termination the *Employer* has the right to use such material for completion of the *services*.

**Z17 Amendment to Clause 92 - Payment on Termination**

92.3 : - "On termination the *Employer* shall not be liable to the *Consultant* for loss of profit, loss of expectation of profit, loss of use, loss of production or indirect and consequential damages."

**Z18 Addition to Clause W2.1(1) – Dispute Resolution**

Add at the end: - "The word "dispute" in this Clause W2 includes any difference under or in connection with this contract".

**Z19 Addition to Clause W2.3(8) – the adjudication**

After "reasons" add the words, "(which will be in writing)"

**Z20 Addition to Clause W2.3(11) – The adjudication**

Delete the first sentence and replace with, "The decision of the *Adjudicator* is binding until the dispute is finally determined by the *tribunal* or by agreement."

**Z21 Amendment to Clause X8 – Collateral Warranty Agreements**

Add at the end: "and provides them to the *Employer* within 5 days of the *Employer*'s written request".

**Z22 New Clause - Confidentiality**

Z22.1 The *Consultant* shall not append their name or give authority to the appending of their name to any publicity concerning this agreement or the services or indulge in any publicity concerning the services without the prior written consent of the *Employer.*

Z22.2 The *Consultant* warrants the accuracy of all information of a legal, commercial or financial nature provided by them to the *Employer.* Details must be provided by the *Consultant* to the *Employer* regarding any matter as and when they take place, which affects the legal, commercial or financial standing of the *Consultant.*

Z22.3 The *Consultant* undertakes to treat any information derived from or obtained in the course of the Agreement as confidential and to take all the necessary precautions to reasonably ensure that its employees and sub-consultants and their employees treat any information as confidential and in doing so the *Consultant* shall ensure that its employees and sub-consultants and their employees keep secret and do not disclose information of a confidential nature by him or them by reason of the Agreement.

**Z23 New Clause – Data Protection**

Z23.1 The *Consultant* warrants and will at all times comply with the provisions of the Data Protection Act 1998 ("the 1998 Act") and any other subordinate legislation enacted pursuant thereto.

Z23.2 The *Consultant* shall only undertake such processing of personal data as is reasonably required in connection with the performance of its obligations under pursuant to the Agreement. To the extent required by the 1998 Act the *Consultant* shall notify the Information Commissioner of any processing which is being carried out and maintain any such notification in full force and effect.

Z23.3 The *Consultant* in its role as Data Processor undertakes to comply with the obligations imposed on a Data Controller under the 7th Data Protection Principle as set out in Part 1 of Schedule 1 of the 1998 Act in respect of all personal data processed pursuant to this Contract.

Z23.4 The *Consultant* shall not, other than in accordance with the 1998 Act, transfer any personal data to any country or territory outside the European Economic Area.

Z23.5 Terms defined within the 1998 Act shall have the same meaning when used in this clause.

**Z24 New Clause – Failure to deliver Collateral Warranty Agreements**

When any Collateral Warranty Agreement is not delivered as required pursuant to Clause X8, one quarter of any amount due to the *Consultant* is retained in assessments of the amount due until the *Consultant* has delivered such Collateral Warranty Agreement to the *Employer*.

**Z25 New Clause – Third Parties**

The *Consultant* performs its obligations under this contract in such a manner and at such times that no act, omission or default of the *Consultant* in relation thereto constitutes, causes or contributes to any breach by the *Employer* of any third party agreement or any other obligation it may owe to a third party relating to the works or the Project, details of which the *Consultant* was made aware of prior to the Contract Date.

**Z26 New Clause - Inconsistencies**

In the case of any inconsistency between these *additional conditions of contract* and the other terms of the contract, the *additional conditions of contract* prevail. In the

event of any inconsistency between the Core Clauses and any other term of this contract (except these *additional conditions of contract*) the Core Clauses prevail.

**Z27 New Clause – Approval**

No inspection, testing, approval or review nor any omission to inspect, test, approve or review on the part of the *Employer* diminishes any duty or liability under this contract of the *Consultant*.

**Z28 New Clause – Set off**

Without derogating from its rights under this contract or under the *law of the contract*, whenever any sum of money is recoverable by the *Employer* against the *Consultant*, such sum is deducted from any sum due or which may become due to the *Consultant*.

**Z29 New Clause – Security**

Z29.1 The *Consultant* acknowledges that the Site forms part of the larger Southern General Hospital site and that the Southern General Hospital is a live and functioning acute hospital. The Consultant takes measures to prevent its employees, sub-consultants and suppliers of the Consultant from entering into or otherwise interfering with the operation of the existing Southern General hospital, except for access to or egress from the Site.

Z29.2 The *Employer* may instruct the *Consultant* to take reasonable measures to prevent unauthorised persons being admitted on the Site.

Z29.3 The *Consultant* does not take photographs of the Site or the works or any part of them unless he has obtained the approval of the *Employer.*

Z29.4 The *Consultant* takes the reasonable measures needed to prevent his and his sub-consultants' people taking, publishing or otherwise circulating such photographs.

**SCHEDULE 1**

**CONSULTANT'S COLLATERAL WARRANTY**

This Agreement is among

(1) **GREATER GLASGOW HEALTH BOARD** of Dalian House, 350 St Vincent Street Glasgow, G3 8YZ ("the Beneficiary" which expression shall include its successors in title or permitted assignees under this Agreement)

(2) **BROOKFIELD MULTIPLEX CONSTRUCTION EUROPE LIMITED** (Registered number 03808946) of 23 Hanover Square, London, W1S 1JB ("Main Contractor" which term shall include any successor including any parties taking over the obligations of Main Contractor. under the Project Agreement)

(3) **TUV SUD LIMITED (trading as "Wallace Whittle")** (Company No. **SC215164**) whose registered office is at Napier Building, Scottish Enterprise Technology Park, East Kilbride, Glasgow G75 0QF ("the Consultant")

WHEREAS:

A The Beneficiary has entered into an agreement with the Main Contractor ("the Building Contract") in connection with the design and construction of the New South Glasgow Hospital, Govan, Glasgow ("the Project").

B The Main Contractor has engaged or is about to engage the Consultant under an appointment ("the Appointment), which expression shall include all documents incorporated therein and any agreed amendment thereto, to carry out mechanical and electrical design services as more particularly described in the Appointment ("the Services"), which expression shall include all services performed or to have been performed by Zisman Bowyer & Partners LLP pursuant to the Professional Services Contract entered into between the Main Contractor and Zisman Bowyer & Partners LLP dated 28 September 2010 in respect of the Project (the "ZBP Appointment") and any additional services performed by the Consultant under the Appointment including in connection with any modifications or variations made thereunder.

C It is a condition precedent of the Building Contract that the Consultant, the Main Contractor and the Beneficiary enter into this agreement ("this Agreement").

NOW IT IS AGREED:

1. The Consultant warrants and undertakes to the Beneficiary that it has complied and will continue to comply with all the terms and obligations under the Appointment on the Consultant's part to be performed and observed and shall complete the Services in accordance with the Appointment.

2. Without prejudice to Clause 1 of this Agreement, the Consultant further warrants and undertakes to the Beneficiary that:

2.1 it has exercised and will continue to exercise all the reasonable skill, care and diligence to be expected from a competent and qualified professional designer experienced in carrying out services similar in nature, size and complexity to the Services including in the selection of goods and materials for the Project; and

2.2 it has not and will not specify for use in relation to the Project any products or materials not in conformity with relevant British or European standards or Codes of Practice or which are at the time of specification generally known within the United Kingdom to an experienced professional designer of works such as the Project to be deleterious to health and safety or to the durability of buildings and/or other structures and/or finishes and/or plant and machinery in the particular circumstances in which they are used;

2.3 it shall be responsible for and liable to the Beneficiary pursuant to this Agreement for all of the duties, obligations and services provided or to have been provided by Zisman Bowyer & Partners LLP pursuant to the ZBP Appointment. The Consultant warrants to the Beneficiary that all services performed by Zisman Bowyer & Partners LLP pursuant to the ZBP Appointment have been carried out in accordance with the

requirements and standards required by the ZBP Appointment; and

2.4 it shall not contend in defence of any claim brought by the Beneficiary against the Consultant under this Agreement in respect of duties, obligations and services provided or to have been provided by Zisman Bowyer & Partners LLP pursuant to the ZBP Appointment that the liability of the Consultant is affected or diminished by reason of the fact that the claim relates to duties, obligations and/or services performed or to have been performed by Zisman Bowyer & Partners LLP under the ZBP Appointment, rather than the Consultant, under this Agreement.

Provided that:

2.3.1 the obligations of the Consultant under this Agreement shall be no greater in extent or quantity than if the Beneficiary had been named as joint employer with Main Contractor under the Appointment; and

2.3.2 the Consultant shall be entitled in any action or proceedings brought by the Beneficiary to rely on any limitation in the Appointment and to raise the equivalent rights in defence of liability (excluding counterclaim and set-off in respect of amounts due to the Consultant under the Appointment) as it would have if the Beneficiary had been named as joint employer with the Main Contractor under the Appointment.

3 The Beneficiary has no authority to issue any direction or instruction to the Consultant in relation to the Appointment unless and until the Beneficiary has given notice under Clauses 4 or 5 below. The Beneficiary or its appointee has no liability to the Consultant in relation to amounts due under the Appointment unless and until the Beneficiary has given notice under Clauses 4 or 5.

4 The Consultant agrees that it will, if so required by notice in writing given by the Beneficiary, subject to Clause 6, below, accept the instructions of the Beneficiary or its appointee, as the case may be, (which for the avoidance of doubt and without limitation may include a third party appointed by the Beneficiary to act as "the Employer" under this Appointment) to the exclusion of the Main Contractor in respect of the Project upon the terms and conditions of

the Appointment. The Main Contractor acknowledges that the Consultant shall be entitled to rely on a notice given to the Consultant by the Beneficiary under this Clause 4 and further acknowledges that such acceptance of the instructions of the Beneficiary or its appointee, as the case may be, to the exclusion of the Main Contractor shall not constitute any breach of the Consultant's obligations to the Main Contractor under the Appointment.

5 The Consultant further agrees that it will not without first giving the Beneficiary not less than 35 days notice in writing exercise any right or purported right it may have to determine its employment tinder the Appointment, treat the same as having been repudiated by the Main Contractor, or discontinue the performance of any duties or obligations thereunder. Further, the Consultant shall within 14 days of giving the said notice, provide statements to the Beneficiary containing the following:

5.1 all amounts properly due and payable to the Consultant under the Appointment on or before the date of issue of the said notice which remain unpaid;

5.2 in the reasonable estimation of the Consultant, the amount of any monetary claim (it any) asserted by the Consultant against the Main Contractor under the Appointment arising out of or in connection with the breach for which the said notice was served; and

5.3 where the Consultant intends to terminate the Appointment due to some default or breach of contract of a non-financial nature:

5.3.1 the provision of the Appointment alleged to have been breached or not fulfilled;

5.3.2 supporting information in reasonable detail to enable the Beneficiary to identify the material facts;

5.3.3 the steps reasonably required to remedy the specified breaches or conditions not fulfilled;

5.3.4 the time within which the specified steps can reasonably be expected to be taken;

5.3.5 (if applicable) the amount of damages claimed and the basis of their calculation; and

5.3.6 (if applicable) the relief to be sought.

The Consultant warrants to the Beneficiary that to the best of the Consultant's knowledge and belief, having made all proper and appropriate enquiries, the statements submitted under this Clause 5 shall be true, complete and accurate statements of the amounts to which the Consultant considers itself entitled. In the event that the Consultant shall delay in giving such notice and information within the said 14 days, the period of 35 days shall be extended to correspond with the period of any such delay. The Consultant's right to determine its employment under the Appointment or to treat the same as having been repudiated or to discontinue performance shall cease if, within the said 35 day period (extended as appropriate) and subject to Clause 8 the Beneficiary shall give notice in writing to the Consultant requiring the Consultant to accept the instructions of the Beneficiary or its appointee to the exclusion of the Main Contractor in respect of the Project upon the terms and conditions of the Appointment.

6 It shall be a condition of any notice given by the Beneficiary under Clauses 4 or 5 above, that the Beneficiary or its appointee, as the case may be, accepts liability for payment of the sums due under the Appointment and detailed in the statement provided under Clause 5 (and makes payment within a period of 28 days of such notice from the Beneficiary), and for subsequent performance of the Main Contractor's obligations. Upon the issue of any notice by the Beneficiary under Clauses 4 or 5, the Appointment shall remain in full force and effect as if no right of determination of its employment under the Appointment, or any right of the Consultant to treat the Appointment as having been repudiated by the Main Contractor had arisen and the Consultant shall be liable to the Beneficiary and/or its appointee, as the case may be, under the Appointment in lieu of its liability to the Main Contractor.

7 The Beneficiary may at any time following the issue of any notice by the Beneficiary under Clauses 4 or 5, serve a further notice that following the expiry of 28 days from the giving of such notice the Beneficiary will have no liability (save in respect of the Beneficiary's antecedent breach) for any sums due or to become due to the Consultant in respect of the period following expiry of the last mentioned 28 day period. The Beneficiary may exercise any

licenses and shall subsist notwithstanding that the Appointment is terminated or the obligations and duties thereunder have been completed. For the avoidance of doubt, the grant of such licence or sub-licences shall not impose any additional liability on the Consultant. The Consultant will not assign or agree to assign the copyright in any of the documents without the prior written consent of the Beneficiary. The Consultant shall on reasonable demand provide to the Beneficiary or its appointee and those authorised by the Beneficiary additional copies of any documents on receipt of reasonable copying costs. The Consultant shall not be liable for any use by the Beneficiary of any of the documents for any purpose other than those authorised by this clause.

10 This Agreement may be assigned on a maximum of two occasions in whole or in part by the Beneficiary to any party to whom the Beneficiary's interest in the Main Contract or any part thereof is assigned or transferred to without the consent of the Main Contractor or the Consultant being required and any such assignation shall be effective upon written notice thereof being given to the Main Contractor and to the Consultant. No other or further assignation of this Agreement, other than permitted by this Clause, by the Beneficiary or any other party shall be permitted. The Consultant shall not be entitled to assign or transfer any rights or obligations hereunder without the consent of the Beneficiary.

11 The Consultant undertakes that it will not raise as a defence to any action by the Beneficiary for alleged breach of this Agreement the fact that the obligations of the Main Contractor to the Beneficiary in respect of the services have been released as a result of the termination of the Building Contract.

12 No failure, approval, act or forbearance on the part of the Beneficiary in respect of any right of the Beneficiary pursuant to this Agreement shall constitute any waiver of any right of the Beneficiary under raising out of this Agreement nor relieve the Consultant of any of its duties or obligations under or arising out of this Agreement.

13 Any notice, consent or demand to be given or made by any party under this Agreement (hereinafter called a "Notice") shall only be validly served if In writing and delivered personally or sent by pre-paid first class recorded delivery post to the following address and marked for the attention of the following person in the case of each party:

| Party: | Address: | Person: |
|---|---|---|
| Beneficiary | Dalian House, 350 St Vincent Street Glasgow, G3 8YZ | Head of Board Administration |
| Main Contractor | 23 Hanover Square, London, W1S 1JB | Ben Keenan - Director |
| Consultant | Napier Building, Scottish Enterprise Technology Park, East Kilbride, Glasgow G75 0QF | Brian Mayberry – Divisional Director |

Any party may by Notice to the other party/parties change its address or the title of the person for whose attention Notices are to be given or made pursuant to this Clause. Any such Notice shall be deemed to have been received:

13.1 if delivered personally, at the time of delivery;

13.2 in the case of pre-paid first class recorded delivery post, on the first Business Day after the date of posting.

If any Notice Is delivered after 5 p.m. on a Business Day, or at any time during a day which is not a Business Day, that Notice shall be deemed to have been received at 9 a.m., on the next Business Day. For the purposes of this Clause, "Business Day" means any day which is not a Saturday, a Sunday or a public holiday in Scotland. In proving service it shall be sufficient to prove that the envelope containing such Notice was properly addressed to the relevant party and either delivered personally to that address or delivered into the custody of the postal authorities as a pre-paid first class recorded delivery letter. For the avoidance of doubt, Notices shall not be validly served if sent by email or fax.

14 No action or proceedings for any breach of this Agreement shall be commenced against the Consultant after the expiry of twelve years from Completion or earlier termination of the

Consultant's employment under the Appointment.

15 The definitions of words and phrases used in this Agreement shall be those set out in the Appointment except where expressly defined in this Agreement.

16 This Agreement shall be governed by and construed in accordance with Scots Law and the parties hereto submit to the exclusive jurisdiction of the Scottish Courts.

IN WITNESS WHEREOF these presents consisting of this and the preceding 8 pages have been executed as follows:

**SUBSCRIBED** for and on behalf of the said **GREATER GLASGOW HEALTH BOARD** at

on the [ ] day of [ ] 2013:

..... AUTHORISED SIGNATORY

..... FULL NAME

..... AUTHORISED SIGNATORY

..... FULL NAME

**SUBSCRIBED** for and on behalf of the said **BROOKFIELD MULTIPLEX CONSTRUCTION EUROPE LIMITED** at

on the [ ] day of [ ] 2013 by:

..... DIRECTOR

..... FULL NAME

before this witness

..... WITNESS

..... FULL NAME

..... ADDRESS

**SUBSCRIBED** for and on behalf of the said **TUV SUD LIMITED** at

on the [ ] day of [ ] 2013 by:

..... DIRECTOR

..... FULL NAME

before this witness

..... WITNESS

..... FULL NAME

..... ADDRESS

## SCHEDULE 2

## DEFINITION OF SCOPE AND *SERVICES*

## SCHEDULE 2, PART 1

## DEFINITION OF SCOPE AND *SERVICES*

Contract Data Part 1

Appendix 2

Schedule 1

# SCOPE OF SERVICES

## NEW SOUTH GLASGOW HOSPITALS (NSGH)

## (MEP) Services Engineer

**TUV SUD LIMITED (trading as "Wallace Whittle")**

March 2013



A49342285

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1. Outline
2. Concept Design and Design Development
3. Construction Documentation and Construction Phase
4. Documentation Deliverables
5. Commissioning, Completion and Post Completion

# 1. OUTLINE

## Introduction

1.1 The New South Glasgow Hospitals (NSGH) Project consists of new adult acute and children's hospitals, new laboratories, energy centre and associated support facilities and infrastructure for the NHS Greater Glasgow and Clyde (the Client/Board).

The Project is located on the existing hospital site at the Southern General in Govan, Glasgow which is required to remain operational during the execution of the Works. The Project is to provide in the order of 175,000m2 of internal area comprising approximately 1,400 beds in addition to the development of the external spaces.

This Scope of Services excludes the new laboratory block (which comprises of the laboratories building and the FM facility to its rear), unless highlighted as otherwise.

1.2 The Services shall be the provision of professional labour, supplies, systems and other resources as necessary to design, specify, document, inspect, report and certify the building services elements of the Works for the Project. The Services outlined herein are the basic scope of works specifically applicable for this Project and are completely allowed for in the initial total fee.

1.3 Key Performance Indicators (KPIs) – The quantitive KPIs for Stage 2 Works (leading to the Full Business Case) are defined in the Contract Data Part 1 Appendix 3 in addition to the Design Programme contained in Contract data Part 1 Appendix 4 and the Cost Plan referenced in the Building Contract. This Scope of Services represents the qualititive KPIs to be achieved by the Consultant.

1.4 The Consultant shall adequately and timely coordination, cooperation and liaison with other consultants, subcontractors, suppliers, Authorities and other relevant parties/stakeholders to clearly define the relevant Project works, which minimises the Project costs, time and risk.

1.5 The Consultant's coordinated design and documentation shall be fully integrated with all relevant designs and advice from other consultants, the subcontractors (where arranged by the Employer) and Statutory Authorities.

1.6 The Services are to be provided in the following Work Stages:

- Concept Design and Design Development
- Construction Documentation and Construction Phase
- Commissioning, Completion and Post Completion

Note: Notwithstanding the entry point to an individual scheme or design task, the Consultant is required to review all the previous information for the scheme made available by the Employer in addition to those sourced by the Consultant and undertake the Services irrespective of where the Services is listed in order to enable the Employer to complete the Works.

## Performance Standards

1.7 The Consultant shall submit its Quality Plan for review by the Employer. The Consultant shall amend its Quality Plan as reasonably required by the Employer. The Quality Plan shall explain

how the design and documentation work are to be planned to the standard specified in ISO 9001:2008 particularly the Section 7.3 and shall include:

- The design and documentation stages
- The review, verification and validation that are appropriate to each design and documentation stages
- The responsibilities and authority for design and documentation

The Consultant shall review and comment on the Quality Plans (especially the Quality Inspection and Test Plans) from the subcontractors and suppliers as reasonably required by the Employer.

1.8 The Documentation (or Documents) to be provided by the Consultant shall be all that is required in order that the Project can be completed in the most time and cost efficient manner and shall include but not be limited to:

- Drawings (including 3D as required)
- Schedules
- Specifications
- Working models, illustrations and other presentation materials
- Calculations and sketches
- Reports (including Progress Status)
- Certifications (including Compliance)
- Meeting minutes, file notes etc.

Such documentation to be provided in a form and at such frequency as is required by the Employer

1.9 Conform with the Project specific documentation protocols as updated from time to time by the Employer (or its designate) including the CAD parameters and electronic documentation transfer facilities such as the FTP websites or as requested by the Employer.

1.10 In respect of all Work Stages, the Consultant shall:

a) Perform the Services in a diligent manner with the standard of skill and care and undertake any work falling within the level of Services to be reasonably expected of a Consultant appointed for a Project of a similar size, scope and complexity.

b) Ensure that it has the necessary skill and resources to provide the Services and acknowledges that in reliance on this obligation, the Employer has agreed to engage the Consultant to perform the Services.

c) Take all necessary steps on an ongoing basis so that all persons engaged for the Services are properly qualified, competent and experienced for the size, scope and complexity of the Project.

d) Inform itself of the Project requirements by regularly consulting with other relevant parties and the Employer. Review all relevant documents and immediately inform the Employer of any apparent errors or ambiguities contained in such documents and make recommendations for the correction of such ambiguities.

e) Keep secure the Employer materials and documents and return them at the end of this Appointment.

f) Strictly remain within the scope of the authority granted by the Employer and not act beyond its authority or hold out that it has authority beyond this Appointment.

g) Seek the Employer's prior consent to any proposed sub-letting or employing outside agency and/or self employed staff.

h) Comply with all policies relating to the use of the Employer office premises and facilities when using them.

i) Permit the Employer to carry out agreed and scheduled visits to the Consultant's business premises in connection with the Services.

j) Keep proper commercial records and accounts for any claims it makes on the Employer including if applicable, for reimbursement of expenses and remuneration of fees based on time charged billing and permit the Employer auditors to inspect such records and accounts.

k) Nominate a person or persons who have authority to receive notices and take instruction under this Appointment and not change such nominees without the consent of the Employer.

l) Liaise and cooperate with the other consultants employed (and likely to be employed) by the Employer for the purpose fulfilling its obligation that the Project shall be designed in compliance with the Project requirements. Including attendance at such meetings necessary or requested by the Employer or other Consultants.

m) Coordinate and manage the sequence of design and documentation production.

n) Provide Technical Advisory role to the Employer for design works provided by others associated with the Project.

**Performance Obligations**

1.11 The Consultant shall:

a) Carry out the Services using proven best up-to-date practice and to appropriate standards (having regard to the nature of the Project) and consistent with the intended use of the Project.

b) Comply with the requirements of Planning consent for the Project and with all Statutory Authorities requirements and regulations and with all other legislation applicable to the Services and/or to the Works.

c) Comply with all specific standards contained in this Appointment. If no such standards are stated in this Appointment and if they cannot be reasonably inferred from the Project Documents, the standards shall be those required by relevant British Standards and/or UK Building Regulations and/or any relevant applicable legislation and/or relevant local Statutory Authority requirements.

d) Comply with the Employer's Requirements and the Contractor's Proposals.

e) In the event of any discrepancies, ambiguities and inconsistencies within and/or between the Project documents, such discrepancies shall be decided on by the Employer and the Consultant shall at no cost to the Employer and that the Services and any Documentation prepared by the Consultant in relation thereto shall comply with and meet the requirements as decided by the Employer.

f) Progressively submit the Consultant's Documentation and any other documentation included within the ambit of the Services to the Employer by the dates specified in the Programme or if no dates are specified, in accordance with the progress of the Works and the Employer's reasonable requirements.

g) In respect to all drawings produced as part of the Documentation are computer generated and capable of being transferred into 'tiff', 'pdf, and 'dwg' formats or other format approved by the Employer. The Consultant shall send and receive written correspondence, drawings, schedules and specifications and any other relevant documentation by a controlled web based document management system (Aconex) in accordance with the rules and procedures (updated from time to time) as provided by the Employer.

h) In reference to the specifications as referred to in the definition of Documentation are in A4, double sided and comprising of two bound copies and one copy on a portable memory storage device. The Consultant shall also upload one copy onto a web based document control system (Aconex). The specifications shall be in full compliance with the Project requirements and shall be complete and coordinated with all other consultants in a format agreed by the Employer. The specifications shall be in trade sections and capable and suitable for the Employer to invite tenders for the various packages of work and for the subsequent construction and completion of the Project. The specifications shall also incorporate, but not be limited to, materials, finishes workmanship and quality standards and other items as may be reasonably required by the Employer.

i) Include all those duties that are set out in this Schedule together with those duties that can be reasonably expected from the Consultant, preparing design and documentation for works of a similar size, scope, nature, value and complexity of the Project.

j) Specify the materials and its method of use, fixing or working that do not infringe any patent, registered design, copyright or other protection rights.

k) Review and comment on all relevant temporary works as reasonably requested by the Employer in completing the Project.

l) Send, receive, review and comment all information in relation to O&M manuals which may be by a controlled web based management system.

m) Provide advice and documents as required to assist the Employer in the maintenance of the building to ensure whole-life costs are minimised.

n) Provide information as requested by the Building Owner, Funders, Facilities Manager, Operators and the like.

o) Coordinate, incorporate and document where relevant to the building services, all fire protection and acoustic treatment measures in consultation with the Fire Engineer and Acoustic Engineer respectively.

p) Proactively endeavours to maximise the BREEAM rating of the Project and develop energy efficient strategies.

q) Evaluate, design, specify and document Secure by Design, acoustical and fire protection measures related to their Services and where applicable to satisfy building insurance requirements. Should there be exceptional insurance requirements, such information to be made available to the Consultant in a timely manner during the design period.

r) In reference to CDM 2007 Regulations and in particular Regulation 11 that requires the Designers to eliminate hazards which may give rise to risks to those undertaking construction work or subsequently using the building, and to reduce any hazards which cannot be eliminated. The Consultant shall produce information to the Employer, other Designers and Contractors in this regard and where possible this information shall be included in all Documentation especially the drawings issued by the Consultant.

s) Submit evidence of competence to comply with the CDM 2007 Regulations as per Regulation 4 and as set out in Appendix 4 of the Regulations.

t) In providing the Services, the Consultant shall aim to minimise any adverse impacts that construction has on the environment. This shall be through the design process, materials selection, construction techniques and operational methods. Specific information on the

Employer's policy which the Consultant is required to comply is set out in the Environmental Policy Statement (as set out below).

The Consultant shall work towards to reduce waste and use materials efficiently and proactively assist in reaching the Employer's objective as outlined in the Waste Policy Statement (as set out below). The Consultant shall support this Policy by:

- Assist in developing the Site Waste Management Plan from an early design stage, including waste forecasts and data on reduction targets and actions.
- Assist in implementing the Site Waste Management Plans throughout the design and construction period that comply with the applicable Regulatory requirements and include in such Plans project-specific targets for waste recovery and reused and recycled content and for waste reduction;
- Identifying methods to reduce waste and waste to landfill and increase reused and recycled content, throughout the duration of providing the Services and report to the Employer. In this regard, the Consultant shall use site waste management software nominated by the Employer which shall be WRAP's Designing out Waste Tools or Net Waste Tool (accessible at www.wrap.org.uk/nwtool) unless notified otherwise;
- Work with the Project team to ensure that design actions to reduce construction waste and increase reused / recycled content are implemented;
- Agree with the Employer which level of waste reduction and reuse to pursue.

Note: The Consultant should refer to the WRAP Designing out Waste guidance to identify, prioritise and implement ways of meeting Project targets for waste.

# BROOKFIELD CONSTRUCTION (UK) LTD

## ENVIRONMENTAL POLICY STATEMENT

This policy statement is valid from May 2010 to 31st December 2010.

### Introduction

Brookfield Construction (UK) Ltd is focused on the construction of significant landmark projects. Our overall mission is to build high quality construction projects using materials and processes that respect the environment.

We firmly believe that the delivery of high quality construction projects requires active consideration of the environmental and social impacts associated with construction. High standards of environmental performance in these areas can also deliver benefits to the environment, society and economy.

### Environmental Policy

At Brookfield Construction (UK) Ltd, our aim is to:

- Work to prevent pollution and minimise the overall impact of our activities on the environment, from the sourcing of our materials to the recycling and disposal of wastes.
- Make more efficient use of energy and natural resources and minimise emissions and waste, focusing on those activities which have the most significant impacts.
- Comply with applicable legal requirements and other requirements to which Brookfield subscribes which relate to its environmental aspects. Such requirements include WRAP's (Waste & Resources Action Programme) initiative for "Halving construction waste to landfill", BREEAM, Considerate Constructors and Considerate Contractors in London.
- Apply environmental management practices across the business which protect and enhance our reputation and meet the expectations of our stakeholders.
- Pursue continual improvement in our environmental performance.

In order to deliver this aim we will:

- Implement a formal Environment Management System.
- Provide information and training to enable environmental impacts and opportunities to be identified, prioritised and managed effectively.
- Promote joint consultation with employees, contractors, the Environment Agency, Environmental Health Officers and other relevant organisations.
- Work proactively with the local communities in which we operate.
- Set environmental objectives and targets relevant to our significant environmental aspects and monitor our progress against these; year on year.

### Organisation and General Responsibilities

The UK Health and Safety Manager and UK Environmental Advisor are responsible for environmental issues and report to the Brookfield Europe Safety Director. Environment, Health and Safety Managers are allocated to projects and report to the Project Director whilst retaining a functional reporting link to the UK Health and Safety Manager.

Detailed descriptions of our organisation and responsibilities are available in the Environmental Management System which is integrated with the Health and Safety Management System. This integrated system forms a part of a larger suite of documents which also includes the Quality Management System. This larger system is referred to as "CoSHEQ". This document is available on the Brookfield Europe Intranet, which is accessible to all employees.

**Brookfield** Environmental Policy Statement UK/EHS/F/001a rev 07

**Arrangements**

***Management Systems***
**The Environmental Management System sets out through Procedures, Forms, Risk Registers, Management Plan Templates and Best Practice Standards (the "Supervisors Manual") the way in which environmental issues are managed on our projects.**

***Sustainability Strategy***
**Our appointed designers are required to meet the guidance given in the Brookfield Europe Sustainability Strategy.**

***Third Party Certification***
**The company is third party certified to ISO 14001:2004 Environmental Management Systems.**

***Code of Conduct***
**The behaviour expected from Brookfield employees and our subcontractors is set out in our Code of Conduct. Copies of this are displayed on notice boards at Head Office and at each project.**

**This document is available to the public on the Brookfield Europe website and is communicated to all employees.**

**12 month objectives January 2010 to December 2010 for Environment and Sustainability**

- **As signatories to WRAP's initiative for halving construction waste to landfill by 2012, taking 2009 as the baseline year, we will take measures to divert construction waste from landfill sites.**
  **Target – For construction, demolition and excavation waste corporate targets see our Waste Policy Statement**

- **Promoting the ethical and environmentally sustainable management of the world's forests we will endeavour as far as practicable to only use FSC-certified timber products on all our projects.**
  **Target – Publish percentage of FSC-certified timber employed on our projects**

- **In order to reduce our environmental impact we will reduce the amount of our office waste going to landfill. A new office waste management strategy will be introduced and implemented in 2010 that will involve segregating recyclable waste at source and phasing out individual desk b s.**
  **Targ – 90% of all office waste to be diverted from landfill and relevant data to be published**

[redacted]

**Ashley Muldoon**
**Managing Director**
**Brookfield Construction (UK) Ltd**
**May 2010**

# BROOKFIELD CONSTRUCTION (UK) LTD

## WASTE POLICY STATEMENT

**Scope**
This Policy Statement applies to Brookfield Construction (UK) Ltd for 2010 and must be read in conjunction with the Brookfield Construction Environmental Policy Statement.

**Introduction**
Brookfield Construction (UK) Ltd is focused on the development, construction, management and ownership of significant landmark projects. In all of its development work, Brookfield aims to minimise any adverse impacts that construction has on the environment. We seek this through the design process, materials selection, construction techniques, and operational methods.

From 2010 all organisations appointed to work on our behalf are required to work in accordance with these principles.

**Achievements**
We have set waste targets since 2007. Each year the target for recycling has been increased as follows:

2007 to recycle 70% waste concrete, bricks and ceramics over the course of a project and 50% of general waste over the course of a project.

2008 and 2009 to recycle 80% of construction waste (combined Construction, Refurbishment, Demolition and Excavation).

The company has succeeded in meeting these targets.

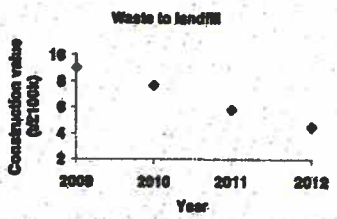
**The WRAP Initiative**
Committed to continual improvement in 2009 Brookfield Construction (UK) Ltd became a signatory to the "Halve waste to landfill by 2012" initiative for the construction industry of the Waste and Resources Action Programme, (WRAP) a government-backed body set up to facilitate waste minimisation in the UK. There are two strands to this commitment:

1 To generally reduce the amount of waste generated from a construction project by exploring possibilities in design and procurement.

2 Following on from this, to increase the percentage of residual waste that is recycled.

WRAP proposes that waste data is measured against each £100k construction value[1]. This will then capture both reductions that are obtained from design and procurements in addition to the residual waste figures.

**The Baseline Year: 2009**
To meet the WRAP Commitment, Brookfield Construction has selected 2009 as its baseline year. The WRAP typical figure for waste sent to landfill was 10 tonnes per £100k and the Brookfield Construction target waste figure to be sent to landfill was 9 tonnes per £100k.




**Our target for 2012**
Brookfield Construction will set a 2012 target of 50% of the 2009 target. This is 4.5 tonnes per £100k.

The targets for 2010 and 2011 will be based on a linear progression from 2009 through to 2012.

[1] Construction value is the price in the accepted tender or, if there is no tender, the cost of labour, plant and materials, overheads and profit.

**Brookfield** **Waste Policy Statement** **UK/EHS/F/001c rev 01**

We will work to adopt and implement standards for good practice in reducing waste, recycling and reusing more. This will support national policy goals e.g. halving waste to landfill by 2012, adopted in England by the Government's Strategy for Sustainable Construction and Zero Waste in Scotland, and will be achieved by reducing waste, recovering more materials and using more recovered material in new construction.

**Policy**
Any contractual and client requirements will be taken into account to form the project-specific requirements, but as a minimum on projects commencing in 2010 our design and construction project teams will be required to:

- forecast waste quantities and waste recovery and set targets for waste reduction from an early design stage (for instance by using WRAP's Designing out Waste Tools and Net Waste Tool[2] or the Building Research Establishment's SMARTWaste benchmark calculator[3]).
- before starting on site, the project team shall submit a copy of the Site Waste Management Plan identifying the actions to be taken to reduce waste and increase recovery, as well as the corresponding roles and responsibilities, and quantifying the resulting changes.
- implement Site Waste Management Plans throughout the design and construction period that comply with regulatory requirements and include in such Plans project-specific targets for waste recovery and for waste reduction.
- where there is sufficient space the project teams should plan for and implement waste segregation on site. Otherwise the volume of waste that is recovered will be maximised by using third party contractors.
- measure and report progress against the corporate targets for the quantity of waste produced and the quantity of waste sent to landfill (in tonnes per £100k construction value). The information will be annually reported on the WRAP Waste to Landfill Reporting Portal[4] and guidance.
- on completion of the Works, the project team shall submit a copy of the completed Site Waste Management Plan, reporting the forecast and actual performance for waste quantities, disposal routes, and reused and recycled content used in construction.

**Target for 2010**
- recover at least 83% of construction materials demolition, strip-out and excavation materials.

[redacted]

Ashley Muldoon
Managing Director
Brookfield Construction (UK) Ltd
May 2010

*This policy statement is valid from May 2010 to 31st December 2010.*

[2] The Designing out Waste Tools for Buildings and for Civil Engineering and the Net Waste Tool are freely accessible at www.wrap.org.uk/nwtool

[3] The SMARTWaste Plan is freely accessible at http://www.smartwaste.co.uk/swmp

[4] Accessible at www.wrap.org.uk/reportingportal

**Meetings**

1.12 The Consultant shall:

a) Attend and issue records of the meetings and workshops for those in relation to the design, construction, value engineering, risk management and co-ordination of the building services as required by the Employer.

b) Attendance may be required for factory visits and design and or construction meetings at off site locations.

c) Attend and issue records of the design meetings with other consultants as necessary to integrate, coordinate and clarify the Works during the Project as reasonably required by the Employer.

d) Attend and issue records of the meetings with Statutory Authorities as reasonably required by the Employer.

e) Attend and issue records of the meetings with the Employer as reasonably required on all relevant Project issues.

f) Provide draft minutes for all of the above meetings, workshops and the like as required for review by the Employer or distribute as requested by the Employer.

**Reports**

1.13 The Consultant shall:

a) Provide periodic status reports (fortnightly and/or monthly to be agreed with the Employer) in a form reasonably required by the Employer which shall include as a minimum, a summary documenting the progress of the Services against the Design Programme and Documentation Schedules. Highlight areas of difficulty being experienced with progress of the Services, design co-ordination issues, Statutory Authority approvals status and the like including the proposed mitigating measures.

b) Undertake site inspection as reasonably required or as requested by the Employer and provide inspection reports including tracker schedules to monitor close-out of issues identified which will require revisiting the site.

c) Prepare report or documentation required (on a reasonable and realistic basis) for the assessment of design alternatives and in contemplation of envisaged change to the Project requirements.

d) Not used.

e) Progressively compile and provide design risk registers.

f) Provide compliance reports confirming compliance with the Project documents such as the Employer's Requirements and other compliance reports as requested by the Employer.

g) Provide non compliance reports in relation to the construction works when requested by the Employer in a workable electronic format including photographs.

h) Provide draft reports for all of the above for review by the Employer prior to the formal issue.

i) Not used.

j) Provide reports on energy performance during the 24 months Defect Liability Period based on the information provided by the Employer.



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**Certification**

1.14 On a periodic basis (once a month as a minimum) or when requested by the Employer, provide a progress certification that the design and documentation work done to that period is in accordance with and complies with the Project requirements such as the Employer's Requirements, the Cost Plan, the Programme, Contractor's Proposals and with all relevant Statutory Authority requirements.

**Authorities**

1.15 The Consultant shall:

a) Liaise with the Employer, other consultants and all relevant Statutory Authorities for the purpose of confirming that the design complies with all Planning consent conditions.

b) Liaise with the Employer, other consultants, and others involved in the Works, including without limitation the CDM Coordinator, subcontractors and all relevant Statutory Authorities for the purpose of confirming that the design complies with all relevant Statutory Authority requirements and for obtaining all necessary permits and approvals. Incorporate all relevant Statutory Authority requirements into the design and documentation.

c) Advise on the need to obtain further Planning permissions, Building Regulation approvals and any other Statutory approvals and prepare all necessary associated applications for consideration by the Employer.

d) Liaise closely with all relevant utility companies, service providers and others involved in the identification, relocation and modification of utility services affected by the Project.

e) Prepare coordinated Documentation in conjunction with other consultants for submission to the relevant Authorities. All such Documentation is to be discussed with the Employer prior to submission to the Statutory Authority.

f) Revise and re-submit submissions to the Planning Authority as required where the development of the design has varied from the original Planning consented scheme. Amend Documentation in conjunction with other consultants for resubmission to other relevant Statutory Authorities arising from any directives, requirements or comments from the Employer or Statutory Authorities including those on the previous submissions.

g) Review all relevant Statutory Authority approvals and conditions. Contribute to a schedule/checklist for review by the Employer to monitor timely discharge of all conditions and actions to be carried out by the Consultant in conjunction with other consultants and to be incorporated into the Project.

h) Liaise with all relevant Authorities for expeditious approval and attend all meetings as required by the Employer. Update and amend documentation in conjunction with others as required, to obtain all regulation modifications, approvals and permits.

i) Highlight opportunities to the Employer in respect to alternative means of achieving the Statutory compliance for the benefit of the Project including waivers, relaxations and dispensations. Where requested by the Employer, negotiate the same with the Authorities.

j) Revise documentation as necessary to reflect the outcome of the negotiations with the Statutory Authorities.

k) Assist the Employer with any relevant tests and inspections required by the Statutory Authorities and in obtaining all permits, approvals and certificates required for the lawful use of the Project.

l) Complete all relevant certificates associated with the Services as and when required by the Employer and liaise with Statutory Authorities for the purpose of assisting in obtaining staged building permits and other approvals.

m) Prepare design certification necessary for the completion of the Project and/or the granting of relevant Statutory Authority for Completion, occupancy and title.

**Specific Designs**

1.16 The Services to be provided by the Consultant shall include the design and documentation for the following elements of the Works but not necessarily be limited to:

**Mechanical and Public Health Systems**

The Consultant's design shall cover all works associated with the mechanical and public health systems to comply with the fire strategy, acoustic requirements and all systems necessary as set out below for a fully operational building.

- Chilled water system including high efficient chillers, pumps, heat exchangers etc.
- MTHW & LTHW systems including plant and equipment, valves and pipe systems and interfaces with the Stage 1 Laboratory / FM buildings.
- CHP system with all plant and equipment including interface connections with the Stage 1 Laboratory & FM building.
- Condensate drainage systems including all condensate pumps, pipework and traps.
- Air conditioning systems including all air handling units, chilled beams, fan coil units, distributed ducted system, diffusers, return air plenums, fresh air intake and exhaust etc.
- Under floor heating systems including all pipework and valves.
- Thermal insulation applied to the engineering services systems.
- Heat recovery systems.
- Consideration of borehole water, ground source energy.
- Renewable energy systems integrated with electrical systems including wind turbines, photovoltaic systems and the like.
- Generator cooling.
- Lift pressure relief and pressurisation systems as required.
- Staircase pressurisation systems as required.
- Lift motor room cooling systems.
- Electrical and UPS ventilation and cooling systems.
- Packaged split air conditioning systems including all pipework, electrical systems between fan coil and condenser units.
- Communications rooms and ICT Node rooms cooling systems and ventilation.
- The main communications and secondary communication rooms containing network core switches and main servers to be provided with positive pressurised filtered fresh air systems.
- High specification air conditioning systems.

- Smoke extract system including all fire rated ductwork, smoke dampers, and smoke damper control and power interface with the fire alarm system.
- Misc ventilation systems such as toilets, storage areas, plant rooms, generator ventilation, gas meter room etc.
- Local exhaust ventilation systems.
- Basement mechanical ventilation systems including all plant, equipment, ductwork, dampers.
- Natural ventilation systems where practical.
- Water filtration systems.
- Not used.
- Hot water calorifiers, pumps, valves, piped distribution systems and dead leg (legionnaires) protection.
- Cold water storage tanks, pumps, valves and piped distribution systems including dead leg (legionnaires) protection.
- Mechanical water systems, including all pipework and valves.
- Softened water treatment systems where required.
- Rainwater and roof drainage systems including all pipework, roof outlets.
- Power, water and drainage to Green roof water feed and any fertiliser systems as required by the Green roof specialist.
- Landscape water supply and drain systems (if necessary) including automatic irrigation system.
- Internal soil vent, waste drainage systems including acid resistant systems connected to below ground drainage connections points provided.
- Basement level drainage systems including all sump pumps, pipework and control system.
- Assist in designing the integrated plumbing solutions systems, if any.
- Above ground specialist drainage systems.
- Floor wastes in suspended floors for all wet areas, design coordinated with plant locations etc.
- Automatic flushing systems, pipework, valves and sensors.
- Gas suppression system serving communication and ICT nodal rooms as required.
- Helipad intrinsically safe electrical and fire protection systems.
- Any special medical fixtures and fittings (eg. Pendants).
- Bulk fuel oil storage system including all pipework, valves, filling points and control system.
- Gas distribution systems.
- Compressed air systems.
- Distributed medical gas systems.
- Steam and condensate systems as required.
- Cleaning, flushing and treatment systems.
- Acoustic and vibration treatments and systems.
- Utilities gas, water including interface with Stage 1 Laboratory requirements.



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### Electrical Systems

The Consultant's design shall cover all works associated with the electricity supply and reticulation including incoming supply, all ducting and supply from the Supply Authority's network. The incoming supplies from the Supply Authority's network are to be reviewed for the substation requirements and mains, power factor correction and power quality. The electrical reticulation system will be provided with an electrical management control system.

- HV electrical systems from primary substation HV switchboard including protection requirements and coordination with utility provider and local authority requirements.
- HV consumer network electrical systems including all protection, electrical distribution system, cables/busbar, switchgear, distribution boards etc.
- LV electrical systems including all busbar/cables, distribution boards etc.
- Electrical HV / LV management control systems.
- Earthing & bonding systems.
- Lightning protection system.
- Power factor and power quality requirements.
- HV Generators and LV to HV step up transformers for temporary LV generator interface with electrical system.
- Lighting control system using presence and absence lighting control.
- Emergency lighting.
- Aircraft warning lights system.
- External lighting and secondary external lighting system.
- Electrical and control systems containment.
- BMU (Cradle) power and water supplies and communications systems (terminated at BMU landing points).
- Services to the automatic barriers where relevant.
- Utilities including electrical power including interface with Stage 1 Laboratory / FM building requirements and communications conduit systems.

### Other

The Consultant shall contribute to the design coordination and documentation including all interface requirements and Technical Advice for the following, but not necessarily be limited to:

- Group 1, 2 and interface where applicable with Group 3 Equipments.
- Lighting layout design and performance including review of any design provided by specialists or other parties as required by the Employer.
- Development of reflective ceiling plans.
- Pneumatic tube system.
- Medical gas.
- Renal water systems including de-ionised water systems.
- Coordination with Radiation protection specialist requirements.



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- X-ray systems interface including all associated systems such as warning lights.
- Catering equipment and layout.
- Robotics.
- Food waste processing system.
- Vertical transportation systems.
- Sprinkler protection system, including all plant and equipment, pipework and valves.
- Gas suppression systems electrical rooms including; all plant and equipment, gas bottles, and control systems.
- Wet / Dry riser systems including all plant and equipment, pipework and valves.
- Sprinkler and wet riser water storage tanks including water level control.
- Fire protection electrical installation from control panels to all plant and equipment.
- Main and secondary fire control panels.
- Fireman's general smoke ventilation override system and panel.
- Cause and effect matrix developed by relevant subcontractor(s) which is to outline the interfaces with the relevant systems such as the mechanical control panels, control of smoke dampers, generator control panel, security Access Control remote panels, sprinkler system, building management control system, electrical management control system, disabled alarm system, lift and escalator control systems etc.
- Fire Hydrants.
- Fire alarms and detection system
- Integrated extra low voltage systems.
- Information communication technology and distribution systems.
- Access control and Intruder detection system.
- External and Internal CCTV.
- Building Management Control system Interfaces with the building management control system, fire alarm system and the like
- Mechanical electrical systems including motor control panels etc.
- Public Address
- Telecommunication systems.
- Optic fibre backbone network system.
- IT / Data systems network and systems.
- Telephone distribution system including the fire telephone system.
- Not used.
- Equipment alarms systems.
- Nurse call system.
- Disabled alarm system interfaced with the fire alarm network.
- Induction loops and hand held portable system.
- Television system.

- Central dictation systems.
- Paging and personal attack system.
- Tagging system.
- Telemedicine system.
- Leak detection system.
- Energy metering management system.
- Cold rooms including all plant and equipment

**Compliance and Compatibility**

The Consultant's design and documentation shall ensure compliance with and/or encompass the following, but not necessarily be limited to:

- Employer's Requirements.
- Compliance with Health Service Notes and Memorandums such as the SHTM's, HTM's, HBN's, SHBN's, SHGN's SHPN's and HGN's.
- Codes and Standards.
- Local authority requirements.
- CIBSE guides.
- IEE regulations.
- Utility provider requirements.
- Compliance with Planning and Building Regulations.
- HVCA TR17.
- Health & Safety.
- Aircraft authority and specialist.
- Specialist medical.
- NHS/ Board objectives.
- Quality Assurance and Quality Control.
- Environmental management plan including WRAP waste management organisation system.
- Fire strategy.
- Cold water system to comply with Hai-Scribe infection control requirements.
- Acoustic and vibration requirements.
- Radio Frequency and Electro Magnetic Frequency requirements.
- Not used.
- Carbon foot print compliance.
- BREEAM Excellence rating compliance.
- Input to life cycle analysis and selection.
- Interface with Laboratory / FM buildings.

- Plant, equipment, materials and ICT, including IELVS systems to be compatible with Stage 1 Laboratory systems.
- MEP building services systems configured to promote flexibility to enable future maintenance, re-modelling, re-planning and replacement without disruption to adjacent areas.

# 2. Concept Design and Design Development

## Overview

2.1 It is a fundamental requirement that all Documentation produced during the Concept Design and Design Development stages are in full compliance with the parameters of the Project requirements such as the Planning consents, the Employer's Requirements, the Cost Plan and the Programmes as these may be amended from time to time.

2.2 The Design Development stage involves the development of the Concept Design and enables the tendering and construction of the Project to be executed, particularly for the enabling works and the early release packages. Consequently the particulars highlighted below require the Consultant to undertake iterative Services and revisit the work carried out under Concept Design which must be amended or otherwise.

## Tasks

The Consultant shall:

2.3 Supplement Project details provided by the Employer by sourcing relevant information about the Site. Based on these documents make appraisals and establish constraints for the Works.

2.4 Seek clarification or direction on Project requirements as necessary.

2.5 Visit site in addition to as requested by the Employer.

2.6 Contribute to site appraisals and surveys and (re)evaluate Project requirements including the preparation of options/recommendations for consideration by the Employer highlighting advantages and disadvantages (financial and technical) and where relevant any long lead-in procurement building elements.

2.7 Evaluate any amendments to the Project requirements and advise the Employer on options for development of the design having regard to the effect on the Employer's Requirements, the Cost Plan, the Programme and any other relevant Statutory Authority requirements.

2.8 As when requested by the Employer, provide a Documentation Schedule for review by the Employer. This Documentation Schedule shall support the Full Business Case timeline, the Employer's tender letting schedule and construction programme and shall set out the Documentation to be produced by the Consultant including the sequence and the dates for the production of same.

2.9 Update or amend the Documentation Schedule as required by the Employer. Complete/populate the master documentation matrix if utilised by the Employer. This matrix indicates to which tender package each of the Consultant's documents relates to.

2.10 Provide assistance and support the Architect, Structural Engineer and other consultants in the preparation, design, specification and installation details of their respective discipline to ensure a fully coordinated design is produced for the Project.

2.11 Prepare the Documentation incorporating the architectural, structural and other consultants' requirements and/or information into the building services design having regards at all times to the Planning constraints, the Employer's Requirements, the Cost Plan and the construction



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programme. In conjunction with the other consultants, establish all relevant Statutory Authority requirements and incorporate into the design.

2.12 Prepare design studies and make presentations to the Employer. The Consultant shall take account of any comments from the Employer and amend the Documentation as necessary. The Consultant shall also consult with local or other Statutory Authorities and with other interest groups as reasonably required by the Employer.

2.13 In accordance with the agreed Documentation Schedule, prepare and submit to the Employer in a timely manner, the adequately coordinated and progressed design and as the Lead Consultant for the specific design responsibilities, coordinate tasks and submissions from other consultants. Note: all CAD drawings are to be at an appropriate scale as reasonably required by the Employer.

2.14 In conjunction with the other consultants, develop the design incorporating the design solutions and where required, provide documentation for submissions to the relevant Statutory Authorities including for the discharge of Planning consent conditions and/or to seek conditions of approval for Building Regulations compliance.

2.15 Liaise with other consultants and coordinate the provision of information and data as reasonably required by the Cost consultant and the Employer for use in connection with the Cost Plan.

2.16 Prepare and provide Documentation (on a reasonable and realistic basis) in respect of alternative designs and/or construction solutions for the purpose of value engineering and reviewing costs. Repeat the process as reasonably required by the Employer in terms of the construction costs remaining within the Cost Plan.

2.17 Assess and provide comment on alternatives offered by the Employer, its subcontractors and suppliers. Provide design details and information as required by the Cost consultant in pricing options / alternatives. This may be subject to additional fee to be discussed and agreed between the Consultant and the Employer on a case by case basis.

2.18 Provide studies and information on maintenance, lifecycle and other costs for the Project as required by the Employer.

2.19 Assist the Employer in the preparation of Scope of Work packages on a trade by trade basis for inclusion in subcontract and supply procurement.

2.20 Prepare and issue drawings, specifications, schedules and the like as required by the Employer for market testing, tender and costing purposes. The specification is to include the requirements for testing, commissioning, benchmarks and workmanship standards.

2.21 Prepare schedules, perspectives, computer generated images and other similar presentation materials as reasonably required by the Employer to illustrate the proposed design.

2.22 Review and comment on the temporary works in relation to such activities as the crane locations, materials handling areas, storage and compound areas and the like. It is noted that the Consultant have made allowances in the permanent state design to accommodate the normally envisaged temporary loads during the course of the construction works.

2.23 Continuously review the design against the Project requirements including the Employer's Requirements and all relevant Statutory Authority requirements and immediately notify the Employer of any non-compliance together with associated remedial recommendations.

2.24 Prepare and issue a fully coordinated set of Documentation for these design stages in a report format to the Employer. The Documentation shall be at suitable including coordination information such as the overlay drawings as requested by the Employer.

# 3. Construction Documentation and Construction Phase

## Overview

3.1 This Work Stage shall be the Construction Documentation and Construction Phase of the Project. This Work Stage continues from the Concept Design and Design Development Work Stage and shall enable the remaining tendering and construction of the Project to be progressed. Where necessary, this Work Stage is undertaken in conjunction with the ongoing design development tasks. Consequently all items scheduled below are a continuation of and are in addition to the items scheduled in the Design Development (and where necessary, Concept Design) Work Stage(s) and to the extent that any of the Services carried out under Design Development (and where necessary, Concept Design) must be amended or otherwise, such work shall be deemed to be part of/concurrent to this Work Stage.

3.2 It is a fundamental objective of the Employer that all Documentation produced during this Work Stage is suitable for properly constructing the Project and shall fully reflect the developed design in full compliance with the parameters of the Project requirements such as the Planning consents, Employer's Requirements, the Cost Plan and the Programme as these may be amended from time to time, especially the construction programme.

## Tasks

The Consultant shall:

3.3 Receive further Project details and requirements from the Employer if any and together with other relevant information sourced by the Consultant, make further appraisals of Project constraints.

3.4 Evaluate any amendments to the Project requirements and advise on options for consideration by the Employer having regard to the effect on the Employer's Requirements, the Cost Plan, the Programme and any other relevant Statutory Authority requirements

3.5 Visit site in addition to as requested reasonably by the Employer.

3.6 As when requested by the Employer, update and issue the Documentation Schedule for review by the Employer. The Documentation Schedule shall be consistent with the Employer's construction programme and shall set out the Documentation to be produced by the Consultant including the sequence and the dates for production of same.

3.7 Liaise with other consultants to provide integrated and coordinated design information and data as required by the Employer to comply with the Employer's tender letting schedule and with the construction programme to ensure that there is no delay in providing information to subcontractors or in constructing the Works.

3.8 Update or amend the Documentation Schedule as required by the Employer. Update the master documentation matrix in a format requested by the Employer.

3.9 Produce a monthly update of the Documentation Schedule, or at other times as reasonably required by the Employer, showing the Consultant's actual and proposed delivery against the programmed issue dates for each Documentation including the details of the mitigation measures where the Consultant has fallen behind in providing the design information and/or the Documentation was inadequate.

3.10 Provide Documentation in accordance with the Documentation Schedule. All Documentation to be in compliance with the Project requirements. The Documentation shall be suitable of being used for preparing trade packages (including trade bills of quantities) and used for inviting tenders from trade subcontractors and updated to provide adequate details to allow each design element to be constructed which must for example, take due regard of good health and safety practices, buildability requirements such as construction sequencing and access and construction tolerances.

3.11 Review all relevant subcontractors and/or suppliers' submissions of samples and technical data as requested and report to the Employer in respect of compliance with the Project requirements.

3.12 Evaluate alternatives proposed by the trade subcontractors and in conjunction with other consultants, coordinate and integrate all such preferred alternatives into the Documentation as requested by the Employer. This may be subject to additional fee to be discussed and agreed between the Consultant and the Employer on a case by case basis.

3.13 In conjunction with the other consultants, review and comment on shop drawings, specifications, prototypes, samples and technical data submissions and other information prepared by potential and/or engaged subcontractors or suppliers for compliance with the Project requirements where relevant to the building services design. Provide such comments within 7 days of receipt. However, the Consultant shall endeavour to review, comment and return such submissions earlier should the specific need arise as to be discussed between the Consultant and the Employer.

3.14 Review and comment on the documentation of other consultants and subcontractors within 7 days of receipt and where warranted, fully update all Consultant's Documentation where necessary. However, the Consultant shall endeavour to review, comment and return such submissions earlier should the specific need arise as to be discussed between the Consultant and the Employer.

3.15 Notify the Employer in writing, once the Consultant becomes aware of any amendments or additions/deletions in the Documentation which may increase the cost of construction and/or whole life cost of the Project.

3.16 Not used.

3.17 Provide updated, coordinated and dimensioned drawings at suitable scales showing all major in a timely manner for services and other builder's works in connection details including coordination information such as the overlay drawings as requested by the Employer.

3.18 Produce supplementary documentation as may be required by the Employer to clarify the Documentation during construction, including issuing sketches, details, clarifications, further Documentation, investigating site based construction issues related to the Documentation and preparing and issuing design solutions in conjunction with other consultants where applicable.

3.19 Provide Construction Documentation ("For Contract") drawings incorporating all information issued as advices or sketches so that the latest information is shown on the Documentation to be used for construction. All Documentation must be completed and issued in compliance with the Programme and with the general progress of the Works to ensure that such progress is not delayed and/or disrupted.

3.20 Issue updated drawings, specifications, schedules, details and other design information as the Employer may require as a result of ongoing design development or updates in information provided or released by other consultants or the Employer.

3.21 Revise and resubmit Planning consent submissions to the Planning Authority as required where the progressed design has varied from the original permit approval.

3.22 Regularly check the Documentation against the Project requirements such as the Employer's Requirements all relevant Statutory Authority requirements and immediately notify the Employer of any non-compliance together with associated remedial recommendations.

3.23 Assist in the updating of design and construction programmes as required by the Employer.

3.24 Respond to all correspondence including (but not limited to) Requests for Information within 5 days. However, the Consultant shall endeavour to review, comment and return such submissions earlier should the specific need arise as to be discussed between the Consultant and the Employer.

3.25 Undertake any off-site inspections reasonably requested by the Employer.

3.26 Review mock-ups and samples for compliance with the Project requirements such as the Planning consent and the Employer's Requirements and recommend benchmarks for finish and workmanship with the Employer in respect of subcontractors, suppliers and manufacturers.

3.27 Undertake regular inspections of the Works and provide non conformance report on same to the Employer.

3.28 Assist in the preparation of full documentation and detailing for a marketing and display facilities as appropriate for the Project or as reasonably required by the Employer.

3.29 All design documentation created or produced by the Consultant as part of this appointment is to be issued to the Employer in the form and at the frequency required – this includes but is not limited to full copy of all electronic design files or calculations produced by the Consultant as part of his design obligations hereunder



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# 4. Documentation Deliverables

## Overview

4.1 The Employer intends to engage specialist subcontractors for the following trades to design (For Construction details only) and construct that form part of the Works. Some of these are early release packages. For these trades, the Consultant is to provide documentation that outline the design intent and the performance requirements from which the subcontractor(s) will prepare their construction design (ie. shop drawings):

- Piling
- Structural steel (connection design only)
- Architectural precast concrete
- Major building (M&E) services
- Medical gases (including Pneumatic tube system and Renal water systems)
- Lifts and escalators
- Unitised curtain wall system
- Special/feature glazing such as the entrance glass doors and canopy
- Courtyard cladding including ribbon windows
- Podium (rainscreen) cladding
- Plantroom cladding
- Louvres
- ETFE roof coverings
- Glass roof structures
- BMU/Cleaning cradle and gantry systems
- Robotics
- Radiation protection
- Catering

The Lead Consultant for a given package (refer to the Design Consultant Responsibility Matrix) is to coordinate with other consultants in reviewing the design by these specialist subcontractors and confirm that they are acceptable for coordination with the Services and that the design intent and performance specification has been satisfied.

4.2 Not used.

4.3 In some instances, it is intended that elements of the design are undertaken by specialist subcontractors whereby the subcontractor will assume responsibility for the installation documentation of the Consultant's design intent. However, the Consultant will retain responsibility to review and comment on such design proposals and documentation. For example:

- Spacial coordination – The Consultant shall provide in sufficient detail to establish and confirm the coordinated zoning requirement such as the ceiling voids, risers and the like. The detailed design information from the Consultant is to show the spatial inter-relationship of the



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engineering systems for the production of installation drawings by the relevant subcontractor(s).

- Selection plant and equipment – The Consultant shall provide a description of the main/critical performance requirements and essential design features of plant and equipment. For example: Input/output capacities of plant, the range of operating duties, details of the required quality of construction and finishes, any essential energy saving features, the acoustic performance and the availability of spares. Based on these parameters, the relevant subcontract(s) will propose their plant and equipment selection.
- Commissioning – The Consultant shall incorporate into various systems designs and provide specifications outlining the essential components and features necessary to enable proper preparation and commissioning of the building services. The Consultant shall also provide input to the strategy to be developed in conjunction with the Employer to ensure effective commissioning of the designed and installed systems
- Handover information – The Consultant shall provide specifications that define the scope, content and format of operating and maintenance manuals and record drawings appropriate to the Project. The Consultant shall also define the level of documentation, commissioning results and other information to be made available by the relevant subcontract(s) for a proper handover of the Works.

This design task demarcation between the (MEP) Services Engineer (ie. the Consultant) and the subcontractor(s) is further clarified below as a guide:

| No. | Specific Design Task Examples | (MEP) Services Engineer Shall Provide: | MEP Subcontractor Shall Undertake: | Notes |
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| 1 | Acoustical design and treatment for engineering services | All plant and equipment selection criteria based on internal and external noise limitations. Acoustic attentuators and anti-vibration treatment specifications based on insertions losses and vibration limitation. Ducting and pipe systems to comply with limiting velocities. Specify acoustic sealant treatment and locations | Final equipment selection based on Engineer's criteria | Site and internal acoustic parameters by Acoustic Consultant |
| 2 | Air compressors and compressed air supplies | Performance specification, distribution strategy and detailed design coordination of pipe runs and plant | Selection of plant to meet performance criteria, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |
| 3 | Air-conditioning and mechanical ventilation systems | Schematic arrangements for each of the systems required for the facility. Block planning for plantrooms and risers to departmental boundaries. Floor GAs, plantroom and riser ductwork layouts. Sizing and routing indicated on detailed design drawings showing positions of grilles, dampers and other in-line components. Specify plant and equipment duty performance criteria | Selection of plant and scheduling of equipment to meet design criteria and spatial constraints, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | Fire strategy by Fire Consultant |

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| 4 | Automatic blinds and shutters | Coordinate power supplies, BMS and any fire alarm interface points. Provide solar control blinds operational performance requirements | Coordinate final location including controls and power wiring | |
| 5 | Bedpan washing or disposal equipment | Coordinate power supplies, drainage and water supplies to suit equipment requirements | Final coordination and preparation of installation drawings | |
| 6 | Boiler plant and auxiliaries | Specification, design and resilience criteria, sizing of plant and coordination of spatial constraints on plantroom layout drawings at scale 1:50. Specify pump duty performance criteria | Selection of plant to meet design criteria and spatial constraints, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |
| 7 | Building management system and automatic controls | Detailed functional description of operation for all system including typical AHUs and plant details. Detailed performance specification and a system schematics, block diagrams giving operational requirements. Design arterial containment route requirements | Installation design of systems, points schedule, location of sensors, sizing and routing of containment and power cabling to motor drives, etc. Coordination of protective devices. Final coordination and preparation of installation drawings | |
| 8 | Calorifiers and heat exchangers | Specification, design and resilience criteria and sizing of plant and coordination on plantroom layout drawings at scale 1:50 | Selection of plant to meet design criteria, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |
| 9 | Clocks | Performance specification giving operational requirements. Applicable to operating theatre panels only. All other clocks battery operated | Installation design of systems and coordinate location of components | Groups 1 and 2 only |
| 10 | Cold water service | External - pipe sizes and routes, schematic arrangements and coordinated layout drawings. Internal - schematic arrangements for each plant area with indicative main pipe sizes. Location of key main risers. Specification, design criteria and resilience, sizing of plant and coordination of spatial constraints on plantrooms and layout drawings. Specify pump duty performance criteria. Pipe sizing and routing GAs for coordination showing all terminal positions | Selection of plant and scheduling of equipment to meet design criteria and spatial constraints, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |
| 11 | Combined heat and power plant/s | Analysis of sizes, integration into schematics and GA drawings. Specification, design criteria and sizing of plant and coordination on plantroom layout drawings at scale 1:50 | Selection of plant to meet design criteria, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |



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| 12 | Chilled water system/s | Primary Chilled Water - Major pipe sizes and routes, schematic arrangements. Equipment schedules for chillers, pumps and pressurisation equipment, heat exchangers. Secondary Chilled Water – schematic arrangements. Specification, design and resilience criteria, sizing of plant and coordination of spatial constraints on plantroom layout drawings. Specify pump duty performance criteria. Pipe sizing and routing GAs for coordination showing positions of terminal devices and valves | Selection of plant and equipment to meet design criteria and spatial constraints, scheduling of equipment, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |
| 13 | Generator plant and systems including fuel oil | Sizes, schematics and GA drawings. Detailed description of operation. Specification, design and resilience criteria, sizing of plant and coordination of spatial constraints on plantroom layout drawings at scale 1:50 | Selection of plant to meet design criteria and spatial constraints, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |
| 14 | Electric lighting and power installation/s, including luminaries | Detailed design drawings showing luminaire layouts, circuitry and switching arrangements. Performance specification giving key design criteria.. | All calculations based on requirements of Room Data Sheets, selection and scheduling of luminaires to meet design criteria and photometric data confirmation. Layout drawings and switching/control appearance. Detailed lighting layouts complete with CFD lux level modelling and emergency lighting levels, locations and switching | |
| 15 | Electric small power installation/s | Circuitry details and medical equipment supplies. Design to be in line with ADB Code requirements | Final coordination and preparation of installation drawings | |
| 16 | Electrical distribution system | Detailed specification of HV and LV switchgear, cable/busbar sizing, distribution boards and all HV and LV schematics. Detailed design drawings for all plant rooms and layouts. Theoretical HV/LV discrimination study based on generic protection devices and design cable lengths. Provide HV protection grading philosophy. Provide final calculations and study report based on as installed information from the MEP Subcontractor | Final selection of switchgear, final HV/LV discrimination study and coordination of protective devices based on final selection of protective devices and installed cable lengths. Final coordination and preparation of installation drawings | |
| 17 | Electrical sub-station | Specification, design and resilience criteria, sizing of plant and coordination of spatial constraints on plantroom layout drawings at scale 1:50. Transformer sizes, cable/busbar sizes and routes, switchgear details, schematics and GA drawings. HV/LV control systems and interface requirements with utility provider. | Selection of plant to meet design criteria and spatial constraints, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |

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| 18 | Escape lighting and fixed medical lighting | Detailed design drawings showing circuitry and switching arrangements. Performance specification giving key design criteria. Review and comment on proposals for compliance with design criteria | All calculations based on requirements of Room Data Sheets, selection and scheduling of luminaires to meet design criteria and photometric data confirmation. Layout drawings and switching/control appearance. Coordinated lighting layouts completed with CFD lux level modelling and emergency lighting levels, locations and switching. | |
| 19 | Exhaust gas handling systems/flues/chimneys | Clean Air Act submission. Specify sizes and routing for coordination on plantroom layout drawings at scale 1:50. Chimney height calculations and location on plans | Final chimney sizing, structural support information including any cladding. Final coordination and preparation of installation drawings | |
| 20 | Fire detection and alarm system/s | Performance specification giving operational requirements. Design arterial containment routes. | Design of systems, selection of components to meet Engineer's criteria, and the final location of components to be coordinated with the Architect. Provision of Fire Certificate. Develop fire alarm cause and effect. Design coordination drawings for all plant rooms and layouts. Coordinate all equipment required to be located on the reflective ceilings | Fire strategy by Fire Consultant |
| 21 | Fire fighting/protection system/s (including gas suppression system) | Performance specification and distribution strategy including coordination of pipe runs. Study into potential consequential damage associated with discharge of sprinklers (e.g floors below) and operational impact | Fire water tank sizing and location, pump sizing. Selection of plant to meet performance criteria, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings. | Fire strategy by Fire Consultant |
| 22 | Food preparation, cooking, conveying and serving equipment | Sizing of services to meet catering specialist's requirements. Routing of services to suit specialist's equipment layout | Final location of supplies to suit specialist's requirements. Final coordination and preparation of installation drawings | Catering specialist responsible for selection of equipment, layout. Termination, and sizing of final connections. Extract hood air volumes |
| 23 | Fuel gas supply and distribution | Specification and design criteria, sizing and routing for coordination of spatial constraints at scale 1:100 showing positions of valves meters, etc. Pipe sizes, routes and schematic arrangement. | Selection of equipment to meet design criteria and spatial constraints, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |
| 24 | Fuel oil supply and distribution system/s | Specification, design criteria, sizing of plant and coordination of spatial constraints on plantroom layout drawings at scale 1:50. Specify pump duty performance criteria. Pipe sizing and routing for coordination at scale 1:100 showing positions of valves, pumps and fuel oil tank locations. Schematic arrangement for oil delivery system with pipe sizes. | Selection of plant and equipment to meet design criteria and spatial constraints, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |



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| 25 | Fume extract/handling system/s | Air volumes to suit equipment supplier's requirements. Sizing and routing of ductwork considering the spatial constraints as for ventilation systems. Location and heights of discharges | Selection of equipment to meet design criteria and spatial constraints, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |
| 26 | Heating system/s | Specification, design criteria, sizing of plant and coordination of spatial constraints on plantroom layout drawings. Specify pump duty performance criteria. Pipe sizing and routing GAs for coordination showing positions of terminal devices and valves. LTHW Heating System schematic arrangements for each plant area and main system | Selection of plant and equipment to meet design criteria and spatial constraints, scheduling of equipment, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings. Coordination of reflected ceiling plans locating all services items for example, luminaries, grilles, smoke detectors etc | |
| 27 | Hot water service | Specification, design criteria, sizing of plant and coordination of spatial constraints on plantroom layout drawings. Specify pump duty performance criteria. Pipe sizing and routing for coordination showing positions of valves. Schematic arrangements for each plant area with pipe sizes and main system schematic. Location of key main risers. | Selection of plant and equipment to meet design criteria and spatial constraints, scheduling of equipment, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |
| 28 | 11kV System / HV Distribution | Specification, design and resilience criteria, sizing of plant, switchgear, main distribution, cables/busbar and coordination of spatial constraints on plantroom and layout drawings. Functional description and detailed design of HV /LV control system. Coordinate routing outside plantrooms and the requirements of the utility provider. Theoretical HV/LV discrimination study based on generic protection devices and design cable lengths. Provide HV protection grading philosophy. Provide final calculations and study report based on as installed information from the MEP Subcontractor | Final selection of switchgear, HV/LV control system, final discrimination study and coordination of protective devices based on final selection of protective devices and installed cable lengths. Final coordination and preparation of installation drawings | |
| 29 | Incoming electrical supply/s | Undertake load assessment. Initial enquires and technical liaison with the utility supplier leading to a final quotation. Seek and assist in arranging the programme requirements and liaise with Client. Provide design documentation | Provide the Employer with summary study paper on final discrimination and protection in written and electronic format | |

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| 30 | Incoming water supply/s | Undertake load assessment. Initial enquires and technical liaison with the utility supplier leading to a final quotation. Seek and assist in arranging the programme requirements and liaise with Client. Provide design documentation | | |
| 31 | Incoming gas supply/s | Undertake load assessment. Initial enquires and technical liaison with the utility supplier leading to a final quotation. Seek and assist in arranging the programme requirements and liaise with Client. Provide design documentation | | |
| 32 | Information technology (IT) systems | Coordination of containment to specialist's requirements. Power and cooling provision to specialist's requirements. Liaison with the Client/Board IT representatives | Final siting/location of hub rooms and cooling and power requirements. Final coordination and preparation of installation drawings. Liaise with the Client/Board IT representatives | |
| 33 | Intruder detection/alarm systems | Performance specification. | Design of systems, location of components to be coordinated with the Architect in accordance with the performance specification. Schedule all required system components and hardware. Coordinate in developing the door schedule | |
| 34 | Laboratory gases | Performance specification. Coordination and routing of pipework, plant and equipment to specialist's requirements. | Final coordination and preparation of installation drawings | |
| 35 | Lifts, hoists, escalators & travelators | Power supplies, ventilation, pressure relief lift pressurisation and lift motor room cooling in accordance with Lift Subcontractor's requirements | Fire alarm, security and access control, BMS interfaces. Final coordination and location of supply point with Lift Subcontractor | All ventilation and cooling of lift cars within Lift subcontractor's package |
| 36 | Lightning protection | Performance specification giving operational requirements, lighting protection routes, conductor sizing, test points and connections to earth requirements | Final coordination and preparation of installation drawings | |
| 37 | Weather louvres | Coordination with cladding specialist on connection details. Provide performance criteria; free area, pressure drop and size based on assumed free area ratio | Final coordination with cladding specialist on connection details and preparation of installation drawings | Aesthetics selected by the Architect. Final selection by cladding specialist |
| 38 | Medical equipment - pre-installation works | Sizing of services to meet medical equipment specialist's requirements. Attendance at relevant 'Equipment Selection Group' meetings | Final location of supplies to suit specialist's requirements. Final coordination and preparation of installation drawings | |



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| 39 | Medical gas services including medical vacuum, AGSS and dental services | Performance specification, distribution strategy and coordination of pipe runs and plant. Coordinate location and size of accommodation for VIE plant and manifold rooms. Develop a distribution strategy for the main medical gas systems | Selection of plant to meet performance criteria, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |
| 40 | Nurse call installation | Performance specification, coordination of containment to specialist's requirements. Provide details of the arterial containment routes | Installation design of systems, location of components to be coordinated with the Architect. Final coordination and preparation of installation drawings | |
| 41 | Pneumatic-tube conveying installation | Distribution strategy and coordination of pipe runs and plant | Installation design of systems, location of components to be coordinated with the Architect. Final coordination and preparation of installation drawings | |
| 42 | Power operated smoke louvres | Performance specification and accompanying system schematics giving operational requirements. Provide details of power supplies, BMS and fire alarm interfaces | Final location coordinated with the Architect. Integration with specialist providers requirements. Control and interface wiring installation drawings | Size and location by Fire Consultant |
| 43 | Public address, personnel-location and call system/s | Performance specification giving detailed operational requirements. Coordination of arterial containment routes to specialist's requirements. | Installation design of systems, location of components to be coordinated with the Architect. Final coordination and preparation of installation drawings | |
| 44 | Public health above ground sanitary plumbing | Specification and design criteria, sizing and routing for coordination at scale 1:100. Design to show flow rates and drainage connection points. BWIC details | Installation coordination and preparation of installation drawings and final BWIC details | |
| 45 | Public health above ground chemical drainage | Specification and design criteria, sizing and routing for coordination at scale 1:100. Design to show flow rates and drainage connection points. BWIC details | Installation coordination and preparation of installation drawings and final BWIC details | |
| 46 | Public health above ground rain water installation | Coordinate roof discharge rates and outlet locations. Specification and design criteria, sizing and routing for coordination at scale 1:100. BWIC details | Installation coordination and preparation of installation drawings and final BWIC details | Roof finishes and falls by Architect. |
| 47 | Public health below ground foul drainage | Provide flow rate information and positions of connection points in relation to sanitaryware and partitions | Coordinate final position of connection points to suit setting out of sanitaryware and partitions | Based on the information from Services Engineer, the Civil Engineer to design drainage reticulation below ground |

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| 48 | Public health below ground storm water drainage | Provide flow rate information and positions of connection points | Coordinate final position of connection points to suit setting out and partitions | Based on the information from Services Engineer, the Civil Engineer to design drainage reticulation below ground |
| 49 | Radio and television installation/s | Performance specification, coordination of containment to specialist's requirements. Coordinate power supplies to specialist's requirements | Installation design of systems. Coordinate location of components and prepare installation drawings | |
| 50 | Refrigeration installation and cold stores | Coordination of pipework/containment to specialist's requirements. Power supplies, BMS interfaces etc to specialist's requirements. | Installation design of systems, sizing of refrigerant pipework, location of components to be coordinated with the Architect. Final coordination and preparation of installation drawings | For DX system and the like (eg. in server rooms) |
| 51 | Renewable energy sources | Develop strategy to successfully comply with the project objectives. Specification, design and resilience criteria, sizing of plant and coordination on plantroom layout drawings at scale 1:50. | Installation design of systems. Coordinate location of components and prepare installation drawings | |
| 52 | Sanitary fittings and fixtures | Provide connection arrangement details for each type or equipment. Detail all automatic flushing systems sensor requirements including power supplies locations | Final coordination and preparation of installation drawings | Architect to specify sanitary fittings and fixtures |
| 53 | Security Access and Control Systems | Performance specification, coordination of containment to specialist's requirements. Power supplies to specialist's requirements. Provide details of arterial containment routes indicating all access controlled doors and head ends. Specifications for all required systems components and hardware. Coordinate in developing the door schedule | Installation design of systems, final coordination of the location of component. Interfaces to external control centre if applicable. Final coordination and location of supply point in agreement with specialist. Final coordination and preparation of installation drawings. Schedule all required systems components and hardware. Coordinate in developing the door schedule | |
| 54 | Smoke extract/clearance systems | Specification and sizing duct system and fans to meet performance criteria and spatial constraints | Selection of plant and equipment to meet design criteria and spatial constraints, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | Design strategy and criteria by Fire Consultant |
| 55 | Sound attenuation of services equipment | Equipment selection criteria and location | Final selection and attenuator schedules against procured plant details. Final coordination and preparation of installation drawings | Overall performance criteria by Acoustic Consultant |
| 56 | Specialist water services (e.g Renal RO) | Performance specification, distribution strategy and coordination of pipe runs and plant | Selection of plant to meet performance criteria, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |



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| 57 | Steam and condensate system/s | Performance specification, distribution strategy and coordination of pipe runs and plant | Selection of plant to meet performance criteria, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings | |
| 58 | Street/external lighting/floodlighting | Carry out lighting level calculations. Specification and design criteria. Locate power supplies in relation to the CCTV and lighting locations | Final coordination of power supplies and CCTV locations. Final coordination and preparation of installation drawings | Selection by Landscape Architect |
| 59 | Telephone equipment and wiring | Coordination of containment to specialist's requirements. Power and cooling provision to specialist's requirements. Liaison with Client representatives. | Final coordination of siting/location of hub rooms, cooling and power requirements. Final coordination and preparation of installation drawings. Liaise with Client/Board representatives | |
| 60 | Thermal insulation for services | Specifications | Final selection to meet specifications | |
| 61 | Vibration control | Specifications and equipment selection criteria | Final selection and schedules against procured plant and equipment details | Overall performance criteria by Acoustic Consultant |
| 62 | Water treatment and filtration | Specification, design criteria and sizing of plant including water storage tanks, filtration plant and coordination on plantroom and layout drawing | Selection of plant to meet design criteria, installation details to suit manufacturer's requirements | |
| 63 | Window cleaning trolleys etc. | Power, water and communication supplies to specialist's requirements | Final coordination and location of supply point. Preparation of installation drawings | Specialist to provide power supply requirements and characteristics and location of interface point(s) |
| 64 | Specifications | Final specifications as described under the individual service elements. All systems to be provided with specifications based on NBS to reflect extent of design | Final coordination | |
| 65 | Thermal modelling, Part L Compliance Report, EPC | Undertake thermal modelling using IES Virtual Environment software to obtain heat loss and gain requirements. Use model to assess the thermal performance of the building fabric and summertime temperature predictions. Prepare a SPP6 Compliance Report. IES CFD model to be updated during the project design phase and upon project completion. At the end of detailed design update the model to incorporate plant specifications and use the model to produce an Energy Performance Certificate (EPC) for use by the Client | Final selection to meet specifications | |

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| 66 | Energy Consumption Modelling | Energy model in line with design development and prepare specifications and design to achieve results as assumptions. Energy model to be updated upon completion of design and during commissioning prior to project completion | Final coordination and preparation of installation drawings. Update data entries in model as required through course of project and at completion of Project with final data | |
| 67 | Structural Builder's work | Define and coordinate builder's work critical for the structural integrity of the building(s). This normally applies to all openings, trenches, ducts in concrete. This typically applies to vertical stacks, downpipes. Assist in sanitaryware setout | Define and coordinate all builder's work not critical for the structural integrity of the building(s). This normally applies to all chases, plant bases and openings less than 100mm | Architect to specify grid setout, type, height. MEP Subcontractor to |
| 69 | Reflected Ceiling Plans | Agree and coordinate types of ceilings and heights with the Architect. | Coordinate criteria/rules and grid for setting out. Final coordination and setting out regarding lighting, heating, cooling and ventilation, nurse call, security, CCTV and other specialist designed systems. Provide final details and positions of all ceiling mounted services for Architect's coordination review. Provide final coordinated CAD layer for the Architect to import/issue the final RCP. . | |
| 70 | Detailed design drawings | Detailed design drawings will show the coordinated locations of plant items and service routes in such detail as to indicate the design intent. The main features of detailed design drawings will be as follows:<br><br>• Plan layouts will be to a scale of at least 1:100. Plant areas will be to a scale of at least 1:50, and will be accompanied by cross sections.<br><br>• The drawings will indicate the position of services that are feasible to install and spatially coordinated. It will be possible to produce the final installation drawings without major re-routing of the services.<br><br>• Pipework and cable containment will be represented by single line layouts. Ductwork will be represented by either double line or single line layouts as required to demonstrate that the routes indicated are feasible.<br><br>• The drawing will indicate the space available for major service routing in both horizontal and vertical planes. | Final coordination and preparation of installation drawings | |

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| 71 | Installation and shop drawings | Review and comment on all subcontractor produced coordinated installation drawings | Installation and shop drawings will show the inter-relationship of two or more engineering services and their relation to the structure and building fabric. The main features of coordinated working drawings will be as follows:<br><br>• Plan layouts will be to a scale of at least 1:50 and be accompanied by cross sections to a scale of at least 1:20 for all congested areas.<br><br>• The drawing will make allowance for installation working space and space to facilitate commissioning and maintenance.<br><br>• The drawings will be spatially coordinated and there should be no physical clashes between the system components when installed. Critical dimensions, datum levels and invert levels will be provided.<br><br>• The spaces between pipe and duct runs shown on the drawing will make allowance for the service at its widest points considering the insulation, standard fitting dimensions and joint widths.<br><br>• The drawing will indicate positions of all fixing points and supports necessary to install the works, and where they have significance to the structural design or spatial constraints. | |
| 72 | (As-Built) Record drawings | Review and comment on all subcontractor produced as-built drawings | Prepare record drawings based upon the installation drawings which are marked up on site to reflect any changes occurring during construction. Incorporate these changes to generate the As-Built drawings | |
| 73 | Drain and vent point locations and pipe work gradients | Specification stating venting, drain points and required pipe fall for all building services | Final coordination and preparation of installation drawings | |
| 74 | Locations of brackets and supports | To be defined within the specifications | Final coordination and preparation of installation drawings | |
| 75 | Expansion joints, anchors and guide locations | Specify and indicate locations of expansion joints and anchor points required for major services runs | Final coordination and preparation of installation drawings | |
| 76 | Valve, damper and access point locations | To be defined within the specifications | Final coordination and preparation of installation drawings | |
| 77 | Final fan and pump system resistances | Design resistances based on detailed design drawings and specifications | Verify resistances following completion of the installation drawings and selection of all materials and prior to final procurement of plant items | |



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| 78 | Selection of plant and equipment | Specify main performance requirements and essential design features of plant items. Specify values for the nominal capacities of plant, the range of operating duties anticipated, details of the expected quality of construction and finishes, any essential energy saving features, and the acoustic performance. | Selection of plant and equipment in accordance with the essential design features specified, taking account of final system characteristics once coordinated installation drawings have been adequately developed. Provision of all detailed information in support of proposed selections including, where appropriate, associated system resistance calculations. | |
| 81 | Operational and departmental policies | Review and incorporate requirements into engineering services designs | For performance specified systems, review and incorporate requirements into engineering services designs. Final coordination and preparation of installation drawings | |
| 84 | Major plant and equipment selections | Review and comment on subcontractor's submissions for compliance with key performance requirements as set out in the Equipment Schedules | Submit proposals with supporting information. Consider review comments from the Consultant and undertake final coordination and preparation of installation drawings | |
| 85 | Specialist performance specified systems | Review and comment on specialist's technical submissions for compliance with key performance criteria as set out in the specifications | Submit proposals with supporting information. Consider review comments from the Consultant and undertake final coordination and preparation of installation drawings | |
| 86 | Monitoring the installation for compliance | Attend site to inspect ongoing construction works to confirm that the design intent is generally complied with and to report any observations | | |
| 87 | Commissioning | Agree a commissioning plan and review commissioning data for compliance with the specifications. Attend commissioning activities and meetings in order to witness and sign off key commissioning results | Submit proposals with supporting information. Consider review comments from the Consultant and undertake commissioning | |
| 88 | Energy metering monitoring system | Strategy and performance specification. Indicate all meter locations. | Final coordination and preparation of installation drawings | |
| 89 | BREEAM Excellence rating | Provide all management and input for all aspects of compliance with BREEAM Excellence rating. | Final coordination and preparation of installation drawings | |
| 90 | User Group meetings | Attend key User Group meetings to receive briefing information and input from the building services design aspect | Attend key User Group meetings to receive briefing information and input from the building services design aspect | |

| | | | | |
|---|---|---|---|---|
| 91 | Technical and sample submissions | Review and comment all subcontractor technical and sample submissions to confirm compliance with design intentions, BREEAM rating, energy model, quality etc. | Submit proposals with supporting information. Consider review comments from the Consultant and undertake final coordination and preparation of installation drawings | |

**Documentation**

4.4 The Documentation Deliverables shall be fully coordinated with other consultants and other relevant parties prior to issue. The Deliverables are to be provided in trade package format.

In addition to the above, please note the following general principal requirements:

a) Drawings are to be prepared in a digital form on standard A size sheet (ie. A0, A1, A2, A3). Drawings are not to be any larger than the A0 size.

b) Building Orientation: North to top of sheet, part floors details to be drawn with North to top of sheet. North arrow must be shown on the drawing title block.

c) Each Documents must contain/show:

- Unique document number
- Full title with no abbreviation
- Drawn (or prepared) by and checked by – sign offs
- All details to have scale identified for each
- Denote full (sheet) size
- Changes from the previous drawing revision are to be numbered individually and highlighted with a bold cloud. Once the drawing is revised again, these clouds will be removed and new/latest clouds added to highlight the new drawing amendments
- Detailed description of the change(s) under each number with a date in the title block (to match the cloud number) so that the change(s) can be easily understood from the previous issue
- All documents to be prepared in black and white and not colour unless advised otherwise by the Employer
- The orientation of all drawings when submitted electronically shall be checked that they are landscape and uploaded in the correct orientation (e.g. not scanned upside down)

d) The text on all Documents including the drawings shall be in UK English. All dimensions shall be given in metric format. Calendar dates shall follow the Day/Month/Year format.

e) When revising a document, such as specifications, the full version is to be issued (ie. do not issue just an addenda/extract of the pages that changed).

f) Revisions to text documents will have the revised text in bold and italics (***this is an example***). Text that has been deleted will be in italics and struck through (~~*another example*~~). The Table of Contents shall also highlight in bold italic sections modified. Revised text highlighted must be removed by the Originator prior to issuing the next revision or prior to issuing a document For Tender/Contract and For Construction purposes.

g) Text documents will be prepared on standard A4 size sheets. All text documents will have a title page displaying the relevant information. Each page of the document must show (as a minimum) - document number and its revision, the page number and the total number of pages (ie. page X of Y).



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4.5 The following sample list of documents for the building services design as provided by the Consultant indicates the level of design documentation proposed. However, the Consultant shall provide any additional documentation which is not listed below which would be required by the Employer to construct the Works in addition to the Design Development and Overall Design Document Deliverables required by the Board as listed under the agreed Appendix K of the Building Contract which includes those Deliverables required in advance of (Stage 2) Full Business Case:

| Documentation | Scale (indicative) |
|---|---|
| **Appendix K Deliverables** | |
| Mechanical Services Drawings | |
| Medical Gases Layouts | |
| Plantrooms Medical Gases | |
| Medical Gas Services Schematics | |
| Heating System Zoning Philosophy | |
| Chilled Water System Zoning Philosophy | |
| HTG and CHW Layouts | |
| Plantrooms HTB and CHW | |
| MTHW Heating Schematics | |
| Secondary Heating Schematics Plantrooms | |
| Primary Chilled Water Schematics | |
| Secondary Chilled Water Schematics Plantrooms | |
| Ventilation System Zoning Philosophy | |
| Ventilation Layouts | |
| Plantrooms Ventilation | |
| Ventilation Schematics | |
| Environmental Treatment Layouts | |
| Pneumatic Tube System Schematics | |
| Food Waste System Schematics | |
| Electrical Systems Zoning Philosophy | |
| Plantrooms LV Power | |
| Containment/Sub-main Layouts | |
| Low Voltage Schematics | |
| Lighting Layouts | |
| Security Layouts | |
| Earthing Schematics | |
| UPS Schematics | |



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| | |
|---|---|
| Fire Alarm Layouts | |
| Nurse Call Layouts | |
| Public Health Water Services Layouts | |
| Plantrooms Public Health Water Services | |
| Hot Water System Zoning Philosophy | |
| Sanitation and Rainwater Layouts | |
| Primary Public Health Water Services Schematics | |
| Secondary Public Health Water Services Schematics | |
| Renal Water Schematics | |
| Fire Protection Systems | |
| Fire Protection Plans | |
| Sprinkler System Schematics | |
| Wet Riser System Schematics | |
| External Services and Energy Centre Mechanical Services | |
| Oil System Schematics | |
| Natural Gas System Schematics | |
| Energy Centre Sections | |
| External Services and Energy Centre Electrical Services | |
| Utility Primary Intake Substation Schematics | |
| MV Power Schematics | |
| Energy Centre LV Schematics Substations | |
| External Services and Energy Centre Public Health Services | |
| External Services and Energy Centre Site Services | |
| | |
| | |
| | |
| **Drawings** | |
| **Electrical, Communication and Security Services:** | |
| Legend and symbols | |
| Existing services diversion plans, sections and details | 1:100 / 1:50 |
| Floor plans | 1:100 |
| Plant room and service area layouts | 1:100 |
| Service areas | 1:100 |
| Toilets, tearooms, breakout areas and showers | 1:100 |
| External areas | 1:100 |
| Transformer schedules | |



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| | |
|---|---|
| Fire services schematic | |
| Substation | 1:100 / 1:50 |
| Equipment and containment for PABX/communications systems | |
| HV and LV distribution | |
| Main switch rooms | 1:50 |
| Cable tray reticulation | 1:100 |
| Power, communication and security services riser layouts (if applicable) | 1:50 |
| Services reticulation such as cable tray layout | 1:100 |
| Power, lighting and access control layout including to plant and distribution boards for each level | 1:100 |
| Single line diagrams – main switchboards | |
| Riser details | |
| Electrical control systems | |
| Earthing and bonding | |
| UPS and other back-up power management system | |
| Induction loops containment shown on general power drawings | |
| Essential and non-essential fire services switchboards | |
| Emergency lighting | |
| Riser coordination documentation | 1:50 |
| Façade blinds and windows control schematic | |
| BMU provisions (as per Specialist requirements) | |
| Small power and ancillary services circuitry for each level including 'add-in' supplies shown on Architects 1:50s | |
| Room layouts, sections and elevations | |
| | |
| **Public Health and Fire Protection Services:** | |
| Legend and symbols | |
| Existing services diversion plans, sections and details | 1:100 / 1:50 |
| Floor plans indicating sewer; storm water; rainwater; tundishes; and down pipes. | 1:100 |
| Plant room and service area layouts | 1:100 |
| Basement services layouts | 1:100 |
| Toilets, tearooms, breakout areas and showers | 1:100 |
| External areas | 1:100 |
| Public health and fire protection services schematic | |
| Public health and fire protection services riser layouts | 1:100 |
| Services reticulation layout | 1:100 |
| Public health and fire protection services layout - all levels | 1:100 |
| Riser schematic | |

| | |
|---|---|
| Entry lobby and public spaces | 1:100 |
| Public health and fire protection services control systems | |
| Awnings and canopies rainwater drainage | 1:100 |
| Typical drainage details | 1:100 |
| Wet or Dry Riser | |
| Sanitary pipework | |
| Stormwater pipework | |
| Water tank room layout | |
| Foul drainage pump room layout | |
| Water intake and meter room layout | |
| Hot water diagram | |
| Cold water diagram | |
| Riser co-ordination documentation indicated on mechanical core drawings | |
| | |
| **Mechanical Services:** | |
| Legend and symbols | |
| Floor plans | 1:100 |
| Plant room and service area layouts | 1:100 |
| Toilets, tearooms, breakout areas and showers | 1:100 |
| Mechanical services layout for each level | |
| Sections and elevations | |
| Substation ventilation | 1:100; 1:50 |
| PABX ventilation | 1:50 |
| Main switch room ventilation | 1:50 |
| Services reticulation layout | 1:100 |
| Mechanical riser layouts | 1:50 |
| Mechanical layout for each level | 1:100 |
| Chilled water schematics | |
| Condenser water schematic | |
| LPHW schematic | |
| Ventilation schematic | |
| Smoke and extract schematic | |
| Lift and stair pressurization schematic | |
| Generator oil and bio fuel oil schematic | |
| Typical details | |
| Entry lobby and public spaces | 1:100 |
| Riser co-ordination documentation | 1:50 |
| | |

| **Specifications and Reports** |
|---|
| Services diversions |
| Underground services (excluding drainage) |
| Electrical services |
| Public health services |
| Mechanical services |
| Fire protection and alarm services |
| Future provisions |
| BMS |
| Part SPP6 Report |
| Maintenance and plant replacement strategy |
| Energy metering strategy |
| CDM Hazard control sheets |
| Design risk registers |
| |
| **Schedules** |
| HV & LV Switchboard |
| Plant and equipment |
| HV/LV cable Schedules |
| HV/LV Protective Device Schedules |
| Distribution Board Schedules (Small Power) |
| |

# 5. Commissioning, Completion and Post Completion

## Overview

5.1 This Work Stage shall be the Commissioning, Completion and Post Completion Phase of the Project and shall enable the Project to be commissioned and occupied. Consequently all items scheduled below are a continuation of and are in addition to the items scheduled in the Design Development, the Construction Documentation and the Construction Phases Work Stages.

5.2 It is a fundamental objective of the Employer that all Documentation produced during this Work Stage are suitable for properly constructing, commissioning and completing the Project in full compliance with the Project requirements such as the Planning consents, the Employer's Requirements, the Cost Plan and the construction and completion programmes.

## Tasks

The Consultant shall:

5.3 Receive further Project details and requirements from the Employer if any and together with other relevant information sourced by the Consultant, make further appraisals of Project constraints.

5.4 Visit site in addition to as requested reasonably by the Employer.

5.5 Evaluate any amendments to the Project requirements and advise on options for consideration by the Employer having regard to the effect on the Employer's Requirements, the Cost Plan, the Programme and any other relevant Statutory Authority requirements.

5.6 In conjunction with the other consultants, review as reasonably required by the Employer all subcontractor proposed commissioning procedures and report to the Employer.

5.7 Not used.

5.8 Review and comment on all relevant guarantees, warranties and O & M manuals prepared by subcontractors and suppliers.

5.9 In preparation for Completion, inspect the benchmark areas as required by the Employer and prepare non conformance reports to describe in the opinion of the Consultant the Works that may prevent them to be certified as completed together with recommendations for rectification of them. If required by the Employer and in conjunction with the Employer, the Consultant shall re-inspect the Works to verify that the non conformances have been rectified. These tasks are to be provided in a timely manner and where requested by the Employer, make appropriate representations on Employer's behalf to the Board in regards to the non conformances and their remedial works.

5.10 Review and comment within 7 days, all relevant "As-Built" documents as prepared by the other consultants and/or subcontractors including drawings, specifications, schedules, manuals and maintenance instructions or any other documents as required by the Employer.

5.11 Attend commissioning and witness testing to review the satisfactory function and completion of relevant systems for compliance with the Consultant's design intent and specifications in accordance with the Project requirements.



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5.12 Assist the Employer with the preparation and provision of the Project operation and maintenance manuals and as-built record information and the like as necessary for the Completion of the Project.

5.13 Assist in the preparing and updating of completion programmes as required by the Employer.

5.14 Liaise with other consultants and coordinate the provision of information and data as required by the Employer to comply with the construction and/or commissioning programme to ensure that there is no delay in providing information to the relevant parties.

5.15 Check the Documentation produced during this Work Stage against the Planning consents and other Project requirements such as the Employer's Requirements. Report on any non-compliance and provide mitigation recommendations on same.

5.16 Provide all necessary information to the CDM Coordinator to be included in the Health and Safety File for the purposes of the CDM Regulations.

5.17 Provide the updated specifications to reflect the as-built building services works..

5.18 Not used.

5.19 Provide the Employer with a written statement certifying that the Works are consistent with the Consultant's latest design Documentation and the Project requirements such as the Employer's Requirements as demonstrated on the testing and commissioning results.

5.20 Participate in inspections which shall be conducted at reasonable points during the first 52 weeks, if not at 52 weeks after the date of Completion.

5.21 Reasonably assist the Employer in the settlement of differences in relation to the building services works that may arise between the Board and the Employer or between the Employer and any subcontractor or supplier. Should such differences enter into adjudication or arbitration, the Consultant's assistance may be subject to additional fee which is to be discussed and agreed between the Consultant and the Employer on a case by case basis.

**End**

**SCHEDULE 2, PART 2**

**CONSULTANT COORDINATION MATRIX**

NHS GREATER GLASGOW AND CLYDE
NEW SOUTH GLASGOW HOSPITALS (NSGH)

BROOKFIELD CONSTRUCTION (UK)

# Design Consultant Responsibility Matrix

## June 2010



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**NHS GREATER GLASGOW AND CLYDE**
**NEW SOUTH GLASGOW HOSPITALS (NSGH)**

**BROOKFIELD CONSTRUCTION (UK)**

The Consultant with the primary lead responsibilities including the overall coordination for the various design tasks are as follows, but not necessarily limited to:

Note:

1. All other Consultants are required to assist by providing definitive and complete design advice and information in a timely manner to the Lead Consultant responsible for that design task.
2. The responsibilities below exclude the design tasks associated with the Laboratory Building.

| | **Lead Consultant : L** | Architect and Medical Planners - **Nightingale** | Services Engineer - **ZBP** | Healthcare Planner - **Tribal** | Structural /Civil Engineer - **WSP** | Landscape Architect and Masterplanners - **Gillespies** | Art Strategy - **Gingko** | Environmental Engineer incl BREEAM - **WSP** | Acoustic Consultant – **Acoustic Logic** | Fire Engineering - **WSP** | Radiation Protection - **TBA** | Kitchen Consultant - **TBA** | EMC Consultant - **TBA** | Helicopter Consultant – **Peter Rover** | Lift Engineers - **Schindler** | Cost Planner – **Doig & Smith** | Building Control – **Glasgow City Council** | Planning Consultant - **Ironside Farrar** | CDM Coordinator - **URS** | Client – **NSGH Board** | Contractor / Employer - **Brookfield** | **Notes** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.0 Overall Duties** | | | | | | | | | | | | | | | | | | | | | | |
| 1.1 | Design brief development and confirmation | | | | | | | | | | | | | | | | | | | | L | |
| 1.2 | Design brief compliance | L | L | L | L | L | L | L | L | L | L | L | | L | L | | | | | | | For their respective design discipline |
| 1.3a | Master plan – Review, testing and development | | | | | L | | | | | | | | | | | | | | | | |
| 1.3b | Master plan - Ongoing coordination to ensure integration of changes and consistency | | | | | L | | | | | | | | | | | | | | | | |
| 1.3c | Master plan – Prepare, review and submit revised Master plans | | | | | L | | | | | | | | | | | | | | | | Assisted by other Consultants where required |
| 1.3d | Landscape Visual Impact Assessment as necessary | | | | | L | | | | | | | | | | | | | | | | Assisted by other Consultants where required especially from Planning Consultant |
| 1.3e | Update Environmental Impact Statements | | | | | | | | | | | | | | | | | L | | | | Input from other Consultants especially from the Landscape Architect |
| 1.4 | Design presentations | L | | | | | | | | | | | | | | | | | | | | Assisted by other Consultants where required |
| 1.5 | Overall design and documentation coordination | L | | | | | | | | | | | | | | | | | | | | |
| 1.6 | Site and Building grids and setting out | L | | | | | | | | | | | | | | | | | | | | Coordinate/consider grid requirements with the Structural Engineer and Landscape/Masterplanning Consultant |
| 1.7 | Architectural design and specifications | L | | | | | | | | | | | | | | | | | | | | |
| 1.8 | Healthcare planning (including user | | | L | | | | | | | | | | | | | | | | | | Healthcare Planner to lead in SoA, RDS and |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | group adjacencies) | | | | | | | | | | | | | | | | | | | | | other associated issues |
| 1.9 | Substructure (incl foundation) design and specifications | | | | L | | | | | | | | | | | | | | | | | |
| 1.10 | Superstructure design and specifications | | | | L | | | | | | | | | | | | | | | | | |
| 1.11 | Building Services design and specifications | | L | | | | | | | | | | | | | | | | | | | Supply Chain input |
| 1.12 | IT, data and audio visual design intent | | L | | | | | | | | | | | | | | | | | | | MEP Subcontractor to undertake the sizing/location of hub rooms and coordinate to prepare the installation drawings. Services Engineer to provide wireways to Specialist requirements |
| 1.13 | Infrastructure services design (including incoming services) and specifications | | L | | | | | | | | | | | | | | | | | | | From the (connection) point of Utility Provider |
| 1.14 | Traffic study and design | | | | L | | | | | | | | | | | | | | | | | |
| 1.15 | Site wide road way, paths, civic space concept design | | | | | L | | | | | | | | | | | | | | | | |
| 1.16 | Site wide road way, paths, civic space detailed design | | | | L | | | | | | | | | | | | | | | | | With input from the Architect and Landscape Architect for setting out |
| 1.17a | Site phasing, logistics, concept | | | | | | | | | | | | | | | | | | | | L | Landscape Architect to provide support role in associated graphics |
| 1.17b | Site wide temporary road way, paths, car parks – detailed design | | | | L | | | | | | | | | | | | | | | | | Construction related traffic signage by the Contractor |
| 1.18 | Landscaping design (hard and soft) | | | | | L | | | | | | | | | | | | | | | | |
| 1.19 | Secure by Design compliance | L | | | | | | | | | | | | | | | | | | | | |
| 1.20 | Anti-terrorism design issues – non structural | L | | | | | | | | | | | | | | | | | | | L | Contractor to seek clarification from Board |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.21 | Anti-terrorism design issues – structural | | | | L | | | | | | | | | | | | | | | | L | Contractor to seek clarification from Board |
| 1.22 | Interior (Fitout and FF&E) design and specifications | L | | | | | | | | | | | | | | | | | | | | For their respective design discipline - as applicable to Group 1 (supply and install) and Group 2 ("free issue" from the Board for installation) |
| 1.23 | Acoustic, noise and vibration criteria and design | | | | | | | | L | | | | | | | | | | | | | |
| 1.24 | Vertical transportation study and design | | | | | | | | | | | | | | L | | | | | | | |
| 1.25 | Fire engineering strategy and design | | | | | | | | | L | | | | | | | | | | | | |
| 1.26 | Access and Disability related design | L | | | | | | | | | | | | | | | | | | | | To comply with Part M and other relevant legislations |
| 1.27 | Helipad facility design/brief strategy | | | | | | | | | | | | | L | | | | | | | | |
| 1.28 | Helipad detailed design documentation to meet brief | L | L | | L | | | | | | | | | | | | | | | | | For their respective design discipline |
| 1.29 | Radiation protection design strategy brief | | | | | | | | | | L | | | | | | | | | | | |
| 1.30 | Radiation protection detailed design documentation to meet brief | L | L | | L | | | | | | | | | | | | | | | | | For their respective design discipline |
| 1.31 | Electro magnetic compatibility | | | | | | | | | | | | L | | | | | | | | | |
| 1.32 | Kitchen concept design | | | | | | | | | | | L | | | | | | | | | | |
| 1.33 | Kitchen detailed design documentation to meet brief | L | L | | | | | | | | | | | | | | | | | | | For their respective design discipline |
| 1.34 | Clean room design | L | L | | | | | | | | | | | | | | | | | | | For their respective design discipline for shell. Clean Room design by Specialist. Design interfaces to be provided by the relevant Consultants |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.35 | Building cleaning maintenance access strategy and design | L | | | | | | | | | | | | | | | | | | | | |
| 1.36 | Specialist lighting design (internal) | L | | | | | | | | | | | | | | | | | | | | Engineering by the Services Engineer |
| 1.37a | External areas lighting design | | | | | L | | | | | | | | | | | | | | | | Engineering (ie. power supply) by the Services Engineer. Lighting for roads by the Civil Engineer. All other lighting design intent by the Landscape Architect |
| 1.37b | External lighting design for building envelope | | L | | | | | | | | | | | | | | | | | | | Design intent by the Architect. Engineering (eg. power reticulation) by the Services Engineer. |
| 1.38 | Public Artwork strategy | | | | | | L | | | | | | | | | | | | | | | Landscape Architect to integrate in Master plan and external detail design. |
| 1.39 | All other artwork | L | | | | L | L | | | | | | | | | | | | | | | Architect to integrate into internal design. Landscape Architect to integrate in external design. |
| 1.40a | Signage and wayfinding - Internal | L | | | | | | | | | | | | | | | | | | | | Requirements such as the location, type etc by the Architect. Final manufacturing design by the Supply Chain |
| 1.40b | Signage and wayfinding - External | | | | | L | | | | | | | | | | | | | | | | Requirements such as the location, type etc by the Landscape Architect. Final manufacturing design by the Supply Chain |
| 1.40c | Signage and wayfinding - Traffic | | | | L | | | | | | | | | | | | | | | | | |
| 1.41 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 1.42 | Expansion/flexibility strategy contained in the bid submission | L | L | | L | L | | | | | | | | | | | | | | | L | For their respective design discipline. Contractor to clarify Board requirements (if any in addition to the ERs) |
| 1.43 | Trade package scope of works | | | | | | | | | | | | | | | | | | | | L | Assisted by the Consultants |
| 1.44 | Design programming | | | | | | | | | | | | | | | | | | | | L | With input from relevant Consultants |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.45 | Documentation management | | | | | | | | | | | | | | | | | | | | L | With respect to Aconex |
| 1.46 | Monthly design reporting | L | L | L | L | L | | | | | | | | | | | | L | L | | | For their respective design discipline |
| 1.47 | Design meetings and workshops | L | | | | | | | | | | | | | | | | | | | | With input from all Consultants |
| 1.48 | Quality assurance and control | L | L | L | L | L | | L | L | L | L | L | L | L | L | L | L | L | L | L | L | For their respective design discipline |
| 1.49 | Cost plan | | | | | | | | | | | | | | | L | | | | | | |
| 1.50 | Cost management | | | | | | | | | | | | | | | | | | | | L | With input from all Consultants |
| 1.51 | Risk management scheduling and management | | | | | | | | | | | | | | | | | | | | L | Assisted by the Cost Planner |
| 1.52 | Design change administration | | | | | | | | | | | | | | | | | | | | L | Supported by Consultants |
| 1.53 | Submission of design information to Client | | | | | | | | | | | | | | | | | | | | L | Supported by Consultants |
| 1.54 | Schedule of Derogations | | | | | | | | | | | | | | | | | | | | L | Input from Consultants |
| 1.55 | CDM risk assessments | | | | | | | | | | | | | | | | | | L | | | |
| 1.56 | Health and Safety File | | | | | | | | | | | | | | | | | | L | | | With input from all Consultants |
| 1.57 | Commissioning Specification | | L | | | | | | | | | | | | | | | | | | | Strategy and methodology input from the MEP Subcontractor(s) |
| 1.58 | O&M and Handover strategy | | | | | | | | | | | | | | | | | | | | | Supported by Consultants and Supply Chain |
| 1.59 | Updating the final design drawings and documents for Completion/Occupation | L | L | L | L | L | | L | L | L | | | | | L | | | | | | | For their respective design discipline with marked up drawings supplied by Contractor (ie. from Subcontractors). Services Engineer to provide final updated performance specifications for the building services works |
| 1.60 | On site neighbour liaison | | | | | | | | | | | | | | | | | | | | L | |
| 1.61 | Client liaison | | | | | | | | | | | | | | | | | | | | L | |
| 1.62 | Site Waste Management Plan (incl | | | | L | | | | | | | | | | | | | | | | | Assisted by others where required |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | use of WRAP) | | | | | | | | | | | | | | | | | | | | | |
| 1.63 | Facilities management strategy | | | | | | | | | | | | | | | | | | | L | | |
| 1.64 | Facilities management requirements – incorporation into design | L | L | L | L | L | L | L | L | L | L | L | | L | L | | | | | | | For their respective tasks |
| **2.0 Authorities** | | | | | | | | | | | | | | | | | | | | | | |
| 2.1 | Environment Agency liaison and consents | | | | L | | | | | | | | | | | | | | | | | |
| 2.2 | Planning conditions negotiations and approvals including deviation requests and change audit submissions | | | | | | | | | | | | | | | | | L | | | | Supported by the Design Consultants for their respective discipline |
| 2.3 | S75 Agreement input | | | | L | | | | | | | | | | | | | | | | | Lead by the Board |
| 2.4 | Building Control negotiations and conditions of approvals including deviation requests | L | L | | L | L | | L | L | L | L | L | | L | L | | | | | | | For their respective design discipline |
| 2.5 | Building Regulation compliance | L | L | | L | L | | L | L | L | | L | | | L | | L | | | | | For their respective design discipline guided by Building Control |
| 2.6 | Environmental Health Officer liaison and consent | | | | | | | | | | | | | | | | | | | | L | All Consultants to liaise for their respective design discipline |
| 2.7 | Local Transport liaison and consents Authority | | | | L | | | | | | | | | | | | | | | | | |
| 2.8 | Public Utilities liaison and consents for Incoming (Electricity, Water, Gas) | | L | | | | | | | | | | | | | | | | | | | Telecom order placed by Board |
| 2.9 | Public Utilities liaison and consents for Out going foul and stormwater discharge | | | | L | | | | | | | | | | | | | | | | | |
| 2.10 | Public Utilities legal agreements (way leaves/leases/licences) | | | | | | | | | | | | | | | | | | | L | | |
| **3.0 Specific Tasks** | | | | | | | | | | | | | | | | | | | | | | |

**NHS GREATER GLASGOW AND CLYDE**
**NEW SOUTH GLASGOW HOSPITALS (NSGH)**

**BROOKFIELD CONSTRUCTION (UK)**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.1 | Site boundary definition | | | | | | | | | | | | | | | | | | | L | | |
| 3.2 | General site context analysis | | | | | L | | | | | | | | | | | | | | | | Input from Architect and Engineers |
| 3.3 | Dimensional topographical surveys analysis | | | | L | L | | | | | | | | | | | | | | | L | |
| 3.4 | Geotechnical investigation and analysis | | | | | | | L | | | | | | | | | | | | | | |
| 3.5 | Ground contamination investigation and analysis | | | | | | | | | | | | | | | | | | | L | | Board to provide contamination free site. Civil Engineer allowed for supporting the discharging of the planning condition |
| 3.6 | Contamination advice and statutory liaison coordination and consents | | | | | | | L | | | | | | | | | | | | | | |
| 3.7 | Ground modelling to establish building formation levels | | | | L | | | | | | | | | | | | | | | | | Input from Contractor in relation to phasing/construction sequence. |
| 3.8 | Asbestos investigations and analysis | | | | | | | | | | | | | | | | | | | L | | |
| 3.9 | Environmental surveys to discharge planning approval conditions | | | | | | | | | | | | | | | | | L | | | | With input from the relevant Consultants |
| 3.10 | Environmental remediation certification | | | | | | | | | | | | | | | | | | | L | | Board to provide contamination free site. Civil Engineer allowed for supporting the discharging of the planning condition |
| 3.11 | Archaeological liaisons, coordination and consents | | | | | | | | | | | | | | | | | L | | | | Input from Archaeological specialist. Other Consultants to assist in coordination |
| 3.12 | Liaise coordination of services off site | | L | | | | | | | | | | | | | | | | | | | |
| 3.13 | Flood study and design | | | | L | | | | | | | | | | | | | | | | | |
| 3.14 | Integration of available existing structural design information | | | | L | | | | | | | | | | | | | | | | | |
| 3.15 | Integration of available existing services design information | | L | | L | | | | | | | | | | | | | | | | | |
| 3.16 | Integration of other available existing design information | L | | | | | | | | | | | | | | | | | | | | |



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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.17 | Integration of Site staging (eg. parking controls) and appropriate liaison | | | | | | | | | | | | | | | | | | | | L | Contractor logistics and phasing plans. Input from Consultants as required. |
| 3.18 | Sub/superstructure (interface) design coordination | L | | | L | | | | | | | | | | | | | | | | | |
| 3.19 | Spatial coordination of Building Services | | L | | | | | | | | | | | | | | | | | | | MEP Subcontractor(s) to take this detailed design from the Services Engineer in preparing the final installation drawings |
| 3.20 | Detailed coordination of Building Services | | L | | | | | | | | | | | | | | | | | | | MEP Subcontractor/Services Engineer |
| 3.21 | Coordination of external services (ie. outside building footprints) beneath ground | | L | | | | | | | | | | | | | | | | | | | Input from Civil Engineer |
| 3.22 | Underground drainage design (incl through and to top of the first slab above ground or internal face of (retaining) walls) | | | | L | | | | | | | | | | | | | | | | | Setout dimensions for the pop-ups on slabs and walls to be coordinated with Services Engineer and/or Architect and show them on structure (eg. slab) drawings |
| 3.23 | Above ground slab drainage design including rainwater | L | L | | | | | | | | | | | | | | | | | | | For rainwater, the Services Engineer is to design including showing the setout dimensions on the services drawings. Visual requirements for feature rainwater goods to be provided by the Architect |
| 3.24 | Building plant replacement strategy and design | | L | | | | | | | | | | | | | | | | | | | |
| 3.25 | Electrical systems security strategy and design intent (eg. CCTV and access control) | | L | | | | | | | | | | | | | | | | | | | Assisted by the Architect/Supply Chain |
| 3.26 | Review and incorporation of Architectural Specialist Subcontractor design information | L | | | | | | | | | | | | | | | | | | | | |
| 3.27 | Review of Building Services Specialist Subcontractor design information | | L | | | | | | | | | | | | | | | | | | | |

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| 3.28 | Review of Structural Specialist Subcontractor design information | | | | L | | | | | | | | | | | | | | | | | |
| 3.29 | Special waste drainage – top of ground slab and below and intenal face of walls (eg. grease traps, petrol interceptors) | | | | L | | | | | | | | | | | | | | | | | Setout dimensions for the pop-ups on slabs and walls (referenced off the grids) to be coordinated with Services Engineer and/or Architect and show them on structure (eg. slab) drawings |
| 3.30 | Special waste drainage – above ground slab (eg. grease traps) | | L | | | | | | | | | | | | | | | | | | | |
| 3.31 | Integrated data/comms services design intent | | L | | | | | | | | | | | | | | | | | | | MEP Subcontractor to undertake the sizing/location of hub rooms and coordinate to prepare the installation drawings |
| 3.32 | Design intent and integration of satellite and cable services | | L | | | | | | | | | | | | | | | | | | | Detailed design from Supply Chain |
| 3.33 | Building services management system design | | L | | | | | | | | | | | | | | | | | | | Detailed design from Supply Chain |
| 3.34 | Thermal insulation specifications | L | | | | | | | | | | | | | | | | | | | | Input from Services Engineer |
| 3.35 | U-value simulations and calculations | | L | | | | | | | | | | | | | | | | | | | |
| 3.36 | Part L equivalent Building Regulation performance simulations and calculations | | L | | | | | | | | | | | | | | | | | | | |
| 3.37 | BREEAM assessment and certification | | | | | | | L | | | | | | | | | | | | | | Input from Other Consultants |
| 3.38 | Building air leak/pressurization testing strategy | | | | | | | | | | | | | | | | | | | | L | Supported by the Architect and Services Engineer |
| 3.39 | Energy performance certification and certificate | | L | | | | | | | | | | | | | | | | | | | |
| 3.40 | Waterproofing design below ground up to the underside of the ground slab/DPC | | | | L | | | | | | | | | | | | | | | | | |
| 3.41 | Waterproofing design above ground including the DPC | L | | | | | | | | | | | | | | | | | | | | |

**NHS GREATER GLASGOW AND CLYDE**
**NEW SOUTH GLASGOW HOSPITALS (NSGH)**

**BROOKFIELD CONSTRUCTION (UK)**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.42 | Lightning protection design intent | | L | | | | | | | | | | | | | | | | | | | Detailed design by Supply Chain |
| 3.43 | Structure corrosion protection design | | | | L | | | | | | | | | | | | | | | | | Helicopter Consultant to provide input for the helipad |
| 3.44 | Structural fire protection design | | | | L | | | | | | | | | | | | | | | | | Input from other Consultants as necessary |
| 3.45 | Plant support design and co-ordination with primary structure | | | | L | | | | | | | | | | | | | | | | | |
| 3.46 | Integration of temporary works design into permanent works where required | | | | L | | | | | | | | | | | | | | | | | |
| 3.47 | Secondary steelwork design | | | | | | | | | | | | | | | | | | | | L | Subcontractor's design. Structural Engineer to check and confirm acceptable to the primary structure |
| 3.48 | Masonry wall stability design including wind posts | | | | L | | | | | | | | | | | | | | | | | |
| 3.49 | Lintel specification | | | | L | | | | | | | | | | | | | | | | | Supply Chain to detail the Lintel schedule if necessary |
| 3.50 | Movement joint design (in structure) | | | | L | | | | | | | | | | | | | | | | | |
| 3.51 | Movement joint design (in finishes) | L | | | | | | | | | | | | | | | | | | | | Structural Engineer input required |
| 3.52 | Fire engineered solutions including reports, design notes and deviation requests | | | | | | | | | L | | | | | | | | | | | | |
| 3.53 | Incorporation of the fire engineering related design onto the documentation eg. compartmentation and fire zones etc | L | L | | L | | | | | | | | | | | | | | | | | For their respective design discipline with input from the Fire Engineer |
| 3.54 | Incorporation of acoustic, noise and vibration design into the design documentation | L | L | | L | | | | | | | | | | | | | | | | | For their respective design discipline with input from the Acoustic Engineer |
| 3.55 | Fire extinguisher and exit sign location and quantity | | | | | | | | | L | | | | | | | | | | | | Fire Engineer to draft brief. Architect to provide drawings |

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| 3.56 | Wind load study and design | | | | L | | | | | | | | | | | | | | | | | CFD and wind tunnel testing if required is an additional scope |
| 3.57 | Façade (external cladding, roofing etc) and envelope design coordination | L | | | | | | | | | | | | | | | | | | | | Input from Supply Chain and Other Consultants |
| 3.58 | Roofing purlins and wall cladding girts design (eg. for plantrooms) | | | | | | | | | | | | | | | | | | | | L | Detailed design from Supply Chain |
| 3.59 | Enabling works and project staging documentation | | | | | | | | | | | | | | | | | | | | L | Architect and Landscape Architect to assist with documentation |
| 3.60 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 3.61 | Incorporation of major services builders work in connection in structure | | | | L | | | | | | | | | | | | | | | | | Major builders work penetrations are those equivalent to and larger than 100mm diameter area. Input from Supply Chain and Other Consultants |
| 3.62 | Incorporation of services in connection with finishes | L | | | | | | | | | | | | | | | | | | | | Input from the Services Engineer and the Supply Chain |
| 3.63 | Production of co-ordinated BWIC services information | | | | | | | | | | | | | | | | | | | | L | Subcontractor's design |
| 3.64 | Integration of special fixings into design | L | | | L | | | | | | | | | | | | | | | | | Depending on the stage of the project. Based on Subcontractor information. |
| 3.65 | Lift performance/ type/spec design | | | | | | | | | | | | | | L | | | | | | | |
| 3.66 | Lift car interior and other finishes accessories | L | | | | | | | | | | | | | | | | | | | | |
| 3.67 | Building Services drawings for ceiling mounted services | | L | | | | | | | | | | | | | | | | | | | Input from Supply Chain. Services Engineer will show grilles, chilled beams and radiant panels |
| 3.68 | Reflected ceiling plans | L | | | | | | | | | | | | | | | | | | | | Architect to specify grid setout, type, height. MEP Subcontractor to coordinate and provide details and positions of all ceiling mounted services for Architect's coordination review. |

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| | | | | | | | | | | | | | | | | | | | | | | MEP Subcontractor to provide the final coordinated CAD layer for the Architect to import and issue the final RCP |
| 3.69 | Slab recess drawings showing setouts for the slab edges, setdowns, upstands, parapets. | | | | L | | | | | | | | | | | | | | | | | Input from Supply Chain and Other Consultants |
| 3.70 | Building loading drawings (including for the equipment loading) | | | | L | | | | | | | | | | | | | | | | | |
| 3.71 | Screed requirements | L | | | L | | | | | | | | | | | | | | | | | Screed/topping requiring reinforcement by the Structural Engineer |
| 3.72 | Tenancy Fit Out Design Guidelines | | | | | | | | | | | | | | | | | | | | L | Client/Contractor to provide Brief. Architect to produce drawings with input from Other Consultants. |
| 3.73 | Not used | | | | | | | | | | | | | | | | | | | | | |
| 3.74 | Mock up/prototype design and documentation | L | | | | | | | | | | | | | | | | | | | | |
| 3.75 | Specialist construction input management | | | | | | | | | | | | | | | | | | | | L | |
| 3.76 | Preparation, submission, receipt and analysis of subcontract tenders | | | | | | | | | | | | | | | | | | | | L | Input from relevant Consultants |
| 3.77 | Inspection of works on site | L | L | | L | L | L | L | L | L | L | L | L | L | L | | L | | | | | For their respective design discipline |
| 3.78 | Off site inspections as requested | L | L | | L | L | L | L | L | L | L | L | L | L | L | | L | | | | | For their respective design discipline |
| 3.79 | Medical waste discharge | | L | | | | | | | | | | | | | | | | | | | With the Board (Specialist) input |
| 3.80 | Green roof | | | | | L | | | | | | | | | | | | | | | | Design intent by the Landscape Architect. Performance specifications from other Consultants for their respective design discipline. Drainage design by the Services Engineer with Specialist input |
| 3.81 | Food waste system | | L | | | | | | | | | | | | | | | | | | | With input from the relevant Consultants |

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| **4.0 Specific Design Schedules (to be progressively updated) which may be provided in a drawing format** | | | | | | | | | | | | | | | | | | | | | | |
| 4.1 | Below ground drainage showing setout coordinates, manholes, diversions etc | | | | L | | | | | | | | | | | | | | | | | |
| 4.2 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.3 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.4 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.5 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.6 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.7 | Room Data Sheets | | | L | | | | | | | | | | | | | | | | | | |
| 4.8 | Schedule of Accommodation | | | L | | | | | | | | | | | | | | | | | | |
| 4.9 | Louvre schedules | L | | | | | | | | | | | | | | | | | | | | Input from Other Consultants (especially the Services Engineer and the Supply Chain) |
| 4.10 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.11 | Door and Ironmongery schedules including Masterkeying | L | | | | | | | | | | | | | | | | | | | | Input from Supply Chain |
| 4.12 | Windows / internal screen schedules | L | | | | | | | | | | | | | | | | | | | | |
| 4.13 | Hatches schedule | L | | | | | | | | | | | | | | | | | | | | Input from Other Consultants |
| 4.14 | Finishes schedules | L | | | | | | | | | | | | | | | | | | | | |
| 4.15 | Equipment, Fixtures and Fittings schedules | L | | | | | | | | | | | | | | | | | | | | Architect to provide wall elevations for each exemplar room type in addition to standard wall elevations for the remaining rooms. Architect to highlight substantial fixing requirements (eg. drug cupboards). |
| 4.16 | Signage and wayfinding schedules | L | | | L | L | | | | | | | | | | | | | | | | Split as 1.40a, 1.40b and 1.40c above |
| 4.17 | Sanitary ware schedules | L | | | | | | | | | | | | | | | | | | | | Input from Supply Chain |

**NHS GREATER GLASGOW AND CLYDE**
**NEW SOUTH GLASGOW HOSPITALS (NSGH)**

**BROOKFIELD CONSTRUCTION (UK)**

| Lead Consultant : L | | Architect and Medical Planners - **Nightingale** | Services Engineer - **ZBP** | Healthcare Planner - **Tribal** | Structural /Civil Engineer - **WSP** | Landscape Architect and Masterplanners - **Gillespies** | Art Strategy - **Gingko** | Environmental Engineer incl BREEAM - **WSP** | Acoustic Consultant – **Acoustic Logic** | Fire Engineering - **WSP** | Radiation Protection - **TBA** | Kitchen Consultant - **TBA** | EMC Consultant - **TBA** | Helicopter Consultant – **Peter Rover** | Lift Engineers - **Schindler** | Cost Planner – **Doig & Smith** | Building Control – **Glasgow City Council** | Planning Consultant - **Ironside Farrar** | CDM Coordinator - **URS** | Client – **NSGH Board** | Contractor / Employer - **Brookfield** | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.18 | Building services plant and equipment schedules | | L | | | | | | | | | | | | | | | | | | | Input from Supply Chain |
| 4.19 | Luminaries schedules | | L | | | | | | | | | | | | | | | | | | | Services Engineer to provide the performance specifications. MEP Subcontractor(s) to produce the final schedule for installation to comply with the Services Engineer's requirements |
| 4.20 | Grilles schedules | | L | | | | | | | | | | | | | | | | | | | Services Engineer to provide the selection parameters. MEP Subcontractor(s) to produce the final schedule for installation to comply with the Services Engineer's requirements |
| 4.21 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.22 | NOT USED | | | | | | | | | | | | | | | | | | | | | |
| 4.23 | Reinforcement detailing instructions and scheduling | | | | L | | | | | | | | | | | | | | | | | |

**SCHEDULE 2, PART 3**

**PROGRAMME**

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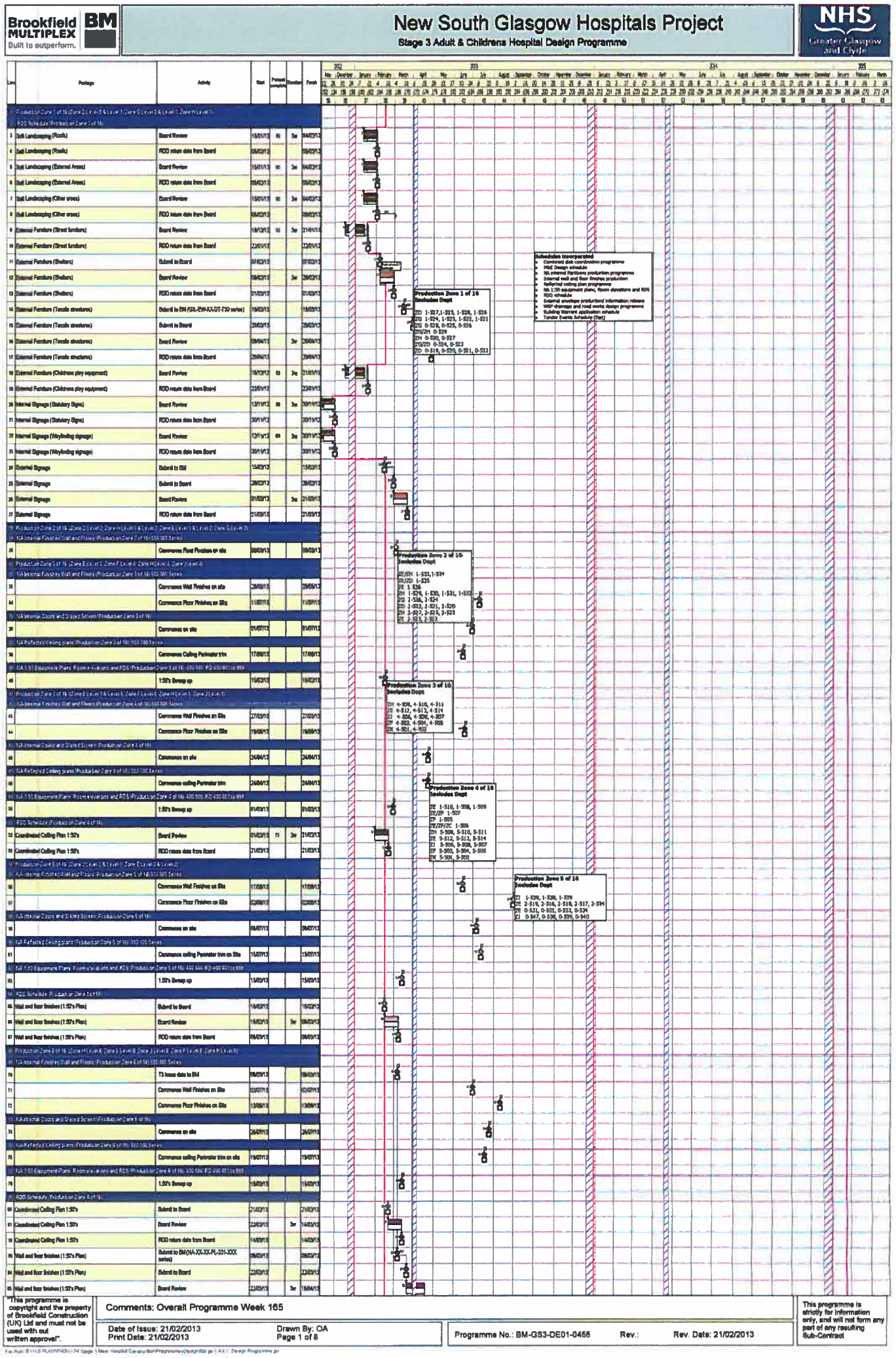
# New South Glasgow Hospitals Project

## Stage 3 Adult & Childrens Hospital Design Programme

NHS Greater Glasgow and Clyde

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Comments: Overall Programme Week 165

Date of Issue: 21/02/2013
Print Date: 21/02/2013

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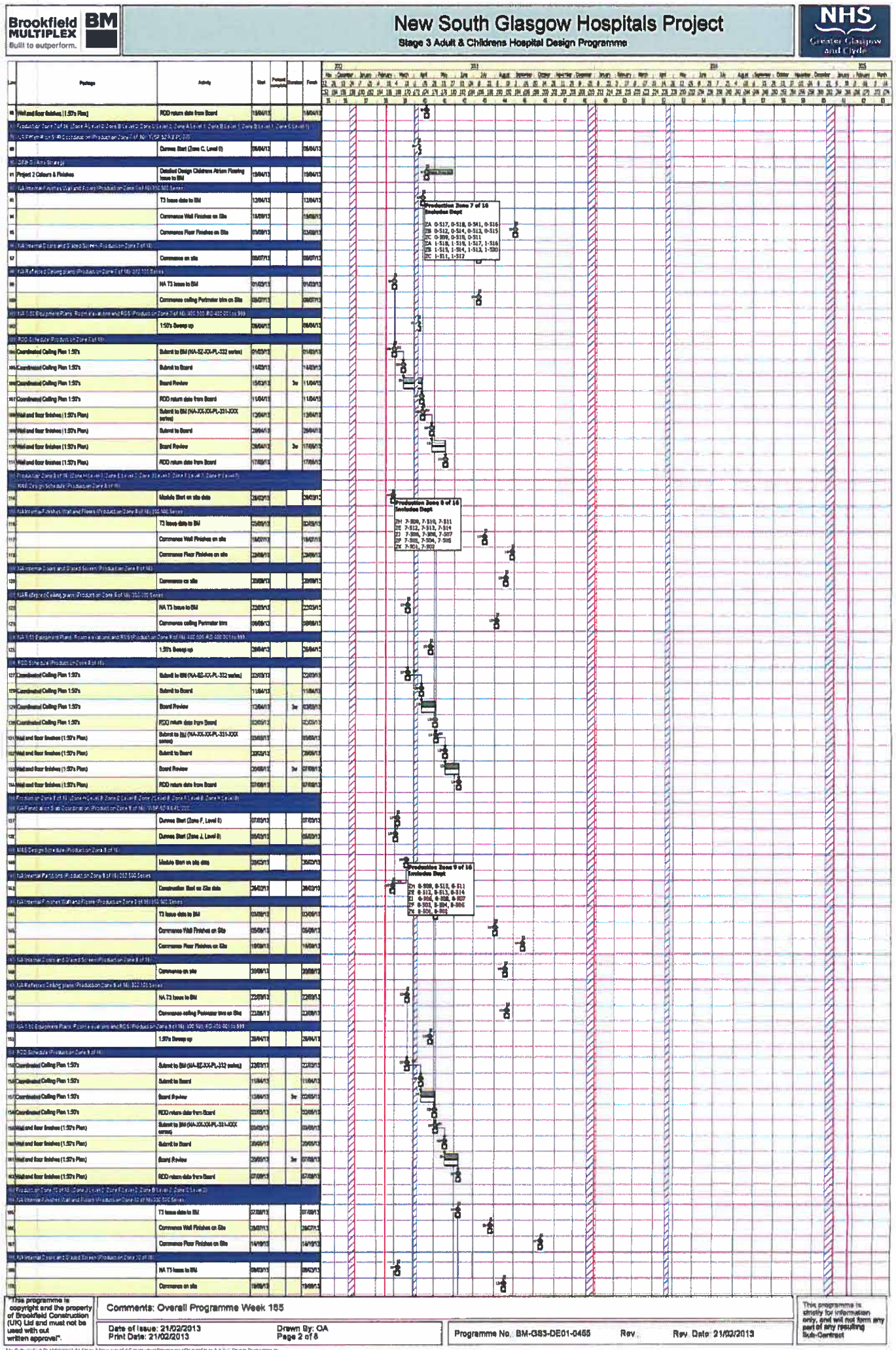
# New South Glasgow Hospitals Project

## Stage 3 Adult & Childrens Hospital Design Programme

NHS Greater Glasgow and Clyde

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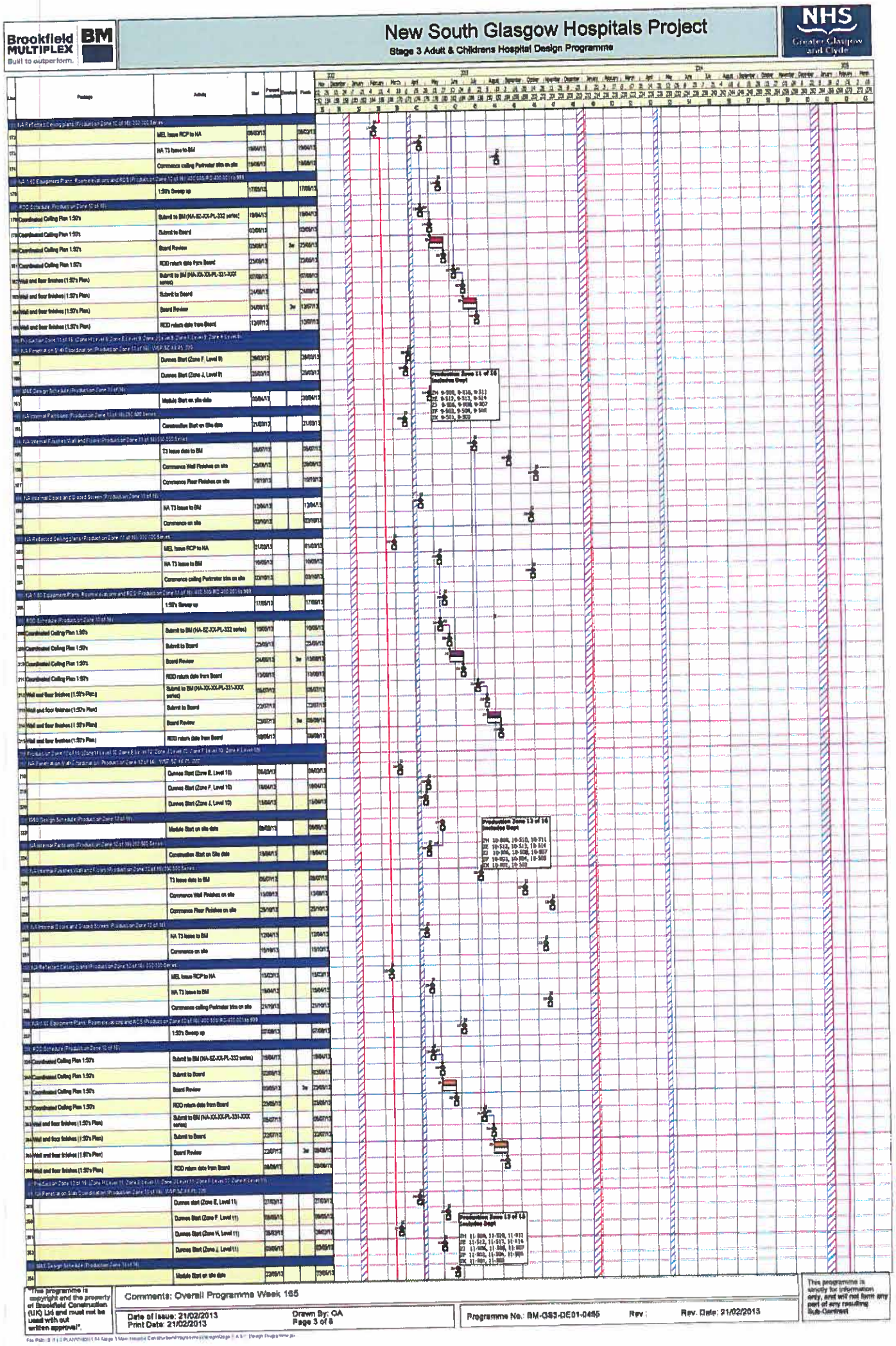
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New South Glasgow Hospitals Project
Stage 3 Adult & Childrens Hospital Design Programme
NHS Greater Glasgow and Clyde
Comments: Overall Programme Week 155
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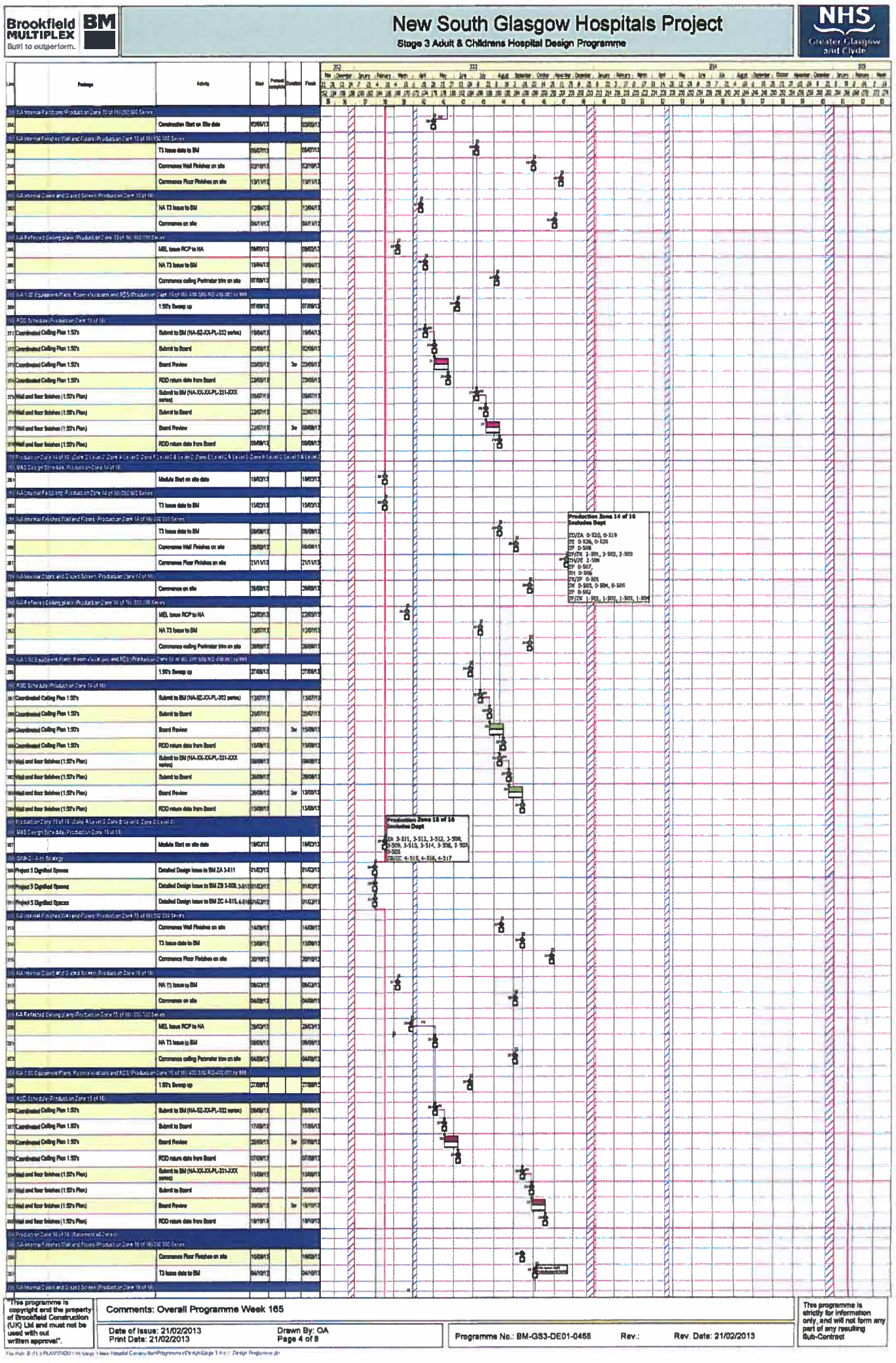
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New South Glasgow Hospitals Project
Stage 3 Adult & Childrens Hospital Design Programme
NHS
Greater Glasgow and Clyde
Production Zone 14 of 16
Includes Dept
ZD/ZA 0-520, 0-519
ZF 0-536, 0-535
ZF 0-538
ZF/ZK 2-501, 2-502, 2-503
ZH/ZE 2-504
ZF 0-507,
ZH 0-508
ZK/ZF 0-504
ZK 0-503, 0-504, 0-505
ZF 0-502
ZF/ZK 1-501, 1-502, 1-503, 1-504
Production Zone 15 of 16
Includes Dept
ZA 3-511, 3-512, 3-513, 3-508, 3-509, 3-510, 3-514, 3-506, 3-507, 3-505
ZB/ZC 4-515, 4-516, 4-517
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# New South Glasgow Hospitals Project

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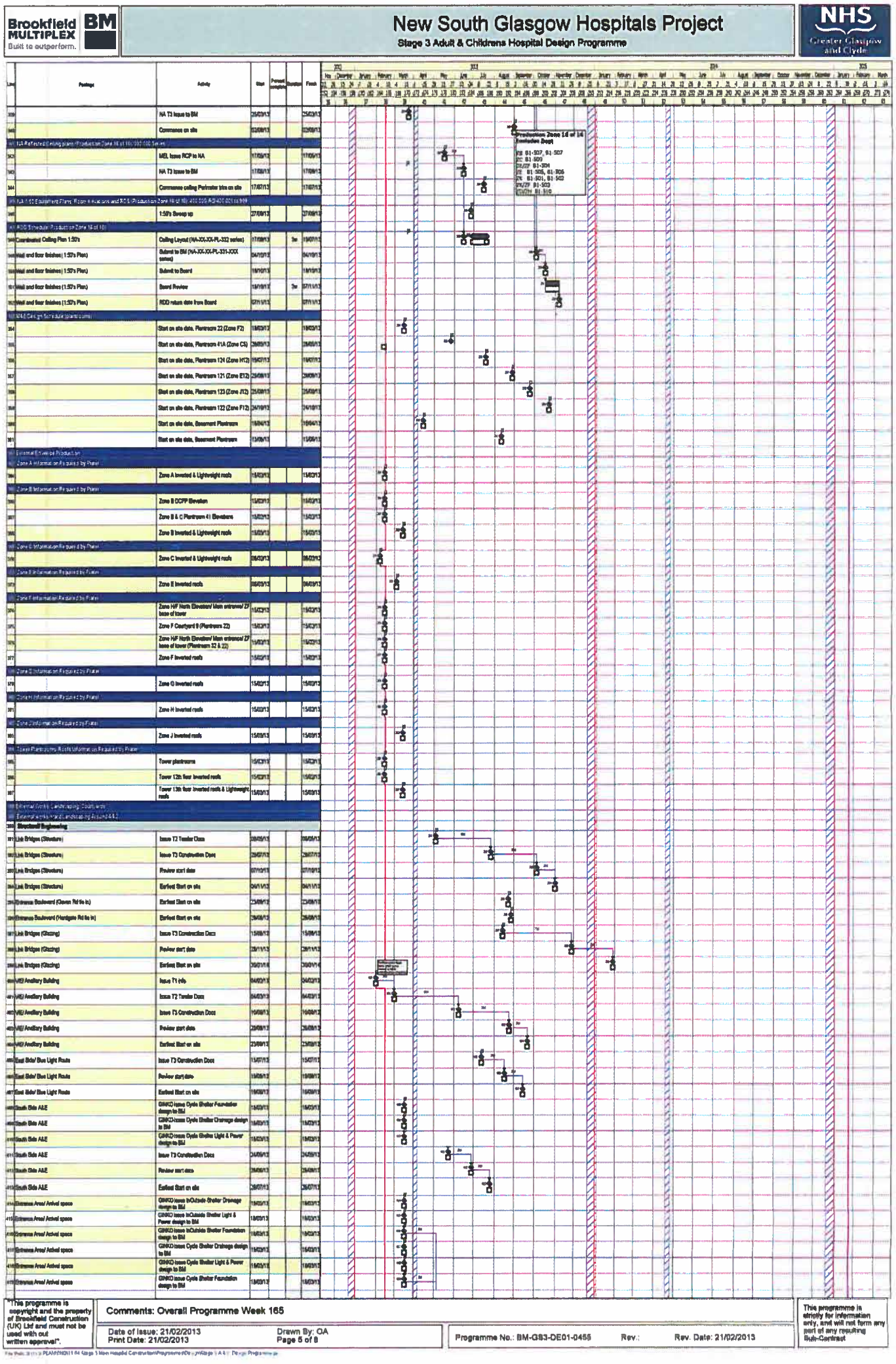
NHS Greater Glasgow and Clyde



| Line | Postings | Activity | Start | Percent complete | Duration | Finish |
|---|---|---|---|---|---|---|
| 339 | | NA T3 Issue to BM | 25/03/13 | | | 25/03/13 |
| 340 | | Commence on site | 02/09/13 | | | 02/09/13 |
| 341 | NA Reflected Ceiling plans (Production Zone 16 of 16) (01-101-102 Series) | | | | | |
| 342 | | MEL Issue RCP to NA | 17/09/13 | | | 17/09/13 |
| 343 | | NA T3 Issue to BM | 17/09/13 | | | 17/09/13 |
| 344 | | Commence ceiling Perimeter kits on site | 17/07/13 | | | 17/07/13 |
| 345 | NA 1:100 Equipment Plans, Room Elevations and RCS (Production Zone 16 of 16) (01-101-102, 02-101-201 to 999 | | | | | |
| 346 | | 1:50's Scoop up | 27/09/13 | | | 27/09/13 |
| 347 | RDD Schedule (Production Zone 16 of 16) | | | | | |
| 348 | Coordinated Ceiling Plan 1:50's | Ceiling Layout (NA-XX-XX-PL-332 series) | 17/09/13 | | 3w | 19/07/13 |
| 349 | Wall and floor finishes (1:50's Plan) | Submit to BM (NA-XX-XX-PL-331-XXX series) | 04/10/13 | | | 04/10/13 |
| 350 | Wall and floor finishes (1:50's Plan) | Submit to Board | 18/10/13 | | | 18/10/13 |
| 351 | Wall and floor finishes (1:50's Plan) | Board Review | 18/10/13 | | 3w | 07/11/13 |
| 352 | Wall and floor finishes (1:50's Plan) | RDD return date from Board | 07/11/13 | | | 07/11/13 |
| 353 | M&E Design Schedule (plantrooms) | | | | | |
| 354 | | Start on site date, Plantroom 22 (Zone F2) | 18/03/13 | | | 18/03/13 |
| 355 | | Start on site date, Plantroom 41A (Zone C5) | 29/05/13 | | | 29/05/13 |
| 356 | | Start on site date, Plantroom 124 (Zone H12) | 19/07/13 | | | 19/07/13 |
| 357 | | Start on site date, Plantroom 121 (Zone E12) | 25/08/13 | | | 25/08/13 |
| 358 | | Start on site date, Plantroom 123 (Zone J12) | 25/08/13 | | | 25/08/13 |
| 359 | | Start on site date, Plantroom 122 (Zone F12) | 04/10/13 | | | 04/10/13 |
| 360 | | Start on site date, Basement Plantroom | 18/04/13 | | | 18/04/13 |
| 361 | | Start on site date, Basement Plantroom | 13/09/13 | | | 13/09/13 |
| 362 | External Envelope Production | | | | | |
| 363 | Zone A Information Required by Prater | | | | | |
| 364 | | Zone A Inverted & Lightweight roofs | 15/03/13 | | | 15/03/13 |
| 365 | Zone B Information Required by Prater | | | | | |
| 366 | | Zone B CCPP Elevation | 15/03/13 | | | 15/03/13 |
| 367 | | Zone B & C Plantroom 41 Elevations | 15/03/13 | | | 15/03/13 |
| 368 | | Zone B Inverted & Lightweight roofs | 15/03/13 | | | 15/03/13 |
| 369 | Zone C Information Required by Prater | | | | | |
| 370 | | Zone C Inverted & Lightweight roofs | 08/03/13 | | | 08/03/13 |
| 371 | Zone E Information Required by Prater | | | | | |
| 372 | | Zone E Inverted roofs | 08/09/13 | | | 08/09/13 |
| 373 | Zone F Information Required by Prater | | | | | |
| 374 | | Zone H/F North Elevation/ Main entrance/ 2F base of tower | 15/03/13 | | | 15/03/13 |
| 375 | | Zone F Courtyard 9 (Plantroom 22) | 15/03/13 | | | 15/03/13 |
| 376 | | Zone H/F North Elevation/ Main entrance/ 2F base of tower (Plantroom 32 & 22) | 15/03/13 | | | 15/03/13 |
| 377 | | Zone F Inverted roofs | 15/03/13 | | | 15/03/13 |
| 378 | Zone G Information Required by Prater | | | | | |
| 379 | | Zone G Inverted roofs | 15/03/13 | | | 15/03/13 |
| 380 | Zone H Information Required by Prater | | | | | |
| 381 | | Zone H Inverted roofs | 15/03/13 | | | 15/03/13 |
| 382 | Zone J Information Required by Prater | | | | | |
| 383 | | Zone J Inverted roofs | 15/03/13 | | | 15/03/13 |
| 384 | Tower Plantrooms Roofs Information Required by Prater | | | | | |
| 385 | | Tower plantrooms | 15/03/13 | | | 15/03/13 |
| 386 | | Tower 12th floor Inverted roofs | 15/03/13 | | | 15/03/13 |
| 387 | | Tower 13th floor Inverted roofs & Lightweight roofs | 15/03/13 | | | 15/03/13 |
| 388 | External Works Landscaping Roads etc | | | | | |
| 389 | External works Hard Landscape by Austin 44 | | | | | |
| 390 | Structural Engineering | | | | | |
| 391 | Link Bridges (Structure) | Issue T2 Tender Docs | 28/05/13 | | | 28/05/13 |
| 392 | Link Bridges (Structure) | Issue T3 Construction Docs | 29/07/13 | | | 29/07/13 |
| 393 | Link Bridges (Structure) | Review start date | 07/10/13 | | | 07/10/13 |
| 394 | Link Bridges (Structure) | Earliest Start on site | 04/11/13 | | | 04/11/13 |
| 395 | Entrance Boulevard (Govan Rd tie in) | Earliest Start on site | 23/09/13 | | | 23/09/13 |
| 396 | Entrance Boulevard (Hardgate Rd tie in) | Earliest Start on site | 28/08/13 | | | 28/08/13 |
| 397 | Link Bridges (Glazing) | Issue T3 Construction Docs | 15/08/13 | | | 15/08/13 |
| 398 | Link Bridges (Glazing) | Review start date | 28/11/13 | | | 28/11/13 |
| 399 | Link Bridges (Glazing) | Earliest Start on site | 30/01/14 | | | 30/01/14 |
| 400 | MSCP Ancillary Building | Issue T1 info | 04/02/13 | | | 04/02/13 |
| 401 | MSCP Ancillary Building | Issue T2 Tender Docs | 04/03/13 | | | 04/03/13 |
| 402 | MSCP Ancillary Building | Issue T3 Construction Docs | 16/08/13 | | | 16/08/13 |
| 403 | MSCP Ancillary Building | Review start date | 28/08/13 | | | 28/08/13 |
| 404 | MSCP Ancillary Building | Earliest Start on site | 23/09/13 | | | 23/09/13 |
| 405 | East Side/ Blue Light Route | Issue T3 Construction Docs | 11/07/13 | | | 11/07/13 |
| 406 | East Side/ Blue Light Route | Review start date | 19/08/13 | | | 19/08/13 |
| 407 | East Side/ Blue Light Route | Earliest Start on site | 16/09/13 | | | 16/09/13 |
| 408 | South Side A&E | GMHD Issue Cycle Shelter Foundation design to BM | 18/03/13 | | | 18/03/13 |
| 409 | South Side A&E | GMHD Issue Cycle Shelter Drainage design to BM | 18/03/13 | | | 18/03/13 |
| 410 | South Side A&E | GMHD Issue Cycle Shelter Light & Power design to BM | 18/03/13 | | | 18/03/13 |
| 411 | South Side A&E | Issue T3 Construction Docs | 04/09/13 | | | 04/09/13 |
| 412 | South Side A&E | Review start date | 28/09/13 | | | 28/09/13 |
| 413 | South Side A&E | Earliest Start on site | 28/07/13 | | | 28/07/13 |
| 414 | Entrance Area/ Arrival space | GMHD Issue InOutside Shelter Drainage design to BM | 18/03/13 | | | 18/03/13 |
| 415 | Entrance Area/ Arrival space | GMHD Issue InOutside Shelter Light & Power design to BM | 18/03/13 | | | 18/03/13 |
| 416 | Entrance Area/ Arrival space | GMHD Issue InOutside Shelter Foundation design to BM | 18/03/13 | | | 18/03/13 |
| 417 | Entrance Area/ Arrival space | GMHD Issue Cycle Shelter Drainage design to BM | 18/03/13 | | | 18/03/13 |
| 418 | Entrance Area/ Arrival space | GMHD Issue Cycle Shelter Light & Power design to BM | 18/03/13 | | | 18/03/13 |
| 419 | Entrance Area/ Arrival space | GMHD Issue Cycle Shelter Foundation design to BM | 18/03/13 | | | 18/03/13 |

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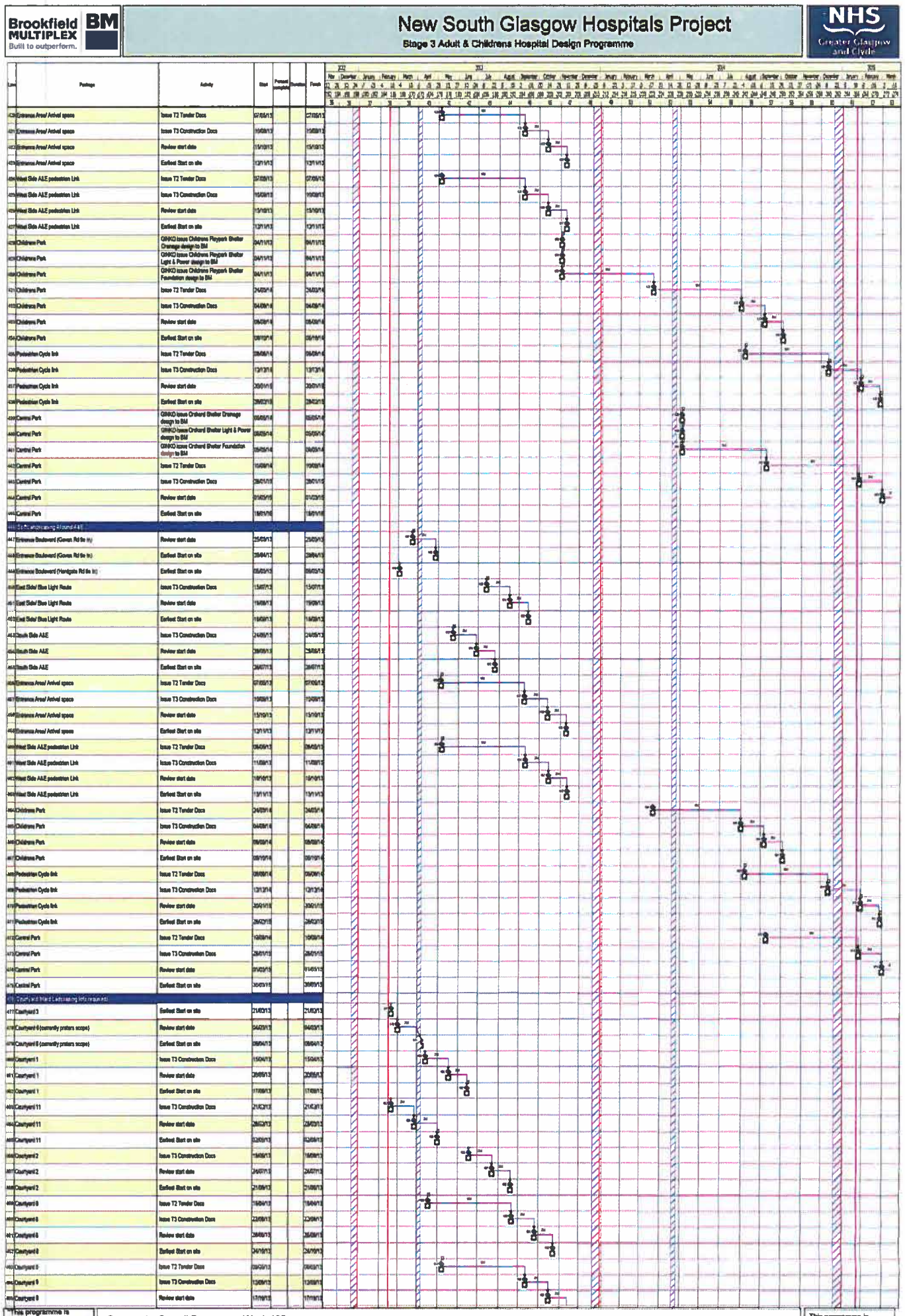
# New South Glasgow Hospitals Project

## Stage 3 Adult & Childrens Hospital Design Programme

NHS Greater Glasgow and Clyde



| Line | Postings | Activity | Start | Forecast complete | Duration | Finish |
|---|---|---|---|---|---|---|
| 436 | Entrance Area/ Arrival space | Issue T2 Tender Docs | 07/05/13 | | | 27/05/13 |
| 437 | Entrance Area/ Arrival space | Issue T3 Construction Docs | 10/06/13 | | | 15/08/13 |
| 438 | Entrance Area/ Arrival space | Review start date | 15/10/13 | | | 15/10/13 |
| 439 | Entrance Area/ Arrival space | Earliest Start on site | 13/11/13 | | | 13/11/13 |
| 454 | West Side A&E pedestrian Link | Issue T2 Tender Docs | 07/05/13 | | | 07/05/13 |
| 455 | West Side A&E pedestrian Link | Issue T3 Construction Docs | 10/06/13 | | | 10/06/13 |
| 456 | West Side A&E pedestrian Link | Review start date | 15/10/13 | | | 15/10/13 |
| 457 | West Side A&E pedestrian Link | Earliest Start on site | 13/11/13 | | | 13/11/13 |
| 428 | Childrens Park | GRKD issue Childrens Playpark Shelter Drainage design to BM | 04/11/13 | | | 04/11/13 |
| 429 | Childrens Park | GRKD issue Childrens Playpark Shelter Light & Power design to BM | 04/11/13 | | | 04/11/13 |
| 430 | Childrens Park | GRKD issue Childrens Playpark Shelter Foundation design to BM | 04/11/13 | | | 04/11/13 |
| 431 | Childrens Park | Issue T2 Tender Docs | 24/05/14 | | | 24/05/14 |
| 432 | Childrens Park | Issue T3 Construction Docs | 04/09/14 | | | 04/09/14 |
| 433 | Childrens Park | Review start date | 05/09/14 | | | 05/09/14 |
| 434 | Childrens Park | Earliest Start on site | 06/10/14 | | | 06/10/14 |
| 435 | Pedestrian Cycle link | Issue T2 Tender Docs | 09/06/14 | | | 09/06/14 |
| 436 | Pedestrian Cycle link | Issue T3 Construction Docs | 13/12/14 | | | 13/12/14 |
| 437 | Pedestrian Cycle link | Review start date | 20/01/15 | | | 20/01/15 |
| 438 | Pedestrian Cycle link | Earliest Start on site | 28/02/15 | | | 28/02/15 |
| 439 | Central Park | GRKD issue Orchard Shelter Drainage design to BM | 05/05/14 | | | 05/05/14 |
| 440 | Central Park | GRKD issue Orchard Shelter Light & Power design to BM | 05/05/14 | | | 05/05/14 |
| 441 | Central Park | GRKD issue Orchard Shelter Foundation design to BM | 05/05/14 | | | 05/05/14 |
| 442 | Central Park | Issue T2 Tender Docs | 15/09/14 | | | 15/09/14 |
| 443 | Central Park | Issue T3 Construction Docs | 28/01/15 | | | 28/01/15 |
| 444 | Central Park | Review start date | 01/05/15 | | | 01/23/15 |
| 445 | Central Park | Earliest Start on site | 18/01/16 | | | 18/01/16 |
| 446 | Entrance Boulevard (Govan Rd to In) | Review start date | 25/03/13 | | | 25/03/13 |
| 447 | Entrance Boulevard (Govan Rd to In) | Earliest Start on site | 28/04/13 | | | 28/04/13 |
| 448 | Entrance Boulevard (Hardgate Rd to In) | Earliest Start on site | 05/03/13 | | | 05/03/13 |
| 449 | East Side/ Blue Light Route | Issue T3 Construction Docs | 15/07/13 | | | 15/07/13 |
| 450 | East Side/ Blue Light Route | Review start date | 19/08/13 | | | 19/08/13 |
| 451 | East Side/ Blue Light Route | Earliest Start on site | 16/09/13 | | | 16/09/13 |
| 452 | South Side A&E | Issue T3 Construction Docs | 24/05/13 | | | 24/05/13 |
| 453 | South Side A&E | Review start date | 28/06/13 | | | 28/06/13 |
| 454 | South Side A&E | Earliest Start on site | 29/07/13 | | | 29/07/13 |
| 455 | Entrance Area/ Arrival space | Issue T2 Tender Docs | 07/05/13 | | | 07/05/13 |
| 456 | Entrance Area/ Arrival space | Issue T3 Construction Docs | 10/06/13 | | | 10/06/13 |
| 457 | Entrance Area/ Arrival space | Review start date | 15/10/13 | | | 15/10/13 |
| 458 | Entrance Area/ Arrival space | Earliest Start on site | 13/11/13 | | | 13/11/13 |
| 459 | West Side A&E pedestrian Link | Issue T2 Tender Docs | 09/06/13 | | | 09/06/13 |
| 460 | West Side A&E pedestrian Link | Issue T3 Construction Docs | 11/08/13 | | | 11/08/13 |
| 461 | West Side A&E pedestrian Link | Review start date | 15/10/13 | | | 15/10/13 |
| 462 | West Side A&E pedestrian Link | Earliest Start on site | 13/11/13 | | | 13/11/13 |
| 463 | Childrens Park | Issue T2 Tender Docs | 24/05/14 | | | 24/05/14 |
| 464 | Childrens Park | Issue T3 Construction Docs | 04/09/14 | | | 04/09/14 |
| 465 | Childrens Park | Review start date | 05/09/14 | | | 05/09/14 |
| 466 | Childrens Park | Earliest Start on site | 06/10/14 | | | 06/10/14 |
| 467 | Pedestrian Cycle link | Issue T2 Tender Docs | 09/06/14 | | | 09/06/14 |
| 468 | Pedestrian Cycle link | Issue T3 Construction Docs | 13/12/14 | | | 13/12/14 |
| 469 | Pedestrian Cycle link | Review start date | 20/01/15 | | | 20/01/15 |
| 470 | Pedestrian Cycle link | Earliest Start on site | 28/02/15 | | | 28/02/15 |
| 471 | Central Park | Issue T2 Tender Docs | 15/09/14 | | | 15/09/14 |
| 472 | Central Park | Issue T3 Construction Docs | 28/01/15 | | | 28/01/15 |
| 473 | Central Park | Review start date | 01/05/15 | | | 01/23/15 |
| 474 | Central Park | Earliest Start on site | 30/03/15 | | | 30/03/15 |
| 475 | Courtyard Island Landscaping (info required) | | | | | |
| 476 | Courtyard 3 | Earliest Start on site | 21/02/13 | | | 21/02/13 |
| 477 | Courtyard 6 (currently protors scope) | Review start date | 04/03/13 | | | 04/03/13 |
| 478 | Courtyard 6 (currently protors scope) | Earliest Start on site | 28/04/13 | | | 28/04/13 |
| 479 | Courtyard 1 | Issue T3 Construction Docs | 15/04/13 | | | 15/04/13 |
| 480 | Courtyard 1 | Review start date | 28/05/13 | | | 28/05/13 |
| 481 | Courtyard 1 | Earliest Start on site | 17/06/13 | | | 17/06/13 |
| 482 | Courtyard 11 | Issue T3 Construction Docs | 21/02/13 | | | 21/02/13 |
| 483 | Courtyard 11 | Review start date | 28/03/13 | | | 28/03/13 |
| 484 | Courtyard 11 | Earliest Start on site | 02/05/13 | | | 02/05/13 |
| 485 | Courtyard 2 | Issue T3 Construction Docs | 16/06/13 | | | 16/06/13 |
| 486 | Courtyard 2 | Review start date | 26/07/13 | | | 26/07/13 |
| 487 | Courtyard 2 | Earliest Start on site | 21/08/13 | | | 21/08/13 |
| 488 | Courtyard 8 | Issue T2 Tender Docs | 15/04/13 | | | 15/04/13 |
| 489 | Courtyard 8 | Issue T3 Construction Docs | 23/05/13 | | | 23/05/13 |
| 490 | Courtyard 8 | Review start date | 28/06/13 | | | 28/06/13 |
| 491 | Courtyard 8 | Earliest Start on site | 24/07/13 | | | 24/07/13 |
| 492 | Courtyard 9 | Issue T2 Tender Docs | 09/05/13 | | | 09/05/13 |
| 493 | Courtyard 9 | Issue T3 Construction Docs | 13/06/13 | | | 13/06/13 |
| 494 | Courtyard 9 | Review start date | 17/07/13 | | | 17/07/13 |

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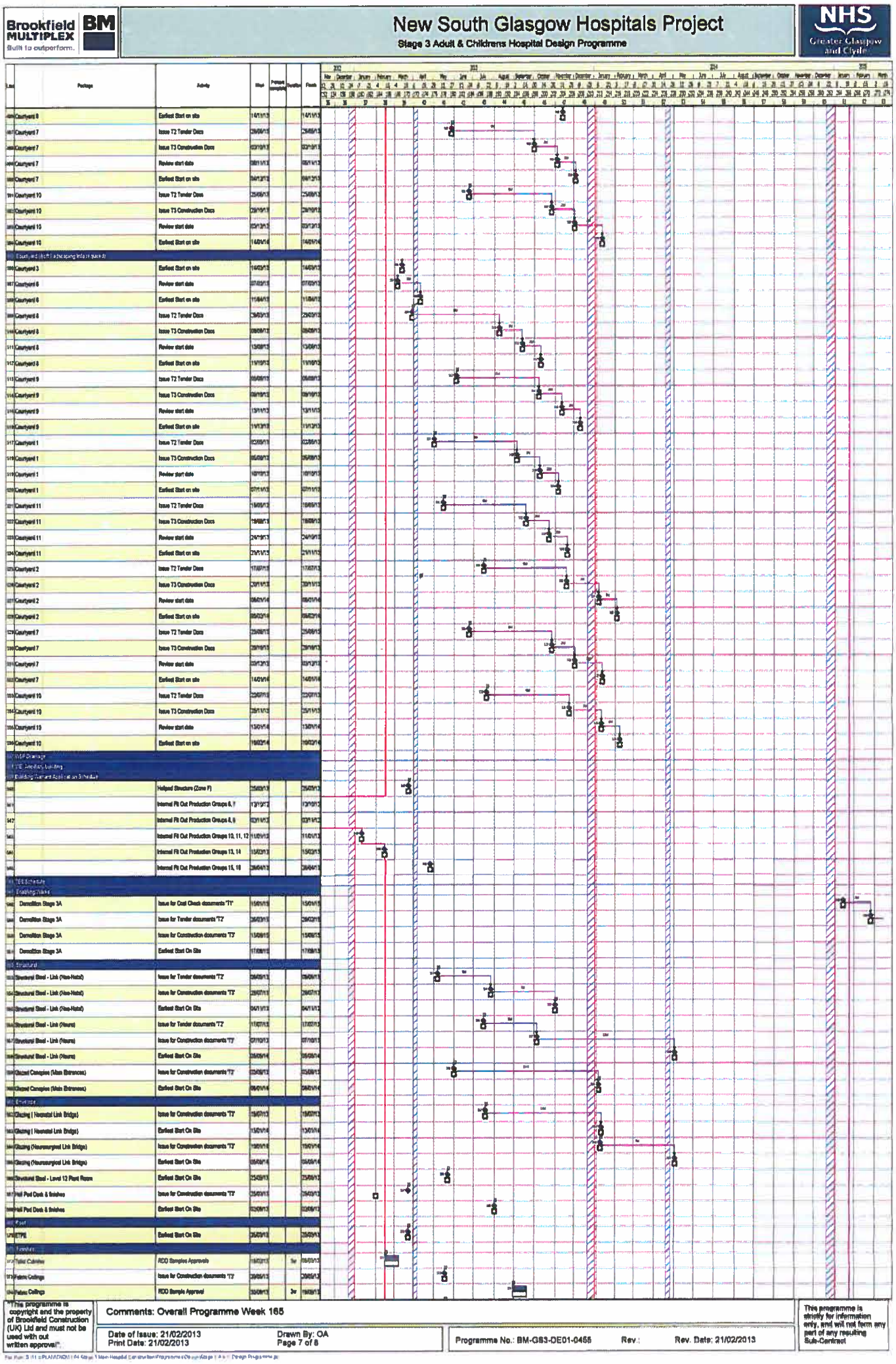
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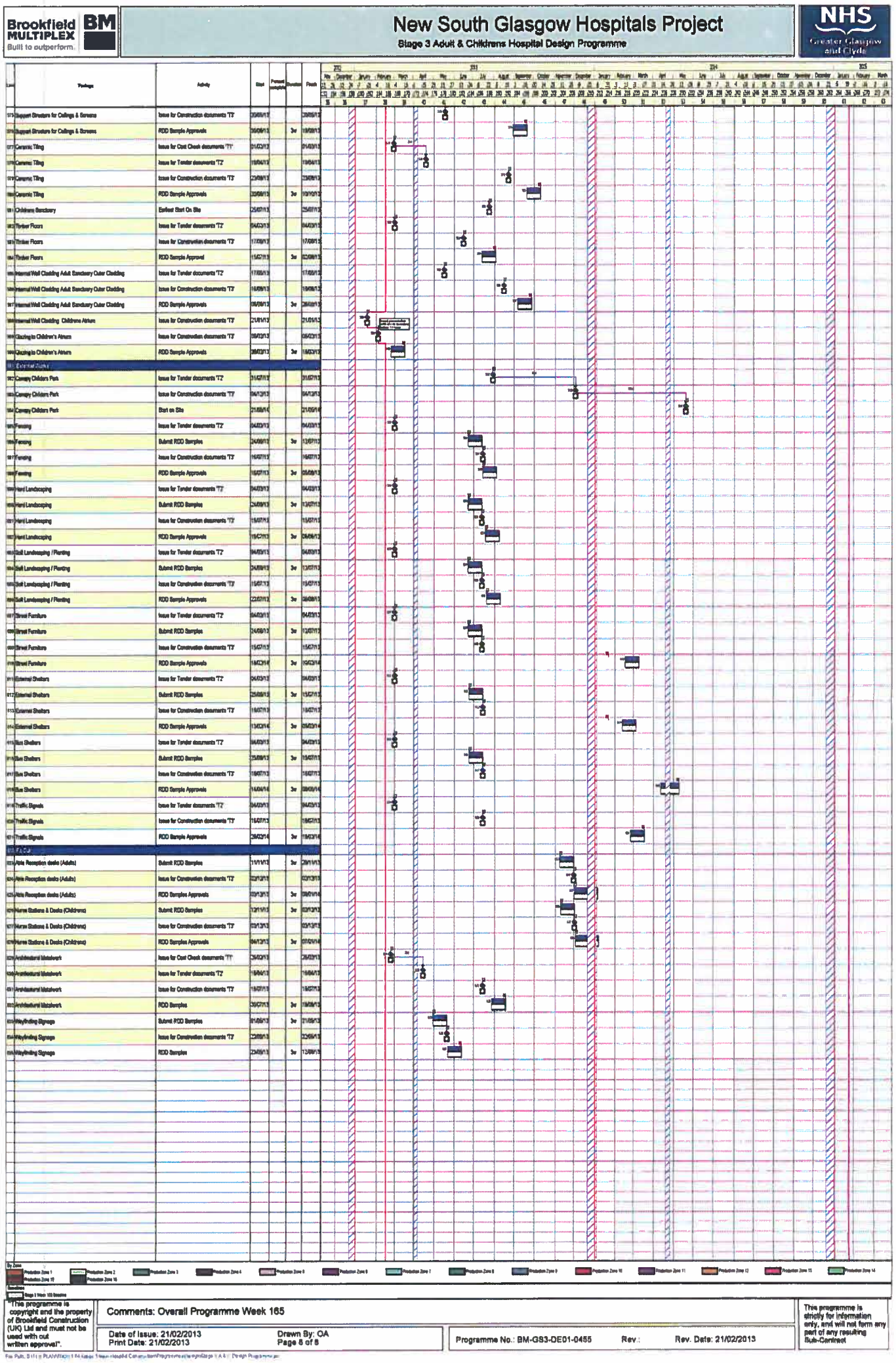
Built to outperform.

# New South Glasgow Hospitals Project

## Stage 3 Adult & Childrens Hospital Design Programme

NHS Greater Glasgow and Clyde



| | Package | Activity | Start | Percent complete | Duration | Finish |
|---|---|---|---|---|---|---|
| 973 | Support Structure for Ceilings & Screens | Issue for Construction documents 'T3' | 23/05/13 | | | 23/05/13 |
| 974 | Support Structure for Ceilings & Screens | RDD Sample Approvals | 26/06/13 | | 3w | 19/08/13 |
| 977 | Ceramic Tiling | Issue for Cost Check documents 'T1' | 01/03/13 | | | 01/03/13 |
| 978 | Ceramic Tiling | Issue for Tender documents 'T2' | 19/04/13 | | | 19/04/13 |
| 979 | Ceramic Tiling | Issue for Construction documents 'T3' | 23/08/13 | | | 23/08/13 |
| 980 | Ceramic Tiling | RDD Sample Approvals | 23/09/13 | | 3w | 10/10/13 |
| 981 | Childrens Sanctuary | Earliest Start On Site | 25/07/13 | | | 25/07/13 |
| 982 | Timber Floors | Issue for Tender documents 'T2' | 04/03/13 | | | 04/03/13 |
| 983 | Timber Floors | Issue for Construction documents 'T3' | 17/09/13 | | | 17/09/13 |
| 984 | Timber Floors | RDD Sample Approval | 15/07/13 | | 3w | 02/09/13 |
| 985 | Internal Wall Cladding Adult Sanctuary Outer Cladding | Issue for Tender documents 'T2' | 17/05/13 | | | 17/05/13 |
| 986 | Internal Wall Cladding Adult Sanctuary Outer Cladding | Issue for Construction documents 'T3' | 19/09/13 | | | 19/09/13 |
| 987 | Internal Wall Cladding Adult Sanctuary Outer Cladding | RDD Sample Approvals | 06/09/13 | | 3w | 26/09/13 |
| 988 | Internal Wall Cladding Childrens Atrium | Issue for Construction documents 'T3' | 21/01/13 | | | 21/01/13 |
| 989 | Glazing to Children's Atrium | Issue for Construction documents 'T3' | 08/03/13 | | | 08/03/13 |
| 990 | Glazing to Children's Atrium | RDD Sample Approvals | 28/03/13 | | 3w | 18/03/13 |
| 991 | External Works | | | | | |
| 992 | Canopy Childers Park | Issue for Tender documents 'T2' | 31/07/13 | | | 31/07/13 |
| 993 | Canopy Childers Park | Issue for Construction documents 'T3' | 04/12/13 | | | 04/12/13 |
| 994 | Canopy Childers Park | Start on Site | 21/08/14 | | | 21/08/14 |
| 995 | Fencing | Issue for Tender documents 'T2' | 04/03/13 | | | 04/03/13 |
| 996 | Fencing | Submit RDD Samples | 24/06/13 | | 3w | 13/07/13 |
| 997 | Fencing | Issue for Construction documents 'T3' | 15/07/13 | | | 15/07/13 |
| 998 | Fencing | RDD Sample Approvals | 16/07/13 | | 3w | 05/08/13 |
| 999 | Hard Landscaping | Issue for Tender documents 'T2' | 04/03/13 | | | 04/03/13 |
| 1000 | Hard Landscaping | Submit RDD Samples | 24/06/13 | | 3w | 13/07/13 |
| 1001 | Hard Landscaping | Issue for Construction documents 'T3' | 15/07/13 | | | 15/07/13 |
| 1002 | Hard Landscaping | RDD Sample Approvals | 16/07/13 | | 3w | 04/08/13 |
| 1003 | Soft Landscaping / Planting | Issue for Tender documents 'T2' | 04/03/13 | | | 04/03/13 |
| 1004 | Soft Landscaping / Planting | Submit RDD Samples | 24/06/13 | | 3w | 13/07/13 |
| 1005 | Soft Landscaping / Planting | Issue for Construction documents 'T3' | 15/07/13 | | | 15/07/13 |
| 1006 | Soft Landscaping / Planting | RDD Sample Approvals | 22/07/13 | | 3w | 26/08/13 |
| 1007 | Street Furniture | Issue for Tender documents 'T2' | 04/03/13 | | | 04/03/13 |
| 1008 | Street Furniture | Submit RDD Samples | 24/06/13 | | 3w | 13/07/13 |
| 1009 | Street Furniture | Issue for Construction documents 'T3' | 15/07/13 | | | 15/07/13 |
| 1010 | Street Furniture | RDD Sample Approvals | 18/02/14 | | 3w | 10/03/14 |
| 1011 | External Shelters | Issue for Tender documents 'T2' | 04/03/13 | | | 04/03/13 |
| 1012 | External Shelters | Submit RDD Samples | 25/08/13 | | 3w | 15/07/13 |
| 1013 | External Shelters | Issue for Construction documents 'T3' | 16/07/13 | | | 16/07/13 |
| 1014 | External Shelters | RDD Sample Approvals | 11/02/14 | | 3w | 05/03/14 |
| 1015 | Bus Shelters | Issue for Tender documents 'T2' | 04/03/13 | | | 04/03/13 |
| 1016 | Bus Shelters | Submit RDD Samples | 25/08/13 | | 3w | 15/07/13 |
| 1017 | Bus Shelters | Issue for Construction documents 'T3' | 16/07/13 | | | 16/07/13 |
| 1018 | Bus Shelters | RDD Sample Approvals | 14/04/14 | | 3w | 28/05/14 |
| 1019 | Traffic Signals | Issue for Tender documents 'T2' | 04/03/13 | | | 04/03/13 |
| 1020 | Traffic Signals | Issue for Construction documents 'T3' | 16/07/13 | | | 16/07/13 |
| 1021 | Traffic Signals | RDD Sample Approvals | 28/02/14 | | 3w | 19/03/14 |
| 1022 | FACIA | | | | | |
| 1023 | Aria Reception desks (Adults) | Submit RDD Samples | 11/11/13 | | 3w | 02/12/13 |
| 1024 | Aria Reception desks (Adults) | Issue for Construction documents 'T3' | 02/12/13 | | | 02/12/13 |
| 1025 | Aria Reception desks (Adults) | RDD Samples Approvals | 23/12/13 | | 3w | 09/01/14 |
| 1026 | Nurse Stations & Desks (Childrens) | Submit RDD Samples | 12/11/13 | | 3w | 03/12/13 |
| 1027 | Nurse Stations & Desks (Childrens) | Issue for Construction documents 'T3' | 03/12/13 | | | 03/12/13 |
| 1028 | Nurse Stations & Desks (Childrens) | RDD Samples Approvals | 04/12/13 | | 3w | 07/01/14 |
| 1029 | Architectural Metalwork | Issue for Cost Check documents 'T1' | 25/02/13 | | | 25/02/13 |
| 1030 | Architectural Metalwork | Issue for Tender documents 'T2' | 19/04/13 | | | 19/04/13 |
| 1031 | Architectural Metalwork | Issue for Construction documents 'T3' | 19/07/13 | | | 19/07/13 |
| 1032 | Architectural Metalwork | RDD Samples | 29/07/13 | | 3w | 19/08/13 |
| 1033 | Wayfinding Signage | Submit RDD Samples | 01/09/13 | | 3w | 21/09/13 |
| 1034 | Wayfinding Signage | Issue for Construction documents 'T3' | 23/08/13 | | | 23/08/13 |
| 1035 | Wayfinding Signage | RDD Samples | 23/09/13 | | 3w | 12/09/13 |

By Zone
Production Zone 1 | Production Zone 2 | Production Zone 3 | Production Zone 4 | Production Zone 5 | Production Zone 6 | Production Zone 7 | Production Zone 8 | Production Zone 9 | Production Zone 10 | Production Zone 11 | Production Zone 12 | Production Zone 13 | Production Zone 14 | Production Zone 15

Key Dates
Stage 3 Week 165 Income

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Comments: Overall Programme Week 165

Date of Issue: 21/02/2013
Print Date: 21/02/2013

Drawn By: OA
Page 8 of 8

Programme No.: BM-GS3-DE01-0455 Rev.: Rev. Date: 21/02/2013

This programme is strictly for information only, and will not form any part of any resulting Sub-Contract

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Brookfield MULTIPLEX BM

# New South Glasgow Hospitals
# M&E Design Schedule

**Based on:**

1 Mercury Procurement - 09.01.12 Rev 0
2 BM Construction Programme BM-GS3-0T01-0135 - 09.01.12
BM-GS3-0T01-0136 - 09.01.12

S:15/15.02/A+C/M+E design schedule

Revison : 6
Date: 14/05.12

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**Level -1**

| ZONE | Level | Area | M&E to BM Drawings | PRE RDD date drws | Workshop | RDD Submission Date | RDD board comments returned | site start date | T3 Date to site start |
|---|---|---|---|---|---|---|---|---|---|
| B | -1 | 507 | 06/02/2012 | 16/02/2012 | 22/02/2012 | 07/03/2012 | 28/03/2012 | 31/05/2013 | 64 |
| B | -1 | 508 | 06/02/2012 | 16/02/2012 | 22/02/2012 | 07/03/2012 | 28/03/2012 | 31/05/2013 | 64 |
| B | -1 | 506 | 06/02/2012 | 16/02/2012 | 22/02/2012 | 07/03/2012 | 28/03/2012 | 14/06/2013 | 66 |
| B | -1 | 505 | 06/02/2012 | 16/02/2012 | 22/02/2012 | 07/03/2012 | 28/03/2012 | 14/06/2013 | 66 |
| C | -1 | 509 | 13/07/2012 | 26/07/2012 | 09/08/2012 | 17/08/2012 | 07/09/2012 | 14/06/2013 | 43 |
| F | -1 | 504 | 23/03/2012 | 05/04/2012 | 19/04/2012 | 27/04/2012 | 18/05/2012 | 14/06/2013 | 59 |
| K | -1 | 503 | 24/10/2011 | 11/11/2011 | 16/11/2011 | 30/11/2011 | 20/01/2012 | 31/05/2013 | 78 |
| K | -1 | 502 | 24/10/2011 | 11/11/2011 | 16/11/2011 | 30/11/2011 | 20/01/2012 | 31/05/2013 | 78 |
| K | -1 | 501 | 24/10/2011 | 11/11/2011 | 16/11/2011 | 30/11/2011 | 20/01/2012 | 31/05/2013 | 78 |
| D | -1 | 510 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 31/05/2013 | 86 |

**Level 0** NSGH Design Deliverables Matrix

| ZONE | Level | Area | M&E to BM Drawings | PRE RDD date drws | Workshop | RDD Submission Date | RDD board comments returned | site start date | T3 Date to site start |
|---|---|---|---|---|---|---|---|---|---|
| G | 0 | 525 | 15/06/2011 | 22/06/2011 | 29/06/2011 | 06/10/2011 | 20/01/2012 | 01/06/2012 | 34 |
| G | 0 | 526 | 15/06/2011 | 22/06/2011 | 29/06/2011 | 06/10/2011 | 20/01/2012 | 08/06/2012 | 35 |
| G | 0 | 528 | 15/06/2011 | 22/06/2011 | 29/06/2011 | 06/10/2011 | 20/01/2012 | 25/05/2012 | 33 |
| D | 0 | 521 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 26/06/2012 | 38 |
| D | 0 | 522 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 25/06/2012 | 38 |
| D | 0 | 523 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 18/06/2012 | 37 |
| D | 0 | 524 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 18/06/2012 | 37 |
| D | 0 | 520 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 14/01/2013 | 67 |
| D | 0 | 519 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 14/01/2013 | 67 |
| K | 0 | 501 | 24/10/2011 | 11/11/2011 | 16/11/2011 | 30/11/2011 | 20/01/2012 | 22/01/2014 | 112 |
| K | 0 | 503 | 24/10/2011 | 11/11/2011 | 16/11/2011 | 30/11/2011 | 20/01/2012 | 22/01/2014 | 112 |
| K | 0 | 505 | 24/10/2011 | 11/11/2011 | 16/11/2011 | 30/11/2011 | 20/01/2012 | 22/01/2014 | 112 |
| K | 0 | 504 | 24/10/2011 | 11/11/2011 | 16/11/2011 | 30/11/2011 | 20/01/2012 | 22/01/2014 | 112 |
| H | 0 | 527 | 21/10/2011 | 18/11/2011 | 24/11/2011 | 02/12/2011 | 27/01/2012 | 26/11/2012 | 51 |
| H | 0 | 530 | 21/10/2011 | 18/11/2011 | 24/11/2011 | 02/12/2011 | 27/01/2012 | 16/11/2012 | 50 |
| H | 0 | 529 | 21/10/2011 | 18/11/2011 | 24/11/2011 | 02/12/2011 | 27/01/2012 | 12/11/2012 | 49 |
| A | 0 | 518 | 18/11/2011 | 02/12/2011 | 08/12/2011 | 21/12/2011 | 03/02/2012 | 21/03/2013 | 65 |
| A | 0 | 517 | 18/11/2011 | 02/12/2011 | 08/12/2011 | 21/12/2011 | 03/02/2012 | **21/03/2013** | 65 |
| E | 0 | 536 | 23/01/2012 | 03/02/2012 | 08/02/2012 | 24/02/2012 | 16/03/2012 | **21/03/2013** | 56 |
| E | 0 | 535 | 23/01/2012 | 03/02/2012 | 08/02/2012 | 24/02/2012 | 16/03/2012 | 25/01/2013 | 48 |
| E | 0 | 533 | 23/01/2012 | 03/02/2012 | 08/02/2012 | 24/02/2012 | 16/03/2012 | 25/01/2013 | 48 |
| E | 0 | 534 | 23/01/2012 | 03/02/2012 | 08/02/2012 | 24/02/2012 | 16/03/2012 | 25/01/2013 | 48 |
| E | 0 | 532 | 23/01/2012 | 03/02/2012 | 08/02/2012 | 24/02/2012 | 16/03/2012 | 11/01/2013 | 46 |
| E | 0 | 531 | 23/01/2012 | 03/02/2012 | 08/02/2012 | 24/02/2012 | 16/03/2012 | 11/01/2013 | 46 |
| B | 0 | 514 | 06/02/2012 | 16/02/2012 | 22/02/2012 | 07/03/2012 | 28/03/2012 | 04/02/2013 | 48 |
| B | 0 | 515 | 06/02/2012 | 16/02/2012 | 22/02/2012 | 07/03/2012 | 28/03/2012 | 08/03/2013 | 52 |
| B | 0 | 513 | 06/02/2012 | 16/02/2012 | 22/02/2012 | 07/03/2012 | 28/03/2012 | 08/03/2013 | 52 |
| B | 0 | 512 | 06/02/2012 | 16/02/2012 | 22/02/2012 | 07/03/2012 | 28/03/2012 | 04/02/2013 | 48 |
| C | 0 | 511 | 13/07/2012 | 26/07/2012 | 09/08/2012 | 17/08/2012 | 07/09/2012 | 15/04/2013 | 34 |
| C | 0 | 510 | 13/07/2012 | 26/07/2012 | 09/08/2012 | 17/08/2012 | 07/09/2012 | 15/04/2013 | 34 |
| C | 0 | 509 | 13/07/2012 | 26/07/2012 | 09/08/2012 | 17/08/2012 | 07/09/2012 | 15/04/2013 | 34 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| F | 0 | 507 | 23/03/2012 | 05/04/2012 | 19/04/2012 | 27/04/2012 | 18/05/2012 | 02/05/2013 | 53 |
| F | 0 | 502 | 23/03/2012 | 05/04/2012 | 19/04/2012 | 27/04/2012 | 18/05/2012 | 22/04/2014 | 104 |
| F | 0 | 508 | 23/03/2012 | 05/04/2012 | 19/04/2012 | 27/04/2012 | 18/05/2012 | 02/05/2013 | 53 |
| J | 0 | 540 | 04/05/2012 | 17/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 18/02/2013 | 38 |
| J | 0 | 537 | 04/05/2012 | 17/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 22/02/2013 | 38 |
| J | 0 | 538 | 04/05/2012 | 17/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 22/02/2013 | 38 |
| J | 0 | 539 | 04/05/2012 | 17/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 18/02/2013 | 38 |

**Level 1**

| ZONE | Level | Area | M&E to BM Drawings | PRE RDD date drws | Workshop | RDD Submission Date | RDD board comments returned | site start date | T3 Date to site start |
|---|---|---|---|---|---|---|---|---|---|
| G | 1 | 525 | 15/06/2011 | 22/06/2011 | 29/06/2011 | 06/10/2011 | 20/01/2012 | 17/02/2012 | 19 |
| G | 1 | 526 | 15/06/2011 | 22/06/2011 | 29/06/2011 | 06/10/2011 | 20/01/2012 | 24/02/2012 | 20 |
| G | 1 | 527 | 15/06/2011 | 22/06/2011 | 29/06/2011 | 06/10/2011 | 20/01/2012 | 22/02/2012 | 20 |
| G | 1 | 528 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 19/03/2012 | 24 |
| D | 1 | 524 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 26/03/2012 | 25 |
| D | 1 | 522 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 27/02/2012 | 21 |
| D | 1 | 521 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 27/02/2012 | 21 |
| D | 1 | 523 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 03/04/2012 | 26 |
| K | 1 | 502 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 20/01/2014 | 120 |
| K | 1 | 501 | 24/10/2011 | 11/111/11 | 16/11/2011 | 30/11/2011 | 20/01/2012 | 20/01/2014 | 112 |
| K | 1 | 503 | 24/10/2011 | 11/111/11 | 16/11/2011 | 30/11/2011 | 20/01/2012 | 20/01/2014 | 112 |
| K | 1 | 504 | 24/10/2011 | 11/111/11 | 16/11/2011 | 30/11/2011 | 20/01/2012 | 20/01/2014 | 112 |
| H | 1 | 529 | 24/10/2011 | 11/111/11 | 16/11/2011 | 30/11/2011 | 20/01/2012 | 27/08/2012 | 39 |
| H | 1 | 530 | 21/10/2011 | 18/11/2011 | 24/11/2011 | 02/12/2011 | 27/01/2012 | 27/08/2012 | 38 |
| H | 1 | 531 | 21/10/2011 | 18/11/2011 | 24/11/2011 | 02/12/2011 | 27/01/2012 | 05/10/2012 | 44 |
| H | 1 | 532 | 21/10/2011 | 18/11/2011 | 24/11/2011 | 02/12/2011 | 27/01/2012 | 05/10/2012 | 44 |
| A | 1 | 517 | 18/11/2011 | 02/12/2011 | 08/12/2011 | 21/12/2011 | 03/02/2012 | 15/11/2012 | 47 |
| A | 1 | 518 | 18/11/2011 | 02/12/2011 | 08/12/2011 | 21/12/2011 | 03/02/2012 | 19/10/2012 | 43 |
| E | 1 | 536 | 23/01/2012 | 03/02/2012 | 08/02/2012 | 24/02/2012 | 16/03/2012 | 06/08/2012 | 23 |
| E | 1 | 535 | 23/01/2012 | 03/02/2012 | 08/02/2012 | 24/02/2012 | 16/03/2012 | 01/10/2012 | 31 |
| E | 1 | 534 | 23/01/2012 | 03/02/2012 | 08/02/2012 | 24/02/2012 | 16/03/2012 | 08/10/2012 | 32 |
| E | 1 | 533 | 23/01/2012 | 03/02/2012 | 08/02/2012 | 24/02/2012 | 16/03/2012 | 01/10/2012 | 31 |
| B | 1 | 516 | 23/01/2012 | 03/02/2012 | 08/02/2012 | 24/02/2012 | 16/03/2012 | 21/11/2012 | 39 |
| B | 1 | 514 | 23/01/2012 | 03/02/2012 | 08/02/2012 | 24/02/2012 | 16/03/2012 | 21/11/2012 | 39 |
| B | 1 | 513 | 06/02/2012 | 16/02/2012 | 22/02/2012 | 07/03/2012 | 28/03/2012 | 21/11/2012 | 37 |
| B | 1 | 519 | 06/02/2012 | 16/02/2012 | 22/02/2012 | 07/03/2012 | 28/03/2012 | 30/11/2012 | 38 |
| B | 1 | 520 | 06/02/2012 | 16/02/2012 | 22/02/2012 | 07/03/2012 | 28/03/2012 | 11/12/2012 | 40 |
| B | 1 | 515 | 06/02/2012 | 16/02/2012 | 22/02/2012 | 07/03/2012 | 28/03/2012 | 21/11/2012 | 37 |
| C | 1 | 512 | 13/07/2012 | 26/07/2012 | 09/08/2012 | 17/08/2012 | 07/09/2012 | 15/01/2013 | 22 |
| C | 1 | 511 | 13/07/2012 | 26/07/2012 | 09/08/2012 | 17/08/2012 | 07/09/2012 | 15/01/2013 | 22 |
| C | 1 | 506 | 23/03/2012 | 05/04/2012 | 19/04/2012 | 27/04/2012 | 18/05/2012 | 18/12/2012 | 34 |
| F | 1 | 505 | 23/03/2012 | 05/04/2012 | 19/04/2012 | 27/04/2012 | 18/05/2012 | 16/10/2012 | 25 |
| F | 1 | 507 | 23/03/2012 | 05/04/2012 | 19/04/2012 | 27/04/2012 | 18/05/2012 | 26/11/2012 | 30 |
| F | 1 | 508 | 23/03/2012 | 05/04/2012 | 19/04/2012 | 27/04/2012 | 18/05/2012 | 01/10/2012 | 22 |
| F | 1 | 509 | 23/03/2012 | 05/04/2012 | 19/04/2012 | 27/04/2012 | 18/05/2012 | 01/10/2012 | 22 |
| F | 1 | 510 | 23/03/2012 | 05/04/2012 | 19/04/2012 | 27/04/2012 | 18/05/2012 | 01/10/2012 | 22 |
| J | 1 | 538 | 04/04/2012 | 05/04/2012 | 19/04/2012 | 27/04/2012 | 18/05/2012 | 05/10/2012 | 23 |
| J | 1 | 537 | 04/04/2012 | 05/04/2012 | 19/04/2012 | 27/04/2012 | 18/05/2012 | 07/09/2012 | 19 |
| J | 1 | 539 | 04/04/2012 | 05/04/2012 | 19/04/2012 | 27/04/2012 | 18/05/2012 | 05/10/2012 | 23 |

**Level 2**

| ZONE | Level | Area | M&E to BM Drawings | PRE RDD date drws | Workshop | RDD Submission Date | RDD board comments returned | site start date | T3 Date to site start |
|---|---|---|---|---|---|---|---|---|---|
| G | 2 | 524 | 15/06/2011 | 22/06/2011 | 29/06/2011 | 06/10/2011 | 20/01/2012 | **07/05/2012** | 31 |
| G | 2 | 526 | 15/06/2011 | 22/06/2011 | 29/06/2011 | 06/10/2011 | 20/01/2012 | **07/05/2012** | 31 |
| D | 2 | 522 | 15/06/2011 | 22/06/2011 | 29/06/2011 | 06/10/2011 | 20/01/2012 | **14/05/2012** | 32 |
| D | 2 | 521 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | **21/05/2012** | 33 |
| D | 2 | 520 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | **21/05/2012** | 33 |
| K | 2 | 501 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 19/12/2012 | 63 |
| K | 2 | 502 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 19/12/2012 | 63 |
| K | 2 | 504 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 19/12/2012 | 63 |
| K | 2 | 503 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 19/12/2012 | 63 |
| H | 2 | 525 | 24/10/2011 | 11/111/11 | 16/11/2011 | 30/11/2011 | 20/01/2012 | 21/10/2012 | 47 |
| H | 2 | 527 | 24/10/2011 | 11/111/11 | 16/11/2011 | 30/11/2011 | 20/01/2012 | 19/09/2012 | 42 |
| H | 2 | 528 | 24/10/2011 | 11/111/11 | 16/11/2011 | 30/11/2011 | 20/01/2012 | 19/09/2012 | 42 |
| A | 2 | 513 | 24/10/2011 | 11/111/11 | 16/11/2011 | 30/11/2011 | 20/01/2012 | 22/10/2012 | 47 |
| A | 2 | 514 | 21/10/2011 | 18/11/2011 | 24/11/2011 | 02/12/2011 | 27/01/2012 | 22/10/2012 | 46 |
| E | 2 | 517 | 21/10/2011 | 18/11/2011 | 24/11/2011 | 02/12/2011 | 27/01/2012 | 30/11/2012 | 52 |
| E | 2 | 530 | 21/10/2011 | 18/11/2011 | 24/11/2011 | 02/12/2011 | 27/01/2012 | 30/11/2012 | 52 |
| E | 2 | 518 | 18/11/2011 | 02/12/2011 | 08/12/2011 | 21/12/2011 | 03/02/2012 | 31/10/2012 | 45 |
| E | 2 | 519 | 18/11/2011 | 02/12/2011 | 08/12/2011 | 21/12/2011 | 03/02/2012 | 30/10/2012 | 45 |
| B | 2 | 512 | 06/02/2012 | 03/02/2012 | 08/02/2012 | 24/02/2012 | 16/03/2012 | 21/11//12 | 48 |
| B | 2 | 515 | 06/02/2012 | 03/02/2012 | 08/02/2012 | 24/02/2012 | 16/03/2012 | 30/11/2012 | 40 |
| B | 2 | 510 | 06/02/2012 | 03/02/2012 | 08/02/2012 | 24/02/2012 | 16/03/2012 | 05/12/2012 | 41 |
| B | 2 | 511 | 06/02/2012 | 03/02/2012 | 08/02/2012 | 24/02/2012 | 16/03/2012 | 11/12/2012 | 42 |
| C | 2 | 508 | 13/07/2012 | 26/07/2012 | 09/08/2012 | 17/08/2012 | 07/09/2012 | 05/02/2013 | 25 |
| C | 2 | 509 | 13/07/2012 | 26/07/2012 | 09/08/2012 | 17/08/2012 | 07/09/2012 | 05/02/2013 | 25 |
| F | 2 | 507 | 23/03/2012 | 05/04/2012 | 19/04/2012 | 27/04/2012 | 18/05/2012 | 19/12/2012 | 34 |
| F | 2 | 506 | 23/03/2012 | 05/04/2012 | 19/04/2012 | 27/04/2012 | 18/05/2012 | 19/12/2012 | 34 |
| F | 2 | 505 | 23/03/2012 | 05/04/2012 | 19/04/2012 | 27/04/2012 | 18/05/2012 | 19/12/2012 | 34 |
| J | 2 | 529 | 04/05/2012 | 17/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 02/11/2012 | 22 |
| J | 2 | 530 | 04/05/2012 | 17/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 02/11/2012 | 22 |
| J | 2 | 532 | 04/05/2012 | 17/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 05/10/2012 | 18 |
| J | 2 | 533 | 04/05/2012 | 17/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 02/11/2012 | 22 |
| J | 2 | 531 | 04/05/2012 | 17/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 02/11/2012 | 22 |

**Level 3**

| ZONE | Level | Area | M&E to BM Drawings | PRE RDD date drws | Workshop | RDD Submission Date | RDD board comments returned | site start date | T3 Date to site start |
|---|---|---|---|---|---|---|---|---|---|
| K | 3 | 501 | 15/06/2011 | 22/06/2011 | 29/06/2011 | 06/10/2011 | 20/01/2012 | 25/01/2013 | 68 |
| K | 3 | 502 | 15/06/2011 | 22/06/2011 | 29/06/2011 | 06/10/2011 | 20/01/2012 | 25/01/2013 | 68 |
| K | 3 | 503 | 15/06/2011 | 22/06/2011 | 29/06/2011 | 06/10/2011 | 20/01/2012 | 21/03/2014 | 128 |
| K | 3 | 504 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 21/03/2014 | 128 |
| A | 3 | 512 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 17/12/2012 | 63 |
| A | 3 | 513 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 17/12/2012 | 63 |
| A | 3 | 511 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 17/12/2012 | 63 |
| B | 3 | 514 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 17/12/2012 | 63 |
| B | 3 | 515 | 26/08/2011 | 16/09/2011 | 21/09/2011 | 05/10/2011 | 20/01/2012 | 17/12/2012 | 63 |
| B | 3 | 510 | 24/10/2011 | 11/11/2011 | 16/11/2011 | 30/11/2011 | 20/01/2012 | 21/10/2013 | 99 |
| B | 3 | 509 | 24/10/2011 | 11/11/2011 | 16/11/2011 | 30/11/2011 | 20/01/2012 | 21/01/2013 | 60 |
| B | 3 | 508 | 24/10/2011 | 11/11/2011 | 16/11/2011 | 30/11/2011 | 20/01/2012 | 21/01/2013 | 60 |
| C | 3 | 506 | 13/07/2012 | 26/07/2012 | 09/08/2012 | 17/08/2012 | 07/09/2012 | 12/02/2013 | 26 |
| C | 3 | 505 | 13/07/2012 | 26/07/2012 | 09/08/2012 | 17/08/2012 | 07/09/2012 | 12/02/2013 | 26 |
| C | 3 | 507 | 13/07/2012 | 26/07/2012 | 09/08/2012 | 17/08/2012 | 07/09/2012 | 12/02/2013 | 26 |

**Level 4**

| ZONE | Level | Area | M&E to BM Drawings | PRE RDD date drws | Workshop | RDD Submission Date | RDD board comments returned | site start date | T3 Date to site start |
|---|---|---|---|---|---|---|---|---|---|
| E | 4 | 512 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 29/10/2012 | 26 |
| E | 4 | 513 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 30/10/2012 | 26 |
| E | 4 | 514 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 31/10/2012 | 26 |
| F | 4 | 503 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 20/12/2012 | 33 |
| F | 4 | 504 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 20/12/2012 | 33 |
| F | 4 | 505 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 20/12/2012 | 33 |
| H | 4 | 509 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 10/10/2012 | 23 |
| H | 4 | 510 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 11/10/2012 | 23 |
| H | 4 | 511 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 12/10/2012 | 23 |
| J | 4 | 506 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 27/11/2012 | 30 |
| J | 4 | 507 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 27/11/2012 | 30 |
| J | 4 | 508 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 27/11/2012 | 30 |
| C | 4 | 515 | 13/07/2012 | 26/07/2012 | 09/08/2012 | 17/08/2012 | 07/09/2012 | 11/03/2013 | 29 |
| C | 4 | 516 | 13/07/2012 | 26/07/2012 | 09/08/2012 | 17/08/2012 | 07/09/2012 | 11/03/2013 | 29 |
| C | 4 | 517 | 13/07/2012 | 26/07/2012 | 09/08/2012 | 17/08/2012 | 07/09/2012 | 11/03/2013 | 29 |

**Level 5**

| ZONE | Level | Area | M&E to BM Drawings | PRE RDD date drws | Workshop | RDD Submission Date | RDD board comments returned | site start date | T3 Date to site start |
|---|---|---|---|---|---|---|---|---|---|
| E | 5 | 512 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 21/11/2012 | 29 |
| E | 5 | 513 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 21/11/2012 | 29 |
| E | 5 | 514 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 21/11/2012 | 29 |
| F | 5 | 503 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 28/01/2013 | 39 |
| F | 5 | 504 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 28/01/2013 | 39 |
| F | 5 | 505 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 28/01/2013 | 39 |
| H | 5 | 509 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 01/11/2012 | 26 |
| H | 5 | 510 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 01/11/2012 | 26 |
| H | 5 | 511 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 01/11/2012 | 26 |
| J | 5 | 506 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 18/12/2012 | 33 |
| J | 5 | 507 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 18/12/2012 | 33 |
| J | 5 | 508 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 18/12/2012 | 33 |

**Level 6**

| ZONE | Level | Area | M&E to BM Drawings | PRE RDD date drws | Workshop | RDD Submission Date | RDD board comments returned | site start date | T3 Date to site start |
|---|---|---|---|---|---|---|---|---|---|
| E | 6 | 512 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 14/12/2012 | 32 |
| E | 6 | 513 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 14/12/2012 | 32 |
| E | 6 | 514 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 14/12/2012 | 32 |
| F | 6 | 503 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 20/02/2013 | 42 |
| F | 6 | 504 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 20/02/2013 | 42 |
| F | 6 | 505 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 20/02/2013 | 42 |
| H | 6 | 509 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 22/11/2012 | 29 |
| H | 6 | 510 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 22/11/2012 | 29 |
| H | 6 | 511 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 22/11/2012 | 29 |
| J | 6 | 506 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 22/01/2013 | 38 |
| J | 6 | 507 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 22/01/2013 | 38 |
| J | 6 | 508 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 22/01/2013 | 38 |

**Level 7**

| ZONE | Level | Area | M&E to BM Drawings | PRE RDD date drws | Workshop | RDD Submission Date | RDD board comments returned | site start date | T3 Date to site start |
|---|---|---|---|---|---|---|---|---|---|
| E | 7 | 512 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 22/01/2013 | 38 |
| E | 7 | 513 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 22/01/2013 | 38 |
| E | 7 | 514 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 22/01/2013 | 38 |
| F | 7 | 503 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 15/03/2013 | 45 |
| F | 7 | 504 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 15/03/2013 | 45 |
| F | 7 | 505 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 15/03/2013 | 45 |
| H | 7 | 509 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 13/12/2012 | 32 |
| H | 7 | 510 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 13/12/2012 | 32 |
| H | 7 | 511 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 13/12/2012 | 32 |
| J | 7 | 506 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 12/02/2013 | 41 |
| J | 7 | 507 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 12/02/2013 | 41 |
| J | 7 | 508 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 12/02/2013 | 41 |

Level 8

| ZONE | Level | Area | M&E to BM Drawings | PRE RDD date drws | Workshop | RDD Submission Date | RDD board comments returned | site start date | T3 Date to site start |
|---|---|---|---|---|---|---|---|---|---|
| E | 8 | 512 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 14/02/2013 | 41 |
| E | 8 | 513 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 14/02/2013 | 41 |
| E | 8 | 514 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 14/02/2013 | 41 |
| F | 8 | 503 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 16/04/2013 | 50 |
| F | 8 | 504 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 16/04/2013 | 50 |
| F | 8 | 505 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 16/04/2013 | 50 |
| H | 8 | 509 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 17/01/2013 | 37 |
| H | 8 | 510 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 17/01/2013 | 37 |
| H | 8 | 511 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 17/01/2013 | 37 |
| J | 8 | 506 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 07/03/2013 | 44 |
| J | 8 | 507 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 07/03/2013 | 44 |
| J | 8 | 508 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 07/03/2013 | 44 |

**Level 9**

| ZONE | Level | Area | M&E to BM Drawings | PRE RDD date drws | Workshop | RDD Submission Date | RDD board comments returned | site start date | T3 Date to site start |
|---|---|---|---|---|---|---|---|---|---|
| E | 9 | 512 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 11/03/2013 | 45 |
| E | 9 | 513 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 11/03/2013 | 45 |
| E | 9 | 514 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 11/03/2013 | 45 |
| F | 9 | 503 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 09/05/2013 | 53 |
| F | 9 | 504 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 09/05/2013 | 53 |
| F | 9 | 505 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 09/05/2013 | 53 |
| H | 9 | 509 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 07/02/2013 | 40 |
| H | 9 | 510 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 07/02/2013 | 40 |
| H | 9 | 511 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 07/02/2013 | 40 |
| J | 9 | 506 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 08/04/2013 | 49 |
| J | 9 | 507 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 08/04/2013 | 49 |
| J | 9 | 508 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 08/04/2013 | 49 |

**Level 10**

| ZONE | Level | Area | M&E to BM Drawings | PRE RDD date drws | Workshop | RDD Submission Date | RDD board comments returned | site start date | T3 Date to site start |
|---|---|---|---|---|---|---|---|---|---|
| E | 10 | 512 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 10/04/2013 | 49 |
| E | 10 | 513 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 10/04/2013 | 49 |
| E | 10 | 514 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 10/04/2013 | 49 |
| F | 10 | 503 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 03/06/2013 | 57 |
| F | 10 | 504 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 03/06/2013 | 57 |
| F | 10 | 505 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 03/06/2013 | 57 |
| H | 10 | 509 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 28/02/2013 | 43 |
| H | 10 | 510 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 28/02/2013 | 43 |
| H | 10 | 511 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 28/02/2013 | 43 |
| J | 10 | 506 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 01/05/2013 | 52 |
| J | 10 | 507 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 01/05/2013 | 52 |
| J | 10 | 508 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 01/05/2013 | 52 |

**Level 11**

| ZONE | Level | Area | M&E to BM Drawings | PRE RDD date drws | Workshop | RDD Submission Date | RDD board comments returned | site start date | T3 Date to site start |
|---|---|---|---|---|---|---|---|---|---|
| E | 11 | 512 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 03/05/2013 | 52 |
| E | 11 | 513 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 03/05/2013 | 52 |
| E | 11 | 514 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 03/05/2013 | 52 |
| F | 11 | 503 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 26/06/2013 | 60 |
| F | 11 | 504 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 26/06/2013 | 60 |
| F | 11 | 505 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 26/06/2013 | 60 |
| H | 11 | 509 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 14/03/2013 | 45 |
| H | 11 | 510 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 14/03/2013 | 45 |
| H | 11 | 511 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 14/03/2013 | 45 |
| J | 11 | 506 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 24/05/2013 | 55 |
| J | 11 | 507 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 24/05/2013 | 55 |
| J | 11 | 508 | 16/03/2012 | 29/03/2012 | 19/04/2012 | 03/05/2012 | 24/05/2012 | 24/05/2013 | 55 |

Zone K

| ZONE | Level | Area | M&E to BM Drawings | PRE RDD date drws | Workshop | RDD Submission Date | RDD board comments returned | site start date | T3 Date to site start |
|---|---|---|---|---|---|---|---|---|---|
| K | 4 | 501 | 27/04/2012 | 10/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 29/04/2013 | 51 |
| K | 4 | 502 | 27/04/2012 | 10/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 29/04/2013 | 48 |
| K | 5 | 501 | 27/04/2012 | 10/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 22/05/2013 | 51 |
| K | 5 | 502 | 27/04/2012 | 10/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 22/05/2013 | 51 |
| K | 6 | 501 | 27/04/2012 | 10/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 14/06/2013 | 54 |
| K | 6 | 502 | 27/04/2012 | 10/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 14/06/2013 | 54 |
| K | 7 | 501 | 27/04/2012 | 10/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 09/07/2013 | 58 |
| K | 7 | 502 | 27/04/2012 | 10/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 09/07/2013 | 58 |
| K | 8 | 501 | 27/04/2012 | 10/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 25/07/2013 | 60 |
| K | 8 | 502 | 27/04/2012 | 10/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 25/07/2013 | 60 |
| K | 9 | 501 | 27/04/2012 | 10/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 12/08/2013 | 63 |
| K | 9 | 502 | 27/04/2012 | 10/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 12/08/2013 | 63 |
| K | 10 | 501 | 27/04/2012 | 10/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 28/08/2013 | 65 |
| K | 10 | 502 | 27/04/2012 | 10/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 28/08/2013 | 65 |
| K | 11 | 501 | 27/04/2012 | 10/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 13/09/2013 | 67 |
| K | 11 | 502 | 27/04/2012 | 10/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 13/09/2013 | 67 |

**Plantrooms**

| | M&E to BM Drawings | PRE RDD date drws | Workshop | RDD Submission Date | RDD board comments returned | Site Start Date | T3 Date to site start (weeks) |
|---|---|---|---|---|---|---|---|
| Zone F Level 2 Plantroon 22 | 13/04/2012 | 02/05/2012 | 03/05/2012 | 25/05/2012 | 16/06/2012 | 18/03/2013 | 42 |
| Zone J Level 3 Plantroom 33 | 01/06/2012 | 19/06/2012 | 28/06/2012 | 06/07/2012 | 27/07/2012 | 07/01/2013 | 26 |
| Zone H Level 3 Plantroom 31 | **26/03/2012** | **28/03/2012** | **29/03/2012** | **10/04/2012** | **22/05/2012** | 07/01/2013 | **39** |
| Zone E Level 3 Plantroom 31 | **26/03/2012** | **28/03/2012** | **29/03/2012** | **10/04/2012** | **22/05/2012** | 07/01/2013 | **39** |
| Zone F Level 3 Plantroom 32 | 18/05/2012 | 05/06/2012 | 14/06/2012 | 22/06/2012 | 13/07/2012 | 07/01/2013 | 28 |
| Zone A+B Level 4 Plantroom 41 | **17/08/2012** | **24/08/2012** | **30/08/2012** | **07/09/2012** | **28/09/2012** | 14/02/2013 | **23** |
| Zone C Level 5 Plantroom 41a | 17/08/2012 | 04/09/2012 | 13/09/2012 | 21/09/2012 | 12/10/2012 | 14/02/2013 | 21 |
| Zone H Level 12 Plantroom 124 | 31/08/2012 | 18/09/2012 | 27/09/2012 | 05/10/2012 | 26/10/2012 | 20/07/2013 | 41 |
| Zone E Level 12 Plantroom 121 | 31/08/2012 | 18/09/2012 | 27/09/2012 | 05/10/2012 | 26/10/2012 | 29/08/2013 | 47 |
| Zone J Level 12 Plantroom 123 | 31/08/2012 | 18/09/2012 | 27/09/2012 | 05/10/2012 | 26/10/2012 | 25/09/2013 | 51 |
| Zone F Level 12 Plantroom 122 | 31/08/2012 | 18/09/2012 | 27/09/2012 | 05/10/2012 | 26/10/2012 | 24/10/2013 | 55 |
| Basement Plantroom | 27/04/2012 | 15/05/2012 | 24/05/2012 | 31/05/2012 | 21/06/2012 | 16/04/2013 | 46 |
| Plantroom 21 | 24/10/2012 | 08/11/2012 | 15/11/2012 | 23/12/2011 | 27/01/2012 | 13/08/2012 | 33 |

**Risers**

| | M&E to BM Drawings | PRE RDD date drws | Workshop | RDD Submission Date | RDD board comments returned | Site Start Date | T3 Date to site start (weeks) |
|---|---|---|---|---|---|---|---|
| Typ Ward T3 | 13/04/2012 | 19/04/2012 | 26/04/2012 | 03/05/2012 | 24/05/2012 | 23/11/2012 | 29 |
| Typ Ward T5 | 13/04/2012 | 19/04/2012 | 26/04/2012 | 03/05/2012 | 24/05/2012 | 08/10/2012 | 23 |
| Typ Ward T11 | 13/04/2012 | 19/04/2012 | 26/04/2012 | 03/05/2012 | 24/05/2012 | 25/01/2013 | 38 |
| Typ Ward T14 | 13/04/2012 | 19/04/2012 | 26/04/2012 | 03/05/2012 | 24/05/2012 | 27/11/2012 | 30 |
| ZK L4-11 T1 | 04/05/2012 | 22/05/2012 | 31/05/2012 | 11/06/2012 | 02/07/2012 | 21/01/2013 | 32 |
| ZK L4-11 T2 | 04/05/2012 | 22/05/2012 | 31/05/2012 | 11/06/2012 | 02/07/2012 | 14/11/2012 | 22 |
| ZK L4-L11 M25 | 04/05/2012 | 22/05/2012 | 31/05/2012 | 11/06/2012 | 02/07/2012 | 23/10/2012 | 19 |
| ZK L4-L11 M25a | 04/05/2012 | 08/05/2012 | 10/05/2012 | 14/05/2011 | 04/06/2012 | 28/08/2012 | 67 |
| T4 T6 T12 | 04/05/2012 | 22/05/2012 | 31/05/2012 | 11/06/2012 | 02/07/2012 | **23/10/2012** | 19 |

**Risers**

| | M&E to BM Drawings | PRE RDD date drws | Workshop | RDD Submission | RDD board comments | Site Start Date | T3 Date to site start |
|---|---|---|---|---|---|---|---|
| Zone B m17 | 24/02/2012 | 12/03/2012 | 22/03/2012 | 30/03/2012 | 20/04/2012 | 21/11/2012 | 34 |
| Zone B M18 | 24/02/2012 | 12/03/2012 | 22/03/2012 | 30/03/2012 | 20/04/2012 | 21/11/2012 | 34 |
| Zone B M19 | 24/02/2012 | 12/03/2012 | 22/03/2012 | 30/03/2012 | 20/04/2012 | 21/11/2012 | 34 |
| Zone B M32 | 24/02/2012 | 12/03/2012 | 22/03/2012 | 30/03/2012 | 20/04/2012 | 10/12/2012 | 36 |
| Zone B 34 | 24/02/2012 | 12/03/2012 | 22/03/2012 | 30/03/2012 | 20/04/2012 | 30/11/2012 | 35 |
| Zone B M39 | 24/02/2012 | 12/03/2012 | 22/03/2012 | 30/03/2012 | 20/04/2012 | 18/12/2012 | 38 |
| Zone C M33 | 13/07/2012 | 19/07/2012 | 26/07/2012 | 03/08/2012 | 24/08/2012 | 18/12/2012 | 20 |
| Zone C M36 | 13/07/2012 | 19/07/2012 | 26/07/2012 | 03/08/2012 | 24/08/2012 | 15/01/2013 | 24 |
| Zone C M33a | 13/07/2012 | 19/07/2012 | 26/07/2012 | 03/08/2012 | 24/08/2012 | 12/02/2013 | 28 |
| Zone C M11 | 10/02/2012 | 16/02/2012 | 22/02/2012 | 02/03/2012 | 22/03/2012 | 14/08/2012 | 24 |
| Zone C M26 | 10/02/2012 | 16/02/2012 | 22/02/2012 | 02/03/2012 | 22/03/2012 | 28/08/2012 | 26 |
| Zone C M27b | 10/02/2012 | 16/02/2012 | 22/02/2012 | 02/03/2012 | 22/03/2012 | 01/08/2012 | 22 |
| M12 | 10/02/2012 | 10/02/2012 | 16/02/2012 | 18/02/2012 | 10/03/2012 | 17/07/2012 | 21 |
| M40 | 10/02/2012 | 10/02/2012 | 16/02/2012 | 18/02/2012 | 10/03/2012 | 04/07/2012 | 20 |
| M14 | 10/02/2012 | 10/02/2012 | 16/02/2012 | 18/02/2012 | 10/03/2012 | 24/07/2012 | 22 |
| M13 | 10/02/2012 | 10/02/2012 | 16/02/2012 | 18/02/2012 | 10/03/2012 | 24/07/2012 | 22 |
| Zone F M27 | 06/04/2012 | 09/04/2012 | 12/04/2012 | 13/04/2012 | 04/05/2012 | 12/10/2012 | 26 |
| Zone F M30 | 06/04/2012 | 09/04/2012 | 12/04/2012 | 13/04/2012 | 04/05/2012 | 04/07/2012 | 12 |
| Zone F M38a | 11/04/2012 | 12/04/2012 | 12/04/2012 | 13/04/2012 | 04/05/2012 | 09/08/2012 | 17 |
| Zone J M23 | 11/05/2012 | 14/05/2012 | 17/05/2012 | 18/05/2012 | 08/06/2012 | 29/08/2012 | 15 |
| Zone J M22, | 11/05/2012 | 14/05/2012 | 17/05/2012 | 18/05/2012 | 08/06/2012 | 29/08/2012 | 15 |
| Zone J T13 | 11/05/2012 | 14/05/2012 | 17/05/2012 | 18/05/2012 | 08/06/2012 | 29/08/2012 | 15 |

**Risers**

| | M&E to BM Drawings | PRE RDD date drws | Workshop | RDD Submission Date | RDD board comments returned | Site Start Date | T3 Date to site start |
|---|---|---|---|---|---|---|---|
| Riser M1 Ground and First floor | 21/06/2011 | N/A | N/A | 09/08/2011 | 30/08/2011 | 04/01/2012 | 21 |
| Riser M2 ground and first floors | 21/06/2011 | N/A | N/A | 09/08/2011 | 30/08/2011 | 19/01/2012 | 23 |
| Riser M8 Ground and First Floor | 21/06/2011 | N/A | N/A | 30/09/2011 | 21/10/2011 | 20/01/2012 | 16 |
| Riser M3 Ground and First Floors | 25/08/2011 | N/A | N/A | 10/10/2011 | 31/10/2011 | 17/12/2011 | 10 |
| Riser M4 Ground and First Floors | 25/08/2011 | N/A | N/A | 10/10/2011 | 31/10/2011 | 04/01/2012 | 12 |
| Riser M5 Ground and First Floors | 25/08/2011 | N/A | N/A | 10/10/2011 | 31/10/2011 | 03/02/2012 | 17 |
| Riser M6 Ground and First Floors | 25/08/2011 | N/A | N/A | 10/10/2011 | 31/10/2011 | 06/02/2012 | 17 |
| Riser 15a Ground and First Floors | 25/08/2011 | N/A | N/A | 10/10/2011 | 31/10/2011 | 06/02/2012 | 17 |
| Riser M15b Levels 00, 01 & 02 | 07/11/2011 | N/A | N/A | 25/11/2011 | 16/12/2011 | 06/02/2012 | 10 |
| Riser M25a Ground, First, Second and Third | 30/09/2011 | N/A | N/A | 29/11/2011 | 20/12/2011 | 28/08/2012 | 39 |
| Riser M25 Ground, First, Second and Third | 30/09/2011 | N/A | N/A | 29/11/2011 | 20/12/2011 | **08/10/2012** | 45 |
| Riser M7 Ground, first, Second | 04/11/2011 | N/A | N/A | 01/12/2011 | 22/12/2011 | 10/07/2012 | 32 |
| Riser M9 Frist, Second, Third | 04/11/2011 | N/A | N/A | 01/12/2011 | 22/12/2011 | 17/07/2012 | 33 |
| Riser M10 Ground, first, Second and Third | 04/11/2011 | N/A | N/A | 01/12/2011 | 22/12/2011 | 31/07/2012 | 35 |
| Riser M21 Ground, First, Second | 04/11/2011 | N/A | N/A | 01/12/2011 | 22/12/2011 | 31/07/2012 | 35 |
| Riser M16 Levels 00, 01, 02 & 01 | 17/11/2011 | N/A | N/A | 15/12/2011 | 05/01/2012 | 21/11/2012 | 49 |
| Riser M38 Levels B1, 00, 01, 02 & 03 | 17/11/2011 | N/A | N/A | 15/12/2011 | 05/01/2012 | 12/10/2012 | 43 |

**Electrical Riser**

| | M&E to BM Drawings | PRE RDD date drws | Workshop | RDD Submission Date | RDD board comments returned | Site Start Date | T3 Date to site start |
|---|---|---|---|---|---|---|---|
| RE63 | 04/11/2011 | N/A | N/A | 11/11/2011 | 20/01/2012 | 19/01/2012 | 10 |
| RE62 | 04/11/2011 | N/A | N/A | 11/11/2011 | 20/01/2012 | 17/12/2011 | 5 |
| RE61 | 04/11/2011 | N/A | N/A | 11/11/2011 | 20/01/2012 | 04/01/2012 | 8 |
| RE21 | 20/01/2012 | N/A | N/A | 27/01/2012 | 17/02/2012 | 24/07/2012 | 26 |
| RE33 | 02/03/2012 | N/A | N/A | 09/03/2012 | 30/03/2012 | 23/11/2012 | 37 |
| RE34 | 02/03/2012 | N/A | N/A | 09/03/2012 | 30/03/2012 | 23/11/2012 | 37 |
| RE51 | 19/12/2011 | N/A | N/A | 26/12/2011 | 20/01/2012 | 17/07/2012 | 29 |
| RE43 | 02/03/2012 | N/A | N/A | 09/03/2012 | 30/03/2012 | 12/10/2012 | 31 |
| RE22 | 13/04/2012 | N/A | N/A | 20/04/2012 | 11/05/2012 | 17/08/2012 | 17 |
| RE31 | 02/03/2012 | N/A | N/A | 09/03/2012 | 30/03/2012 | 25/01/2013 | 46 |
| RE32 | 02/03/2012 | N/A | N/A | 09/03/2012 | 30/03/2012 | 25/01/2013 | 46 |
| HV RISER ZONE J | 04/05/2012 | N/A | N/A | 11/05/2012 | 01/06/2012 | 29/08/2012 | 16 |
| RE41 | 02/03/2012 | N/A | N/A | 09/03/2012 | 30/03/2012 | 27/11/2012 | 38 |
| ZONE B HV RISER | 03/02/2012 | N/A | N/A | 10/02/2012 | 02/03/2012 | 18/12/2012 | 45 |
| RE11 | 03/02/2012 | N/A | N/A | 10/02/2012 | 02/03/2012 | 21/11/2012 | 41 |
| RE12 | 03/02/2012 | N/A | N/A | 10/02/2012 | 02/03/2012 | 11/12/2012 | 44 |
| RE42 | 02/03/2012 | N/A | N/A | 09/03/2012 | 30/03/2012 | 27/11/2012 | 38 |
| RE44 | 02/03/2012 | N/A | N/A | 09/03/2012 | 30/03/2012 | 12/10/2012 | 31 |
| RE52 | 11/05/2012 | N/A | N/A | 18/05/2012 | 08/06/2012 | 29/08/2012 | 15 |

**Substation Component Review**

| | M&E to BM Drawings | PRE RDD date drws | Workshop | RDD Submission | RDD board comments | Site Start Date | T3 Date to site start |
|---|---|---|---|---|---|---|---|
| Substation 1 | 17/07/2012 | N/A | N/A | 24/07/2012 | 14/08/2012 | | |
| Substation 2 | 13/04/2012 | N/A | N/A | 20/04/2012 | 11/05/2012 | | |
| Substation 3 | 18/05/2012 | N/A | N/A | 25/05/2012 | 15/06/2012 | | |
| Substation 4 | 01/07/2012 | N/A | N/A | 08/07/2012 | 29/07/2012 | | |
| Substation 5 | 30/03/2012 | N/A | N/A | 06/04/2012 | 27/04/2012 | | |
| Substation 6 | 18/01/2012 | N/A | N/A | 25/01/2012 | 15/02/2012 | | |

**Electrical Riser**

| | M&E to BM Drawings | PRE RDD date drws | Workshop | RDD Submission Date | RDD board comments returned | Site Start Date | T3 Date to site start |
|---|---|---|---|---|---|---|---|
| RE63 | 04/11/2011 | N/A | N/A | 11/11/2011 | 20/01/2012 | 19/01/2012 | 10 |
| RE62 | 04/11/2011 | N/A | N/A | 11/11/2011 | 20/01/2012 | 17/12/2011 | 5 |
| RE61 | 04/11/2011 | N/A | N/A | 11/11/2011 | 20/01/2012 | 04/01/2012 | 8 |
| RE21 | 20/01/2012 | N/A | N/A | 27/01/2012 | 17/02/2012 | 24/07/2012 | 26 |
| RE33 | 02/03/2012 | N/A | N/A | 09/03/2012 | 30/03/2012 | 23/11/2012 | 37 |
| RE34 | 02/03/2012 | N/A | N/A | 09/03/2012 | 30/03/2012 | 23/11/2012 | 37 |
| RE51 | 19/12/2011 | N/A | N/A | 26/12/2011 | 20/01/2012 | 17/07/2012 | 29 |
| RE43 | 02/03/2012 | N/A | N/A | 09/03/2012 | 30/03/2012 | 12/10/2012 | 31 |
| RE22 | 13/04/2012 | N/A | N/A | 20/04/2012 | 11/05/2012 | 17/08/2012 | 17 |
| RE31 | 02/03/2012 | N/A | N/A | 09/03/2012 | 30/03/2012 | 25/01/2013 | 46 |
| RE32 | 02/03/2012 | N/A | N/A | 09/03/2012 | 30/03/2012 | 25/01/2013 | 46 |
| HV RISER ZONE J | 04/05/2012 | N/A | N/A | 11/05/2012 | 01/06/2012 | 29/08/2012 | 16 |
| RE41 | 02/03/2012 | N/A | N/A | 09/03/2012 | 30/03/2012 | 27/11/2012 | 38 |
| ZONE B HV RISER | 03/02/2012 | N/A | N/A | 10/02/2012 | 02/03/2012 | 18/12/2012 | 45 |
| RE11 | 03/02/2012 | N/A | N/A | 10/02/2012 | 02/03/2012 | 21/11/2012 | 41 |
| RE12 | 03/02/2012 | N/A | N/A | 10/02/2012 | 02/03/2012 | 11/12/2012 | 44 |
| RE42 | 02/03/2012 | N/A | N/A | 09/03/2012 | 30/03/2012 | 27/11/2012 | 38 |
| RE44 | 02/03/2012 | N/A | N/A | 09/03/2012 | 30/03/2012 | 12/10/2012 | 31 |
| RE52 | 11/05/2012 | N/A | N/A | 18/05/2012 | 08/06/2012 | 29/08/2012 | 15 |

**Substation Component Review**

| | M&E to BM Drawings | PRE RDD date drws | Workshop | RDD Submission | RDD board comments | Site Start Date | T3 Date to site start |
|---|---|---|---|---|---|---|---|
| Substation 1 | 17/07/2012 | N/A | N/A | 24/07/2012 | 14/08/2012 | | |
| Substation 2 | 13/04/2012 | N/A | N/A | 20/04/2012 | 11/05/2012 | | |
| Substation 3 | 18/05/2012 | N/A | N/A | 25/05/2012 | 15/06/2012 | | |
| Substation 4 | 01/07/2012 | N/A | N/A | 08/07/2012 | 29/07/2012 | | |
| Substation 5 | 30/03/2012 | N/A | N/A | 06/04/2012 | 27/04/2012 | | |
| Substation 6 | 18/01/2012 | N/A | N/A | 25/01/2012 | 15/02/2012 | | |

## SCHEDULE THREE

## DESIGN DELIVERABLES

Key Performance Indicators in respect of Stages 3 and 3A are set out in the *services*.

**Brookfield Multiplex ConstructionEurope Ltd**
**New South Glasgow Hospitals**
**WW Fee Draw Down Schedule**

| | | | | | | |
|---|---|---|---|---|---|---|
| 37 | Feb-13 | [redacted] | | | | |
| 38 | Mar-13 | | | | | |
| 39 | Apr-13 | | | | | |
| 40 | May-13 | | | | | |
| 41 | Jun-13 | | | | | |
| 42 | Jul-13 | | | | | |
| 43 | Aug-13 | | | | | |
| 44 | Sep-13 | | | | | |
| 45 | Oct-13 | | | | | |
| 46 | Nov-13 | | | | | |
| 47 | Dec-13 | | | | | |
| 48 | Jan-14 | | | | | |
| 49 | Feb-14 | | | | | |
| 50 | Mar-14 | | | | | |
| 51 | Apr-14 | | | | | |
| 52 | May-14 | | | | | |
| 53 | Jun-14 | | | | | |
| 54 | Jul-14 | | | | | |
| 55 | Aug-14 | | | | | |
| 56 | Sep-14 | | | | | |
| 57 | Oct-14 | | | | | |
| 58 | Nov-14 | | | | | |
| 59 | Dec-14 | | | | | |
| 60 | Jan-15 | | | Stage 3 Completion | | |
| 61 | Feb-15 | | | | | |
| 62 | Mar-15 | | | | | |
| 63 | Apr-15 | | | | | |
| 64 | May-15 | | | | | |
| 65 | Jun-15 | | | | | |
| 66 | Jul-15 | | [redacted] | Stage 3A Commencement | | |
| 67 | Aug-15 | | | | | |
| 68 | Sep-15 | | | | | |
| 69 | Oct-15 | | | | | |
| 70 | Nov-15 | | | | | |
| 71 | Dec-15 | | | | | |
| 72 | Jan-16 | | | | | |
| 73 | Feb-16 | | | | | |
| 74 | Mar-16 | | | | | |
| 75 | Apr-16 | | | | | |
| 76 | May-16 | | | | | |
| 77 | Jun-16 | | | | | |
| 78 | Jul-16 | | | Stage 3A Completion | | |
| | | [redacted] | | | [redacted] | Total Fee to Completion |

PRG(M)09/06
Minutes: 63 - 71

**DRAFT**
**TO BE ENDORSED**

NHS GREATER GLASGOW AND CLYDE

**Minutes of a Meeting of the Performance Review Group held at 9.30 am on Tuesday, 3 November 2009 in the Board Room, Dalian House, 350 St. Vincent Street, Glasgow, G3 8YZ.**

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**P R E S E N T**

Mrs E Smith (in the Chair)

Mr P Daniels OBE
Ms R Dhir MBE
Mr P Hamilton
Mr I Lee
Cllr. D Mackay
Mr D Sime
Mr K Winter
Cllr. D Yates

**OTHER BOARD MEMBERS IN ATTENDANCE**

Dr C Benton
Mr R Calderwood
Dr B Cowan
Ms R Crocket
Mr D Griffin
Mr G McLaughlin
Mr B Williamson

**I N A T T E N D A N C E**

| | | |
|---|---|---|
| Ms M Anderson | .. | Property Manager, Capital Planning & Procurement (for Minute 68) |
| Ms H Byrne | .. | Director of Acute Services Strategy Implementation and Planning |
| Mr G Beattie | .. | Head of Procurement |
| Mr J Crombie | .. | Director, Surgery & Anaesthetics – Acute Services Division (to Minute 66) |
| Ms S Frew | .. | Team Secretary, New South Glasgow Hospitals Project (to Minute 66) |
| Mr P Gallagher | .. | Finance Director – Acute Services Division (to Minute 66) |
| Mrs J Grant | .. | Chief Operating Officer - Acute Services Division |
| Mr D Hall | .. | Divisional Director, Currie & Brown (to Minute 66) |
| Mr J C Hamilton | .. | Head of Board Administration |
| Ms A Harkness | .. | Director – Rehabilitation & Assessment – Acute Services Division (for Minute 68) |
| Ms R Harper | .. | Partner, Shepherd & Wedderburn (to Minute 66) |
| Mr A Lindsay | .. | Financial Governance & Audit Manager – NHS Board (for Minute 69) |
| Mr A MacKenzie | .. | Director, North Glasgow CHCP (to Minute 68) |
| Mr A McLaws | .. | Director, Corporate Communications – NHS Board |
| Mr M McVeigh | .. | Assistant Director: Infrastructure, Ernst & Young (to Minute 66) |
| Mr A Nicol | .. | Acting Head of Corporate Reporting & Performance |
| Ms C Renfrew | .. | Director of Corporate Planning and Policy/Lead Director, Glasgow CHCPs (to Minute 69) |
| Mr D Ross | .. | Director, Currie & Brown (to Minute 66) |
| Mr J Rundell | .. | Audit Scotland |
| Mr A Seabourne | .. | Project Director, New South Glasgow Hospitals Project (to Minute 66) |

**ACTION BY**

**63. APOLOGIES**

Apologies for absence were intimated on behalf of Mr R Cleland and Mr A O Robertson OBE.

**64. MINUTES**

On the motion of Mr D Sime and seconded by Mr K Winter, the Minutes of the Performance Review Group meeting held on 15 September 2009 [PRG(M)09/05] were approved as an accurate record.

**65. MATTERS ARISING**

a) Proposal to Re-provide Accommodation currently used at Dalian House and Tara House

In relation to Minute 56 – Mr Griffin reported that with the date of the Performance Review Group being brought forward to accommodate the timescale for the New South Glasgow Hospitals Project, the work to complete the Full Business Case was still ongoing and, once completed, would be submitted to Members shortly. **Director of Finance**

NOTED

b) Review of NHS General Services Contract – Progress on Monitoring Access to GPs

In relation to Minute 45(a) – Review of NHS General Services Contract – Progress on Monitoring Access to GPs – Ms Renfrew advised that with the date of the Performance Review Group meeting being brought forward to accommodate the timescale for the New South Glasgow Hospitals Project, the outcome from the work carried out would not be available until the next meeting. **Director of Corporate Planning & Policy/Lead Director, Glasgow CHCPs**

At the Chair's request, Ms Renfrew provided Members with an update on the two meetings held to date of the Joint Partnership Board with the Glasgow CHCPs. The work was progressing well with positive exchanges around some of the previously difficult areas and it was planned to submit a revised Scheme of Establishment to the NHS Board for approval in December 2009. There were some handling issues around the processes required for agreeing savings plans but these were being worked through with the Council. **Director of Corporate Planning & Policy/Lead Director, Glasgow CHCPs**

NOTED

**66. APPROVAL OF TENDER FOR NEW SOUTH SIDE GLASGOW HOSPITALS AND LABORATORY PROJECT**

Mr Peter Daniels declared an interest in this item in that he had a relative who was a partner in one of the Architects supporting one of the Bidders who had tendered.

There was submitted a paper [Paper No. 09/43] by the Director of Acute Services Strategy Implementation and Planning, which sought Members' approval to the appointment of a Preferred Bidder for identified stages of the project. Ms Byrne reminded Members that the Outline Business Case had been approved by the Scottish Government Health Directorates in May 2008 and, thereafter, Members had been kept up to date on a regular basis by receiving updates on the Procurement Strategy, Gateway Review, Tender Process and Next Steps.

Members were advised that 5 potential Bidders had participated in the Pre-qualifying Questionnaire process following the notification of the Project which had been placed in the European Journal in February 2009. From this, 3 were shortlisted on the basis of their demonstrative ability to construct a health care project in this scale and complexity. The 3 Bidders taken forward to Tender stage of the Project were:-

Balfour Beatty Group Limited
Brookfield Europe LP
Laing O'Rourke Construction Limited

This had led to the receipt of Tenders for the project on 11 September 2009 following the competitive dialogue process.

An Evaluation Team was established and a detailed evaluation programme undertaken covering design, logistics and commercial matters. The Tender prices submitted were assessed for errors, inconsistencies, exclusions and caveats and then equalised to adjust for bid allowances and any missing items. The out-turn adjusted bid prices reflecting the estimated targets were then calculated. The most economically advantageous Tender scores, calculated as a ratio of quality and price were then generated using the full quality score and adjusted bid prices with a higher score representing better value for money.

The conclusions of the Evaluation Group were presented to the new South Glasgow Hospitals and Laboratory Project Executive Board on 22 October 2009. This included the attendance and involvement of the NHS Board Chair, Vice Chair and a Non-Executive Member of the Board. Consequently, on 26 October 2009, the Project Executive Board considered the comments from the 22 October meeting and formally endorsed the outcome and recommended that the preferred bidder be submitted to the Performance Review Group for approval. The NHS Board Chair had been unable to be present at today's meeting: however, had submitted a paper which had been provided to Members on his assessment of the outcome and conclusions of the process.

Mr Seabourne introduced the Evaluation Team who were present and provided Members with a presentation of the key aspects of the evaluation of the 3 Bidder Tenders. The presentations focused on design, quality and quantitative evaluation, legal and contractual considerations and most economically advantageous Tender scores. The Director of Finance of the NHS Board presented on the affordability of the capital and revenue aspects of the Project.

The financial analysis of the submitted bids had found that:-

- All the bids received were within the affordability limits set by the NHS Board.
- Only one Bidder offered the opportunity of less than 50/50 sharing of cost over-runs reflecting their confidence in the pricing.
- The bids submitted by 2 Bidders offered a high degree of certainty around pricing when risks were statistically assessed. One Bidder, however, as a result of its consideration of the fewer larger risks offered a less certain price outcome.
- Based upon the statistical analysis there was realistically no prospect of price out-turns occurring that would change the order of preference for Bidder proposals.

The most economically advantageous scores had clearly identified a Preferred Bidder and this was the basis of the Project Executive Board's recommendation to the Performance Review Group. The Legal Adviser concluded by advising Members that the evaluation process had been robust and compliant with the Regulations and had produced a clear and credible preferred bidder to take the contract forward. The contractual aspects offered were acceptable.

Mr Winter congratulated the NHS Board team on an excellent presentation of the detailed work supporting the recommendation that Brookfield Europe LP be appointed the Preferred Bidder. He asked about the provision of main services, i.e. drainage for the Laboratory Project and the possible dependency on these services if they were being provided as part of the main contract. Mr Seabourne and Mr Hall/..

advised that the Laboratory facility would be connected to an independent system and thereafter would be linked at a later date to the main services being provided as part of the main contract and therefore there would be no impact on the Laboratory Project if there was any delay in commencing with the main building contract for the hospital.

Mr Lee appreciated the details contained within the paper and the presentation and requested further information about Brookfield Europe LP. Mr Seabourne advised that the company was formed following the acquisition of Multiplex, the Australian international construction company in 2006. The parent company employed 10,000 staff with over 600 in Scotland. As a major construction company it sought to attract world class construction projects and had a demonstrable track record in the delivery of major health care schemes, including the £350m Peterborough City Hospital.

In responding to Mr Lee's question about seeking assurance around the compensation events, Mr McVeigh advised that while none were anticipated, small changes to the outputs could see the price moving marginally up or down and they could only proceed if the NHS Board agreed to the change and impact on the pricing structure. If such events occurred, they would be considered on an ongoing basis and not stored up for discussion at the end of the contract.

Ms Dhir asked about the car parking contract and also public transport links to the new hospital development. Mr Calderwood advised that a separate car parking contract would sit outwith the main contract but had been included as part of the overall design. In relation to public transport links, FastLink formed part of the planning application and the Scottish Government Health Directorates had agreed to provide funding to assist with this project. Cllr. Derek Mackay was chairing a meeting of relevant stakeholders to discuss the steps that would be required to be taken to try and secure this project. In addition, currently 12 bus routes entered the Southern General Hospital site and it was hoped in discussions with Strathclyde Passenger Transport to increase this to 36 different bus routes with bus stops within the site at different key locations.

Mr Williamson enquired about the flexibility that had been built into the design recognising the evolving clinical practices and changes which would occur over the lifetime of the building. Mr Hall advised that 25% extra capacity had been built into the services within the building and the main hospital would be based on single room accommodation. In addition, the type of construction used would allow internal alterations as it had been recognised that the site was restricted with little option of expanding externally.

In relation to Brookfield Europe LP, Mr McVeigh explained that the normal financial checks had been undertaken and this was a major multi-national company with a net worth of £40 billion. It was recognised it was pursuing a growth strategy and had committed recently to seeking major projects such as the new Southside Hospital Development. The normal performance bonds would be acquired as part of the protection against possible insolvency.

Cllr. Mackay welcomed the description of the financial stability of Brookfield and asked if any commitment had been given to accessing local employment. Mr Seabourne advised that there were indeed local economic benefits and the company would be targeting and training new recruits with targets around new entrants. They had committed to working with social enterprise and regeneration agencies as well as providing a training centre for staff.

In response to a question from Mr Hamilton, it was explained by Mr Crombie that a new City Morgue had been discussed with the City Council, Fiscal and Police. This would replace the current Morgue.

On the invitation of the Chair, Mr Rundell advised that he had been pleased with the progress made, the detailed work undertaken and the role of the professional advisers and the different levels of scrutiny had been helpful in bringing the Project to NHS Board Members for a decision.

Members welcomed the detail provided, the presentation and the assurances that had been provided by the Evaluation Team during the course of questioning.

Mr Daniels left the meeting.

Mr Calderwood advised that once a decision was taken there would require to be a debriefing for the 3 companies involved. On that basis, Members were asked to treat the information in confidence until a public announcement on the appointment of a Preferred Bidder was made on Thursday, 5 November 2009.

The Chair, on behalf of all Members, thanked Ms Byrne and Mr Seabourne and the New South Glasgow Hospitals and Laboratory Project Team for all the work undertaken to bring this huge project to approval stage and she asked that all members of staff involved be made aware of the Members' appreciation of the effort put in to bring this particular stage to a conclusion.

DECIDED:

1. That Brookfield Europe LP be appointed Preferred Contractor for the following Project stages:-

   Stage 1 – The design and construction of the new laboratories (subject to Scottish Government Health Directorates Capital Investment Group approval of the Full Business Case)

   Stage 2 – Detailed design of the new Adult and Children's Hospitals.

   Stage 3 – Construction of the new Adult and Children's Hospitals.

   Stage 3a – Demolition of the Surgical Block and associated buildings and completion of the soft landscaping. **Director of Acute Services Strategy Implementation & Planning**

   Noting that the end of Stage 2 (when the Full Business Case for the new Hospitals would be considered for approval by the NHS Board) there would be a break point in the contract.

2. That the Full Business Case for the laboratories component of the Project (Stage 1), subject to Scottish Health Directorates Capital Investment Group approval, be approved. **Director of Acute Services Strategy Implementation & Planning**

Mr Daniels returned to the meeting.

## 67. APPROVAL OF FINAL BUSINESS CASE – POSSILPARK HEALTH CENTRE

There was submitted a paper [Paper No. 09/44] by the Director, North Glasgow Community Health Care Partnership, which sought agreement to the approval of the Initial Agreement for submission to the Scottish Health Directorates Capital Investment Group.

Mr MacKenzie advised Members that the current Possilpark Health Centre was built in the 1970s and served a population of 8,000. The current fabric of the existing Health Centre was very poor and space restricted. As a result, the building was barely fit for purpose and was not Disability Discrimination Act compliant.

The development of the replacement Possilpark Health Centre was seen within the wider regeneration programme for the Possilpark area. The North Generation Agency has led on the development of a joint master plan for the Saracen Street site with the aim of contributing to the socio-economic and physical urban regeneration of the area. The Glasgow North Regeneration Agency were also leading on a town centre regeneration bid for the area adjoining the Saracen Street development and, if successful, there was an opportunity for sustained development and investment in the area.

The replacement of Possilpark Health Centre had been conditionally funded subject to Scottish Government Health Directorates Capital Investment Group approval, from the Primary and Community Care Premises Modernisation Programme for 2009/10 and 2010/11. An application to delay the scheme by one year in line with the current programme in the Initial Agreement would be made. The financial gap associated with capital charges which would be incurred had partially been bridged thus far and work was continuing to close the gap with details to be finalised in the Outline Business Case.

Members welcomed this Project.

DECIDED:

That the Initial Agreement for submission to the Scottish Government Health Directorates Capital Investment Group be approved.

**68. RE-DEVELOPMENT OF BLAWARTHILL HOSPITAL, GLASGOW**

There was submitted a paper [Paper No. 09/45] by the Director of the Rehabilitation & Assessment Centre – Acute Services Division, and the Property Manager, Capital Planning & Procurement, setting out proposals relating to Blawarthill Hospital, Glasgow.

Ms Harkness reminded Members that following public consultation in 2000, the NHS Board had agreed to develop the Blawarthill Hospital site from a stand-alone frail elderly facility to one which provided a range of health and social care services – the relevant NHS Board paper had been attached as Appendix 1 to the paper. The detailed requirements were developed jointly with Glasgow City Council and in light of the ongoing need for health care use and the planning restrictions placed on the development by the Council in 2005, it was agreed to progress the development as a land transaction with restrictions linked to the required elements of development –

- 60 beds for NHS continuing care;
- 60 care home beds;
- 16 very sheltered housing units; and
- 8 disabled access housing units.

It was acknowledged that any attempt to separate the NHS service provision from the sale of the site would jeopardise the potential value of the site and the marketing strategy reflected this position.

The ongoing requirement for frail elderly continuing care beds was described in papers submitted to the NHS Board in 2008 and early 2009 and in February 2009 the NHS Board had reaffirmed its commitment to the redevelopment of the Blawarthill Hospital site. Through joint planning arrangements Glasgow City Council identified the need for 20 specialist dementia places and 40 places providing nursing and enhanced residential care and this had been confirmed at an Executive Committee meeting in 2008 and reconfirmed at the end of October 2009. The support for the housing element had also been reconfirmed by the City Council.

Members were advised that the Tender process was carried out in two stages from seeking expressions of interests followed by the selection of 5 companies who were requested to submit Tenders in February 2007. 3 of the companies submitted a Full Tender and James Walker (Leith) were selected as the Preferred Developer in the year 2007. Due to the complexity of the brief for the transaction there had been significant detailed discussions on the Heads of Terms and this had taken some time to resolve. The Heads of Terms have now been agreed subject to endorsement by the Performance Review Group and the main aspects of these terms were as follows:-

- The nominees for the 4 aspects of the transaction to be delivered as part of the Project, i.e. 60 beds for NHS Continuing Care; 60 Care Home beds; Sheltered Housing provision and Mainstream Housing agreed as follows:-

    - Southern Cross Health Care for the Care Home site and either Southern Cross Health Care or other member of James Walker (Leith) Group for the NHS provision;

    - Yoker Housing Association for the Sheltered Housing site

    - Dundas Estate and Development Company for the mainstream Residential site.

The Central Legal Office had confirmed that they would be in a position to provide the necessary assurance that the transaction met the requirements of the Scottish Government Health Directorates – Property Transactions Handbook and the price structure indicated an estimated capital receipt of £1.37 million. This price had been agreed and supported by the Board's property advisers and independent adviser and included provision to protect the Board should the property market recover.

Ms Dhir indicated that she was pleased to see the partnership approach come together and Mr Calderwood advised that Members would be aware that this was a key part of the proposals for the west sector which had an impact on St Margaret's Hospice. The proposed development for this area addressed a deficit within the west sector of Glasgow and it was an attempt to provide the right type of beds, within the right area. There was support from the City Council and local politicians and the West Glasgow CHCP were pleased to see the fruition of a valuable resource within this area of the west of the city.

In response to a question from Mr Winter, it was explained by Ms Anderson that the land transaction negotiations were attempting to try and cap the impact of any site abnormals should they be identified by the developer when they were able to carry out their full site tests. Mr Winter was pleased to have the assurance that there was a valuing mechanism in place for the extent of any abnormals identified within the site.

Mr McLaughlin was keen to understand the communications aspect of this proposal and Mr Calderwood advised that he was meeting with Ms Harkness shortly to ensure that St Margaret's Hospice were aware of the decision and of the consistency with the approach agreed by the Board in February 2009. He was keen to continue to try and engage St Margaret's in discussions about providing services for a different client group but that had proven difficult thus far. Members hoped that efforts would continue to be made to try and work with St Margaret's Hospice recognising the changes taking place.

DECIDED:

1. That the transaction as outlined on the understanding that Missives for the sale of Blawarthill Hospital be concluded by 31 January 2010 be approved. **Director of Rehabilitation and Assessment**

2. That the transaction was dependent on the NHS Board agreeing a 5-year bed contract with the developer and Glasgow City Council agreeing a 5-year care home contract with the developer and their nominees be noted. **Director of Rehabilitation and Assessment**

3. That the transaction also required that a specification was agreed with Yoker Housing Association for the sheltered housing aspect of the development be noted. **Director of Rehabilitation and Assessment**

4. That the proceeds from the sale would not be received until 2012/13 be noted. **Director of Rehabilitation and Assessment**

**69. TAXI CONTRACT**

There was submitted a paper [Paper No. 09/46] by the Director of Finance which set out the current position with regard to the taxi contract for NHS Greater Glasgow.

Immediately prior to the NHS Board meeting on 18 August 2009 further disclosures were made to officers of the NHS Board by Strathclyde Police. As a result, the NHS Board decided that the award of a contract for taxi services for Greater Glasgow to Network Private Hire Ltd (NPH) be granted conditional approval and asked the officers of the Board to establish whether the additional information was materially significant.

There was a full discussion of the additional information provided by Strathclyde Police, NPH, and Counsel Opinion. In the course of the meeting, deep reservations were expressed at the award of a contract to NPH in the light of the information which had been provided by Strathclyde Police. Board Members expressed their support for the aims of Strathclyde Police in seeking to tackle the issue of serious and organised crime. However, there was also concern that based on the legal framework within which the Board was required to operate in procuring of services; the very clear legal advice and the potential high risk of legal action and substantial damages, the Board had a clear responsibility to award the contract. The Performance Review Group decided that a further paper should be provided to the full NHS Board, setting out these issues.

DECIDED:

That the issue of the Taxi Contract be referred to a meeting of the full NHS Board which it was hoped could be arranged for 17 November 2009. **Chief Executive**

**70. COMMUNICATION ISSUES: 16 SEPTEMBER TO 27 CTOBER 2009**

There was submitted a paper [Paper No. 09/47 from the Director of Corporate Communications covering communication actions and issues from 16 September to 27 October 2009.

Mr McLaws highlighted the following:-

- The preparation of a draft plan covering both internal and external communications to ensure the local public were made aware of the existing and new services being provided at the Vale of Leven Hospital.

- He expressed concerns that local newspapers in the area were portraying a very negative view of the Vision for the Vale of Leven and that some local campaigners were diving the negative comments without due regard being given to the positive support for the future services from the Government, the NHS Board and the Local Authority. He said that meetings were planned with senior newspaper editors/managers to discuss how best to achieve more balanced coverage of the ongoing developments on the Vale of Leven campus and would involve senior representatives from the Council.

- The support provided to the staging of the Annual Review on 19 October 2009 where over 300 members of the public attended the afternoon session and participated in the question and answer session which ran from the planned 30 minutes to one hour and 15 minutes.

- The official opening of the Dental Suite at Greenock Health Centre by Shona Robison, Minister for Public Health.

- The setting up of a webcam at the Southern General Hospital site to provide images of the new multi-storey car park and beginnings of the work of the new Children's Hospital and new adult acute facility.

- The launch of the NHS Credit Union by the Cabinet Secretary for Health and Wellbeing. Mrs Smith wanted to take the opportunity of thanking Mr McLaws and his team in her position as Chair of the NHS Credit Union and was delighted at the arrangements around the management of the event and formal launch by the Cabinet Secretary.

- The launch of the Influenza H1N1 Vaccination Programme from the new Victoria Hospital by the Cabinet Secretary with every national title and broadcaster in attendance.

- The Winter Health and Annual Review/Report edition of the Health News was in the final stages of production and when printed, would be inserted into the Herald, Evening Times and Sunday Herald and also distributed through the Board's normal distribution network. This was an integrated Communication Strategy which would see the production of a local winter patient booklet to coincide with the national winter health campaigns.

NOTED

**71. DATE OF NEXT MEETING**

The next meeting of the Performance Review Group will be held at 9.30 am on Tuesday, 19 January 2010 in the Board Room, Dalian House, 350 St. Vincent Street, Glasgow, G3 8YZ.

The meeting ended at 12.45 p.m.

# Greater Glasgow & Clyde NHS Board

## Performance Review Group

**03 November 2009** **Paper No. 09/43**

**Report of the Director of Acute Services Strategy, Implementation and Planning**

# Approval of New South Glasgow Hospitals & Laboratory Project

**RECOMMENDATIONS**

The Performance Review Group is asked to approve:

a) the appointment of the preferred contractor Bidder 1 for the following project stages:

Stage 1 – The design and construction of the new Laboratories (subject to Scottish Government Health Directorates Capital Investment Group approval of the Full Business Case)

Stage 2 – Detailed design of the New Adult and Children's Hospitals

Stage 3 – Construction of the New Adult and Children's Hospitals and

Stage 3A - Demolition of the Surgical Block and associated buildings and completion of the soft landscaping.

Noting that at the end of stage 2 (when the Full Business Case for the New Hospitals will be considered for approval by the NHS Board) there is a break-point in the contract.

b) the Full Business Case for the Laboratories component of the Project (Stage 1), subject to Scottish Health Department Capital Investment Group approval.

## 1. Progress Update

### 1.1 New South Glasgow Hospitals

The sections below provide an update on progress with the Project since approval of the Outline Business Case (OBC) by Dr Kevin Woods, Director-General Health and Chief Executive NHSScotland in May 2008.

Board members will recall that the Director of Acute Services Strategy Implementation and Planning and the Project Director have updated them on the progress of the project since approval of the OBC in May 2009. These updates included:

| | |
|---|---|
| 16th September 2008 | Approval of Procurement Strategy |
| 20th January 2009 | Update on Gateway Review |
| 19th May 2009 | Update on the Tender process and next steps |
| 7th July 2009 | Tender Process – Status Update |

Members of the Board's Evaluation team will be in attendance at the meeting and will provide a presentation on key aspects of the evaluation of the three bidders tenders. The presentation will focus on design, quality and quantitative evaluation, legal and contractual considerations and affordability. Those attending will be:

| | | |
|---|---|---|
| Alan Seabourne | Project Director – New South Glasgow Hospitals & Labs | NHS GG&C |
| David Hall | Divisional Director | Currie & Brown |
| Douglas Ross | Director | Currie & Brown |
| Jim Crombie | Director of Surgery and Anaesthetics | NHS GG&C |
| Michael McVeigh | Assistant Director - Infrastructure Advisory | Ernst & Young |
| Peter Gallagher | Finance Director | NHS GG&C |
| Rhona Harper | Partner, Projects | Shepherd & Wedderburn |

**Outline Business Case and appointment of the Technical Adviser Team**

The OBC for the New South Glasgow Hospitals and Laboratory was approved by the Scottish Government in May 2008.

Following a tender process a new Technical Adviser Team, Currie & Brown, was appointed in September 2008. Their role has been to assist the Board in preparing the technical and other information required to take the Project to market and to assist in the evaluation of the bids. They will work with the Board and successful bidder in the development of the scheme through to completion of the build.

**Gateway 2 Review**

In January 2009, the Project underwent a Gateway 2 Review. The review investigated the assumptions in the OBC and the proposed approach for delivery of the project including details of the proposed procurement route, project methodology and plans for implementation.

The review found that the Project had taken a very robust approach to identifying a suitable procurement route with advice and input from legal, financial and technical advisers and the market. The Gateway Review report also highlighted that the prudent financial planning in the OBC meant that the Project was as well positioned as possible to manage the uncertainties of the prevailing economic climate.

**Taking the Project to Market**

Notification of the Project was placed in the European Journal in February 2009 and attracted a significant level of interest. Five potential bidders participated in a pre-qualifying questionnaire process from which three were short listed on the basis of their demonstrative ability to construct a healthcare project of this scale and complexity.

The five bidders were:-

- Balfour Beatty Group Limited
- Brookfield Europe LP
- FCC Elliot Healthcare Ltd
- Laing O'Rourke Construction Limited
- Miller Construction UK Ltd

The evaluation of the pre-qualification questionnaire identified the following three bidders to be taken forward to the tender stage of the project:

- Balfour Beatty Group Limited
- Brookfield Europe LP
- Laing O'Rourke Construction Limited

**Development of the tender documentation**

Between September 2008 and April 2009, the Project Team and Technical Advisers worked with users, legal and financial advisers and others, preparing the clinical, technical and other information required to take the Project to market. This information formed the tender documentation which informed bidders of the NHS Board's requirements.

The tender documentation constituted 3 volumes as follows:-

Volume 1 Project Scope and Commercial Document

This provided an overview and outlined the scope and commercial parameters of the Project. It set out the background to the Project, outlined the detailed procurement process and timetable, identified the competitive dialogue process and incorporated the draft construction contract.

Volume 2 Employer's Requirements

This set out the technical and clinical requirements of the Board. These included Clinical Output Specifications for all departments, master plan and exemplar design information, output specifications regarding the construction works, building and engineering services to be provided plus Activity database (ADB) Room Data Sheets and Equipment Lists (by Group).

Volume 3 Bid Return and Evaluation

This detailed the range of deliverables required from bidders and the evaluation strategy and scoring approach to be applied by the Board.

**Exemplar**

Key aspects of the Employer's Requirements (ER) were an Exemplar of the Hospitals to Royal Institute of British Architects (RIBA) Stage C, Schedule of Accommodation and Clinical Output Specifications. The Exemplar was developed with input from User representatives from significant elements of the 90 specialties/Departments which will be housed within the New Adult and Children's hospitals.

The Exemplar involved development of 1:500 block plans for the Adult and Children's Hospitals, a number of 1:200 detailed design plans and 1:50 room information. The following describes this in more detail.

The 1:500 block plans demonstrate:

i) the clinical adjacencies required for the key specialties;
ii) flows of visitors, patients, staff and Facilities Management through the building;
iii) the clinical links required between the new hospitals and the Neurosciences Institute and Maternity buildings.

User Groups worked with the Board's Project Team and Technical Advisers to develop detailed 1:200 departmental layouts for 8 major clinical Department/areas, these being: Emergency

Department, Theatres, Critical Care, Imaging, Wards, Acute Assessment Unit in the Adult Hospital and Imaging and Emergency Department for the Children's Hospital. The detailed design plans illustrate how the department might be laid out and the flows for patients, staff and Facilities Management (FM) within it.

1:50 room information was developed using the ADB activity database which is a standard database for all UK hospitals showing general arrangements of standard rooms and suggested positions and location of equipment.

**Outline Planning Permission**

The Outline Planning Application was submitted to Glasgow City Council on 13 April 2007. The application was considered at the Glasgow Planning Committee meeting held on 15 January 2008 and received conditional approval subject to the Section 75 legal agreement (which identifies additional external works that may be required to reduce any adverse impact on the surrounding area by the completion of the project such as road layouts/junctions or traffic controls, etc.) this agreement was concluded in July 2009. Full Outline Planning Consent has now been achieved as a result.

**Tender Process**

The tender documentation, as previously described, was issued electronically to the bidders on 01 May 2009 stipulating that bids were to be returned by noon on Friday 11 September 2009, following the competitive dialogue process.

**Competitive Dialogue**

Competitive Dialogue commenced on 11th May 2009. This involved a series of 16 scheduled meetings with each of the three bidders to discuss and clarify the Board's requirements in four main areas of the project:

i) Design;
ii) Site Logistics;
iii) Laboratories;
iv) Commercial.

Four corresponding Groups were formed to represent the key areas with members from a range of stakeholders and advisers including Board Representatives, Medical, Nursing, FM and infection control representatives and Technical, Legal & Financial Advisers.

The bidders were represented from their own internal teams and their associated partners.

As part of the dialogue process the bidders formulated the agenda items based on their need to clarify any aspects regarding the tender documentation/project. The agenda items were discussed and subsequently action/query lists were drawn up and responded to within agreed timescales. A Request for Information (RfI) process was also operated whereby bidders sent questions for clarification to the Board.

Through the process described above bidders were given clear and detailed direction on the Board's requirements. The Competitive Dialogue concluded on 14 August 2009 following a bidder presentation and final feedback and direction from the Board.

## 1.2 Laboratories

The proposals for the construction of a purpose built multi disciplinary laboratory building on the Southern General Hospital site was part of the recommendations contained in the Glasgow Laboratory Service Modernisation Strategy approved by the NHS Board at the meeting held on 24 October 2006.

The key objectives of the laboratory services review process were:

i) To define and develop an agreed configuration for provision of lab services across the city which reflects the Acute Services Strategy – consolidating from six to two major emergency and in-patient acute sites at Glasgow Royal Infirmary and Southern General Hospital; a third in-patient site including the West of Scotland regional cancer centre at Gartnavel General Hospital, the new Stobhill and Victoria Ambulatory Care Hospitals, and the co-location of paediatric with obstetrics on an adult site.

ii) To modernise the provision of laboratory services.

iii) To create a network of laboratory services working Pan-Glasgow, operating within a single integrated management structure**.**

Following approval of the Strategy, a Project Board was established, chaired the Director of Diagnostics. This group reported, initially, to the Acute Services Review (ASR) Programme Board and then to the New South Glasgow Hospitals and Laboratory Project Executive Board. Membership of the New South Glasgow Hospitals and Laboratory Project Board included the Clinical Director for Diagnostics.

The laboratory building includes the following specialties/departments:

i) Biochemistry;
ii) Haematology;
iii) Microbiology;
iv) Mortuary Services including the City Morgue;
v) Pathology;
vi) West of Scotland Medical Genetics.

The Laboratory building has been designed to RIBA Stage D which means that the design brief has been agreed and the initial requirements developed. This has enabled the structural and building services to be signed off, and a preliminary cost plan estimated. The departmental layouts have also been drawn and signed off by Users Groups. The User Groups have included strong clinical representation.

The Planning Application for the laboratory complex was submitted for approval to Glasgow City Council on 17 July 2009 and a meeting to discuss the detail is planned for November 2009.

The Laboratories Full Business Case is currently in extant draft form, but members will be able to obtain a copy of the final document on the 2nd of November 2009 at the meeting. Only presentational changes will be made to the document and no factual changes.

## 2. Quality Evaluation Process

The detailed process to evaluate the bids submitted was set out within the "Invitation to Participate in Commercial Dialogue Volume 3: Bid Deliverables and Evaluation" (Appendix 1). This was issued to the bidders on 01 May 2009 as part of the Employer's Requirements.

Three bids were received on 11 September 2009 and following formal receipt and recording were initially checked for completeness.

To ensure that the Evaluation Team complied fully with the process as outlined, training workshops for the evaluators were held in advance of the tender return date.

An Evaluation Centre was established at Gartnavel Royal Hospital, providing a secure base from which to manage and undertake the process. All members of the Design and Logistics groups (Appendix 2) co-located to this Centre for the full 5 week duration, thus ensuring interaction between individuals and Groups was possible at all times.

A detailed evaluation programme was produced for the Team in advance, setting out the key actions and dates for the Groups and a copy is attached (Appendix 3).

Areas covered by the evaluation, as set out, were:

i) Design;
ii) Logistic;
iii) Commercial.

The outputs of the Design and Logistics sub-groups were reviewed, for consistency of approach, scoring and reasoning, by Senior Managers in the first instance and then by the Commercial Group.

The tender prices submitted were first assessed for errors, inconsistencies, exclusions and caveats, then equalised to adjust for bid allowances and missing items. The out turn adjusted bid prices reflecting the estimated target were then calculated.

The Most Economically Advantageous Tender (MEAT) scores , calculated as a ratio of quality and price were then generated using the full quality score and the adjusted bid prices, with a higher score representing better Value for Money.

The conclusions of the Evaluation Group were presented to the New South Glasgow Hospitals & Laboratories Project Executive Board on Thursday 22 October 2009, which included the attendance and involvement of the Chair, Vice Chair and Non Executive Member of the NHS Board. Consequently on 26 October 2009 the Project Executive Board considered the comments from the meeting on 22nd October and formally endorsed the outcome and recommended that it be submitted to PRG for approval.

As the NHS Chair is unable to be present at the PRG meeting, please find attached a paper he had prepared following the Project Executive Board meeting on 22nd October 2009 for inclusion with the papers for this matter and sets out his conclusions on the process. (Appendix 4)

## 3. Financial Evaluation

The requirement to select the successful bidder on the basis of the Most Economically Advantageous Tender (MEAT), requires the board to consider the financial aspects of the bidders proposals. MEAT has been defined in this process, and discussed with bidders, as the offer that provides the greatest ratio of quality points for each pound of price.

The pricing structure which bidders were required to follow is set out in the NEC 3 suite of documentation. This is an industry standard form of contract familiar to all bidders.

Key elements of the financial evaluation are

- The target and maximum price offered by bidders, and in particular the affordability
- The bidders proposals for sharing both cost under and over spends (Pain/Gain)
- The risks identified by bidders that may impact upon the final price paid.

The evaluation methodology also required the consideration of risks retained by NHSGGC. These have been identified separately by NHSGGC and are considered as broadly equal across each of the bidders.

### 3.1 Target and maximum price

Bidders were required to submit a price for the work which they believed to be the most realistic outcome, and against which their final price could be referenced for pain/gain purposes. This is discussed further below.

In order to protect the affordability position of the board, and to provide a strong incentive for cost control throughout the contract period, bidders were also required to provide a maximum price, above which NHSGGC would not be required to make any further payment.

The degree of uplift between the bidders proposed target and maximum prices is a measure of their confidence in pricing and the degree to which they are prepared to absorb cost overruns, and therefore is an important qualitative aspect of their pricing proposals.

### 3.2 Pain/Gain Assessment

Bidders were required to submit their proposals for how they would share cost overruns (Pain) and cost savings (Gain) with NHSGGC. This reflects the estimated nature of the target price and the reality of variations in costs.

Ultimately the pain/gain proposals determine the final price payable by the board and as such are an important element of calculating the expected outturn price upon which the appointment decision is to be made. The pain/gain sharing percentages can be seen as measure of the bidders' confidence in pricing, in particular where in the case of one bidder they sought substantially reduced contributions from NHSGGC as cost over runs increased.

### 3.3 Risk Assessment

In order to understand and assess the factors that may lead to cost savings or overruns, bidders were asked to submit detailed risk registers setting out the likelihood, potential impact and mitigating factors of pricing risks.

This data was then subject to statistical analysis in order to establish the expected outturn price of the bidders' proposals. This analysis considered both risks and the action of the pain/gain and maximum price mechanisms.

### 3.4 Conclusions of the Financial Analysis

In summary the financial analysis found that

- All the bids received were within the affordability limits set by NHSGGC
- That only one bidder offered the opportunity of less than 50/50 sharing of costs overruns reflecting their confidence in their pricing
- That the bids submitted by bidders 1 and 3 offered a high degree of certainty around pricing when risks were statistically assessed. Bidder 2 however, as the result of its consideration of a fewer, larger risks, offered a less certain price outcome
- Based upon the statistical analysis there is realistically no prospect of price outturns occurring that would change the order of preference for bidders proposals.

### 3.5 MEAT Scores

The MEAT scores are as follows:

| | |
|---|---|
| Bidder 1: | 417.2 |
| Bidder 2: | 369.6 |
| Bidder 3: | 377.5 |

Due to commercial sensitivities the names of the Bidders have been kept confidential at this stage. There will be tabled at the beginning of the PRG meeting on 3rd November 2009 information for each Member identifying each Bidder by name.

## 4. Programme

The Project will be undertaken in the following stages:

| | | Start | Finish |
|---|---|---|---|
| Stage 1: | Design & Construction of New Laboratories | Q1 2010 | Q1 2012 |
| Stage 2: | Detailed Design of Adult's, Children's and Infrastructure to FBC | Q4 2009 | Q4 2010 |
| Stage 3: | Construction of Adult's, Children's and Infrastructure. | Q4 2010 | Q1 2015 |
| Stage 3A: | Demolition of Surgical Block & associated buildings and completion of soft landscaping | Q3 2015 | Q3 2016 |

## 5. Affordability

### 5.1. <u>Capital Affordability</u>

The total funding requirement associated with the provision of the new Adult and Children's Hospitals, as identified within the Outline Business Case, was £841.7m. It was planned that this would be sourced by combining the following sources of capital funding to create a funding pot capable of financing total capital expenditure of £841.7m.

1) Specific allocation of capital funds by SGHD (£551.7m)
2) Endowment funds (£20m)
3) Capital receipts (£135m)
4) Annual capital resource allocations (£135m)

The capital cost provision incorporated within the Outline Business Case allowed for a maximum price bid of £621m, excluding VAT, for the construction of the two new hospitals including laboratories, leaving a residual provision for optimism bias (ie general contingency) of £46m, in respect of further design development. This was regarded as reasonable in the light of the scale and stage of development of the capital scheme. A target price of £590m was also set. If achieved, this would increase the residual provision for optimism bias (ie general contingency) to £81m.

The maximum price and the target price offered by the proposed bidder both sit comfortably within the target set by the Board enabling the Board to embark on the implementation phase of the project with an increased level of contingency than had been set aside within the Outline Business Case.

In terms of funding sources, SGHD have reaffirmed their commitment to make available £551.7m as a specific allocation of capital funding. In addition, it continues to be reasonable to assume that £20m can be sourced from general Endowment Funds, with total Endowment Funds currently standing at approximately £75m. However, the previous forecast of £135m capital receipts from the disposal of sites to be declared surplus over a 10 year period to 2017/18 has been scaled back to £106m. This reflects current property market conditions and takes account of updated projections carried out by the Board's Property Advisers. This reduction is offset by an equal but opposite increase in the amount of general capital funds which the Board plans to release from its routine annual allocation of capital funds over the period to 2015/16. This now stands at £164m.

Looking forward, the scope for extending the release of general capital funds beyond the current planned level is likely to be constrained by the scale of the Board's capital plan, also by the likelihood of a general tightening in future capital funding availability. In this light, the aforementioned increase in the level of general contingency is welcome, as it will provide some potential additional flexibility to the Board in managing capital expenditure within the envelope of funding available to the project.

**5.2. Revenue Affordability**

The Outline Business Case identified a revenue cost commitment of £59.5m as the total step up in annual revenue costs associated with establishing the new Adult and Children's Hospitals (£53.8m), together with related enabling capital schemes (£5.7m) where the capital cost is funded by the Board's general capital funding allocation. The Outline Business Case also identified internally generated cost savings as the primary source of revenue funding which the Board would use to fund the additional recurring revenue costs of two new hospitals and enabling schemes within the context of its ten year financial plan.

At OBC stage the Board had identified £45m of future cost savings, specific to its existing Acute Services cost base, which were capable of release to fund the anticipated step up in annual revenue costs. These comprised savings in operational and accommodation costs, including property maintenance and capital charges costs. With the exception of £3m, representing those capital charges cost savings which have been released to date within the context of the Board's current financial plan, this cost savings pool remains intact and can be realistically expected to contribute £42m towards affording the future revenue cost step up of the two new hospitals.

In the light of the target price/maximum price being offered by the preferred bidder, it is not unreasonable to anticipate a reduction of between £2m - £4m on the original estimated capital charge costs of the two new hospitals. In addition, the annual costs of operating the laboratories element of the project have now reduced by some £2m. This is attributable to a changed approach to reprovision which no longer requires accommodation to be leased and also to a review of operating costs and income assumptions. The impact of the two changes above contributes a further £5m towards funding the two new hospitals, demonstrating the progress which the Board has made since the OBC was approved in identifying the requisite level of funding to cover the operating costs of the two new hospitals and the related capital schemes.

During the lead-in period to the establishment of the new Adult and Children's Hospitals, the Board will continue to work on the development of further cost savings schemes within the context of its annual financial planning process, aiming to generate a further £12m of cost savings over a 4 year period. This will be ring-fenced, along with cost savings from the Acute specific cost savings schemes as these are released to secure the funding sources required to meet the operating costs of the new hospitals.

**Note:**

There is a possibility that SGHD may change the existing capital charge costs regime with effect from 1 April 2010 by eliminating the current practice whereby Health Boards are required to account for a 3½% notional finance charge each year on net assets held. If SGHD were to implement this change, it would potentially have a significant positive impact on the revenue costs of the project as the step up in revenue costs of £59.5m is almost exclusively related to capital charges (ie depreciation plus 3½% notional finance charge). The impact of removing the 3½% notional finance charge would be to reduce the anticipated net step up in revenue costs by an estimated minimum amount of £20m.

## 6. Recommendation

The Performance Review Group is asked to approve:

c) the appointment of the preferred contractor Bidder 1 for the following project stages:

Stage 1 – The design and construction of the new Laboratories (subject to Scottish Government Health Directorates Capital Investment Group approval of the Full Business Case)

Stage 2 – Detailed design of the New Adult and Children's Hospitals

Stage 3 – Construction of the New Adult and Children's Hospitals and

Stage 3A - Demolition of the Surgical Block and associated buildings and completion of the soft landscaping.

Noting that at the end of stage 2 (when the Full Business Case for the New Hospitals will be considered for approval by the NHS Board) there is a break-point in the contract.

d) the Full Business Case for the Laboratories component of the Project (Stage 1), subject to Scottish Health Department Capital Investment Group approval.

**Helen Byrne**
**Director of Acute Services Strategy Implementation and Planning**

# APPENDICES

**NHS Greater Glasgow and Clyde**

**New South Glasgow Hospitals (NSGH) Project**

# INVITATION TO PARTICIPATE IN COMPETITIVE DIALOGUE

## VOLUME THREE

## BID DELIVERABLES AND EVALUATION

**Contents**

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**2.0 Selection Procedure and Evaluation Criteria**

**3.0 Bid Deliverables**

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**Appendix C Legal Evaluation**

**Appendix D Financial Evaluation**

**Appendix E Board Evaluation Process / Structure**

**Appendix F Certificates**

## 1.0 Introduction

1.1 This Volume of the ITPB sets out the Bid Deliverable Requirements and the Bid Evaluation Process.

## 2.0 Selection Procedure and Evaluation Criteria

### 2.1 Introduction

The Tender Return Date is for submissions relating to this Project is 11 September 2009. In terms of the Public Contracts (Scotland) Regulations 2006 (as amended), which implement EU directives into UK law, the Board will award the contract on the basis of the most economically advantageous Bid.

The Board must be satisfied that the proposed solution offers value for money and meets the Board's affordability criteria and minimum requirements for the Project. This will be determined by reference to the bid submission requirements in the Appendix A of Volume 3 of this ITPD and the evaluation criteria set out in Section 2.3. Having undertaken a detailed pricing analysis of the exemplar design, the Board has produced a "should cost" figure for the Project of £590M. The Board believes that this is a robust target for the pricing of the Project and expects bids to be received which meet or better this price. This figure has provided the basis for the Board's budget allocation for design, construction and risk.

Separately, the Board has an affordability ceiling of £621M and reserves the right to reject any bid submission that exceeds this figure

### 2.2 Evaluation Team

A team composed of individuals with relevant knowledge and expertise will carry out the evaluation of technical and commercial submissions. The Evaluation Team will comprise relevant individuals from the Board, Technical, Legal and Financial Advisors, and representatives from the Board. A Team Leader shall be appointed to co-ordinate the review of the bid submissions under the following sections:-

- Design Group
- Site Logistics Group
- Laboratories Group
- Commercial Group

### 2.3 Evaluation Methodology

The bid evaluation process is outlined as follows:-

- *Stage 1 - Compliance & Completeness Review*

Each bid submissions will be subject to an initial compliance and completeness review. This initial review will not involve a qualitative assessment of a Bidder’s proposals but will simply check whether or not the submission requirements of the ITPD have been satisfied. Any omissions will be notified to the Team Leader via a Compliance & Completeness Review Schedule and forwarded to the Project Director. All requests for missing information will be made to Bidders from the Project Director and requested information should be provided within 7 days of request.

The Financial Evaluation Team will undertake a high level review of the priced bids and any bid above the maximum affordability threshold may be discarded at this initial stage.

At this stage the Board reserves the right to either reject any non-compliant or substantially incomplete Bids or request further information from the Bidder to address any such non-compliance or shortcomings with the Bid.

- *Stage 2 – Bid Evaluation*

In order to determine the bid that represents the Most Economically Advantageous Tender, each bid will be subject to the following process:-

1. A detailed scoring evaluation will be undertaken in accordance with the Bid Evaluation Schedule included in Appendix B and the scoring matrix below to determine the Qualitative Score. Further detail on the Board's approach to the evaluation of the Bidders' responses on the draft Contract and ancillary matters is set out in Appendix [C].

| Scores | Value | Description |
|---|---|---|
| Excellent | 9 - 10 | Performs significantly well on all key factors and offers substantial additional benefits |
| Good | 7 - 8 | Performs well on all key factors and offers some additional benefits |
| Adequate | 5 - 6 | Passes thresholds on all key factors but offers few additional benefits |
| Poor | 3 - 4 | Fails to meet threshold on some key factors |
| Very Poor | 2 | Fails to meet threshold on majority of key factors |
| Unacceptable | 1 | Fails to meet threshold on all key factors |

2. Pricing evaluation will be carried out, based on price / risk scenario modelling to assess the most likely final outturn price to the Board. This process aims to evaluate the true cost of the bids to the Board and reflect a comparable risk position between bids. The expected outturn price will be determined based on cost modelling of bid submissions with the assessed impact of Board retained risk. Modelling will consider scenarios to establish the expected outturn price by reference to the bidders price submissions, priced risk registers for contractor accepted risk and board retained risk, and the pain / gain ratios.

3. A Value for Money / Most Economically Advantageous Tender assessment will follow, the outcome of which will be determined by dividing the Qualitative Score by the expected outturn price (MEAT Score).

   The outcome of the calculation performed in accordance with Paragraph 3, above, will identify a provisional combined ranking of the tenders assessed. The MEAT Score for each bidder should aim to achieve a minimum overall level [as determined with reference to the Board's indicative MEAT Score, which is calculated by dividing baseline requirements of Volume 3 Employer Requirements by the "should cost" figure in Section 2.1], i.e. 400.

   There will then be a final meeting of the evaluation team to agree that the provisional ranking is robust. The outcome of this meeting will form the basis of a recommendation to the Board as to which tender is the most economically advantageous. Subject to Board approval, the Contract will be awarded to the Bidder who submits this tender.

As part of the evaluation process the Board reserve the right to convene meetings with the Bidders in order to clarify any part of the bidders submission where the proposals are considered to be unclear.

The Board also reserve the right to request the bidders to attend an Interview / Presentation in order that the Bidder can fully explain his design proposals, management procedures, construction methodology, and any other matter considered relevant to the Board. The Interview / Presentation will not form part of the bid evaluation process.

Further details on the Evaluation Process / Structure is included in Appendix E.

## 1.0 Bid Deliverables

The bid deliverables to be submitted by bidders for are set out in Appendix A

## 2.0 Submission of Bids

The format of the bid submissions shall be as follows:-

- Separate volumes or sections for each of the Bid Deliverable categories identified in Appendix A
- Front Cover for each Volume noting
  - New South Glasgow Hospitals Project
  - Volume Nr & Bid Deliverables Sections
  - Bidder Name & Logo
- General text minimum font size 10pt
- A4 or A3 paper size (A0 drawing size will be acceptable if folded to A3 size)
- Each page to have Header with – New South Glasgow Hospitals Project & Bidders Name (no Company logo)
- Each page to have Footer with – Volume Nr and Page Nr
- 2 or 4 hole punch Lever Arch Folders
- A1 or A0 Drawings folded and contained in plastic folders within appropriate volume

# Appendix A Bid Deliverables

**NEC3 CONDITIONS OF CONTRACT - CONTRACT DATA PART 2 – DATA PROVIDED BY THE CONTRACTOR**

The Bidders tender submission require to be a full and comprehensive response to the Works Information (Employers requirements) clearly demonstrating compliance, and as a minimum requires the following information to be submitted.

| Section | Submission | Checklist |
|---|---|---|
| **1.0 Accommodation Schedule** | | |
| 1.1 | Net Area – room by room, including all ducts, pipe boxing and service zones | |
| 1.2 | Circulation area | |
| 1.3 | Communication & plant space area | |
| 1.4 | Total Gross Floor Area | |
| **2.0 Drawing Information** | | |
| 2.1 | 1:500 scale Masterplan proposals, indicating the following information:-<br>▪ Communication routes into and out of the site & buildings for<br>o Vehicles<br>• Public transport (Buses & fastlink)<br>• Private cars<br>• Taxis<br>• Ambulances<br>• Services Vehicles<br>• Cycles<br>o Pedestrians<br>• Patients<br>• Visitors<br>• Staff<br>▪ Planning restrictions affecting the development and modifications to highways, response to specific local authority planning requirements<br>▪ Orientation of buildings and relationship to other buildings and infrastructure on the site<br>▪ Hard & soft landscaping proposals<br>▪ Car Parking arrangements with distribution of spaces and use identified<br>▪ Areas of differing Carriageway Construction<br>▪ Road, footway and cycle way geometry<br>▪ Indicative Signalised layouts at external roads<br>▪ Main access points to buildings (existing & proposed)<br>▪ Major service routes<br>▪ Response to the surrounding and wider urban context<br>▪ Phasing plans / temporary works plans for the implementation of roads and drainage infrastructure | |
| 2.2 | 1:500 departmental relationship drawings for all levels indicating functional relationships, main circulation routes and FM flows. | |
| 2.3 | 1:200 departmental layouts (minimum 11nr) indicating the following information:-<br>▪ Room adjacencies<br>▪ Circulation layouts<br>▪ Corridor widths<br>▪ Door widths<br>▪ Communication routes / wayfinding<br>▪ Entrances<br>▪ Egresses | |

| | | |
|---|---|---|
| | ▪ FM flows (in and out) and distribution | |
| 2.4 | 1:200 departmental drawing for Accident & Emergency Department,<br>▪ floor finishes<br>▪ ceiling finishes<br>▪ wall finishes<br>▪ door types & ironmongery<br>▪ wall protection<br>▪ Lighting proposals<br>▪ CCTV locations<br>▪ door entry locations | |
| 2.5 | 1:200 departmental drawing for Adult Theatres Department, fully annotated to indicate :-<br>▪ floor finishes<br>▪ ceiling finishes<br>▪ wall finishes<br>▪ door types & ironmongery<br>▪ wall protection<br>▪ Lighting proposals<br>▪ CCTV locations<br>▪ door entry locations | |
| 2.6 | 1:200 departmental drawing for Adult Ward, fully annotated to indicate<br>▪ floor finishes<br>▪ ceiling finishes<br>▪ wall finishes<br>▪ door types & ironmongery<br>▪ wall protection<br>▪ Lighting proposals<br>▪ CCTV locations<br>▪ door entry locations | |
| 2.7 | 1:200 departmental drawing for Childrens Ward, fully annotated to indicate<br>▪ floor finishes<br>▪ ceiling finishes<br>▪ wall finishes<br>▪ door types & ironmongery<br>▪ wall protection<br>▪ Lighting proposals<br>▪ CCTV locations<br>▪ door entry locations | |
| 2.8 | 1:200 departmental drawing for Childrens A&E Department fully annotated to indicate<br>▪ floor finishes<br>▪ ceiling finishes<br>▪ wall finishes<br>▪ door types & ironmongery<br>▪ wall protection<br>▪ Lighting proposals<br>▪ CCTV locations<br>▪ door entry locations | |
| 2.8a | 1:200 drawing(s) for FM departments (other than FM areas in the laboratory building) fully annotated to indicate<br>▪ floor finishes<br>▪ ceiling finishes<br>▪ wall finishes<br>▪ door types & ironmongery<br>▪ wall protection | |

| | | |
|---|---|---|
| | ▪ Lighting proposals<br>▪ CCTV locations<br>▪ door entry locations<br>▪ storage provision and proposals<br><br>This to address (as a minimum) FM offices, staff changing, catering/kitchen, FM stores and holding, AGV holding and distribution areas. | |
| 2.9 | 1:50 room layout and wall elevations fully developed for the rooms included as part of the Employers Requirements indicating:-<br>▪ room size and useable floor space<br>▪ room shape and compliance with ergonomic data and minimum critical dimensions<br>▪ room elevations<br>▪ reflected ceiling plans<br>▪ access points / locations of doors and windows<br>▪ location of utilities, engineering and specialist services<br>▪ location of equipment | |
| 2.10 | 1:500 Fire Strategy drawings & Fire Strategy Report indicating the following information:-<br>▪ Strategic plans, highlighting evacuation strategies and staff implications in the event of fire<br>▪ Specialist Fire Engineer's Report providing a clear understanding or risk and protection measures<br>▪ Outline of principles adopted underlying approach to fire safety indicating compliance with Employers Requirements, NHS Firecode and Technical Standards | |
| 2.11 | 1:200 Elevations – incorporating external signage proposals | |
| 2.12 | 1:200 Roof plan indicating the following<br>▪ Form<br>▪ Materials<br>▪ Helipad proposals | |
| 2.13 | 1:200 Exemplar sections indicating the following:-<br>▪ Floor to floor heights<br>▪ Floor to ceiling heights<br>▪ Architectural vision – space, height, form, composition, scale, character and use of materials<br>▪ Consideration of patient environment – natural light, views etc | |
| 2.14 | 3D images / perspective (internal & external) indicating the following:-<br>▪ Architectural vision – space, height, form, composition, scale, character and use of materials | |
| 2.15 | Hospital Main Entrance / atrium / public space proposals / visuals | |
| 2.16 | 1:500 site hard & soft landscaping proposals indicating:-<br>▪ Soft landscaping strategy<br>▪ Hard landscaping strategy<br>▪ Car Parking arrangements with distribution of spaces and use identified<br>▪ Areas of differing Carriageway Construction<br>▪ Road, footway and cycle way geometry<br>▪ Indicative Signalised layouts at external roads<br>▪ Retention / protection of existing trees<br>▪ Incorporation of art<br>▪ Special features<br>▪ Courtyards | |

| | | |
|---|---|---|
| | ▪ External lighting and CCTV locations and coverage | |
| 2.17 | Typical Sections and details to appropriate scale showing:-<br>Carriageway Construction<br>Footway / Cycleway Construction | |
| 2.18 | 1:1250 (or greater) plans showing :-<br>▪ Drainage provision in support of SUDS and Drainage Strategy | |
| 2.19 | 1:500 scale plans showing:-<br>▪ Layout of roads and buildings<br>▪ Layout of sewers, outfalls, underground storage, and SUDS features | |
| 2.20 | Finishes Schedule for 10 Nr Departments (other than those identified above for detailed 1:200 drawing submissions) and key circulation & communication routes, and main entrances | |
| 2.21 | Door & ironmongery Schedule for 10 Nr Departments (other than those identified above for detailed 1:200 drawing submissions) and key circulation & communication routes, and main entrances | |
| 2.22 | Outline design drawings demonstrating structural philosophy and should include as a minimum:<br>▪ Foundations: Typical layout and detail of proposed solution<br>▪ Basement: Outline construction detail; plan of slabs, sections of retaining walls<br>▪ Ground level slab: Typical layout and details<br>▪ Podium level floor: Typical layout and details, transfer structures<br>▪ Ward level floors: Typical plan layout indicating slab and supporting structure, (columns, beams), core layout (stability elements)<br>▪ Roof level: Typical layout indicating structure, including helipad (Acute Adults & Childrens) | |
| 2.23 | 1:200 Energy Centre Services Layout and Plant Room locations | |
| 2.24 | Schematic for Main Services incoming routes and distribution from Energy Centre to Main Hospital Building – tunnel cross sections (1:50 scale) | |
| 2.25 | MTHW Schematic | |
| 2.26 | LTHW Schematic | |
| 2.27 | Hot & Cold Water Services Schematic | |
| 2.28 | Filtered Water Schematic | |
| 2.29 | Renal Water Schematic | |
| 2.30 | Medical gases Schematic | |
| 2.40 | Sprinklers Schematic | |
| 2.41 | Fire alarm & damper controls Schematic | |
| 2.42 | BMS Schematic | |
| 2.43 | MV Power Schematic | |
| 2.44 | LV Schematic | |
| 2.45 | Air supply Schematic, including additional sketches for Theatre supply | |
| 2.46 | Air extract Schematic, including additional sketches for Theatre supply | |
| 2.47 | Air Treatment Schematic (cooling), including additional sketches for Theatre supply | |
| **3.0 Design Strategy** | (Strategies to be up to 1,500 words per strategy, unless | |

| | | |
|---|---|---|
| | noted otherwise, and may be supplemented with sketches/illustrations/tables) | |
| 3.1 | Architectural design strategy (up to 4,000 words) | |
| 3.2 | Wayfinding strategy | |
| 3.3 | Arts Strategy | |
| 3.4 | Acoustic Report indicating the following information:-<br>▪ Specialist Acoustic Engineer's report providing a clear demonstration of compliance with HTM 08-01<br>▪ Outline principles adopted underlying bidder approach to acoustics with particular regard to issues around items such as rooftop helipad, atrium etc | |
| 3.5 | FM Strategy (up to 4,000 words)<br>This to identify and address (as a minimum):<br>▪ Goods In and Out proposals for deliveries and removal off site<br>▪ Distribution proposals (hospitals and to lab building) from delivery to site to end user stations and back to location of removal off site<br>▪ Separation of flows<br>▪ Systems and technologies<br>▪ Interface of systems<br>▪ Resilience of systems and proposals<br>▪ External façade access (cleaning and maintenance/replacement) solution | |
| 3.6 | Main incoming utilities design / connection strategy | |
| 3.7 | Water Services & Drainage design strategy | |
| 3.8 | Heating design strategy | |
| 3.9 | Ventilation & air treatment design strategy, including statements on odour control from adjacent sewage works | |
| 3.10 | Mains power distribution design strategy | |
| 3.11 | Sub-mains power distribution design strategy | |
| 3.12 | Lighting design strategy, including reference to energy and aesthetics to improve patient experience | |
| 3.13 | Lift Engineering design strategy (to include lift movement analysis) | |
| 3.14 | Communication design strategy | |
| 3.15 | Protective systems design strategy | |
| 3.16 | Medical gases design strategy | |
| 3.17 | Pneumatic tube system design strategy | |
| 3.18 | Fire engineering design strategy | |
| 3.19 | Plant room design strategy | |
| 3.20 | Energy strategy including approach to renewables, sustainability | |
| 3.21 | BREEAM scoring schedule | |
| 3.22 | Helipad M&E services design strategy | |
| 3.23 | Maintenance & major plant and equipment replacement strategy – including resilience provisions and strategy (up to 3,000 words) | |
| 3.24 | Building Services Commissioning, Handover, Training strategy (up to 4,000 words) | |
| 3.25 | Drainage strategy including:-<br>▪ Methodology for Addressing the requirements of the Hydraulic Assessment and Flood Risk Assessment as scoped out on the Drainage Impact Assessment and Strategy Report<br>▪ SUDS and Drainage Strategy statement which recognises the requirements as outlined in the Drainage Impact and Strategy Report | |
| 3.26 | Structural Design Strategy which should include:- | |

| | | |
|---|---|---|
| | ▪ Outline description demonstrating understanding of: topography, geology, soil conditions, contamination, ground water, history, services<br>▪ Demonstrate outline principles or design including, general description, stability, joints, floors, vertical structure, foundations, stairs and ramps, retaining walls, earthworks, slope stability, drainage, external works etc.<br>▪ Design Standards and Sources of Reference (Codes of Practice and Standards) | |
| 3.27 | Demolitions Strategy which should include/identify:<br>▪ Separation from new hospital, labs, energy centre and other buildings – safe pedestrian and traffic routes<br>▪ Access routes for construction traffic and site accommodation<br>▪ Protective measures – live services, noise, dust, removal of debris off site | |
| 3.28 | Diversions Strategy which should include/identify<br>▪ Culvert diversion<br>▪ Other diversions<br>▪ Medical gas line workplans | |
| **4.0 Specifications** | | |
| 4.1 | Substructure | |
| 4.2 | Frame | |
| 4.3 | Upper Floors | |
| 4.4 | Roof Structure | |
| 4.5 | Roof coverings | |
| 4.6 | Roof drainage | |
| 4.7 | Roof lights | |
| 4.8 | Stair structure | |
| 4.9 | Stair finishes | |
| 4.10 | Stair balustrades & handrails | |
| 4.11 | External walls | |
| 4.12 | Windows | |
| 4.13 | External doors | |
| 4.14 | Internal walls and partitions | |
| 4.15 | Internal doors | |
| 4.16 | Wall finishes | |
| 4.17 | Floor finishes | |
| 4.18 | Ceiling finishes | |
| 4.19 | Fittings, fixtures & furniture | |
| 4.20 | Soft furnishings | |
| 4.21 | Works of Art | |
| 4.22 | Equipment | |
| 4.23 | Sanitary appliances (in relation to Group 1 appliances identified in the Equipment List) | |
| 4.24 | Services equipment | |
| 4.25 | Disposal installations | |
| 4.26 | Mains Water installations | |
| 4.27 | Cold water services | |
| 4.28 | Hot water services | |
| 4.29 | Steam & condensate | |
| 4.30 | Heat source | |
| 4.31 | Space heating | |
| 4.32 | Space cooling | |
| 4.33 | Ventilating system | |
| 4.34 | Electric source & mains | |
| 4.35 | Electric power supplies | |
| 4.36 | Electric lighting & fittings | |

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| 4.37 | Gas installations | |
| 4.38 | Lift installations | |
| 4.39 | Sprinkler installations | |
| 4.40 | Fire-fighting installations and alarms | |
| 4.41 | Lightning protection | |
| 4.42 | Communication installations | |
| 4.43 | Special installations– Renal Water, Filtered Water | |
| 4.44 | Special installations – Building management System and Asset Management System | |
| 4.45 | Special installations– Pneumatic tube system | |
| 4.45a | Special installations – Security systems, access control, CCTV and intruder alarms | |
| 4.45b | Special installations – Other (e.g. AGVs) | |
| 4.46 | Roads, car parks, pavements, cycle paths | |
| 4.47 | Soft landscaping | |
| 4.48 | Site enclosure | |
| 4.49 | External fittings & furniture | |
| 4.50 | Drainage | |
| 4.51 | Water Mains | |
| 4.52 | Fire Mains | |
| 4.53 | Heating Mains | |
| 4.54 | Gas Mains | |
| 4.55 | Electric Mains | |
| 4.56 | Site Lighting | |
| 4.57 | Minor building works | |
| **5.0 Component / Product & Manufacturer Schedule** | | |
| 5.1 | Boilers | |
| 5.2 | Calorifiers | |
| 5.3 | Pumps | |
| 5.4 | Switchgear | |
| 5.5 | AHU's | |
| 5.6 | Fans | |
| 5.7 | Internal Doors | |
| 5.8 | Ironmongery | |
| 5.9 | External doors & screens | |
| 5.10 | Roof Coverings | |
| 5.11 | Cladding / Curtain Walling / Windows | |
| 5.12 | Vinyl Flooring | |
| 5.13 | Carpet | |
| 5.14 | Ceiling systems | |
| 5.15 | CHP systems | |
| 5.16 | Generators | |
| 5.17 | Chillers | |
| 5.18 | Light fittings | |
| **6.0 Equipment Schedule** | | |
| 6.1 | Proposed Equipment Schedule (this to be the schedule issued by the Board priced. No variant or alternative schedule to be utilised or considered). | |
| **7.0 SHTM Compliance Statement** | | |
| 7.1 | Confirm compliance with required SHTM's and other standards noted in the ERs (Section 5) and state how compliance is being achieved (this to take the form of both Table 2 and Table 3 (5.1.2 and 5.1.3 of Vol 2/1 respectively) being reproduced and column(s) added confirming compliance and stating how compliance is being achieved). | |

| | | |
|---|---|---|
| | Further, a compliance statement with regard each of the Additional Guidance listing entries at 5.1.4 of Volume 2/1 is also required. | |
| **8.0 ADB Compliance Statement** | | |
| 8.1 | Confirm compliance with requirements of ADB sheets issued | |
| 8.2 | Confirm compliance with environmental matrix issued, return completed carbon tracker and evaluation matrix | |
| **9.0 Programme** | | |
| 9.1 | Master programme | |
| 9.2 | Stage 1 Laboratory sub-programme | |
| 9.3 | Stage 2 FBC Stage sub-programme | |
| 9.4 | Stage 3 Construction stage sub-programme | |
| **10.0 Project / Site Management** | | |
| 10.1 | Project Execution Plan comprising:- | |
| | ▪ Management structure | |
| | ▪ Management Staff – key personnel & structure | |
| | ▪ Design Staff - key personnel & structure | |
| | ▪ Temporary Accommodation & Welfare | |
| | ▪ Logistics (through timeline on site) | |
| | ▪ Traffic Management | |
| | ▪ Car Parking | |
| | ▪ Staff Movement (construction operatives) | |
| | ▪ Site Security | |
| | ▪ Site Safety, including Construction Phase Health & Safety Plan | |
| | ▪ Site interfaces | |
| | ▪ Waste management | |
| | ▪ Community engagement and benefits | |
| | ▪ Initiation of NEC working practices and cascade of this through supply chain | |
| **11.0 Contract Conditions** | | |
| 11.1 | A detailed and full mark-up of the Draft Contract; An electronic version, capable of being read in Microsoft Word 2000, of the Draft Contract;<br>Details of any of the proposed conditions contained in the Draft Contract that the Bidder is not prepared to accept and the reasoning behind the Bidder's position; | |
| 11.2 | Details of any of the proposed conditions contained in the Draft Contract that the Bidder is not prepared to accept and the reasoning behind the Bidder's position; | |
| 11.3 | A letter of support from the Bidders' insurers or other form of evidence demonstrating that the Board's expectations relative to insurance cover will be met. | |
| 11.4 | Performance Bond | |
| 11.5 | Performance Damages | |
| 11.6 | Collateral Warranties | |
| **12.0 Financial** | | |
| 12.1 | Statement on Commercial proposals, operation of Target Pricing, Open Book audit | |
| 12.2 | Target & Maximum Price Proposals<br>▪ Overall Project<br>▪ Stage 1 New Labs<br>▪ Stage 2 FBC Design<br>▪ Stage 3 Design & Construction New Hospitals | |

| | | |
|---|---|---|
| 12.3 | Detailed Elemental Cost Plan, comprising elemental summary with supporting detail comprising work items, approximate quantities, rates etc<br>▪ Stage 1 New Labs<br>▪ Stage 2 FBC Design<br>▪ Stage 3 Design & Construction New Hospitals<br>▪ Stage 3A Hard & Soft Landscaping Completion | |
| 12.4 | Priced Activity Schedules & Supporting Monthly Cashflows<br>▪ Overall Project<br>▪ Stage 1 New Labs<br>▪ Stage 2 FBC Design<br>▪ Stage 3 Design & Construction New Hospitals<br>▪ Stage 3A Hard & Soft Landscaping Completion | |
| 12.5 | Payment proposals | |
| 12.6 | Priced Risk Register & Risk Allocation<br>▪ Stage 1 New Labs<br>▪ Stage 2 FBC Design<br>▪ Stage 3 Design & Construction New Hospitals<br>▪ Stage 3A Hard & Soft Landscaping Completion | |
| 12.7 | Incentivisation Proposals Pain / Gain<br>▪ Stage 1 New Labs<br>▪ Stage 2 FBC Design<br>▪ Stage 3 Design & Construction New Hospitals & Stage 3A Hard & Soft Landscaping Completion | |
| 12.8 | Whole Life Cycle Cost Estimate for 30 year period detailing, replacement costs & timescales, planned & preventative maintenance, energy usage including:-<br>▪ Overall Project Summary<br>▪ Stage 1 New Labs<br>▪ Stage 3 Construction New Hospitals<br>▪ Stage 3A Hard & Soft Landscaping Completion<br>Energy costs assumptions should be clearly stated | |

# Appendix B Qualitative Scoring Schedule

B

| ITPD Evaluation Criteria | Individual Weighting | Technical Weighting |
|---|---|---|
| **DESIGN** | **550** | **50** |
| | | |
| ***Space*** | **20** | |
| The design should achieve appropriate clinical space standards as required by the ITPD Schedule of | 10 | |
| | | |
| The circulation, communication & plant space should be adequate and optimised | 10 | |
| | | |
| ***Drawing information:-*** | **250** | |
| 1:500 scale Masterplan proposals | 30 | |
| 1:500 departmental relationship drawings for all levels indicating functional relationships & main circulation routes | 45 | |
| 1:200 departmental layouts reflect the required space standards and functionality | 40 | |
| 1:200 departmental drawing for Accident & Energency Department, fully Annotated | 10 | |
| 1:200 departmental drawing for Adult Theatres Department, fully Annotated | 10 | |
| 1:200 departmental drawing for Adult Ward, fully annotated | 10 | |
| 1:200 departmental drawing for Childrens Ward, fully annotated | 10 | |
| 1:200 departmental drawing for Childrens A&E, fully annotated | 10 | |
| 1:50 room layout and wall elevations fully developed | 10 | |
| 1:200 Elevations – incorporating external signage proposals | 5 | |
| 1:200 Exemplar sections | 5 | |
| 3D images / perspective (internal & external) indicating the following:- | | |
| ▪ Architectural vision – space, height, form, composition, scale, character and use of materials | | |
| ▪ Hospital Main Entrance / atrium / public space proposals / visuals | 20 | |
| 1:500 site hard & soft landscaping proposals indicating:- | | |
| ▪ Soft landscaping strategy | | |
| ▪ Hard landscaping strategy | | |
| ▪ Car Parking arrangements with distribution of spaces and use identified | | |
| ▪ Areas of differing Carriageway Construction | | |
| ▪ Road, footway and cycle way geometry | | |
| ▪ Indicative Signalised layouts at external roads | | |
| ▪ Retention / protection of existing trees | | |
| ▪ Incorporation of art | | |
| ▪ Special features | | |
| ▪ Courtyards | 10 | |
| Finishes Schedule for 11 Departments, and key circulation & communication routes, and main entrances | 10 | |
| Door & ironmongery Schedule for 11 Departments, key circulation & communication routes, and main entrances | 10 | |
| Roof level: Typical layout indicating structure, including helipad (Acute Adults & Childrens) | 5 | |
| Architectural design strategy statement in support of drawing information | 5 | |
| Wayfinding strategy | 5 | |
| | | |

| ITPD Evaluation Criteria | Individual Weighting | Technical Weighting |
|---|---|---|
| ***Design Strategy*** | **155** | |
| Acoustic Strategy & Report | 5 | |
| Arts Strategy | 5 | |
| Fire engineering design strategy including drawings | 5 | |
| Structural Engineering design strategy including outline design drawings demonstrating structural philosophy | 5 | |
| Drainage design strategy including 1:1250 (or greater) plans showing drainage provision in support of SUDS and Drainage Strategy1:500 scale plans showing:- | | |
| ▪ Layout of roads and buildings | | |
| Layout of sewers, outfalls, underground storage, and SUDS features | 5 | |
| Main incoming utilities design / connection strategy including Schematic for Main Services distribution | 5 | |
| Water Services Strategy including Hot & Cold Water Services Schematic, Filtered Water Schematic and Renal Water Schematic | 5 | |
| Heating design strategy including MTHW Schematic & LTHW Schematic | 10 | |
| Ventilation & air treatment design strategy including Schematic drawings | 10 | |
| Mains and Sub-mains power distribution design strategy including MV Power Schematic and LV Power Schematic | 10 | |
| Lighting design strategy | 10 | |
| Lift Engineering design strategy | 10 | |
| Communication design strategy | 5 | |
| Protective systems design strategy including Sprinklers schematic and Fire alarm & damper controls | 5 | |
| Medical gases design strategy including schematic drawings | 5 | |
| Pneumatic tube system design strategy including schematic drawings | 5 | |
| Plant room design strategy | 5 | |
| Control systems including BMS schematic | 5 | |
| Helipad M&E services design strategy | 5 | |
| Maintenance & major plant replacement strategy | 35 | |
| | | |
| ***Sustainability*** | **75** | |
| Sustainable design statement | 25 | |
| BREEAM scoring schedule | 25 | |
| Energy strategy including approach to renewables, sustainability | 25 | |
| | | |
| ***AEDET Review*** | **50** | |
| Overall AEDET review score | 50 | |
| **Design Score** | **550** | **50** |

| ITPD Evaluation Criteria | Individual Weighting | Technical Weighting |
|---|---|---|
| **DELIVERABILITY AND APPROACH** | **275** | **30** |
| **Project management:** | **90** | |
| Structure & approach | 20 | |
| Site Management Team; | 5 | |
| Design Team; | 5 | |
| Community Engagement | 60 | |
| **Construction Approach:** | **20** | |
| There should be minimal impact on service delivery; | 10 | |
| The construction exploits any innovation benefits from standardisation and prefabrication; | 10 | |
| **Site Management:** | **80** | |
| Temporary Accommodation proposals | 15 | |
| Logistics proposals | 10 | |
| Traffic management | 10 | |
| Car Parking | 10 | |
| Staff Movement | 5 | |
| Site Security & Safety | 10 | |
| Site interfaces | 10 | |
| Waste Management | 10 | |
| **Programme:** | **40** | |
| Master programme | 5 | |
| Stage 1 Laboratory programme | 10 | |
| Stage 2 FBC sub programme | 10 | |
| Stage 3 Construction programme | 10 | |
| Stage 3A Hard & landscaping completion programme | 5 | |
| | | |
| **Commissioning & Handover** | **45** | |
| | | |
| ▪ Commissioning plans, including Building Services testing & commissioning | 15 | |
| ▪ Handover process | 15 | |
| ▪ Extended defects requirement | 15 | |
| | | |
| **Logistics Score** | **275** | **30** |

| ITPD Evaluation Criteria | Individual Weighting | Commercial Weighting |
|---|---|---|
| **COMMERCIAL** | **175** | **20** |
| | | |
| **Contract:** | **25** | |
| Compliance with Contract Conditions | 5 | |
| Insurances | 5 | |
| Performance Bond | 10 | |
| Collateral Warranties | 5 | |
| | | |
| **Pricing** | **150** | |
| Statement on Commercial proposals, operation of Target Pricing, Open Book audit | 5 | |
| Target / Maximum Price assessment | 20 | |
| Priced Risk Register & Risk Allocation | 55 | |
| Stage 1 Laboratory Design & Construction detailed elemental cost & resource plans | 5 | |
| Stage 1 Laboratory Design & Construction Priced Activity Schedules, Cashflow & Payment Proposals | 5 | |
| Stage 2 FBC Stage Priced Activity Schedules including supporting detailed costed resource plan, | 10 | |
| Stage 3 Adult / Childrens / Site Works Design & Construction detailed elemental cost & resource plans | 5 | |
| Stage 3 Adult / Childrens / Site Works Design & Construction Priced Activity Schedules, Cashflow & | 5 | |
| Project Whole Life Cycle Cost Plan | 40 | |
| | | |
| **Total Commercial Score** | **175** | **20** |

# Appendix C Legal Evaluation

C

**Purpose of Legal Evaluation**

The legal evaluation has two primary functions:

- to give comfort as to deliverability - demonstrated by the robustness of the legal submission and mark-up of the draft Contract and a constructive approach to resolving complex issues; and
- to better inform the financial or technical evaluations.

**Legal Evaluation Criteria**

(i) The legal evaluation will focus on the detailed mark-up of the draft Contract including the schedules, Appendices, Contract Data Part 1 and Contract Data part two (together, the "Contract Documents") submitted by the Bidders.

(ii) Bidder's responses to the Contract Documents will be evaluated in accordance with the following criteria (of equal importance):-

- the extent to which the Bidder has accepted the conditions set out in the Contract Documents and the extent to which the Bidder has provided detailed comments on the Contract Documents and a constructive approach to issues which it does not accept;
- the extent to which the Bidder demonstrates that it understands and accepts the risks inherent in the Project and the extent to which the Bidder's qualifications (if any) to risk allocation position set out in the Contract Documents are acceptable to the Board; and
- the sufficiency of Bidder's insurance proposals.

**How the Legal Evaluation will be conducted**

Firstly, the legal evaluation team will evaluate the individual responses against the legal evaluation criteria.

Thereafter, the legal evaluation team will produce a detailed commentary on the mark-up of the Contract Documents which will allow the legal evaluation team to:

- inform the technical and financial evaluation teams of any amendment to the Contract Documents which will have an impact on the price/risk profile or service being offered;
- identify any deficiencies in the legal submission which they consider should be brought to the attention of the Bidder prior to completion of the evaluation to give the Bidder an opportunity to clarify and ensure that tenders are compliant from a legal submission point of view(recognising the constraints on the degree of clarifications that might be requested under the Competitive Dialogue process);
- clearly identify any commercial issues which in the view of the legal evaluation team should be clarified with tenderers prior to appointment of Preferred Bidder. Clarification will be required when the Bidder 's position is not clear; and
- score the legal submissions taking all of the above into account, in accordance with the evaluation scoring matrix set out elsewhere in this ITPD.

**Legal Evaluation Report**

The legal evaluation team will complete a comprehensive legal report for each of the tenders evaluated.

Each legal report will contain the following:

- a summary of the legal submission including confirmation that the legal submissions were compliant;
- a summary of the quality of the responses in the legal submission against the legal evaluation criteria set out in this ITPD;
- a detailed commercial commentary on the mark-up of the Contract Documents which will identify:
    - the points considered relevant to the financial evaluation (which will have already been passed to the financial evaluation team);
    - the points relevant to the technical evaluation (which will have been passed to the technical evaluation team);
    - a list of key commercial issues which, in the legal evaluation team's view, should be addressed/developed prior Contract Award (as appropriate).

In addition, at an early stage in the process, the legal evaluation team will have identified any deficiencies in the legal submission which they consider should be brought to the attention of the tenderer prior to completion of the evaluation to give the Bidder an opportunity to clarify and ensure that tenders are compliant from a legal submission point of view.

The legal evaluation team will also rank the Bids according to the quality of their responses against the legal evaluation criteria.

**Bidder mark-up to the Contract Documents**

Legal submissions will be assessed on how thorough and constructive the Bidder's responses are. The key concern here is to satisfy ourselves that if a particular Bid is selected on the basis of the overall evaluation, that selection is made on a full understanding of their position on **all** commercial issues and on the basis of us being confident that they have thought through the implications of all commercial aspects of their Bid.

Where contract conditions are not acceptable to Bidders, weight will be given to responses which represent constructive alternatives rather than simple rejections.

**Conclusion**

The key issue in the tender evaluation to meet the “most economically advantageous” test remains identifying the compliant affordable Bid which offers the Board the best balance between price and quality. Much of the legal evaluation therefore focuses on assisting that process by identifying issues which are relevant to the overall evaluation but which are expressed by the Bidder through the legal submission documents.

# Appendix D Financial Evaluation

# 1. Background to the Financial Evaluation

## 1.1 Overview of the Approach

The use of competitive dialogue requires the appointment of the successful bidder to be made on the basis of the most economically advantageous tender.

In order to make this assessment NHS Greater Glasgow & Clyde has set out an evaluation method which considers the qualitative aspects of the tenderer's proposals in ratio to the expected cost of the project. The bidder demonstrating the best ratio of outputs to cost will be deemed successful.

The evaluation approach has been set out in the information provided to bidders.

## 1.2 Financial Evaluation

The evaluation of the pricing proposals is carried out as part of the commercial assessment of bids. In addition it is will consider the pricing proposals submitted with the aim of establishing the expected cost to the Board of the proposals.

### 1.2.1 Pricing and Cost Structure

#### 1.2.1.1 Price Structure

In order to understand the approach to evaluation it is necessary to consider the pricing mechanism set out in the contract. The key elements are

Target Price – Bidders are required to provide their best estimate of target price being made up of best estimate of cost plus, with what is in effect a lump sum profit amount

Pain/Gain percentages – the proportion by which cost variations from those used to establish the target price will be met by both the board and the bidder

Maximum Price – The price after which all additional costs will be the responsibility of the bidder

#### 1.2.1.2 Other Costs

It is possible that the pricing proposals will result in costs being borne directly by the board. For example should the bidder propose a cap on cost inflation which if exceeded would not form part of the normal pain/gain mechanism. Costs such as these will be included in the valuation as a direct cost consequence of the bidders proposals

# 2. Approach to financial evaluation

## 2.1 Aim of the Approach

The key aim of the approach is to establish the most likely costs to NHSGG&C of the bidders proposals and to use those estimated cost to establish the most economically advantageous tender.

## 2.2 Stages of Evaluation

### 2.2.1 Affordability

Bids that breach the stated affordability thresholds of NHSGG&C may be excluded from further analysis

### 2.2.2 Establishing expected outturn prices

The target price will be based upon the bidder's best estimate of the final costs of the project plus a lump sum profit. The pricing structure recognises that this is an estimate and therefore allows for a predetermined price variation process to be applied.

The causes for price variation will be set out in the risk registers prepared by each bidder. This will be used to establish the expected outturn price by applying statistical techniques such as but not limited to Monte Carlo Analysis.

It will be for each bidder to set out what they believe their post mitigation risks will be that will drive the price variation. If however it is apparent that this estimate is materially different from what me be expected in normal circumstances, this will be clarified with the bidder and additional sensitivity testing may be applied.

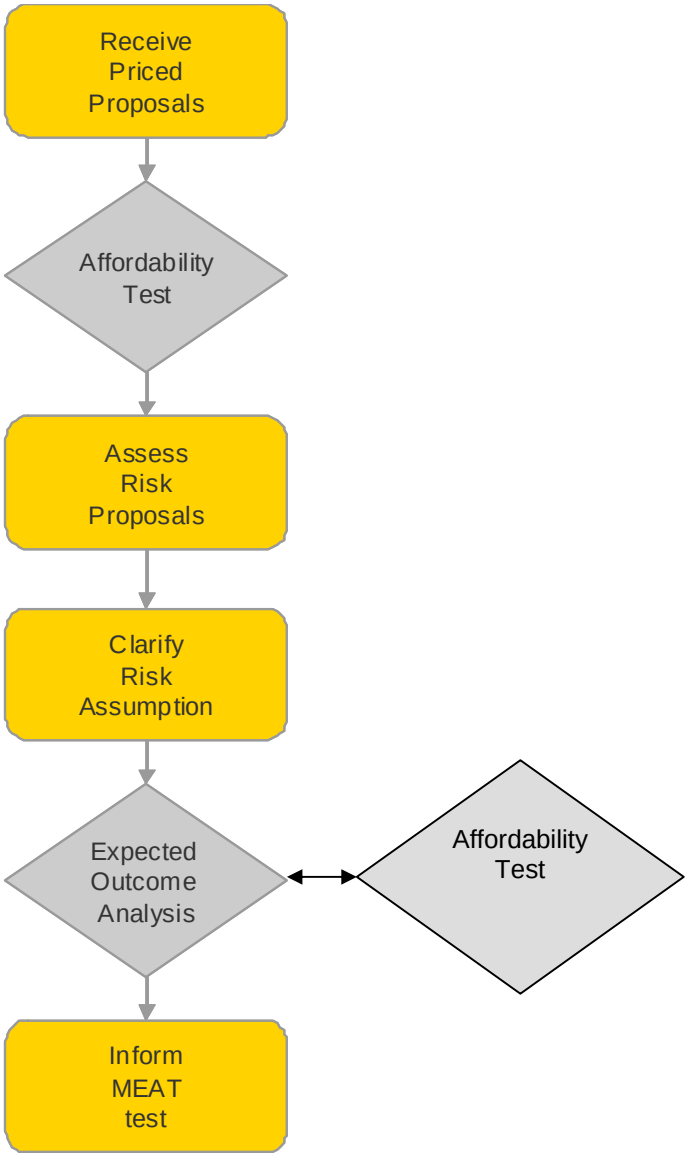
**Categories of Risk Impact**

In assessing the risk impact the following categories will be considered.

a. Those risks borne by the bidder which may impact the final outturn price and ultimately the pain/gain and max price mechanism

b. Those risks borne solely by the board

The following diagram sets out the processes that will be followed




**Specific Treatment of Inflation**

A risk common to all bidders on projects with extended periods of delivery is the impact of inflation. Bidders are required to set out their own approach to inflation, but for evaluation purposes NHSGGC has taken the view that inflation will be evaluated on the basis of 2.5% per annum, this being the government' target for RPI over the period of the project.

### 2.2.3 Other aspects of Financial Evaluation

In order to obtain a full picture of the financial elements of the bids, we will consider factors such as

- The quantum of difference between the bidders target and maximum price
- Any caveats or exclusions submitted by bidders, and there possible impact upon the risks borne by the board

► The clarity of the bidders pricing proposals and the degree to which they could be practicably implemented

# Appendix E Board Evaluation Process / Structure

New South Glasgow Hospitals and Laboratory Project

New South Glasgow Hospitals Project Evaluation Process and Structure

The purpose of this paper is to set out the evaluation programme, process and teams for the New South Glasgow Hospitals and Laboratory Project. (It should be noted that Volume 3 of the Invitation to Participate in Dialogue (ITPD) (appendix A) sets out the bid deliverables which require to be evaluated.)

Evaluation Process

The evaluation process contains all activities required to provide the Board with a robust evaluation mechanism to ensure confidence that the evaluation will be appropriate, accurate and auditable. The evaluation of the tenders will be carried out by those who have been involved in compiling the ITPD and/or involved with the bidders in the Competitive Dialogue Process. This will ensure that tenders will be considered by those who have the most knowledge and understanding of the Board's requirements and who have also been providing clarity to the bidders in Competitive Dialogue.

The bid deliverables split naturally into four evaluation groupings and therefore there will be four evaluation groups, these being Design, Logistics, Laboratory Block and Commercial. A training seminar for all those involved in the process based on the information contained in the ITPD is arranged for 21st August 2009.

Following receipt of the tenders for the works on September 11th 2009, the evaluation groups will commence the initial evaluation process. The whole evaluation process will take approximately 5 weeks and will conclude on the 16th October 2009. The main parts of the evaluation process are:

1. Check all information is complete (Request missing information if required);
2. Evaluation groups consider all tender information for their groupings;
3. Bidders attend evaluation meeting to present their proposals and answer any questions from evaluation groups;
4. The evaluation groups carry out their initial evaluation of their respective sections of the tenders and complete an initial scoring in line with Volume 3, appendix A of the ITPD;
5. During the evaluation period there may be a need for the evaluation group leads to meet with a sub-group of the New South Glasgow Hospitals and Labs Project Executive Board (NSGH&LPEB) to provide information about the progress of the evaluation of tenders and allow them to request more detail on any particular aspects of that process. The proposed dates for these meetings are 30th September and 13th October 2009.
6. The Commercial Group will carryout a review of all outputs from the evaluation groups (provided by the Group Leads). The Commercial Group will complete a moderation exercise to ensure consistency of approach, scoring and reasoning of the initial evaluation and scoring of each tender submission.
   The Commercial Group will complete the final scoring of the tenders and will rank the tenders and establish a preferred bidder.
   A comprehensive evaluation report will be completed by the 16th October 2009.
7. After the completion of the evaluation process the Commercial Group will present its conclusions to a seminar/workshop of the NSGH&LPEB on 22nd October 2009 to provide them with a comprehensive understanding of the tender submissions to enable them to make an informed judgement at their formal meeting to be held on the 26th October 2009. The NSGH&LPEB will consider all relevant information and, if they agree with the recommendation of the Commercial Group, take forward the formal recommendation to the NHS Greater Glasgow & Clyde Board Performance Review Group.

Remit and Groups

a) Evaluation Groups
   - Carry out analysis of all information for their groupings provided by the Bidders and seek any clarifications regarding any missing information.
   - Complete a detailed review and initial evaluation of each submitted bid (as in ITPD Volume 3) and compile summary of bid compliance with expected deliverables. This to be completed for the four work-streams which have been the subject of Competitive Dialogue (i.e. Design, Labs, Logistics and Commercial).
   - Write up a detailed evaluation report on all aspects of their work stream.

b) Commercial Group
   - Carry out final evaluation review of all bid submissions and conclude the evaluation scoring assessment (as in ITPD Volume 3).
   - Determine ranking of each bid.
   - Write up detailed summary evaluation report of all aspects of the evaluation of the bids
   - Present recommendations to the NSGH&LPEB.

c) New South Glasgow Hospitals & Labs Project Executive Board
   - Receive and consider the recommendation from the Commercial Group and make a decision on the successful bidder to go forward as the project's design and construction partner.
   - Make formal recommendation to NHS Greater Glasgow & Clyde Board Performance Review Group.

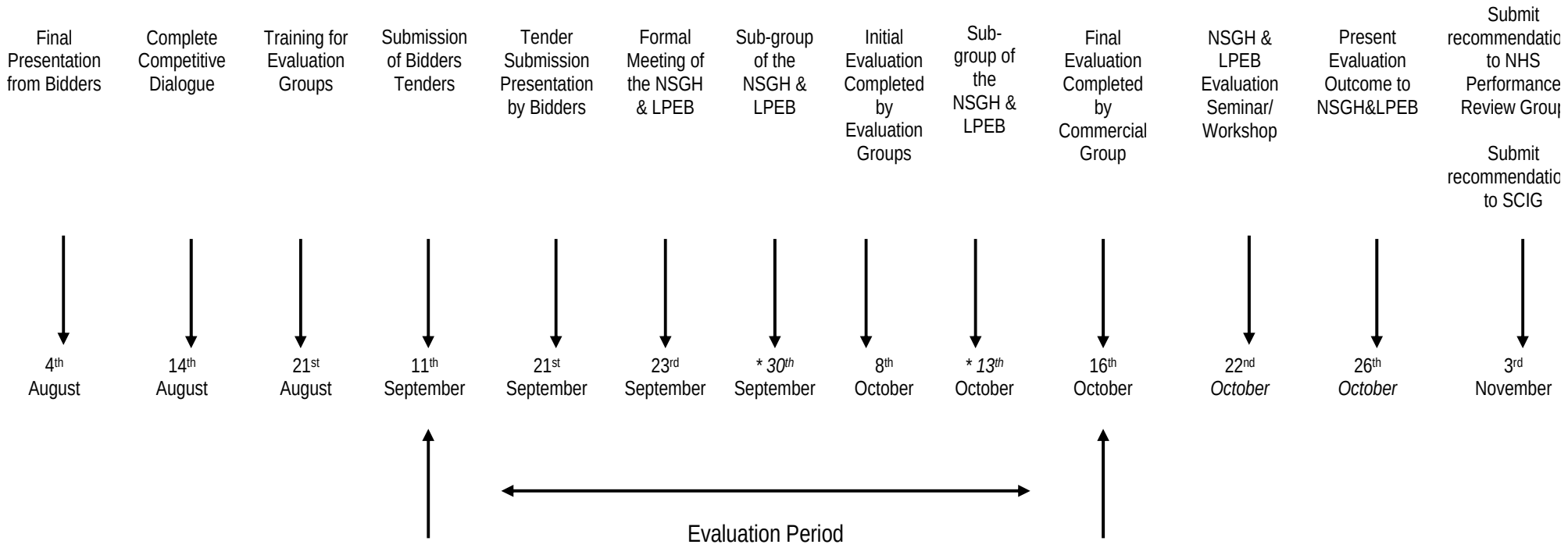
Membership of Groups

Table 1 shows the membership of each evaluation group.

TABLE 1 - BOARD EVALUATION GROUPS
a) Technical Evaluation Groups

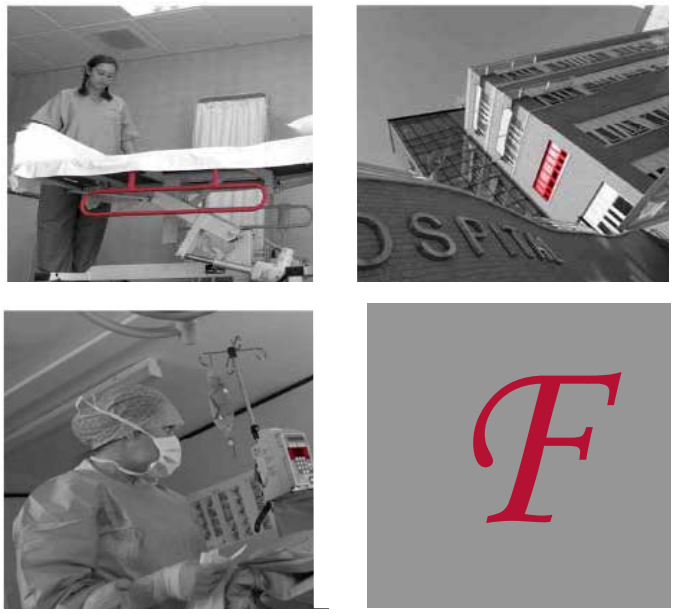
| GROUP | DESIGN | LOGISTICS | LABS | COMMERCIAL |
|---|---|---|---|---|
| BOARD | Alan Seabourne<br>Alex McIntyre<br>Annette Rankin<br>Fiona McCluskey<br>Frances Wrath<br>Heather Griffin<br>Hugh McDerment<br>Mairi Macleod<br>Mark McAllister<br>Mary Ann Kane<br>Morgan Jamieson<br>Peter Moir<br>Stephen Gallacher | Alan Seabourne<br>Alex McIntyre<br>Frances Wrath<br>John Green<br>Peter Moir | Alan McCubbin<br>Alan Seabourne<br>Alex McIntyre<br>Annette Rankin<br>Frances Wrath<br>Hugh McDerment<br>Jim Crombie (Lead)<br>Isabel Ferguson<br>Mary Ann Kane<br>Peter Moir<br>Dr Margaret Burgoyne<br>Dr Rachel Green | Alan McCubbin<br>Alan Seabourne<br>Alex McIntyre<br>Peter Gallagher<br>Peter Moir |
| TA ADVISORS | David Hall (Lead)<br>Graham Annandale<br>Harry Smith<br>Iain Buchan<br>John Bushfield<br>Mark Baird<br>Robert Menzies<br>Susan Logan | David Hall (Lead)<br>Mark Baird | Douglas Ross<br>Graham Annandale<br>Neil Robson<br>Raj Deb<br>Stewart McKechnie | Douglas Ross (Lead)<br>Jim Hackett<br>Juliet Haldane<br>Michael McVeigh<br>Simon Fraser |

**Appendix 1** – EVALUATION PROGRAMME




*(* - provisional date)*

# Appendix F Certificates



**Part 1 – Confidentiality Agreement**

Name of bidder:

We undertake that we shall keep confidential and will not use for our own purposes or reveal to any person, firm or company the information contained in or sent with the ITPD issued by the Board in relation to the Project or which is made available in connection with any further enquiries in relation to that Project (the "Information Provided") unless we obtain in each case the prior written consent of the Board. Such consent shall not be required where the Information Provided is:

(i) disclosed on a "need to know" basis to such of our directors, officers, employees or advisers who are directly involved with the preparation of bids on our behalf provided that we shall inform each person to whom the Information Provided is made aware of the confidential nature of the Information Provided and the obligations under this Confidentiality Agreement and has given an undertaking at the time of receipt of the Information Provided to keep such information confidential;

(ii) in the public domain or shall come into the public domain otherwise than by breach of this undertaking or any other undertaking;

(iii) made available to us by a third party who is entitled to divulge such information and who is not under any obligation of confidentiality in respect of such disclosure; or

(iv) required to be disclosed by any applicable law provided that the party disclosing the information shall notify the Board of the information to be disclosed (and of the circumstances in which the disclosure is alleged to be required) as early as reasonably possible before such disclosure must be made and shall take all reasonable action to avoid and limit such disclosure.

We undertake at the request of the Board that we shall immediately return to the Board all Information Provided and all and any copies or any part thereof including any information derived or produced partly or wholly from the Information Provided which is in a tangible form. If any such information is not in a tangible form, the bidder shall destroy or permanently erase that information and all and any copies or part thereof including any information derived or produced partly or wholly from the Information Provided.

Without prejudice to any other rights or remedies which the Board may have, the bidder acknowledges and agrees that (a) damages would not be an adequate remedy for any breach by the bidder of the provisions of this undertaking and (b) the Board shall be entitled to the remedies of interdict and other relief for any threatened or actual breach of this undertaking.

Signed for and on behalf of [**bidder**] by [**name of signatory and nature of authority to sign**] and [**name of signatory and nature of authority to sign**] on the day of 2009.

……...

……...

NOTE: (i) Where the bidder is a company, to be signed by two directors or by a director and the secretary of the company, such persons being duly authorised for that purpose.
(ii) Where the bidder is a consortium yet to be established as a company, to be signed by persons duly authorised by each of the prospective members of the consortium.

**Part 2 – Certificate of Non-Canvassing**

Name of bidder:

We hereby undertake that we have not (nor will we in the future):

1. Committed any offence under the Prevention of Corruption Acts 1889 to 1916; or

2. Contacted any other officer of the Board about any aspect of the Project, except as authorised by the ITPD, including (but without limitation) for the purposes of discussing the possible transfer to the employment of the Bidder of such officer for the purpose of the Project or for soliciting information in connection with the Project; or

3. Offered any inducement, fee or reward to any member or officer of the Board or any person acting as an advisor for the Board or in connection with the project; or

4. Canvassed any of the persons referred to in paragraph 3 above in connection with the Project.

In this Certificate the word "person" includes any persons and any body or association, corporate or unincorporate and "agreement" or "arrangement" include any such transactions, whether formal or informal, legally binding or not.

Signed for and on behalf of [bidder] by [name of signatory and nature of authority to sign] and [name of signatory and nature of authority to sign] on the day of 2009.

……...

……...

NOTE: (i) Where the bidder is a company, to be signed by two directors or by a director and the secretary of the company, such persons being duly authorised for that purpose.
(ii) Where the bidder is a consortium yet to be established as a company, to be signed by persons duly authorised by each of the prospective members of the consortium**.**

**Part 3 – Certificate of Non-Collusion**

Name of bidder:

We certify that we will submit a bona fide bid and that we have not adjusted and will not adjust our bid in agreement or by arrangement with any other person.

We also certify that we have not done and we undertake not to do at any time during the competition any of the following acts:

1. Entered into any agreement with any other person with the aim of preventing bids being made or as to the fixing or adjusting of the amount of any bid or the conditions on which any bid is made;

2. Caused or induced any person to enter into such an agreement as is mentioned in paragraph 1., above, or to inform us of the amount or the approximate amount of any rival bid for the Project; or

3. Informed any other person, other than the person calling for this bid, of the amount or the approximate amount of our bid, except where the disclosure, in confidence, of the amount of the bid was necessary to obtain quotations necessary for the preparation of the bid, for insurance, for performance bonds and/or contract guarantee bonds or for professional advice required or the preparation of the bid; or

4. Offered or agreed to pay or give any sum of money, inducement or valuable consideration directly or indirectly to any person for doing or having done or causing or having cause to be done in relation to any other bid or proposed bid for the works any act or omission; or

5. Canvassed any other persons referred to in paragraph 1., above, in connection with the project.

We also undertake not to procure the doing of any of the acts mentioned in paragraphs 1 to 5 above before the hour and date specified for the return of the bid nor (in the event of the bid being accepted) shall we do so while the resulting contract continues in force between us (or our successors in title) and the Board.

In this Certificate, the word “person” includes any persons and any body or association, corporate or unincorporate, and “agreement” or “arrangement” include any such transactions, whether formal or informal, legally binding or not.

Signed for and on behalf of [**bidder**] by [**name of signatory and nature of authority to sign**] and [**name of signatory and nature of authority to sign**] on the day of 2009.

…….

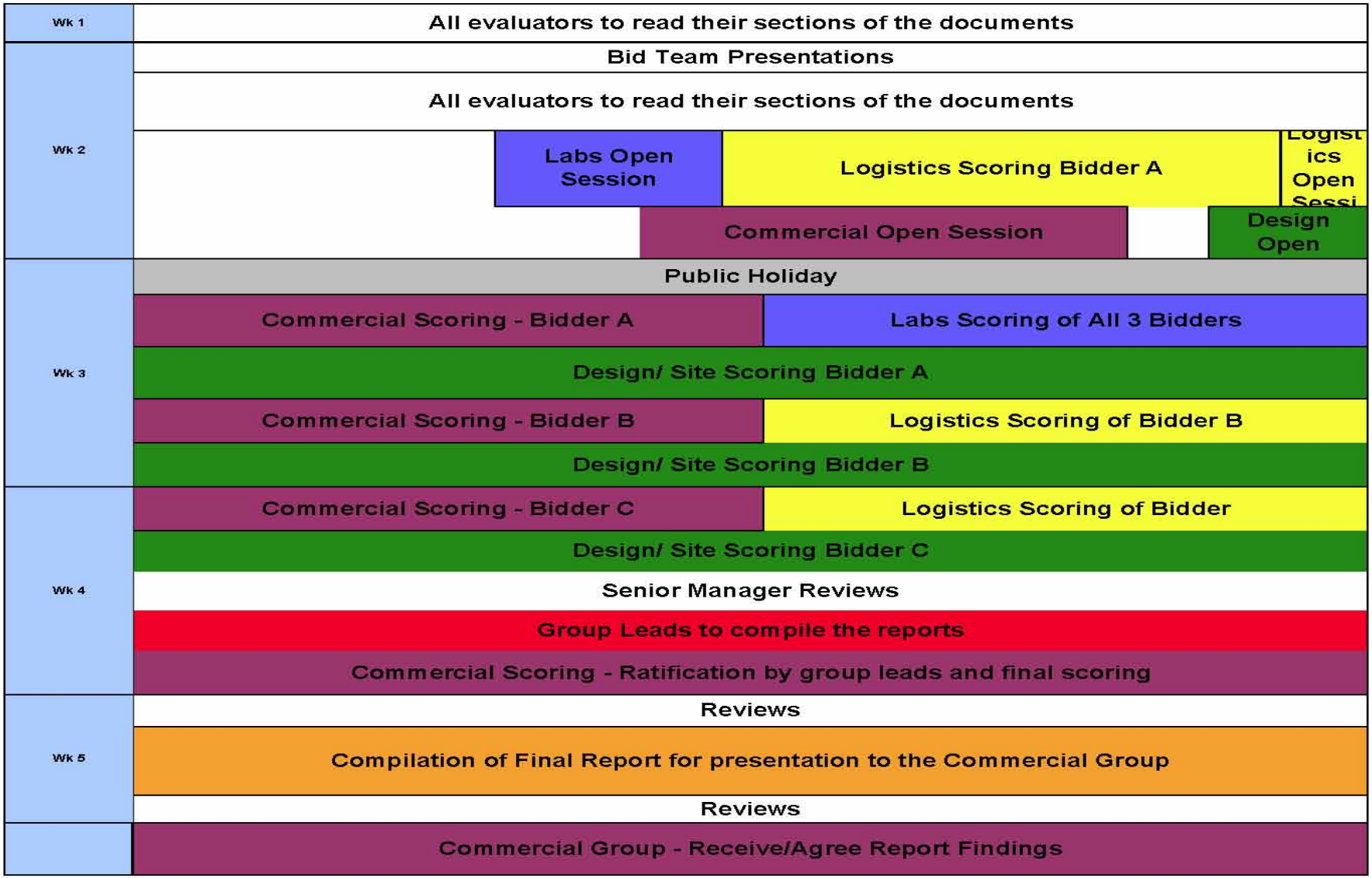
... ……..

NOTE: (i) Where the bidder is a company, to be signed by two directors or by a director and the secretary of the company, such persons being duly authorised for that purpose.
(ii) Where the bidder is a consortium yet to be established as a company, to be signed by persons duly authorised by each of the prospective members of the consortium.

# Appendix 2 - Evaluation Teams

| Design Group | Logistics Group | Laboratories Group | Commercial Group |
|---|---|---|---|
| Alan Seabourne | Alan Seabourne | Alan McCubbin | Alan McCubbin |
| Alex McIntyre | Alex McIntyre | Alan Seabourne | Alan Seabourne |
| Annette Rankin | Frances Wrath | Alex McIntyre | Alex McIntyre |
| Fiona McCluskey | John Green | Annette Rankin | Peter Gallagher |
| Heather Griffin | Peter Moir | Frances Wrath | Peter Moir |
| Hugh McDerment | David Hall (Lead) | Hugh McDerment | Douglas Ross (Lead) |
| Mairi Macleod | Mark Baird | Jim Crombie (Lead) | Jim Hackett |
| Mary Ann Kane | | Mary Ann Kane | Juliet Haldane |
| Morgan Jamieson | | Peter Moir | Michael McVeigh |
| Peter Moir | | Dr Rachel Green | Simon Fraser |
| Stephen Gallacher | | Dr Margaret Burgoyne | Rhona Harper |
| Mark McAllister | | Douglas Ross | |
| Frances Wrath | | Graham Annandale | |
| David Hall (Lead) | | Neil Robson | |
| Graham Annandale | | Raj Deb | |
| Harry Smith | | Stewart McKechnie | |
| Iain Buchan | | Graham Stuart | |
| John Bushfield | | | |
| Robert Menzies | | | |
| Susan Logan | | | |
| Mark Baird | | | |
| Anna Baxendale | | | |
| Jackie Sands | | | |
| Neil Warbrick | | | |
| Alan Rose | | | |

# Appendix 3 - Evaluation Programme



## Evaluation Tasks

| Week No | |
|---|---|
| 1 | Receive and check all tender documents and locate them in the designated bidder area of the evaluation unit. Deliver tender information to legal, financial and technical advisor offices. Set out tender information into the 4 categories of evaluation: Design, Logistics, Labs and Commercial. (All information coded for document control.) |
| 1 + 2 | All evaluation group members read the information in relation to their relevant category (Some members of the evaluation groups required to read full documents - AS, AMcI, PM and Technical Advisors). The Bidders presentations will take place on the 4th day of this task. |
| 2 | Individual open meetings held for discussion on tenders - mainly clarification and understanding of documents with the exception of the Logistics workstream which will commence scoring. |
| 3 | Formal group evaluation meetings commence and conclude scoring of tenders |
| 4 | Compile evaluation reports by each group |
| 4 | Commercial group commence final scoring of bids which includes:<br>- Review all group reports<br>- Discuss reports with group leads<br>- Hold a final scoring meeting<br>- Rank tender and identify preferred tender |
| 5 | Commercial group compile final tender evaluation report with clear recommendations on way forward |
| 6 | Commercial Group review final report for submission to New South Glasgow Hospitals & Labs Project Executive Board |

APPENDIX 4

# NEW SOUTH GLASGOW HOSPITALS AND LABORATORIES PROJECT

## THE PROCUREMENT PROCESS

## A PERSONAL VIEW AT 22nd OCTOBER, 2009

During the past two years, the NHS Board has been kept fully informed as the new South-side hospital project develops. Briefings have been held at informal seminars covering areas such as the development, design and financial implications. More formal Board settings, such as the Performance Review Group and the Board itself, have been used for briefing and then approval of the formal governance arrangements.

The procurement process has now reached an important stage in that approval is required for the appointment of contractors, in respect of the laboratory project, and the approval of a contractor as the preferred bidder for the main project.

On 22nd October, a full meeting was held of the New South Glasgow Hospitals and Laboratory Executive. This took the form of a seminar with presentations by the NHS Board's key advisory teams. In addition to Executive Members, three Non-Executive Members also attended. This was a full day's seminar where high-level presentations were made with the opportunity for in-depth questioning and close scrutiny.

Without going through the detail of the seminar presentations, it is worth recording the following particular points:-

1. All three contractors who engaged in the competitive dialogue stage of the process submitted tenders that are within the cost parameters.

2. Detailed consideration had been given to the manner in which the individual contractors had developed their own design from the exemplar and those attending the seminar were able to gain insight as to the basis on which scores were recorded……with the exemplar representing the mean so that it was possible for a tender design to exceed the mean score of the exemplar. Evaluation had been developed across a number of critical areas such as layout, individual floor design, etc., and all of these different areas were explored individually within the presentations.

3. A composite presentation was made identifying the final qualitative scoring across all three submissions, in terms of both design and logistics.

4. Attention then turned to the most economically advantageous tender (MEAT) which was a means of identifying the value received for each pound spent. All three submissions were compliant. There was then detailed analysis of the financial implications of each submission, to create a level playing field taking account of variations within each submission.

5. The results of the MEAT scoring across each of the three tenderers was consistent with that under the heading of qualitative scoring.

6. There was then a presentation by the NHS Board's own team on the affordability of the project. This was looked at from both capital and revenue perspectives and, while risks were clearly identified and articulated, the affordability criteria were adequately met.

7. Personal observations

   To a great extent, the presentations had been prepared in such a way that they took account of all likely anxieties and questions that might be raised. However, there were one or two particular aspects where I was happy to receive detailed reassurance and these particular areas included the following:-

   (a) The Section 75 Agreement which will be a condition of detailed planning consent raises a number of issues, none of which have a significant impact on costs.

   (b) The role of Architecture & Design Scotland has changed during the process and there is a degree of comfort that they are content with the way the design and delivery of the project has proceeded.

   (c) Inclusion of the City Morgue has not been at our behest but it is not creating any significant difficulties for the Board.

   (d) The exemplar design was dependent on accommodation in a basement area. The ground level is not significantly above the level of the River Clyde and reassurance was given that aspects relating to ground condition, the height of the ground above sea level, etc., has all been taken on board and well dealt with.

   (e) The impact of life-cycle maintenance, etc., had been taken on board within the scoring system.

   (f) It was recognised that all three tenderers had required to spend significant sums in making their submissions. Accordingly, it was critically important that there was absolute confidence in the clarity of the process. It was confirmed that all aspects of the process had been fully explained to the

tenderers, at each stage, and that they had all expressed contentment with the proposed way ahead.

(g) The development of the exemplar had been given great care and scrutiny, with major input from clinicians, and was a confident basis on which to prepare submissions.

(h) As to the stage beyond acceptance of the tender, there would be the opportunity for an element of tweaking of the design, but it was important that this was only in the margins, and it was believed that there was only one design which was sufficiently close to the exemplar to allow that tweaking without any possibility of there being a claim that the contract was being reconstructed.

(i) There was recognition that there were two possible areas of continuing risk:-

(1) Any events which might give rise to compensation to the successful contractor, eg any NHS initiated changes to the design.
(2) Any difficulty with the provision of the NHS Board's capital contribution through difficulty arising on account of land sales or failure in government brokerage.

These risks were clearly identified and reassurance was provided that they should be minimised.

(j) There was recognition that the Board will require to be fully satisfied as to the substance and credit worthiness of the recommended preferred bidder.

In conclusion, there will be a clear recommendation coming from the project Executive Team as to the identity of the preferred bidder for the main contract and for the Laboratories on which work can start at an earlier date.

Conclusion

Although I will not be able to attend the meeting on 3rd November, I would like to record my full support for the recommendation which will come to the Board on 3rd November, and which I have fully discussed with the Chief Executive.

Andrew O. Robertson, OBE, LLB
Chairman
NHS Greater Glasgow and Clyde

# New South Glasgow Hospitals

## Presentation to Performance Review Group

## 03 November 2009

A49342285

# Agenda



NHS Greater Glasgow and Clyde

**Performance Review Group - 03 November 2009**

- Technical Overview & Evaluation
- Cost Analysis
- Legal Considerations
- MEAT Score
- Affordability
- Recommendation

# Brookfield Europe LP

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# Brookfield Europe: Masterplan

- Fully met the Board's Exemplar requirements
- Innovative proposal for Car Park 2
- Creation of additional, quality external space for the Children's hospital
- Good sense of arrival
- Well appointed entrances and access to the facilities, with airport style frontage at both A&E Departments and enhanced integration of internal and external space to central park and play areas
- Additional benefit through design of roof space as external gardens
- Strong building identity with high quality finishes

# Brookfield Europe: 1/500's (Departmental Adjacencies)

- Compliant with Employer's Requirements
- Likely to achieve early sign off due to high level of functionality in current proposals
- Efficient patient, staff and Facilities Management service flows
- Fully acceptable travel distances between departments
- Good standard of resilience via alternative routes throughout

# Brookfield Europe: 1/200's
## (Departmental Layouts)

- **Major benefits to the Board and process due to all departments drawn during bid period**
- **Generally high standard across required departments**
- **Flexibility across full Adult Ward floorplate (4 Wards)**
- **Exemplary design for Children's A&E + both Children's and Adult Wards**
- **Further design development of departments to be undertaken in Stage 2**

# Brookfield Europe: General

- Strong architectural concept of vessel, dock and beacon
- Identities of hospital elements very clearly expressed
- Very good intuitive way-finding across scheme
- Sustainable design solutions to achieve very challenging targets
- Fully meets expectations and requirements of Programme
- Exemplary engagement and joint working practices with the Board team through the process

# Laing O’Rourke

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00
South Glasgow Hospital

# Laing O'Rourke: Masterplan

- Changed Facilities Management solution to detriment of flows and operation of hospital
- Reduction of basement resulting in less resilience
- All traffic on existing internal roads, reducing exemplar position
- Reduction in open space and soft landscaping north and west of facility
- Rationale of additional overhead links not fully thought through

# Laing O'Rourke: 1/500's
## (Departmental Adjacencies)



NHS Greater Glasgow and Clyde

- Deficient in 5 key areas of patient/staff flow
- Accident & Emergency to Radiology
- Out-patient to Radiology
- Children's Theatres to PICU
- PICU to Radiology
- Schiehallion (Children's) Ward to Day Ward
- Inappropriate Clean & Dirty routes for FM
- Excessive travel distances on several key flows with associated revenue implications
- Unsatisfactory bereavement pathways

# Laing O'Rourke: 1/200's (Departmental Layouts)



NHS Greater Glasgow and Clyde

- **Significant issues with staff and patient flows in several departments**
- **Lack of flexibility and patient observation in Acute Assessment and Critical Care Departments**
- **Inappropriate FM routes in several departments including Adult Theatres**
- **Excessive staff travel distances in Adult Wards**

# Laing O'Rourke: General



- Monolithic design character
- Lack of identity of individual elements
- Negative impact of FM relocation upon Children's Hospital
- Omission of significant accommodation requirements (e.g. areas of Facilities Management support space)
- Failure to meet medical gas requirements
- Weaknesses in Sustainable Design Strategy
- Uninspired integration of Arts

# Balfour Beatty

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SOUTH GLASGOW HOSPITAL

RECEPTION

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# Balfour Beatty: Masterplan



- Compliant with Employer's Requirements
- Strong concept of three individual building elements
- Positive impact of Winter Garden arrival area
- Benefit of "green space" in front of mortuary + labs
- Large internal courtyards providing good daylight to podium areas
- Reduced external spaces outside Children's Hospital
- Traffic management issues at car park 2
- Concern over ward towers dominating existing buildings

# Balfour Beatty: 1/500's
## (Departmental Adjacencies)



NHS Greater Glasgow and Clyde

- Major Issues around key adjacencies created by decision to spread podium over 4 levels
- Ward shape results in significant inefficiencies in staff and patient movement
- Significant increases in travel distances between key departments
- Significant increases from majority of departments to ward block with uneven distribution of support accommodation in ward towers
- Critical Care link to Neuro via lift is a major departure from Employer's Requirements
- Lack of resilience in Facilities Management flows
- No outside space for Department of Children and Family Psychiatry (DCFP)

# Balfour Beatty: 1/200's
## (Departmental Layouts)



NHS Greater Glasgow and Clyde

- Significant advantages in Adult A&E layout
- Good daylight levels in podium departments (Critical Care, Theatres etc)
- A number of issues with patient flows and efficiency of staffing.
- Adult's Radiology over three floors, compounded by lack of vertical connectivity, is significant departure from requirements with negative impacts on staffing and functionality
- Major concerns over lack of flexibility and inefficiencies in Adult Ward layout with no apparent public stair access

# Balfour Beatty: General



- Strong architectural concept with separate identities for individual building elements
- Good intuitive way-finding at front entrance areas, but weak in out-patient and ward areas
- Generally compliant services strategy but with limited Sustainability enhancements
- Excessive travel distances due to separation of ward tower from podium
- Lack of functionality/flows due to additional podium floor level

# Final Qualitative Scoring



NHS Greater Glasgow and Clyde

| Workgroup | Benchmark Score | Brookfield | Laing O'Rourke | Balfour Beatty |
|---|---|---|---|---|
| **Design (weighting x 50)** | 165,000 pts | 169,000 pts | 122,250 pts | 149,000 pts |
| **Logistics (weighting x 30)** | 49,500 pts | 49,200 pts | 51,900 pts | 51,750 pts |
| **Sub-Totals** | **214,500 pts** | **218,200 pts** | **174,150 pts** | **200,750 pts** |
| Commercial (weighting x 20) | 21,000 pts | 20,200 pts | 19,400 pts | 21,700 pts |
| **Totals** | **235,500 pts** | **238,400 pts** | **193,550 pts** | **222,450 pts** |

# Laboratories Full Business Case (FBC)

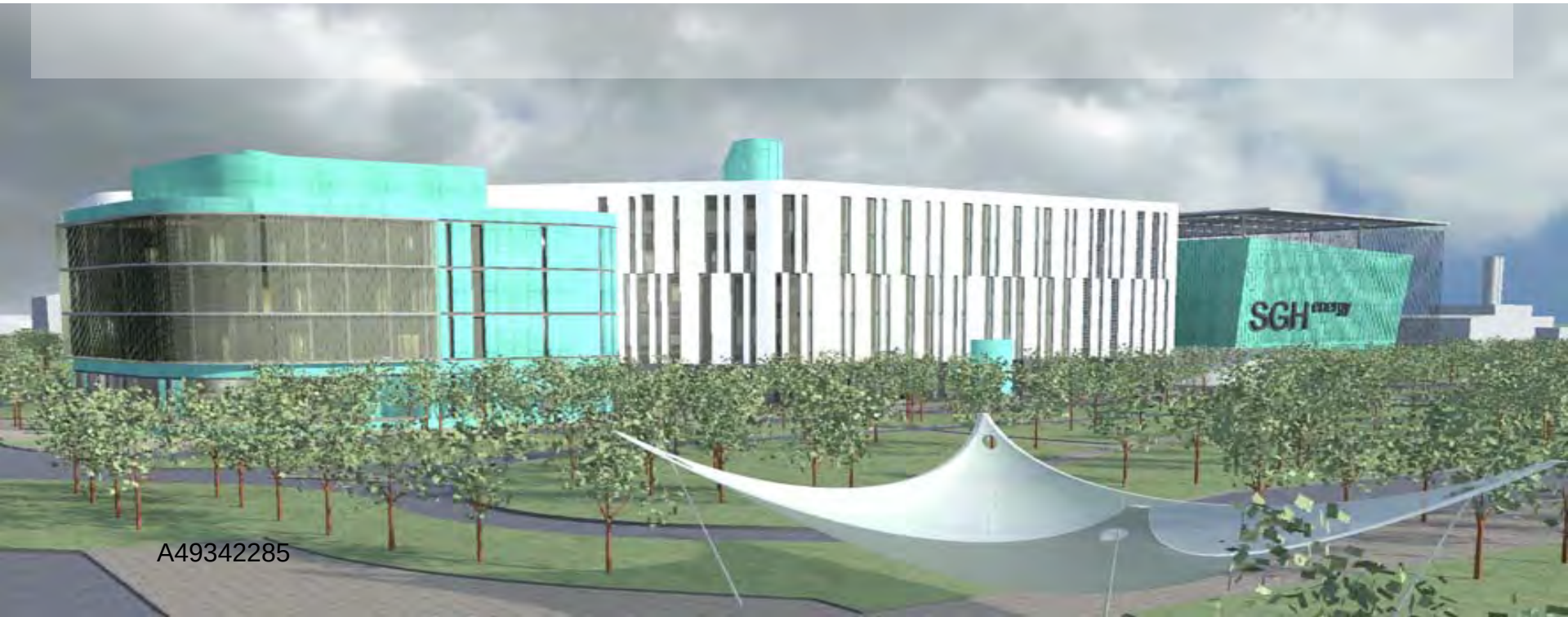


- Board requested to approve Laboratories FBC
- Laboratories is Stage 1 of the Contract
- FBC to be submitted to Scottish Government Capital Investment Group for final approval
- FBC now includes an addendum which refers to facilities which require to be incorporated into the Stage 1 (Laboratory accommodation) rather than the Stage 3 (Hospitals Construction) in order to realise cost, programme and design efficiencies

# Laboratories Full Business Case (FBC)



- **Affordability is demonstrated in FBC**
- **The Laboratories building will be designed to RIBA Stage E, at which point the Board's design team will be novated to the successful Contractor**



# Equalised Cost Summary



NHS Greater Glasgow and Clyde

| | Brookfield | Laing | Balfour |
|---|---|---|---|
| • Works | £531.1M | £491.8M | £548.8M |
| • Fees | £ 40.3M | £ 31.9M | £ 40.5M |
| • Target Price | £571.4M | £523.7M | £589.3M |
| • Maximum Price | £578.8M | £542.3M | £615.6M |
| • Hospitals | £513.9M | £465.0M | £534.1M |
| • Labs | £ 57.5M | £ 58.7M | £ 55.2M |
| • Target Price | £571.4M | £523.7M | £589.3M |

# Legal Considerations



NHS Greater Glasgow and Clyde

## Procurement process

- Competitive Dialogue Procedure
- Evaluation Process included in the tender documents
- Process has been followed
- Process overseen by Board's procurement team

# Legal Considerations



NHS Greater Glasgow and Clyde

## Legal Submission

- Basis of Board's requirement (NEC3)
  - Contract Terms
  - Insurance arrangements
  - Performance Bonds
  - Collateral Warranties
- Dialogue engagement – produced the final tender documents
- Clarifications from bidders to ensure that there is no misunderstanding
- Outcome of evaluation

# Most Economically Advantageous Tender (MEAT)



- Competitive Dialogue requires the appointment of the successful candidate to be made on the basis of MEAT
- In this process it has been determined that the MEAT is the offer that provides the highest number of quality points per pound.
- The evaluation process issued to bidders requires the board to base MEAT upon the expected outturn cost for the board

# Pricing Structure

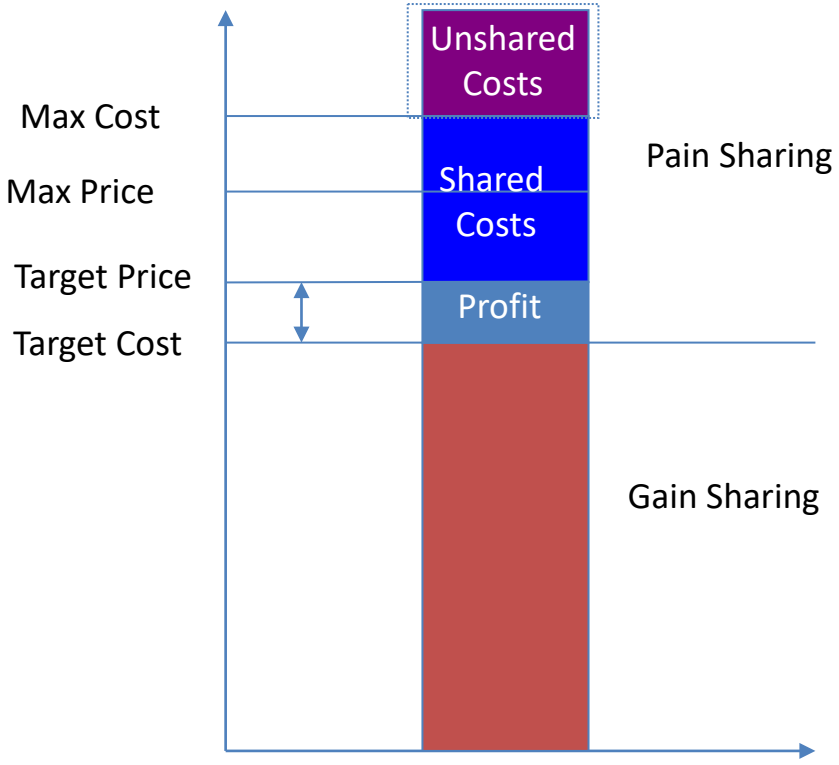


NHS Greater Glasgow and Clyde

- The pricing structure developed as part of the process was based upon NEC 3. The objectives of the pricing structure are
  - To provide incentives for the contractor to achieve their bid price
  - To recognise the spirit of partnership and co developed solution through the sharing of pain and gain
  - To protect the ultimate financial position of the board by setting a maximum price payable in the event of increased costs – maintains affordability

# Graphical Representation of Pricing Structure





# Price Quality Ratio – Bid Target Price

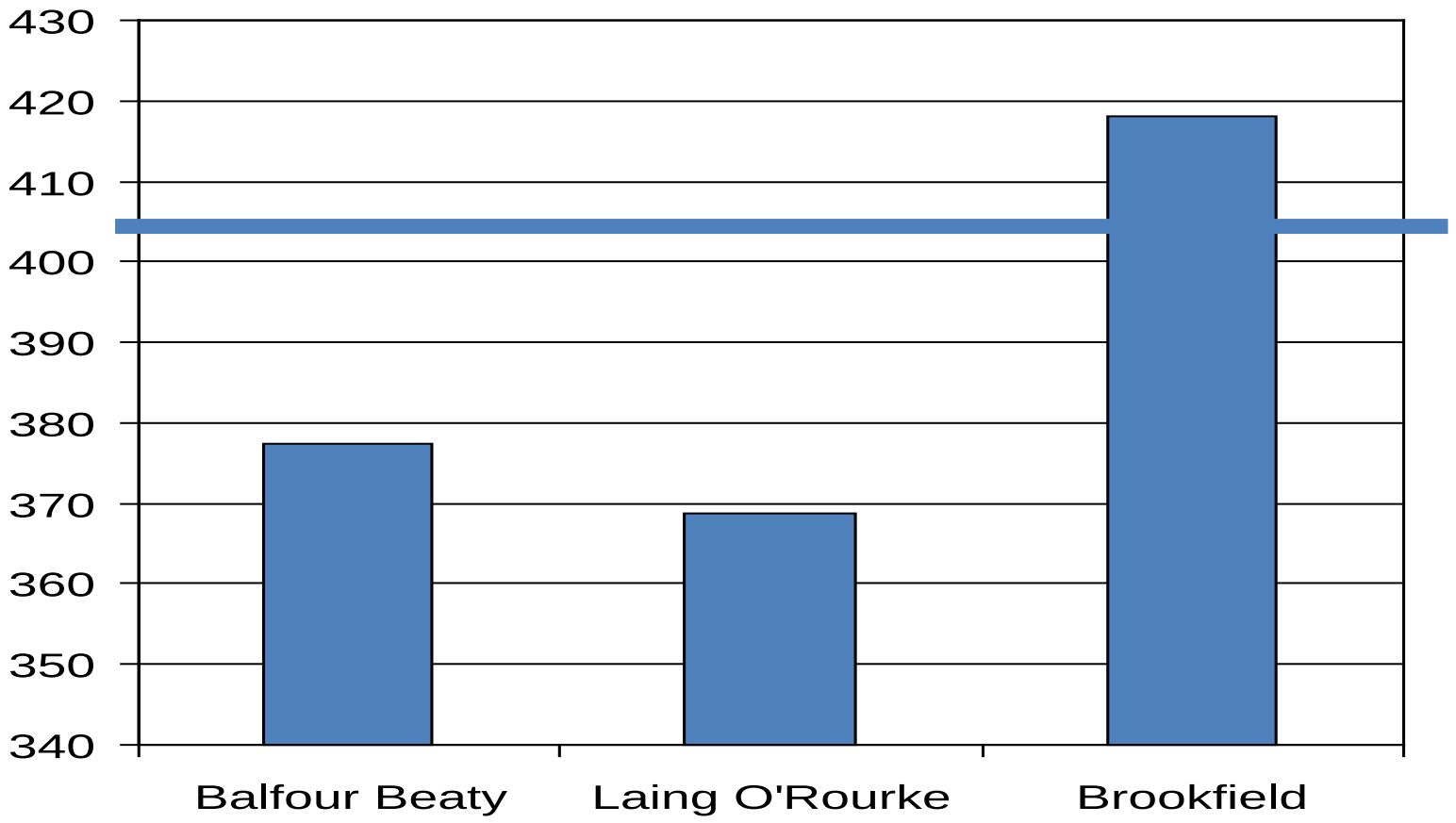


NHS Greater Glasgow and Clyde

| | |
|---|---|
| **Brookfield** | |
| Target Price (£m) | 571.400 |
| Evaluation Score | 238,400 |
| Price Quality Ratio | 417.2 |
| **Laing O'Rourke** | |
| Target Price (£m) | 523.700 |
| Evaluation Score | 193,550 |
| Price Quality Ratio | 369.6 |
| **Balfour Beatty** | |
| Target Price (£m) | 589.300 |
| Evaluation Score | 222,450 |
| Price Quality Ratio | 377.5 |

# Price Quality Ratio – Target Price (Bid)



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# Most Economically Advantageous Tender

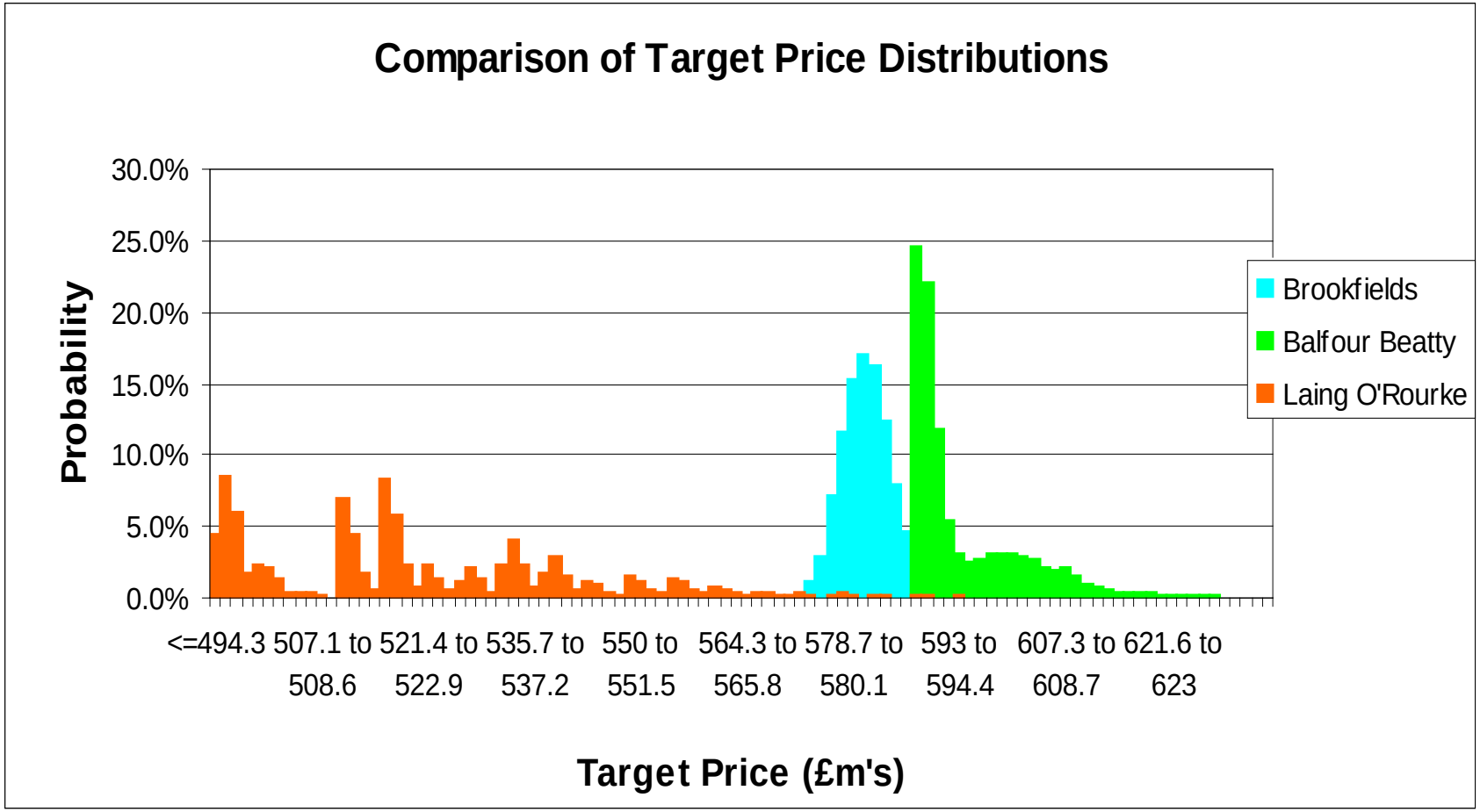


NHS Greater Glasgow and Clyde

– The proposal submitted by Brookfield Europe LP represents the Most Economically Advantageous Tender.
  - It has been assessed as providing significant qualitative advantages relative to other bidders
  - Other Bids received contained serious design and qualitative shortcomings
  - The price offered is affordable and is resilient to risk
  - The lowest proportion of cost overruns to be funded by the Board is contained in the Brookfield proposal

# Simulated target price comparison






Probability of overlap for Brookfields and Balfour Beatty: 2.4%

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# Affordability of Adult & Children's Hospitals



| | Outline Business Case Approval (May 08) £'M | Selection of Preferred Bidder (Nov 09) £'M |
|---|---|---|
| **Sources of Funding** | | |
| Specific SGHD | 551.7 | 551.7 |
| Endowment Funds | 20 | 20 |
| Capital Receipts | 135 | 106 |
| General NHSGG&C | 135 | 164 |
| | 841.7 | 841.7 |
| | ==== | ==== |
| **Planned Expenditure** | | |
| Target build cost including professional fees and inflation allowance | 603.8 (Max:621) | 571.0 (Max:579) |
| Equipment | 52.8 | 52.8 |
| VAT | 116.0 | 110.0 |
| Other | 8.3 | 8.3 |
| Optimism Bias (contingency) | 60.8 | 99.6 |
| | 841.7 | 841.7 |
| | ==== | ===== |

## Key Points

1. Brookfield target price – comfortably within OBC provision – increased contingency.
2. Commitment of SGHD to specific funding allocation AND funding for enabling schemes of £124m.
3. Construction cost inflation provided for at 2.5% p.a.
4. Increased contingency provides cover for key risks – shortfall in capital receipts, inflation of construction costs beyond assumed rate.

# Affordability of Adult & Children's Hospi



NHS Greater Glasgow and Clyde

## (2) Revenue Affordability

| | Outline Business Case Approval (May 08) £'M | Selection of Preferred Bidder (Nov 09) £'M |
|---|---|---|
| **Forecast step up in revenue expenditure** | | |
| New adult/children's hospitals | 53.8 | 48.8 |
| Enabling schemes | 5.7 | 5.7 |
| | 59.5 | 54.5 |
| **Planned Cost Savings** | | |
| Operational cost savings | 22.1 | 22.1 |
| Capital Charge and Maintenance cost savings | 22.8 | 19.9 |
| Cost Savings to be identified | 14.6 | 12.5 |
| | 59.5 | 54.5 |

**Key Points**

1. Reduced capital charge costs related to Brookfield target price.
2. Residual cost savings challenge reduced to £12.5m…if spread over 4 year period, required supplementary cost savings target of only £3m p.a..
3. Change to capital charges regime, starting in 2010/11, potentially reduces revenue step up by a minimum of £20m per annum.
4. Affordability dependent upon internally generated cost savings - £42m still secure and can be ring-fenced.

# Affordability of Adult & Children's Hospitals



NHS Greater Glasgow and Clyde

## 3) Financial Outlook 2017/18

→

### 1. OUTLINE BUSINESS CASE (MAY 2008)

| Key Risks | Financial Strategy |
|---|---|
| 1. Reducing funding uplifts (to 3.1%).<br>2. Implementation of NRAC recommendations.<br>3. Pay uplift(s) exceed 2% per annum.<br>4. Unachievable cost savings targets (in 2009/10 and 2010/11). | 1. Cost savings programme a dominant feature.<br>2. Amass cost savings pot over number of years to pay for new hospitals.<br>3. Use all available non-recurring cost savings measures/slippage.<br>4. Reduce provision for other new programme commitments. |

### 2. SELECTION OF PREFERRED BIDDER (NOV 2009)

| Potential sources of pressure | Potential sources of relief |
|---|---|
| 1. Funding uplifts reduce below 2.15%.<br>2. Implementation of NRAC recommendations.<br>3. General cost savings target of 2% per annum proves to be unsustainable source of funding for<br>(a) national policy commitments<br>(b) managing local cost pressures<br>4. Tighter availability of general capital funding (impact on capex). | 1. Reduced level of pay uplift(s) including pay freeze.<br>2. SGHD continue to maintain measured approach to NRAC implementation.<br>3. Change(s) to capital charges regime.<br>4. Tighter availability of general capital funding (impact on revenue). |

NHS Greater Glasgow and Clyde

## 4) Financial Strategy

1. **Capital Funding**

- SGHD funding commitment to the scheme is explicit and remains key
- secure forecast level of capital receipts
- secure £20m contribution from endowment funds
- hold general contingency and use if necessary to manage risk of
  (a) increased capital expenditure
  (b) shortfall in level of capital receipts

**Conclusion** : Project remains affordable in capital terms.

2. **Revenue Funding**

- dependency of any new service commitment on funding from cost savings
- ring fence Acute £42m cost savings pool as this is released – specific to programme implementation
- secure further Acute cost savings of £12.5m per annum to bridge remaining funding gap
- plan to secure £12.5m over 4 year period….minimising impact in any one year….and ring fence
- change to capital charges regime may reduce scale of revenue funding challenge - potential for contingency or release of cost savings for alternative use



**Conclusion** : Project remains affordable in revenue terms.

# Recommendation



- **To appoint Brookfield Europe LP as the preferred contractor to carryout the 4 stages of the project.**

# Brookfield Europe LP



- **Brookfield Europe was formed following the acquisition of Multiplex, the Australian international construction company, in 2006**
- **Parent company employs over 10,000 people, with over 600 presently employed in Scotland**
- **Have strong supply chain to support mobilisation to commence Stage 1 construction – including Bathgate based Dunne Group – a leading civil engineering contractor specialising in reinforced concrete substructure and superstructure construction**

# Brookfield Europe LP



NHS Greater Glasgow and Clyde

- Major construction entity only attracted to world class construction projects (i.e. not a volume constructor)
- Selected Southern General scheme as UK bid focus and priority
- Construction and support team with significant demonstrable track record in the delivery of major healthcare schemes
- Project Director is from Glasgow and has managed the team through the £335m Peterborough City Hospital (on programme and on budget) and has previously successfully managed, amongst other schemes, the £220m Norfolk & Norwich Hospital

# Healthcare Experience



NHS Greater Glasgow and Clyde

## Peterborough City Hospital

- Main Contractor in the £335m PFI Project for a 612 bed Acute Hospital & 102 bed Mental Health unit (on programme and on budget).

- Reference from NHS Project Director, Miss A. Broekhuzian –

"members of team worked in partnership which maximised quality of design and resulted in exceptional building finishes"

- Reference from OGC Gateway Review team:

"in their experience they had never reviewed a project which had the strength of relationships seen in this project"

# Southern General Project Team



NHS Greater Glasgow and Clyde

*Brookfield Project Team have extensive experience of delivering Hospital projects spanning 25 years*

**Project Director** **Ross Ballingall**

**Project Experience:**

| | | |
|---|---|---|
| **Peterborough Hospital PFI** | | **£350m** |
| **Oxford Churchill** | | **£130m** |
| **Stoke Mandeville hospital** | | **£56m** |
| **Addenbrookes Hospital** | | **£80m** |
| **Middlesex Hospital BeCAD** | **£70m** | |
| **Newham Hospital** | **£27m** | |
| **Newcastle Hospitals** | | **£300m** |
| **Norfolk & Norwich Hospital** | | **£220m** |

*The Staff included in the Bidding Team will be retained for the duration of the Project*

**Commercial Director** **Paul Serkis**

**Project Experience:**

| | |
|---|---|
| **Peterborough Hospital PFI** | **£350m** |
| **Chelsea & Westminster Hospital** | **£200** |
| **National Physical Laboratories** | **£87m** |

**Construction Director** **Alan Keeley**

**Project Experience:**

| | |
|---|---|
| **Peterborough Hospital PFI** | **£350m** |
| **Norfolk & Norwich Hospital** | **£220m** |
| **Medical training school** | **£100m** |

# Next Steps



NHS Greater Glasgow and Clyde

- Meet with all bidders (separately) 04 November 2009
- Commencement of 'Alcatel' standstill period
- Press/communication programme commences
- Meet with unsuccessful bidders 09 + 10 November 2009 for feedback/debrief sessions
- From 16 November 2009 engage with Brookfield regarding pre-contract requirements
- Contract Signature

**From:** David Hall [redacted]
**Sent:** 04 December 2009 09:25
**To:** Ross.Ballingal[redacted]
**Cc:** Douglas Ross; Mark Baird; Seabourne, Alan; Moir, Peter; Frew, Shiona
**Subject:** NSGFH:RFI Log and M&E Design Summary 041209
**Attachments:** 20091204Design Summary - Mechanical and Electrical.doc; RFI Log for Contract (Brookfield to Board) Board comments - 041209.doc

Ross,

Please find attached an updated RFI Log with "Board Comments 2" added. This should be self explanatory and assist in reducing the volume of items on this log to be discussed next week.

Also attached is a M&E Design Summary log which is not adding anything to the ER's, but rather identifying areas where clarity is required on the bid in relation to it's compliance with the ER's.

Please note that there are some areas, eg water storage, where the Board are not willing to accept the derogation proposed.

As before, please highlight "agreed" in green where you concur, or change to "not agreed" and highlight yellow, where further deliberation is required.

Please feel free to give me a call to discuss

Regards

**David Hall**
FCIOB MAPM
Divisional Director
Currie & Brown UK Limited
140 West Campbell Street
Glasgow G2 4TZ

[redacted]

"Queen's Award for Enterprise 2009"
"Sunday Times Profit Track 100 Companies 2009"

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| **NSGH – Contract Preparation Design Summary – [area]** | | | | | |
|---|---|---|---|---|---|
| **Item** | **Add** | **Omit** | **Board Comment** | **Status** | **Brookfield Comment** |
| **ER 2/1** | | | | | |
| Text | - | - | Volume 2/1 of the ERs remains as the output requirements of the Board to be achieved as a minimum standard by the Contractor. Including M&E appendices 1, 2, 3, 4, 5, 6 & 7. | Agreed | |
| Drawings | - | - | The ER drawings remain as the output requirements of the Board. The submitted bid drawings of BC supplement the ER drawings and the following system comments are provided to assist in resolving certain anomalies within BC proposals. | Agreed | |
| **Bid Submission – Vol 2 Drawings** | | | | | |
| Chilled Water | - | - | The chillers to incorporate free cooling coil sections or equivalent provision. | Agreed | |
| | - | - | Plate heat exchangers to be fully independent duty/standby including wiring and control panels etc. | Agreed | |
| | - | - | Chillers to have screw compressors, “Rated as residentially quiet”. | Agreed | |
| | - | - | Chillers to have variable speed head pressure control with load and efficiency optimized head pressure and chilled water flow temperature control to improve seasonal efficiency will be incorporated. | Agreed | |

| | | | | | |
|---|---|---|---|---|---|
| | - | - | Full system details and drawings to be provided for specialist areas (Plant required to ensure max feed water temp of 5 to 12 deg C to specialist areas noted in correspondence during CD) | Agreed | |
| | - | - | Reduction in Chiller Plant resilience where (N+1) N=8 is not agreed, provision of additional unit together with associated distribution pipework and controls required to comply with ER's. | Agreed | |
| Ventilation | - | - | Typical Isolation Room Supply. All air system heater battery +5°C to 21°C – supply temperature will require to be higher for provision of room heating. | Agreed | |
| | - | - | Pressure stabiliser to be located in the wall above the bedroom door to the lobby. Currently indicated within ductwork in the ceiling void, no access in this location due to ceiling construction. | Agreed | |
| | - | - | Conventional Theatre Supply System Schematic. Air on temp to cooling coil to be +30°C ER's, not 28°C as shown on BE drawing (Also main heater battery within AHU to be rated at +6°C to 35°C). | Agreed | |
| | - | - | Typical Ultra Clean Theatre Supply air on temp to cooling coil to be +30°C ER's, not 28°C as shown on BE Drawing (Also main heater battery to be rated at +6°C to 35°C). | Agreed | |
| | - | - | Typical Isolation Room Extract Schematic. All air system heater battery +5°C to 21°C – Supply temperature will require to be higher for provision of room heating. | Agreed | |

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| | - | - | Typical Conventional Theatre Extract System Schematic Air on temp to cooling coil to be +30°C ER's, not 28°C as shown on BE drawing (Also main heater battery within AHU to be rated at +6°C to 35°C). | Agreed | |
| | - | - | Typical Ultra Clean Theatre Extract System Schematic Air on temp to cooling coil to be +30°C ER's, not 28°C as shown on BE drawing (Also main heater battery within AHU to be rated at +6°C to 35°C). | Agreed | |
| | - | - | Ward Air change to be 6AC/HR, currently shown as 2.5AC/HR which is not in compliance with SHTM 03-01. | Agreed | |
| Hot & Cold Water Services | - | - | Renal Water Schematic to be reviewed by SGH Renal Water Advisory Group and comments incorporated within the scheme. | Agreed | |
| | - | - | Renal Acid Circulation Schematic to be reviewed by SGH Renal Water Advisory Group | Agreed | |
| | - | - | Renal Water System response to Volume 2/1 , Appendix M&E 6<br>Renal Water is to be completed and approved by NSGH Renal Water Advisory Group | Agreed | |
| | - | - | Concentrate Bulk Delivery to site Strategy is to be completed and approved by NSGH Renal Water Advisory Group | Agreed | |
| | - | - | Stainless Steel pipework to be provided as per ER's in lieu of ABS plastic for the larger sizes. | Agreed | |
| | - | - | 24 Hour water storage to be provided in lieu of 12 hours as proposed and | Agreed | |

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| | | | modularity of tanks to be as per the ER's. (if we change to 12 hours, change to 4 tanks) | | |
| Heating Systems | - | - | 3 no. off flow pipes to be provided between the Energy Centre and the Hospitals capable of passing 50% flow through each, where one fails and the other two can carry the total load. Current proposal is to reduce to 2 no. off pipes each capable of carrying 66% should one fail. | Agreed | |
| | - | - | Plate heat exchangers to be fully independent duty/standby including wiring and control panels etc. | Agreed | |
| Medical Gases | - | - | Medical gas schematic to be amended to reflect ER requirements together with the BC plantroom services layout drawing and design dialogue. | Agreed | |
| | - | - | All references to BOC should be Air Products Ltd. | Agreed | |
| | - | - | Details of the plant resilience for Medical Air, Oxygen, Vacuum, Surgical Air, Nitrous Oxide and Nitrous Oxide to be in accordance with the ER's. | Agreed | |
| Wet Riser Schematic | - | - | Water storage tank capacity to be with local authority. | Agreed | |
| | - | - | BC drawings to be developed. | Agreed | |
| Sprinkler Schematic | - | - | Note on BC drawing states ' Tank by Others ' to be clarified as included. | Agreed | |
| | - | - | Note on BC drawing states ' Others to include tank immersion heater, trace heating, lighting etc. to be clarified as | Agreed | |

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| | | | included. | | |
| | - | - | Note on BC drawing states Pump House by others to be clarified as included. | Agreed | |
| Energy Centre | - | - | Man access to be provided to the chimney stack to allow full access to flues over its total height as ER's. | Agreed | |
| | - | - | Chimney stack enclosure to be provided. | Agreed | |
| | | | Boiler layout to be configured to simplify flue routes. | Agreed | |
| | - | - | External oil transfer point to be provided on the wall of the Energy Centre to serve the retained estate. | Agreed | |
| | - | - | Minimum requirement is accessible diverse twin trench solution to be provided in accordance with the ER's to provide required resilience. Pipe material selection will be critical | Agreed | |
| Plant Replacement Strategy | - | - | Scaffold platform to be capable of supporting the plant weights of the larger items of equipment or other strategy adopted to minimise plant replacement time. | Agreed | |
| | - | - | Ground finishes to be capable of taking the scaffolding weight with plant added adjacent to plantrooms. | Agreed | |
| UPS | - | - | UPS autonomy to be amended inline with the ER's. | Agreed | |
| Lighting | - | - | Lighting control to be amended inline with ER's. | Agreed | |
| | - | - | Full luminaire details to be provided | Agreed | |

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| | | | including LED's and feature lighting. | | |
| | - | - | Bedside lights to be low energy type. | Agreed | |
| | - | - | Feature lighting LED's to be provided inline with the ER's. | Agreed | |
| | - | - | BE lighting design strategy to be applied to the Internal Lighting scheme which shall be developed in line ER's to provide full CIBSE compliance. | Agreed | |
| | - | - | Lamp colour strategy to be developed in line with HSE & CIBSE guidance | Agreed | |
| | - | - | External Lighting scheme to be developed in line ER's with full CIBSE compliance. | Agreed | |
| Comms Room Racks | - | - | Reduction in racks is not agreed, ie. 10 indicated by BE in each main Comms Room to be amended inline with the ER's drawing. | Agreed | |
| | - | - | Comms room cooling strategy to be detailed to minimise energy use. | Agreed | |
| Fire Alarm | - | - | Graphic user interface system details to be provided during detailed design | Agreed | |
| | - | - | BE to provide full details of the proposed voice alarm system and indicate areas to be covered by conventional sounders | Agreed | |
| | - | - | Atrium protection system details to be provided | Agreed | |
| | - | - | Comms room VESDA system details to be provided | Agreed | |
| Structured Data Wiring | - | - | Comms room and rack layouts to be provided for early discussion with GG&C | Agreed | |

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| | | | Technology to verify equipment space allocation. | | |
| Metering | - | - | All metering to be provided in accordance with ER's to allow active energy management together with associated BREEAM credits. | Agreed | |
| Energy Management | - | - | Energy Management software to be fully compliant with ER's complete with BMS management and interactive link to GG&C system | Agreed | |
| Standby Power | - | - | BE to provide early proposals for system management, CHP and Utility Company interface details to progress agreement of all parties | Agreed | |
| Bio fuels | - | - | BE to advise outcome of their proposed feasibility study and provide detailed proposals | Agreed | |
| Utiliities | - | - | BE to provide design estimates for water, gas and electricity to verify and update Utility company info<br>. | Agreed | |
| Service reserve capacity | - | - | BE to ensure that service reserve capacity is maintained during detailed design | Agreed | |
| As fitted drawings, asset register and O&M's | - | - | BE to ensure that all systems shall be linked to the As Fitted drawings via MiCAD drawing mapping, the MiCAD should also integrate with the LMS to provide a fully integrated system complete with interfaces to the PPM and Board's labour resource software systems (Apollo or Eclipse). | Agreed | |
| PPM | - | - | BE to provide, as part of the contract, a full PPM manual and system (computer | Agreed | |

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| | | | based software package) for all the buildings and for all building and building services elements of the project. This system will incorporate the As Fitted drawings (MiCAD format) and specifications. This schedule shall have a full planned maintenance programme of works that the FM & Estates managers can review to plan and establish their annual maintenance schedules and annual budgets. BE will be responsible for the purchase and installation of the full PPM system, including pc work stations, barcode readers and tablets. | | |
| General Items | - | - | BE drawings will require further development to meet ER requirements. | Agreed | |
| | - | - | Vibration and noise solutions to be included on drawings. | Agreed | |
| | - | - | Weather proofing to be in accordance with ER's. | Agreed | |
| | - | - | All plant sound attenuation measures to be shown. | Agreed | |
| | - | - | All plant tagging to be in compliance with ER's. | Agreed | |
| | - | - | Compliance with ER's to be demonstrated for all plant and systems maintainability and area isolation. | Agreed | |
| | - | - | Leak detection to be incompliance with ER's. | Agreed | |
| | - | - | All clinical areas with special emphasis on Operating Theatres, Radiology, MRI and Critical Care to be configured to miminise risk of water damage from plant and | Agreed | |

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| | | | equipment. All plantrooms to be treated for mitigation of water leaks in accordance with the ER's. | | |
| | - | - | Environmental proving of all rooms to be provided in accordance with the ER's. Samples and reliance on BMS only for test results is not acceptable. | Agreed | |
| | - | - | All services elements to be included to meet the buildings Fire Engineering solution, eg. Stair Pressurisation, Smoke Control etc. all in accordance with the ER's and to the requirements of building Control. | Agreed | |
| | - | - | Dual path distribution resilience to be provided for all services in accordance with the ER's. | Agreed | |
| | - | - | BMS IP network to be fully stand alone with all active equipment will be included. BMS to be fully compliant with ER appendix M&E5. | Agreed | |
| | - | - | All Mechanical, Electrical, Public Health and Specialist System plant to be designed and installed in modular arrangements incorporating plant N+1 redundancy to minimize disruption during planned maintenance in accordance with the ER's. | Agreed | |
| | - | - | BE to provide detailed backup to justify plant selection e.g.<br>Capital Costs<br>Lifecycle & Maintenance Costs<br>Additional Electrical etc loadings<br>Projected Energy costs etc | Agreed | |
| | - | - | BE shall develop the sustainability brief in | Agreed | |

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| | | | conjunction with the Local Authority to ensure compliance with:<br><br>Building Regulations,<br>BREEAM Healthcare Excellent requirements,<br>Building Control, Glasgow City Council requirements<br>Scottish Government Planning Policies including SPP6<br>Advice Notes including PAN84<br>NHS/Board objectives. | | |
| **Bid Submission – Vol 3 Strategy** | | | | | |
| Text [ref] | | | Comments Incorporated within drawing and ER items above. | | |
| **Bid Submission – Vol 4 Specifications** | | | | | |
| Spec [ref] | | | Detailed construction specification to be provided in advance of the | | |
| **Bid Submission – Vol 5 Components** | | | | | |
| Component [ref] | | | Capacities, rating, spare capacity all to be confirmed to reflect accurate building geometry and dimensions during detailed design.<br>List to be expanded to include all ancillary plant e.g. pressurisation units, water filtration plant, fuel systems, wet risers, sprinklers, controls, data wiring, data wiring accessories, racks, power distribution, lighting controls, Structured cabling, nurse call, fire alarms, transformers, luminaire details and BMS etc.<br><br>Three manufacturers for each plant type to be agreed for all Mechanical, Electrical and Public Health equipment prior to contract execution. | | |

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| **Bid Submission – Vol 6 Equipment** | | | | | |
| Generally | | | | | |
| **Bid Submission – Vol 7 SHTM** | | | | | |
| Generally | | | Compliance to be demonstrated during the detailed design | | |
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| **Bid Submission – Vol 8 ADB** | | | | | |
| Generally | | | Refer to exchange of correspondence during CD | | |
| | | | | | |

**NSGH – RFI Log – Contract Version (~~for issue 18Nov09~~)**
**~~Issued by the Board to Brookfield 18 November 2009 – due for return from Brookfield to the Board by 5pm on Wednesday 25 November 2009~~**
**Board Comments '2' added in response to Brookfield submission to Board of 30 November 2009**

**Key:**

**Y** – (inserted in the 'Add' box) =This is where the RFI information or an aspect of the response/information is to be included in the ERs for clarity and to reflect the information in the RFI issued to the bidder.
**Info =** This is where a separate reference point is noted (e.g. in relation to uploaded BIW information the separate BIW log to be issued is the reference point), where there is no action as the RFI was merely providing some information or where it is noted that the item falls under a different area (e.g. an aspect of the Laboratories Stage E information to be issued).
**NC =** No action required as the information is already addressed by the ERs (may include Watchlist items where compliance requires to be demonstrated by the Contractor during the design development stage).

**Brookfield Action:**

The Status box has been marked with 'Agreed' responses to every item. Brookfield to review the listing and shade the 'Agreed' status box **GREEN** for each item where they agree with the Board. Otherwise the status box should be shaded **YELLOW** with 'Not Agreed' noted and relevant comments as to nature/aspect of disagreement noted in the 'Brookfield Comment' box.

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 |
|---|---|---|---|---|---|---|---|
| 001 | Drawings to be uploaded in dwg format | - | Info | Drawings addressed under the Drawing Log to be issued to Brookfield under separate cover. | Not Agreed | Brookfield Drawings to be included as Works Information 2 should take precedence over Works Information 1 (Employer Requirements) in the event of conflict. | Exceptions to be highlighted by the Board (i.e. out put CD1 drawings that require to remain, to be met by the developed BE CD2 drawing). |
| 002 | **Bedrooms – Clinical Risk Category.** Page 184 of the ERs states that wards are to be classed as Clinical Risk Category 3. Page 27 of Appendix M&E3 lists bedrooms as IEE GN7 Group 1, which would normally be viewed as Clinical Risk Category 4. We believe that the latter statement is correct. | - | NC | Information is included in ERs and therefore need not be added. | Not Agreed | BCL offer based on Wards being Clinical Risk Category 4 which we do not believe is reflected within ER`s. | It is agreed that wards are clinical risk 4 as SHTM |
| 003 | **Crash Call** The ERs refer to "crash" call. Is this "staff to staff" call or an additional layer of call?<br><br>i.e.:<br><br>Patient to Staff /<br>staff to staff /<br>and Crash call<br><br>or<br><br>Patient to Staff /<br>and Staff to Staff (aka Crash). | Y | - | Statement that Crash Call is staff to staff with automatic paging to time scheduled list to be included ERs for clarity. | Agreed * | * Subject to confirmation that as per Board intention the ER`s are updated such that this is clearly defined in the Works Information 1 (Employer Requirements). | This document to be included as an addendum to Works Information Part 1. The ER's will not be updated (track changed) rather the RFI log, BIW log etc sit as addendum to ERs. |
| 004 | HTM06-01 states that electrical loads in hospitals are growing by 3% to 6% per year. At 6% growth the spare capacity would be used within 5 years, at 3% within 9 years.<br><br>Based on current experience at SGH, does the Board have a view on whether the allowance of 25% for future growth is adequate? | Y | - | Statement that 25% is over the complete footprint to be included in ERs for clarity. | Agreed* | * Subject to confirmation that as per Board intention the ER`s are updated such that this is clearly defined in the Works Information 1 (Employer Requirements). | See response to Item 003, above. |
| 005 | HTM 06-01 states that it is preferable for large healthcare premises that dual public electrical supplies should be provided from diverse sources originating from separate distribution network operator substations and fed from different parts of the National Grid with independent cable routes to and across the site to the main substation.<br><br>Can you advise if the negotiations carried out to date with the Utilities have indicated the extent to which this would be possible? | - | NC | Compliance with the HTM (now SHTM) requirement is included in the ERs and is to be met by the Contractor – the specific issue requires to be addressed by the Contractor (with support by the Board) as an aspect of the 33kV discussions and agreement with the utility provider. | Agreed* | *Contractor, in discussion with Scottish Power, will endeavour to satisfy this requirement subject to availability of diverse sources from the grid. | No further action |

<table>
<tr><th>Ref</th><th>Information Requested</th><th>Add</th><th>No Change / Info</th><th>Board Comment 1</th><th>Status</th><th>Brookfield Comment</th><th>Board Comment 2</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>006</td><td><u>High Voltage Generators.</u><br>We note from drawing G1274E/(60)01 that Low Voltage generators are proposed each with a step up transformer for site ring connection. Would there be any objection, in principle, to High Voltage generators? We note that the CHP is shown as an HV unit.</td><td>Y</td><td>-</td><td>The statement that any design solution must include the provision for use of easy to obtain 400V hire sets to cover machine outages to be included in ERs for clarity.</td><td>Agreed*</td><td>* Subject to confirmation that as per Board intention the ER`s are updated such that this is clearly defined in the Works Information 1 (Employer Requirements).</td><td>See response to Item 003, above.</td></tr>
<tr><td>007</td><td>The ERs, page 143, require the services to be configured to ensure that isolation can be achieved in each room without taking other rooms out of use. As written this requirement could be taken to mean that, for example, each electrical circuit must serve no more than one room, which we are sure is not intended. We seek further guidance on the intention of this clause.</td><td>Y</td><td>-</td><td>The statement that a room may be “in use” as long as a proportion (50%) of the outlets are retained available during maintenance of a final circuit or local DB to be included in the ERs for clarity.</td><td>Agreed*</td><td>* Subject to confirmation that as per Board intention the ER`s are updated such that this is clearly defined in the Works Information 1 (Employer Requirements).</td><td>See response to Item 003, above.</td></tr>
<tr><td>008</td><td><u>Standby Lighting</u><br>We seek clarification of Appendix M&E3, page 27, clause 3.5, Standby Lighting.<br><br>The ERs appear to require Grade A standby lighting to be UPS supported. We believe that this is not always necessary and that compliance with applicable standards can be achieved in a more cost effective manner.<br><br>Standby lighting grades signify the percentage of normal lighting to be maintained on mains failure. The grade of standby lighting required is not related to the permitted duration of interruption to the power supply.<br><br>For example, CIBSE LG2 requires bedrooms to be provided with Grade A standby lighting. Bedrooms are classed as group 1 by IEE GN7 and MEIGaN which implies that they would fall into Clinical Risk Category 4. The table below which is based on Appendix 1 of HTM 06-01 (we do not believe that SHTM 06-01 has been published yet) would indicate that this type of room would normally require the interruption to general lighting to be not more than 15 seconds. Thus it would not be usual to support all lighting to all bedrooms by UPS.<br><br><table><tr><th>Clinical risk category</th><th>IEE GN7 /MEIGaN group</th><th>Standby Grade / % provision</th><th>Interruption to general lighting</th></tr><tr><td>3</td><td>0</td><td>B / 30-50%</td><td><15s to 3hours></td></tr><tr><td>4</td><td>1</td><td>A / 95%+</td><td><15s</td></tr><tr><td>5</td><td>2</td><td>A / 95%+</td><td><15s</td></tr></table><br>The above implies that only ‘fixed medical lighting and escape lighting’ is required to be supported by battery or UPS. This is often interpreted to include the lighting around an operating table.<br><br>We appreciate that there may be special circumstances and therefore would welcome to opportunity to discuss this further at a workshop with the Board to arrive at a solution acceptable to the Board.</td><td>-</td><td>NC</td><td>Overall treatment of lighting on Board ‘Watchlist’ for development and compliance to be demonstrated by the Contractor.</td><td>Not Agreed</td><td>Brookfield design will be compliant with SHTM06-01, CIBSE LG2, IEE GN7 and MEIGaN. Brookfield design proposal does not include for UPS support to all Grade A lighting as a blanket provision, as the grade of standby lighting is unrelated to the permitted duration of interruption to the power supply.</td><td>This can only be accepted if BE guarantee that the lights will be reinstated (by the generators) within 15 seconds. This will be challenging and will require full load management<br><br>OR<br><br>Provide inverter cover to grade A lighting with for example 5 minute battery autonomy.</td></tr>
<tr><td>009</td><td><u>Treatment Room Lighting</u><br><br>P186 of the ERs implies that luminaires in Treatment Rooms are to be fed from 2 circuits – does this mean 2 circuits to each luminaire? We request guidance on the reason for this.</td><td>-</td><td>NC</td><td>ERs address this item.</td><td>Not Agreed</td><td>BCL bid submission Volume 4 section 4.35 provides for LV distribution split between two distribution boards.</td><td>Light fittings shall be on one circuit generally. Patient treatment areas, where procedures will take place, to have minimum of two lighting circuits.</td></tr>
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| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 |
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| | | | | | | | |
| 010 | Could you please provide the final version of the Geo-Environmental Report as the current version is in draft form only. | - | Info | This information was issued to bidders for background/information purposes. | Agreed | Please note that we have not received the final SI report. Brookfield submission allows for risk. Further SI to be undertaken. | BE to check records as disc was uplifted from the offices of Currie & Brown |
| 011 | The Drainage Strategy Report makes reference to a Drainage Impact Assessment being undertaken by Scottish Water in 2007. Could a copy of this report be provided? | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c |
| 012 | The Drainage Strategy Report is in Outline Form only – can you confirm:<br><br>Whether a Hydraulic model of the Linthouse Burn has been undertaken and provide the information?<br><br>What discussions have taken place to date with Scottish Water regards drainage capacity at the nearby treatment works?<br><br>What discussions have taken place to date with SEPA regards surface water drainage to the existing culverted watercourses that run through the site? | - | Info | Development Impact Assessment is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | See comment on Labs below. | n/c |
| 013 | Although the Car Parks and future works are not included in the current scope, can you clarify whether the Drainage Impact Assessment and design of the future works needs to account of any changes to the surface runoff and/or foul drainage i.e. is it a site-wide scheme with input from others? | - | Info | No action required with regard to this RFI. | Agreed | Brookfield bid submission includes for the new drainage system required for the Works, and the currently identified Car Parks and requires timely input from Board and Third Parties in regard to information re Car Parks. | n/c |
| 014 | Notwithstanding Volume 2/1 section 2.3 can you please clarify the extent of the demolition and site clearance that will be undertaken by others and the status of the ground at the time of handover to the successful contractor? | - | NC | ERs address this item. | Not Agreed | Site levels still to be confirmed by the Board. BCL proposals based on working from existing levels. | Assume existing levels are retained at completion of demolition |
| 015 | Could you please provide a list of available archive information in relation to the site, and clarify when this will be available:<br><br>Buried Services, drainage, LV, HV,<br>Existing Structures incl foundations and buried structures<br>Topographic Survey | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | Brookfield submission allows for any impact in risk register. | BE Risk item. |
| 016 | We note that there is Japanese Knotweed present on the site, can you clarify whether this affects the construction areas and if this will be dealt with in the site clearance contract or main contract? | - | NC | ERs address this item (topic is on Board Watchlist). | Agreed | Brookfield would note that this is a Board Risk item. | n/c |
| 017 | Could you please provide copies of the existing fire strategy documentation relating to adjacent buildings, or alternatively confirm that it is acceptable to contact the Fire Officer direct? | - | Info | No action required in respect of this RFI. | Not Agreed | BCL have an obligation to liaise with the Fire Officer and not to detrimentally affect fire strategies of other adjacent facilities. The design has been developed to meet the requirements of SHTM 86 insofar as supporting a reasonable and ordinary fire risk assessment by the Board and no adverse fire safety issues will be created to the existing hospital by the proposed design.<br>However in order to develop the fire strategy we will need to review the | Board to provide copies of existing Fire Risk Assessments/Fire Action Plans. These will be uploaded to BIW Volume 6. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 |
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| | | | | | | existing fire strategy documentation relating to adjacent / proposed adjoining buildings. | |
| 018 | Please can you confirm if it is possible to bring the Blue Light A&E access from the back of the site off the A739/Hardgate Road? | - | NC | ERs address this item. | Agreed | | n/c |
| 019 | In order for our Design Team to progress the 1:50 Room Layouts we would be pleased to receive the ADB Brief in electronic **.mdb** format. | - | Info | No action required in respect of this RFI. | Agreed | | n/c |
| 020 | Could you please provide copies of the drainage requirements for the Laboratory Facility relating to:<br><br>Surface Water Runoff<br>Foul Water Flows | - | Info | This is a Laboratory Design Development issue and is addressed through the developing package of design information for that aspect of the Works. | Agreed | | n/c |
| 021 | Further to the Commercial Competitive Dialogue meeting no 1 we would be pleased to receive a copy of the following in relation to the **Laboratories/FM facility only** :<br><br>Draft Design Consultant Appointment for BMJ (incorporating other consultants of the Labs/FM design)<br>Schedule of Scope of Services for each discipline<br>Schedule of Total Fees for each discipline for each Design Stage together with details of fees paid/accrued to date.<br>Design programme and schedule of deliverables | - | Info | This is addressed through the Contract/Commercial area of the Contract preparation being undertaken. | Agreed | | n/c |
| 022 | With reference to ITPD Document Volume Three 'Bid Deliverables and Evaluation', Section 2.3 '1:200 Department Layouts' please confirm whether this is a minimum of 11 nr ***including***:<br>Section 2.4 – Accident & Emergency Department<br>Section 2.5 – Adult Theatres Department<br>Section 2.6 – Adult Ward<br>Section 2.7 – Childrens Ward<br>Section 2.8 – Childrens Accident & Emergency Department?<br>In addition, please confirm if there is any preference for the other departmental layouts you wish our Team to develop at 1:200 scale? | - | Info | ERs and ITPD/ITSFB updates address this RFI. | Agreed | | n/c |
| 023 | With reference to ITPD Document Volume Three 'Bid Deliverables and Evaluation', Section 2.9 '1:50 Room Layout and Wall Elevations' please provide a list of the 1:50 Room Layouts required. If this is to match the Generic ADB Room Data Sheets already provided, please provide an Index of these to allow us to ensure we prepare the correct number/room types. | - | Info | ERs and ITPD/ITSFB updates address this RFI. | Agreed | | n/c |
| 024 | With reference to ITPD Document Volume Three 'Bid Deliverables and Evaluation', Section 1.0 Accommodation Schedule (items 1.1 to 1.4) please can you confirm if these areas are required for the 'whole hospital scheme' or only the 11 number of Departments required to meet the Project Deliverables? | - | Info | ERs and ITPD/ITSFB updates address this RFI. | Agreed | | n/c |
| 025 | Could the Board please arrange a meeting between BCL and WRAP to review the following:<br><br>WRAP commentary upon BCL Waste Management Plan<br>BCL understanding of WRAP KPI's<br>Alignment of BCL and WRAP benchmarking | - | Info | Addressed during Competitive Dialogue sessions/meetings. | Agreed | Wrap proposals included in BCL submission. | n/c |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 |
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| | | | | | | | |
| 026 | Can the board confirm that the currently vacant area of “green zone” land can be made available for use by BCL during the construction of the laboratories. | - | Info | RFI closed as more specific information relation to this query was subsequently issued by the bidder. | Agreed | | n/c |
| 027 | Can the Board provide a rough quantity of crushed material that could be left on site following the demolition of the existing buildings. It is likely that this material can be reused for a piling mat and subbase offering some commercial benefit. | - | Info | No action required in respect of this RFI. | Not Agreed | The board did not advise a quantity of crushed demolition material they stated “quantities not available at this time”. Brookfield assumed crushed materials would not be removed from site. | Material can be used by BE if required. Piling is BE issue and risk of need to import pile mats if demolitions arising are not usable rests with BE. |
| 028 | The nature of pathology and microbiology in particular, requires that departments take into consideration statutory requirements and recommendations made under the following:<br><br>Home Office, Anti Terrorism Crime and Security Act 2001, part 7<br>Home Office, Personnel Security Measures for Laboratories, 2005<br>London First and National Counter Terrorism Security Office, Secure in the Knowledge, 2005<br><br>With this in mind, please can you provide us with the measures proposed, to ensure the safety and security of all staff, equipment and controlled substances including micro-organisms that have a bearing on the design and specification of the architectural elements of the project. e.g. provision of a robust controlled access system, cladding design, internal partition design, door specification, CCTV. | - | Info | Any specific requirements have been included in the Laboratories design. | Agreed | | n/c |
| 029 | **CLINICAL SPACE DEFINITION**<br><br>At the M&E break out session at Design Dialogue Meeting 2 we were advised that a list of spaces defined as “Clinical” as referred to in to ERs was available.<br><br>Please could the Board forward a copy of this.<br><br>Response required by 9th June 2009 | - | Info | No action required in respect of this RFI. | Not Agreed | Board to forward the information as requested? | From a services perspective, it is understood that query relates to sealed luminaires and not using clinical spaces to access services. Sealed fittings will not be required unless procedures take place in the area.<br>Access to services should not be via high utilisation areas |
| 030 | **Existing Infrastructure**<br><br>Please provide records of existing site wide services infrastructure.<br><br>We request a response by 9th June 2009. | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | Brookfield submission allows for any impact in risk register. | n/c |
| 031 | **Dual electrical distribution**<br><br>We query the required extent of dual unified distribution paths for **all** electrical systems, i.e.: departments fed from two boards, side A and side B, and interleaving of final circuits.<br>We assume that this requirement applies to Risk Category 3 and 4 departments only.<br>We propose that lower risk category departments will be provided with unified supplies, i.e.: departments provided with a single distribution board fed from either side A or side B, but not both. | Y | - | Statement that dual unified distribution paths to be provided for all departments to be included ERs for clarity. | Agreed* | * Subject to confirmation that this is clearly defined in line with Brookfield submission within the Works Information 1 (Employer Requirements). Brookfield bid submission includes for dual unified supplies | This appears compliant (see item 68 below for further comment) |

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| | We request a response by 9th June 2009. | | | | | | |
| 032 | **Lighting Controls**<br><br>The ERs refer to automatic lighting controls in a number of places.<br><br>We propose the following simplified lighting control strategy for your consideration and comment:<br><br>A mixture of automatic 'absence' and 'presence' detection will be provided.<br><br>Presence detection : detector switches lighting on and off.<br>Provided to intermittently occupied areas such as WCs, en suites, corridors, ward kitchens, stores, plant rooms, services risers, hospital streets, bathrooms etc.<br><br>Absence detection : lights manually switched on, detector extinguishes lighting in unoccupied room.<br>Extent of provision to be agreed but likely to cover offices, consulting rooms etc.<br><br>In addition, in rooms benefiting from daylight, luminaires near windows will be dimmable, regulated by the amount of daylight available.<br><br>The ERs require lighting in corridors to be dimmed when unoccupied and scheduled by BMS. We do not believe that this will be necessary as the detectors will extinguish lights in unoccupied areas regardless of the time of day.<br><br>The ERs require dimmable lighting 'throughout'. Please clarify if this means each room regardless of available daylight and function.<br><br>We request a response by 9th June 2009. | - | NC | Lighting controls on Board Watchlist. | Not Agreed | BCL included for the simplified proposal as outlined in the RFI and this is contained in our bid submission. | Generally accepted. The reason for the "watch list" is to focus the Board on monitoring compliance going forward<br><br>Brookfield to substantiate that the proposed system will function as described in relation to the automatic dimming regulated by the amount of daylight available. |
| 033 | **Service Capacity Reserve**<br><br>With reference to ITPD Vol 2/1 Clause 8.1.25.1 please could you clarify the extent of reserve to major items of equipment.<br><br>Whilst an expansion of 25% is common on electrical systems, when applied to mechanical plant this leads to significant oversizing and potential inefficient running in terms of energy use which could affect the proposed energy target, and also result in poor control.<br><br>Response required by 9th June 2009 | Y | - | Statement that energy matching by modular selection of plant and provision of integrated controls to be included in ERs for clarity. | Agreed* | * Subject to confirmation that this is clearly defined in line with Brookfield submission within the Works Information 1 (Employer Requirements). | See response to Item 003, above. |
| 034 | **Site Heating Loads**<br><br>The calculation of heating loads for the new hospitals are given in Appendix M&E.2 / 2.0 and broken into heating, ventilation and HWS. Please could you provide the basis of calculation for the heating and ventilation loads.<br><br>Response required by 9th June 2009 | - | Info | No action required in respect of this RFI. | Agreed | | n/c |
| 035 | **Variable Volume Pump Systems**<br><br>The Board's exemplar schematics for heating and cooling systems | - | NC | This item is on the Board Watchlist. | Not Agreed | Brookfield submission includes for VVP systems | 2 port valves introduced by bidder for energy saving.<br>Valve selection is critical-to be |

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| | indicate constant volume flow systems with 3 port valve bypass control of equipment.<br>We would wish to provide variable volume pumping (VVP) systems utilizing 2 port control valves and differential pressure control.<br>VVP systems can reduce electrical consumption for pumping significantly, and we feel that this is an essential requirement to meeting the carbon target required.<br><br>Response required by 9th June 2008. | | | | | | selected to reflect actual duty.<br><br>This item to be retained on board watch list through design and installation. |
| 036 | **Re: Community Engagement**<br>Further to the Logistics meeting no 2 and as directed we would be pleased if Mark could arrange an introductory meeting with the following:<br><br>Ross Campbell: Glasgow Regeneration Agencies<br>Sharon McGrath: City Building<br>Maggie Lennon: Bridges Programme<br>Morag Keith: West of Scotland Colleges Partnership<br>Hugh McCafferty: Construction Skills<br>Jim Brown: EU Skills<br>Ian Stirrat: Summit Skills<br>Robert Andrew: Supplier Development Programme<br>Lauren McNichol: Glasgow Chamber of Commerce<br>Stewart Farmer: Federation of Small Businesses<br>Jillian Moffat: Scottish Enterprise<br>Gerry Higgins: Community Enterprises in Strathclyde (CEiS) | - | Info | Addressed during Competitive Dialogue sessions/meetings. | Agreed | | n/c |
| 037 | Within the laboratory building mention is made of animal holding facilities but no further reference found, nor area identified on drawings. Please confirm is this statement is a correct requirement or purely an oversight in document preparation. | - | Info | No action required in respect of this RFI. | Agreed* | Board confirmation during dialogue session that facility will not be used for any animal holding. | n/c |
| 038 | Please confirm the number of floors currently proposed on the laboratory building is as follows:<br><br>Level 0<br>Level 1<br>Level 2<br>Level 3<br>Level 4<br>Roof,<br><br>along with the number/size of floors to be considered as potential future accommodation. | - | Info | No action required in respect of this RFI. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do BE think their LABS option is being taken? |
| 039 | Within the laboratory building, please advise expected pattern of usage for the office pod central conference facilities e.g. intermittent/constant etc, as this will influence potential services solutions.<br><br>Also, will main conference facility have a raked floor? | - | Info | Any specific requirements have been included in the Laboratories design. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do BE think their LABS option is being taken? |
| 040 | Within the laboratory building, suggestion is made that the office pod will have some public access.<br><br>Please advise whether the level of public access to the office areas will dictate that openable windows will have openings limited to 100mm (This will impact on effective natural ventilation). | - | Info | Any specific requirements have been included in the Laboratories design. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | 100mm opening limitation is a laboratories ER requirement<br><br>But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do BE think their LABS option is being taken? |

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| 041 | Reference is made for a separate incoming electrical supply for the laboratory building due to programme issues of deriving a supply from the final site network. No mention is made of similar requirements for the other statutory services e.g. water, gas, telecoms, drainage etc.<br><br>Please confirm if our assumption of the following is correct.<br>Electricity: Board<br>Water: Bidder<br>Gas: Bidder<br>Telecoms: Bidder<br>Drainage: Bidder<br>IT Infrastructure: Bidder | - | Info | No action required in respect of this RFI. | Not Agreed | Brookfield submission and Commercial Clarification No 3 refers | Primary Sub station will be required for lab start up to ensure value for money on utility supplies<br>Refer to minutes of meeting 02 December |
| 042 | Several references are made to the proximity of the sewage treatment works to the laboratory building, including potential for carbon filtration of fresh air ventilation plant.<br><br>Requirements for natural ventilation are also identified wherever practical.<br><br>Please confirm whether openable windows are acceptable on all elevations especially in close proximity to the sewage works. | - | Info | No action required in respect of this RFI. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do BE think their LABS option is being taken? |
| 043 | On the laboratory building solar-thermal panels have been suggested to support hot water generation. The solar collectors would occupy significant areas of roof which are required to be lightly populated to allow future upward expansion.<br><br>Please confirm requirements. | - | NC | The Contractor will require to address and deliver this area of the Laboratory design following issue of the Board Stage E design. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do BE think their LABS option is being taken? |
| 044 | Reference is made to potential sprinkler protection of the laboratory building, however no plant space is specifically identified for the significant quantities of water storage and associated plant.<br><br>Please confirm requirements. | - | NC | The Contractor will require to address and deliver this area of the Laboratory design following issue of the Board Stage E design. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do BE think their LABS option is being taken? |
| 045 | Reference is made to standby generation to support the electrical services in the laboratory building, in the event of mains failure.<br><br>We have assumed that this plant/facility will be located in the energy centre and form part of the site-wide backup.<br><br>In the interim period between the laboratory block and the energy centre being online, we have assumed connections for temporary generators will be provided for the laboratory block.<br><br>Please advise albeit we note the current discussions during dialogue meetings regarding potential early delivery of the energy centre. | - | NC | Interim solution of the Contractor on Board Watchlist (to pass through Reviewable Design Data). | Not Agreed | Brookfield submission and Commercial Clarification no 3 refers. | Reference minutes of 02 December Utilities meeting. Contractor to provide 100% standby capacity for Laboratories via one of three options detailed in RFI reply. |
| 046 | Reference is made to local tri-generation units per floor/plantroom within the laboratory building. Would a centralised facility be considered to serve the whole building? | - | Info | No action required in respect of this RFI. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | Tri-generation to be incorporated within the energy centre<br><br>But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do BE think their LABS option is being taken? |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 |
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| 047 | Halcrow Group Ltd – Flood Risk Assessment, April 2005. At the design dialogue meeting no. 2 we were advised that this report would be issued to the bidders. We have checked our records but currently do not appear to received this document. Please confirm when this report will be made available including relevant non commercial issues of the brief. | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c |
| 048 | **Foul Water Discharge**<br>Scottish Water have advised that a DIA (Drainage Impact Assessment) will be required to establish the impact of any additional foul flow on Shieldhall Sewage Works and adjacent combined / foul flow infrastructure. Is it the Board's intention that this DIA will be commissioned by the Board during this tender period?<br><br>The URS DIA report states that "Greater Glasgow and Clyde are committed to the reasonable upgrading of any Scottish Water Infrastructure identified through this process" The extent of works cannot be fully defined until the DIA has been undertaken therefore please advise what the Board considers would be reasonable upgrading to the off-site network in terms of a potential budget/cost.<br><br>Do the foul flows within table 4.3 (DIA report) include areas of hard standing discharging to foul system e.g. helipad. We would be pleased to understand the rational behind this requirement. | - | Info | No action required in respect of this RFI, this area of design remains the responsibility of the Contractor. | Agreed* | *Risk register Stage 2 D25 refers | |
| 049 | **Surface Water**<br>Discharge<br>Glasgow City Council flooding department have confirmed a catchment hydraulic simulation/model will be required in order to demonstrate the hospital site (including culverted burns, Linthouse open channel (north of Govan Rd), existing surface water flows, upstream flows etc) can withstand flooding 'issues' with the 1 in 1000 year storm event. This modeling process takes circa 12wks to complete from inception to completion (advised by Scottish Water). Please advise if this modeling has been commissioned by the Board? If not please confirm it's acceptable to adopt the flood levels as detailed in section 6.2.1 of the URS DIA and Strategy Report dated 1 May 2009 i.e. worst flooding event = 5.31 m O.D. These levels will be used to set the ground floor levels for the proposed buildings.<br><br>Attenuation<br>Please confirm attenuation requirements for the site. Has the entire site to be attenuated to green-field run off or is it acceptable to limit the discharge to that as per exiting i.e. the proportion of surface water discharging to the culvert at present.<br>Please confirm discussion with Scottish Water/SERA/GCC flooding dept with regards to this issue.<br><br>Section 4.2.2. Drainage network design considerations<br>Please confirm what design storm is to be used for the joint probability assessment.<br><br>The DIA report states that landscaped areas should be connected to the culverted watercourse – has this been agreed in principal with Scottish Water or GCC? | - | Info | No action required in respect of this RFI, however as discussed at the meeting with the Board on 18 November 2009 URS to be instructed to commence metering and monitoring of Linthouse and Jenny's Burn.<br><br>The design requirement with regard to drainage (including attenuation) remains the responsibility of the Contractor. | Agreed* | Note that a full surface water hydraulic model of the catchment is required. *Risk register Stage 2 D19 refers | |
| 050 | We are investigating the surface water strategy for the site and would ask if it is feasible to move the proposed laboratory building 2-3m south east? If acceptable this would facilitate the diversion of the Jenny's Burn culverted watercourse behind the lab, FM and energy centre. | - | Info | No action required in respect of this RFI. | Agreed | | n/c |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 |
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| 051 | **Linthouse Burn**<br>Please confirm who owns and maintains the Linthouse Burn culvert out with the site boundary. If upgrading of the culvert and open channel is required have any discussions taken place with the respective owners with regards to this issue? If so please confirm these discussions and the implications of any agreements reached. | - | Info | No action required in respect of this RFI. | Agreed | | n/c |
| 052 | **URS DIA Report**<br>Executive Summary – foul and surface water drainage strategy. 1st bullet point states that "the future development is to be served by a separate foul and surface water drainage infrastructure where practicable".<br><br>We would be pleased to receive your thoughts on the definition of "practicable" as this is open to interpretation and could have significant cost implications if, for example, it's the Board's requirement that the entire existing network has to be split into foul and surface water systems. Or alternatively is it deemed acceptable to undertake the minimal from an engineering and Scottish Water approval perspective. | - | Info | No action required in respect of this RFI. | Agreed | | n/c |
| 053 | Please provide copies of correspondence confirming agreement of drainage strategy from stakeholders i.e. Scottish Water, SEPA and Glasgow City Council Flooding Dept. | - | Info | No action required in respect of this RFI. | Agreed | | n/c |
| 054 | Please provide copies of correspondence with SEPA regarding consultation on CAR requirements. Please also confirm discussions with SEPA regarding CAR requirements for the front end buildings e.g. Labs and multi-story car park. | - | Info | No action required in respect of this RFI, the Contractor remains responsible for the relevant CAR requirements. | Agreed | | n/c |
| 055 | SEPA published flooding maps indicate that during a 1 in 200 year storm event (0.5% probability) there is potential flooding to the north west corner of the site at building ref 'AG'. In the absence of more detailed information please confirm flooding protection to the existing buildings are excluded from this contract and that we should only consider 1:1000 year return periods for new buildings. | - | Info | No action required in respect of this RFI. | Agreed | | n/c |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 |
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| 056 | It would appear from the Travel Plan that considerable detailed work or a Transport Assessment has been undertaken on the site. We would be pleased if you could provide us with a copy of this document to understand in more detail the discussions that have taken place.<br><br>In the absence of a Travel Assessment please confirm the following:<br><br><u>FM Building</u><br>The service access to this building is by Hardgate Road, is there a restriction on how many access ways are need to be provided?<br><br>As discussed in dialogue meetings we would welcome your thoughts on whether the position of the building could be moved east?<br><br><u>Transport/Parking Provision</u><br>• Please confirm requirement for the number of taxi parking bays for children's and adult entrance and along the site?<br>• Please confirm requirement for the number of visitor drop off spaces for children's and adult entrance and along the site?<br>• Please confirm the maximum bus size to access the site.<br>• Please confirm requirement for the number of visitor drop off spaces near entrances?<br>• Please confirm number of disabled parking spaces required in addition to the capacity of the multi-storey car park?<br>• The "fastlink" service is to be provided by "bendy" bus or normal bus, is this access exclusive for bus service or can be used for taxis and visitor drop off? Does this service need to be able to turn around within site to enter and exit via Govan Road.<br><br>From the exemplar drawings appear to include the following provisions - please confirm<br><br>*7 bays - Taxi*<br>*44m drop off - along the Blue Light Road*<br>*25m drop off- along the Blue Light Road by the Urology/dermatology building*<br>*2 passing bay- along the Blue Light Road by the Pharmacy building and Neurosurgical building*<br>*7 drop off bays- to the adults entry*<br>*43m drop off - to the children's entry*<br>*24m drop off- to the FM building*<br>*32m passing bay- to the FM truck entry road*<br>*32m bus bay- assumes a bendi-bus*<br>*32m waiting bay assumes a bendi-bus*<br>*30m drop off bay- to Hardgate Road next to the Sub-station in the car park* | Y | - | Relevant responses to be included in ERs for clarity as minimum requirements (e.g. drop offs, transport interchange) – as noted in the RFI, however, Planning will dictate specific requirements on the site. | Agreed* | * Subject to confirmation that this is clearly defined in line with Brookfield submission within the Works Information 1 (Employer Requirements). | As stated in Board Comment 1 – the drop off etc in the RFI to be met, with planning dictating actual outturn requirements. That is, BE submission not being overwritten into ERs. The ERs state what is required (incl the RFI responses) wit BE to achieve this (as amended by planning). |
| 057 | Please find enclosed preliminary main office proposals and location mark-up on the Ogilvy Site off Hardgate Road.<br><br>These drawings will be developed to show door and workstation positions etc. and specifications will be produced, however, we request your initial comments | - | NC | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Agreed | | n/c |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 |
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| 058 | Following logistics dialogue meeting No 2, can you please confirm when buildings AV and AW are to be demolished (existing Boiler House and Works Dept)<br><br>Information requested for our hoarding line proposals | - | NC | On Board Watchlist for discussion with Brookfield to agree exact delineation of site hoardings prior to mobilisation. | Agreed | | n/c |
| 059 | Following Logistics Dialogue meeting No 2, can you confirm the Boards intent to demolish existing buildings within the October 2010 phase during the summer of 2010.<br><br>(Drawing PD-HLM-S(00)X-XX-005 Buildings BD, BE,BF, BG, BH, BI and BJ | - | Info | No action required in respect of this RFI, however as discussed at the meeting with the Board of 18 November 2009 Currie & Brown shall issue a package for pricing the demolition works in relation to these buildings. | Agreed | | n/c |
| 060 | Our RFI's 058 and 059 request dates for some existing building demolition by the Board.<br><br>Could you please advise indicative dates for demolition of other areas not by the Bidder.<br><br>This information is requested to assist us in preparation of Vol. 3 Site Interface Appendix A – Bid Deliverable item 10.1 | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c |
| 061 | Reference is made in the briefing documents to exposed structural soffits in the laboratory areas. Given the extent of engineering services at high level, especially close to the plant pods, is the client team satisfied that the level of exposed services will be complimentary to the "quality" environment required for the lab areas? | - | Info | Any specific requirements have been included in the Laboratories design. | Agreed | On the basis that Works Information 2 takes precedence over Works Information 1 in the event of conflict | But there is no WI2 for labs? – only one set of drawings + Vol2/2 written narrative? Or do BE think their LABS option is being taken? |
| 062 | Fast link<br>Please confirm if provision for fast link turning is required within the site or is the statutory minimum requirement such that only a through route for the fast link is required as a minimum.<br><br>We would note that at the architecture sub-group (bidder day #3) it was advised that provision for turning was required however, at the C&S sub-group URS confirmed that the minimum required was for a through route only.<br><br>Please clarify accordingly. | - | Info | The requirement and solution will be developed and provided by Brookfield in response to Planning/Transportation requirements which they are responsible for achieving. | Agreed | | n/c |
| 063 | We note the information currently set out in Volume 2/1 Section 7 (7.2.26 to 7.2.29 inclusive) with regards the helipad at roof level. In order to assess more fully we would be pleased if the Board can confirm loading information of the helicopter proposed for the new hospital. In particular, please indicate maximum loads that are exerted on the roof structure. | Y | - | Reference to loads to be included in ERs for clarity. | Agreed* | *Subject to ER's being updated to reflect Brookfield bid submission. | Compliance with HBN 15-03 Hospital Helipads required. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 |
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| 064 | Travel Plan<br>At the design briefing session #3 (10 June 09) URS advised that they are not in possession of a Traffic Assessment for the site and the only document they have is the Travel Plan compiled by JMP (Dec 07). With regards to this Travel Plan this makes specific reference to a TA page 2 point 1.15 which states the following " an outline planning application was lodged with GCC in May 07 along with a TA which identified……..."<br><br>We are investigating the internal site road network and require information with regards to traffic flows, movement etc and require a copy of the TA for reference purposes. We would be pleased if the Board could provide us with a copy. | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c |
| 065 | Linthouse Culvert<br><br>We would be pleased if the Board could provide record information with regards to the Linthouse Burn Culvert including (but not limited to) depths, manhole sizes, manhole depths etc. | - | Info | No action required in respect of this RFI. | Agreed | | n/c |
| 066 | **Re: Risk Register**<br><br>Further to the Commercial Dialogue meeting No 2 we attach a draft Risk Register as promised for your consideration. Clearly, this document will change during the bid period as other risks are identified and others mitigated.<br><br>Please note we have amended the categories with the following headings:<br>Business<br>Construction<br>Design<br>Environmental and Sustainability<br>Operational<br>Programme<br>Statutory<br><br>In addition, we have separated for ease of reference those risks we feel sit with Brookfield, those with the Board and those we believe are shared between both parties subject of course to mutual agreement. At this stage we have identified the risk and proposed the mitigation for the Brookfield and shared items. Our focus now will be to score the risk and review potential cost implications accordingly.<br><br>In the meantime, as discussed we would be pleased for the Board to review the attached and in particular propose mitigation measures for those identified as "NHS GGC" and comment on those stated as "Shared".<br><br>We look forward to receipt of your comments prior to the next Commercial Dialogue meeting. | - | Info | No action required in respect of this RFI. | Agreed | | n/c |
| 067 | **Re: Areas Schedule**<br>Further to the Commercial Dialogue meeting no 2 please find attached soft copy of the areas schedule of the exemplar scheme we tabled at the meeting.<br><br>As discussed, we would ask the Board to identify where stated its view on areas schedule "life for like" so we may assess any differences or assumptions made. | - | Info | No action required in respect of this RFI. | Agreed* | *Refer to Brookfield submission Volume One for SOA. | Agreed SoA to be inserted. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 |
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| 068 | **Dual Electrical Supplies – Supplementary Query**<br><br>Further to our previous RFI in which we queried the required extent of dual unified distribution paths for all electrical systems we confirm our interpretation of your requirements:<br><br>As required by the ERs and as confirmed by the Board in DDM#3, all departments will have dual unified supplies i.e.: departments will be provided with two distribution boards, one fed from side A and one from side B of the network.<br><br>In general, in rooms within departments, the final circuits will be interleaved such that each room is fed partially from side A and partially side B of the distribution network.<br><br>However, Clinical Risk Category 1 and 2 rooms within departments will **not** be provided with interleaved final circuits. Determination of Risk Categories will be as defined by SHTM 06-01, 4.19 and 4.20. | Y | - | The requirement for all rooms to be provided with interleaved final circuits to be included in ERs for clarity. | Not Agreed | Clinical Risk Category 1 and 2 rooms within departments will **not** be provided with interleaved final circuits. Determination of Risk Categories will be as defined by SHTM 06-01, 4.19 and 4.20. | Concern is corridors and consultation rooms.<br><br>Only exception should be stores and any accommodation with a single light fitting or single socket outlet |
| 069 | **33kV substation**<br><br>Please advise the dimensions of the 33kV substation, LxWxH. | - | Info | No action required in respect of this RFI. | Agreed | | n/c |
| 070 | As per item 2-43 of logistics competitive dialogue 2 we would attach our draft Site Waste Management Plan (SWMP) for your comment.<br><br>Please pass this document to WRAP for comment against their procedures and benchmarking protocols. | - | Info | No action required in respect of this RFI. | Agreed | | n/c |
| 071 | Further to RFI 026 please advise if the 3 areas of unoccupied land (or any part of) as highlighted on the attached sketch BE-LOG-SK/DJ/1008 could be made available as part of the Nov 2009 phased handover to facilitate New Laboratory development site offices, car parking, and haul routes.<br><br>We would confirm that occasional access to the VIE compound and turning for oil vehicles would be afforded through site haul roads and gates | - | Info | No action required in respect of this RFI. | Agreed | Land confirmed as available for BCL use | Logistics agreement for contract signature to confirm areas of land, shared car park etc. |
| 072 | Find attached our Hoarding proposals to the South and East site boundaries for your review and comment.<br><br>We would note that we have identified 2 possible relocation options for the Bus stop which we can include in the discussions for Logistics dialogue 3 prior to your response.<br><br>We would also request demolition date associated with the works department building to allow co-ordination of hoarding road and service diversion works | - | NC | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Agreed | | n/c |
| 073 | Further to Logistics Dialogue meeting Minute 2-26, please find attached our updated site access hoarding and storage routes layout to Laboratory Development (Dwg BE-LOG-SK/DJ/1004A that includes access to VIE and for demolition works.<br><br>We would request your review and comment. | - | NC | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Agreed | | n/c |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 |
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| 074 | **Ref Laboratories Building site area**<br><br>We are aware that the relocation of the compactor will be carried out by the Board. Please confirm that the remaining concrete base and hard-standing are included in that removal package of works by the Board's demolition contractor. | Y | - | Per discussions at the meeting with the Board on 18 November 2009 this is to be moved to the location adjacent to the CMB. | Agreed | Subject to confirmation as well that the concrete base and hardstanding will also be removed. | Technical Clarification 20nr (on BIW) and RFI confirm that base and hardstanding (as well as fencing etc) to be removed by Works Contractor (i.e. BE). |
| 075 | **Re: Board Spend profile**<br>Further to the Commercial Dialogue meeting no 2 we tabled a standard cash flow model and would welcome any comments the Board has in this regard.<br><br>In addition, it was stated by the Board that your own spend profiles are year end (March). We would be pleased to receive details and parameters of the Board's cash flow for each year so that we may review accordingly against those parameters. | - | Info | No action required in respect of this RFI. | Agreed | | n/c |
| 076 | Existing Drainage<br>There is reference in the URS Drainage Impact Assessment; " NSGACL NHS Greater Glasgow & Clyde - NSGH Drainage Strategy Report_iss2_revA.pdf " (section 3.3.3) to an NHS assets survey which also included a CCTV survey carried out in 2003. We would be pleased if the Board could provide a copy of this survey. | - | Info | No action required in respect of this RFI. | Agreed | | n/c |
| 077 | At the last Labs/FM Dialogue, we were advised that the architectural plans and elevation drawings reviewed by BMJ Architects would be issued via BIW, in pdf. and DWG formats, however we do not yet appear to have been issued these in the addendum uploaded to date. | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c |
| 078 | **UPS Provision**<br><br>The ERs require all Isolated Power Supply Units in Risk Category 5 areas (group 2 locations) to be supported by UPS with 3 hour autonomy.<br><br>SHTM 06-01 recommends a typical autonomy of 60 minutes for theatres and 15-30m for non theatres.<br><br>We are concerned about size, weight and cost. To illustrate what a 3 hour autonomy means in practice we estimate that for the adult Theatres there would be 2 no. UPS rooms each approximately 12mx4m with batteries weighing approx 30 Tonnes.<br><br>Similarly, the ERs require a UPS of 2 hour autonomy for the 2 server rooms. Typically the autonomy of a server room UPS is significantly less than 2 hours, the principle being that the UPS is provided to enable seamless operating during the brief period between mains failure and generator start up. In the unlikely event of generator failure the autonomy of the UPS should be sufficient to enable a controlled shut down of the servers, say 15 minutes.<br><br>Your comments would be appreciated.<br><br>Response required by 26th June 2009 | - | NC | This item is on the Board Watchlist for compliance by the Contractor to be fully demonstrated. | Not Agreed | Brookfield proposal includes for design in compliance with SHTM 06-01. | 15 min for non Theatre UPS is not acceptable, 30min minimum to allow intervention if required<br><br>15 min for servers is not acceptable, 30min minimum to allow intervention if required |

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| 079 | Drainage & Sewers Impact Assessment compiled by Black & Veatch dated Jun 07 states the following on page 3.6<br><br>The following options have been considered for diversion of Jenny's Burn Culvert:<br>(a) Option 1<br>The new development will include landscaped areas and roads as well as the new hospital<br>buildings. It may be possible to find a gravity route through the development site which<br>follows a road or footpath and therefore minimises impact on construction of the<br>buildings. As it may follow the most direct route between upstream and downstream<br>connection points, this may be the lowest cost option for diversion of Jenny's Burn<br>Culvert.<br>However, this option would require agreement from the developer to incorporate the<br>culvert into the layout of the new hospital grounds. Following discussion with the NHS, it<br>was confirmed that routing the diverted culvert through the new site is not permitted.<br><br>Please confirm if this constrain still exists in terms of re-routing Jenny's Burn? | Y | - | Diversion through the site permissible to be included in the ERs for clarity. | Agreed | | n/c |
| 080 | Further to RFI 071 please advise if the 3 areas of unoccupied land (or any part of) as highlighted on the attached sketch BE-LOG-SK/DJ/1009 could be made available prior to the dates identified on the phased handover drawings.<br><br>Area 4 is requested as part of the Nov 2009 phased handover to facilitate New Laboratory development site offices, car parking, and haul routes.<br><br>Areas 5 and 6 are requested for June 2010 to provide early access to carry out road works to establish hoarding lines and commence any necessary Culvert and Foul drainage diversion activities. | - | NC | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Agreed | | n/c |
| 081 | It is noted that the footprint currently identified as the Maternity Unit on the topographical and existing layouts for that building does not reflect the construction as existing. Further to the logistics dialogue meeting #2 minute 2-39 and logistics dialogue meeting #3 minute 2-33 we would be pleased if the Board can confirm by illustration the pinch points/logistics for the maternity access to be included as part of their review and response to this. | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c |
| 082 | **FM Building layout and location**<br><br>We are in receipt of the latest FM DWG files. However upon review they do not appear to reference into our drawings in the correct location. We would be pleased if the Board could provide us with the latest FM floor plans in DWG format with a reference point that we can align with either the existing survey or exemplar scheme so that the building can be placed accurately. | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c |

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| 083 | Re Community Benefits<br><br>Further to the Community Engagement bidder meeting on Monday 29th June we would be pleased if the Board would confirm the following:<br><br>1) The percentage split between a) Targeted Recruitment and Training and b) SME/Social Enterprise development [Volume 2/1, Appendix V, Page 3]<br><br>2) Clarification on what the actual SME supplier development objectives are. (Volume 2/1, Appendix V, page 10) | - | Info | No action required in respect of this RFI. | Agreed | | n/c |
| 084 | Please confirm the maximum vehicle height requirements for headroom purposes at link bridge locations. | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | Minimum height clearance to be included in ERs at 5.3m per original RFI response. |
| 085 | Response to RFI 12 and Scottish Water correspondence to URS dated 9 June 09 uploaded onto BIW.<br><br>The SW correspondence states ***" Sheildhall WWTW which has the capacity to accept the foul drainage, provided the foul flow is connected downstream of the terminal CSO to Shieldhall WWTW"*** Can URS please seek clarification from Scottish Water with regards to the location of the 'terminal CSO' as this may have a cost implication in relation to 'off site' sewerage works . | - | Info | No action required in respect of this RFI. | Agreed | | n/c |
| 086 | Please could the Board please provide the information relating to BREEAM and sustainability, which was shown at the Design Dialogue meeting on the 23rd June 2009. We understood this was going to be uploaded for distribution last week. This includes the BREEAM pre-assessment by the Board's assessor, feedback on transport, aquifer/groundwater and ecology for BREEAM credits, details of acceptable flush volumes for the hospital and feedback from the meeting with Scottish Water relating to the potential for using biogas. | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover.<br><br>Additionally, the aquifer information is anticipated to be available for review w/c 23 November 2009. | Agreed | | Aquifer information is to be available by 09 December. Board will upload this to BIW Volume 6 as soon as it is available |
| 087 | **33 kV supply rating**<br><br>We note from the Scottish Power Energy Networks Quotation issued under addendum 14 that the Maximum import Capacity will be 15, 910kVA, which is somewhat lower than the figure of 20,500kVA stated in Appendix M&E2.<br><br>Please clarify.<br><br>We would be pleased if the Board were able to provide a response to this RFI no later than 10th July 2009 | - | Info | No action required in respect of this RFI. | Not Agreed | Brookfield submission has only allowed for the quotation from Scottish Power supplied by the Board which identified that maximum import capacity was only 15,910Kva. | Reference minutes of Utilities meeting of 02 December. |

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| 088 | As part of the rationalisation of the area v budget constraints we seek the Board's comments/view on the possible relocation of the Facilities Management Workshops and Associated Office space for the FM Supervisors over to the new Energy Centre.<br><br>Assuming this is an acceptable solution would it be also appropriate to locate the basement mortuary area into the space vacated by the FM Workshops?<br><br>We would ask the Board to respond as soon as possible to enable us to move forward with the design and cost options. | - | Info | No action required in respect of this RFI. | Agreed | | n/c |
| 089 | With reference to the new Lab-Building, we would be pleased for the Board to provide us with set out coordinates of the new building to allow Brookfield to prepare the correct set out of our drawings. | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c |
| 090 | Please can we receive an indication of whether WC flush volumes of 4.5 litres are acceptable to the board (as required under BREEAM Wat 1) for all WCs? This was discussed at DD meeting #4 as potentially unacceptable. Thanks. | - | Info | No action required in respect of this RFI. | Agreed | | 4.5litres confirmed as not acceptable per original RFI response. |
| 091 | We would be pleased if the Board can confirm the actual number of Loaded Rooms as per the ADB sheets, as the current information available in the various documents varies from 73 to 100.<br>We would appreciate your response as soon as possible. | - | Info | No action required in respect of this RFI. | Agreed | | n/c |
| 092 | We have been advised (by SSE) that there has been a review of NHS Board owned land which may consider potential sites for installing wind turbines. The contact name we were given was Ian Powrie of NHS Estates. Is it possible to be given the results of this review, in order to complete a comprehensive assessment of the potential for installing an off site wind turbine, able to supply renewable energy to NSGH? Thanks. | - | Info | No action required in respect of this RFI. | Agreed | | n/c |
| 093 | Could the Board please advise how is the Ecoteric carbon tracker and evaluation matrix are going to be integrated into the bid evaluation process? Information on how to structure our response as part of a bid deliverable as well as details of its evaluation would be appreciated. Thanks. | - | Info | No action required in respect of this RFI. | Agreed | | n/c |
| 094 | Can the Board confirm the likely volume and mix of waste the final project is likely to generate? An indication of volume and waste streams would be appreciated as well as any specific waste management constraints already known.<br>Thanks. | Y | - | Waste details to be included in the ERs for clarity. | Agreed | | n/c |

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| 095 | The Employers' Requirements state that:<br><br>*7.17.3 The Art strategy will be developed in the context of;*<br>*a. current Board arts strategy work already being undertaken in Glasgow as part of ASRI and the new Maternity Unit at Southern General Hospital;*<br>*b. the range of cultural, regeneration, funding partnerships already established within Greater Glasgow and Clyde;*<br><br>We would be pleased if you can provide a copy of the current Board arts strategy for our review, to ensure compatibility. In addition, please provide details of the art programme for the new Maternity Unit and a short commentary to highlight the headlines of the process and to summarise the key lessons learned from this.<br>It would also be greatly appreciated if you could provide a list to confirm those funding partnerships which have already been established, for our review and to enable us to ensure appropriate continuity. | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | | n/c |
| 096 | Could the Board confirm the number, type (medium pressure, low pressure) and available capacity of natural gas supplies that could serve the site? Thanks. | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | BCL have confirmed assumptions in submission | Refer to minutes of Utilities meeting of 02 December |
| 097 | Further to the Boards response to RFI 057 regarding Clients Office Requirements, would the Board accept their offices being located on the second floor over the Brookfield offices, with easy access to shared meeting rooms on first floor. Disabled access for wheelchairs to second floor would not be viable. | - | NC | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Agreed | | n/c |
| 098 | Please can you provide further details by way of a room by room SOA breakdown for the following departments:<br><br>Decontamination<br>Medical Physics<br>Medical Photography<br>Hotel Services & Domestic Portering<br>Staff Changing<br>Equipment Library/Store (non-Bio-Engineering)<br>Sterile Store<br><br>In addition, please can you confirm whether the Equipment List provided has included for the above departments. | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | Please Note that a detailed SOA was not provided, therefore we assume that the area allocation provided in the Brookfield Bid Submission, which matches the Board's SOA, is correct. In addition, we assume that all equipment required was provided in the Board's Equipment List, which has been priced for in the Brookfield Bid Submission. | Common SoA to be agreed, BE were to provide ADB allowances also however (HLM to advise). |
| 099 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 1 - Cleaner sockets:** OUT005 (SOCKET outlet switched 13amp single, wall mounted) to be added in all rooms, where not provided in the brief. Placed at 150mm cc from door opening. Exceptions are WC's, Shower Rooms, Bathrooms, En-suites, Changing Rooms and Parking Bays (Resus trolley, Wheelchair, mobile X-ray) | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |

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| 100 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 2 - Light switches:** SWC001 (SWITCH 5amp ac single pole, 1 way, wall mounted) to be added in all rooms. Placed at 150mm cc from door opening. Exceptions are WC's, Shower and Bathrooms refer to **QUERY 003**. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 101 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 3 - Wet areas:** Please confirm light switch type (i.e. pull cord SWC014 (SWITCH 5amp ac single pole, 1 way, ceiling pull cord) or SWC001 (SWITCH 5amp ac single pole, 1 way, wall mounted) and position of light switches in all wet rooms and WC's. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 102 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 4 - X-Ray viewers:** Electrical supply to this item be standardised as an OUT052 (CONNECTION UNIT switched 13amp, wall/trunking mounted to M&E detail) below and a cable outlet OUT002 (OUTLET cable, wall/trunking mounted) behind unit throughout the project. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 103 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 5 - Water boilers:** Electrical supply to this item to be standardised as an OUT052 (CONNECTION UNIT switched 13amp, wall/trunking mounted to M&E detail) | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 104 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 6 - Dishwasher, Washing Machine/Tumble Dryer:** Electrical supply to this item to be standardised as a low level OUT006 (SOCKET outlet unswitched 13amp single, wall mounted) and an OUT052 (CONNECTION UNIT switched 13amp, wall/trunking mounted to M&E detail) above the worktop throughout the project. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |

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| 105 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 7 - Fridges under worktops:** Electrical supply to this item to be standardised as a low level OUT006 (SOCKET outlet unswitched 13amp single, wall mounted and) and an OUT054 (CONNECTION UNIT unswitched 13amp, with pilot light) above the worktop throughout the project. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 106 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 8 - Tall appliances:** Electrical supply to these items should be standardized as an OUT006 (SOCKET outlet unswitched 13amp single, wall mounted and) behind unit and OUT054 (CONNECTION UNIT unswitched 13amp, with pilot light) accessible next to unit. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 107 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 9 - High Level Controlled drug cupboard:** Electrical supply to this item to be standardised as an OUT050 (CONNECTION UNIT, to controlled drugs cupboard, wall mounted) behind and LIG081 (LUMINAIRE fitted with single fluorescent lamp with switch, below drug cupboard, 8watt, 400mm) if not included in the description of the drug cupboard, below unit throughout the project. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 108 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 10 - High Level Drug Fridge:** Electrical supply to this item will be standardised as an OUT006 (SOCKET outlet unswitched 13amp single, wall mounted) behind unit and OUT054 (CONNECTION UNIT unswitched 13amp, with pilot light) accessible next to unit. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 109 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 11 - Vending Machines:** Electrical supply to this item to be standardised as a low level OUT006 (SOCKET outlet unswitched 13amp single, wall mounted) throughout the project. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |

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| 110 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 12 - Drinking Water Dispensers:** Floor standing OUT010 (SOCKET outlet switched 13amp double, wall / trunking mounted) adjacent to item throughout the project. From Mains OUT315 (OUTLET drinking water for equipment) and a low level OUT006 (SOCKET outlet unswitched 13amp single, wall mounted) throughout the project. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 111 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 13 - Ovens:** Electrical supply to this item be standardised as an OUT052 (CONNECTION UNIT switched 13amp, wall/trunking mounted to M&E detail) as well as an OUT054 (CONNECTION UNIT unswitched 13amp, with pilot light) above and a cable outlet OUT002 (OUTLET cable, wall/trunking mounted) behind unit throughout the project. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 112 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 14 - TV's:** Electrical supply to this item to be standardised as an OUT206 (SOCKET outlet television aerial, single, wall mounted) & an OUT010 (SOCKET outlet switched 13amp double, wall / trunking mounted). | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 113 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 15 - Microwave oven, Toaster & Kettle:** Electrical supply to this item to be standardised as an OUT010 (SOCKET outlet switched 13amp double, wall / trunking mounted) adjacent to item throughout project. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 114 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 16 - Bedpan Macerator:** Electrical supply to this item will be standardised as an OUT075 (OUTLET isolator, 32 amp, TP&N, wall mounted 3 phase) and an OUT046 (CONNECTION UNIT unswitched 13amp, flex outlet, wall mounted) adjacent to item throughout project. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |

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| 115 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 17 - Fax Machine, Copier, Printer:** Electrical supply to these items to be standardised as an OUT010 (SOCKET outlet switched 13amp double, wall / trunking mounted) and an OUT121 (SOCKET outlet data; wall/trunking mounted) throughout the project. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 116 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 18 - Over Head Projector:** Electrical supply to this item to be standardised as an OUT010 (SOCKET outlet switched 13amp double, wall / trunking mounted) throughout the project. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 117 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 19 - Resus Trolley, ECG, Mobile Suction Apparatus, Electric Portable Suction Unit:** Electrical supply to these items to be standardised as an OUT010 (SOCKET outlet switched 13amp double, wall / trunking mounted) throughout the project. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 118 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 20 - Examination Lamp (wall mounted):** Electrical supply to this item to be standardised as an OUT052 (CONNECTION UNIT switched 13amp, wall/trunking mounted to M&E detail) adjacent to the unit and a cable outlet OUT002 (OUTLET cable, wall/trunking mounted) behind unit throughout the project. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 119 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 21 - Reception desks:** A generic description referring to architectural detail to be used throughout the project i.e. COU8037 - COUNTER, RECEPTION - Bespoke furniture - Details as design. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 120 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 22 - Staff Base/ Nurse Base:** A generic description referring to architectural detail to be used throughout the project i.e. COU8005-COUNTER, STAFF – Bespoke | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |

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| 121 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 23 - Sanitary bins:** BIN9000 (BIN, sanitary) to be added in all unisex and female WC's. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 122 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 24 - Soap Dispensers:** Will be fixed on the wash hand basin panel on the left hand side and paper towel dispensers on the right with mirrors and shaver sockets as close as possible next to the wash hand basin. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 123 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 25 - Hand dryers -** Electrical supply to this item to be standardised as an OUT059 (CONNECTION UNIT switched 13amp, flex, indicator light). | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 124 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 26 - Wash hand basin- Independent wheelchair/Accessible WC's:**<br>NA Codebook cell WAS902L/R (BASIN, for accessible WC's, right/left hand, small, general pattern, vitreous china, 1 central tap hole, no overflow, exposed waste, 400x370mm, HTM64LBG/S) to be used. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 125 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 27 - IPS panels:** Will be added behind wash hand basins, WC's, Disposal Units & sinks. IPS8006 (IPS PANEL 125 deep; length as drawn) is used for wash hand basins and sinks generally 750mm in length and IPS8000 (IPS PANEL 300 deep, length as drawn) used for WC's and Disposal units. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 126 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 28 - Shelves:** A maximum of 5 shelves to be placed on top of each other (at 350mm intervals), with top shelf at 1700mm off floor level. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 |
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| 127 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 29 - Wheelchair turning circles:** SPA8013 (1500 DIAM. WHEELCHAIR TURNING CIRCLE) to be added in all Independent/Disabled as well as assisted rooms where the Room Data specifies that the patient may be in a wheelchair | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 128 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 31 - Computer workstation arrangements:** Will comprise of the following - 1 x COM032 (COMPUTER VDT MONITOR, (Part of COM031) or COM046 (COMPUTER MONITOR, 15 "; TFT, digital flat panel display, desk top) depending on the brief , 1 x COM031 (COMPUTER KEYBOARD, (Part of COM031), 1 x COM033 COMPUTER KEYBOARD, (Part of COM031), 2 x OUT010 (SOCKET outlet switched 13amp twin, wall/trunking mounted), and 1 x OUT121 (SOCKET outlet data; wall/trunking mounted). | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 129 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 32 - 300mm Opening:** An unobstructed space of at least 300mm on the pull side of the<br>door between the leading edge of the door and any return wall will be left open to provide for wheelchair access in accordance with DDA requirements. | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |
| 130 | Following a review of the Room Data Sheets, we have a number of queries relating to the Standardisation of equipment which we would normally propose at the beginning of the Room Loading process. Please can you confirm whether you accept our proposals;<br><br>**QUERY 33 - Services:** Power outlets will be standard regardless of whether it is wall or trunking mounted. OUT012's briefed (SOCKET outlet switched 13amp twin, trunking mounted) will be replaced with item OUT010 (SOCKET outlet switched 13amp twin, wall/trunking mounted). | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed | | n/c |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 |
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| 131 | With reference to ITPD Volume 3 appendix A Bid Deliverables we would be pleased if the Board could clarify the following deliverable requirements:<br><br>Section 2.11: Heli pad proposals: Is this limited to location on roof level or does the Board require details on structural support, fire fighting, lighting etc<br><br>Section 3.5: Please confirm if this is the same deliverable as 3.26 or confirm what the Board require under this deliverable if different.<br><br>Section 3.22: Heli pad M&E services design strategy. Please confirm the Board's operational strategy/protocol so we may consider this in more detail. Alternatively, is this amplification of item 2.11 above.<br><br>Section 3.26: See above item 3.5 clarification request.<br><br>Section 4.0 General: Please advise what level of specifications the Board require at this stage. We propose to submit outline specifications unless stated otherwise within our submission.<br><br>Section 4.19 Fittings, fixtures and furniture: Could the Board please clarify what is required in this section.<br><br>Section 4.20: Soft Furnishings: Could the Board please clarify what is required in this section.<br><br>Section 4.21: Works of Art: Could the Board please clarify what is required in this section.<br><br>Section 4.22: Could the Board please clarify what is required in this section.<br><br>Section 4.24: Services Equipment: Could the Board please clarify what is required in this section.<br><br>Section 4.57: Could the Board please clarify what is required in this section.<br><br>Section 6.10 Equipment: Could the Board please clarify what is required in this section.<br><br>Your earliest response would be most appreciated. | - | Info | No action required in respect of this RFI. | Agreed | | n/c |
| 132 | 1. Could area 7 be made available to us for siting Phase 1 offices and Welfare on Commencement phase 1 of Construction.<br><br>2. Could area 8 be made available to us for siting Phase 2/3 offices and welfare in August 2010 assuming in our bid Car Park 2 is on Area 4.<br><br>Note: Previous land usage requests:<br>RFI 071 only covers part of Area 7<br>RFI 080 response makes available to us Area 4 but this RFI was raised prior to us moving position of car park 2 and its availability will now depend on Car Park 2 Programme.<br><br>Please can you respond as a matter of urgency: this information is required later today if possible. | - | NC | Response is included in bid return, this on Watchlist to be developed and agreed with Brookfield prior to mobilisation. | Agreed* | *Subject to availability as per BCL bid submission. | To be agreed pre-contract and therefore prior to mobilisation. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 |
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| 133 | With reference to Tender Addendum **TAD-00023**, and the attached documents **'NSGH Suggested Drawn Rooms'** and **'NCH Suggested Drawn Rooms'**, please clarify the following discrepancies in relation to the Document Volume Three 'Bid Deliverables and Evaluation', Section 2.9 '1:50 Room Layout and Wall Elevations' ITPD List of Key Rooms :<br>(1) There are duplicate Room Types (ADB Briefing Code);<br>**X0240** – used for:<br>NSGH Renal Wards 16 Beds + Day Unit – Minor Procedures & Treatment Room and<br>NSGH Accident & Emergency – Major Procedure Room –<br>**X0253** – used for:<br>NSGH Renal Wards 16 Beds + Day Unit – 4 Station Dialysis Room and<br>NSGH Dialysis Unit (30 Stations) – 4-Bed Dialysis -<br>**V1610 –** used for:<br>NSGH Generic Wards 28 Beds – Patients En-Suite Assisted Shower, WC, & Wash Double Assist<br>NCH Assessment Area 20 Beds – Shower, WC, & Wash: Accessible, Wheelchair Assisted - **N0111** – used for:<br>NSGH Radiology – Radiological/Surgical Endovascular Laboratory Theatre<br>NCH Cardiac Cath Lab & Interventional Radiology Suite – Interventional Radiology Lab<br>**E0127 –** used for:<br>NSGH Radiology – General Computed Radiography Room inc Control Area<br>NCH Radiology **–** General Computed Radiography X-Ray Room inc Control<br>**X0240** – used for:<br>NSGH Renal Wards 16 Beds + Day Unit – Minor Procedures & Treatment Room (inc prep)<br>NSGH Accident & Emergency – Major Procedure Room<br>**X0242A** – used for:<br>NSGH Accident & Emergency – MIU Assess / Treatment Room<br>NCH Accident & Emergency – Assess & Treatment Room A&E, Multi-Functional<br>Please confirm if this is correct? If any require a different Clinical Briefing please provide this to enable us to produce the drawings as requested<br>(2) The following Room Types (ADB Briefing Code); which were included in the Volume 2.1: Appendix E - ADB Room Data Sheets are now missing from the **'NSGH Suggested Drawn Rooms'** and **'NCH Suggested Drawn Rooms'**;<br>**C0201**, **C0304**, **C1020**, **K0378**, **T0106**, **T0212A**, **X0206**, **X0238** and **X0255**.<br>Please confirm that these rooms are no longer required to meet the Bid Deliverable requirements?<br>(3) The following Room Types (ADB Briefing Code); which were not included in the Volume 2.1: Appendix E - ADB Room Data Sheets are now included in the **'NSGH Suggested Drawn Rooms'** and **'NCH Suggested Drawn Rooms'**;<br>**Z0303** – NSGH Aseptic Dispensary Model 2: CIVAS Outer Support Room (prep)<br>**Z0404** – NSGH Aseptic Dispensary Model 2: TPN Outer Support Room (prep)<br>**Z0105** – NSGH Option 3 Dispensary (Adult and Children) – Dispensary<br>**C0216** – NSGH Outpatient Department Accommodation – Consulting / Exam Room (interconnecting)<br>We do not have ADB Room Data Sheets for these, please can you provide the brief as **.mdb** or **excel** format?<br>In addition, please note that the department '**NSGH Aseptic Dispensary Model 2**' does not currently have an SOA breakdown, and is currently noted as 'block allowance'. Please provide the detailed SOA to enable the design of the 2xrooms requested? | - | NC | Equipment list on Watchlist to be rationalised and concluded as an element of design development. | Agreed* | *Subject to BCL bid submission | n/c |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 |
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| 134 | You have confirmed in addendum 22 that the Biochemistry block AN is to be demolished April 2012.<br><br>Please advise whether this space could be made available for relocation of the service yard compound beyond the new build site boundary into the cleared space as per the attached sketch. | - | Info | No action required in respect of this RFI. | Agreed* | *Subject to space being available upon Labs completion. | Waste compound now being located elsewhere, per discussions with BE at recent meetings. |
| 135 | With reference to ITPD Volume 3 appendix A Bid Deliverables we would be pleased if the Board could clarify the following deliverable requirement: Section 12.8: Whole Life Cycle Cost Estimate for 30 Year Period.<br><br>At the Commercial Dialogue meeting No 3 it was confirmed by the Board that it was actually Life Cycle Cost (LCC) that is required rather than Whole Life Cost (WLC). On this basis we propose to submit the following:<br><br>1) Published high level cost per m2<br>2) Replacement Costs and timescales<br>3) Planned & Preventative Maintenance<br>4) Energy Usage assumptions<br>5) Energy Cost assumptions<br><br>The following items shall be evidenced in relation to the above:<br><br>**Building**<br><br>Roof<br>Cladding<br>Glazing<br>Decoration<br>Flooring<br>Partitions<br>Ceilings<br>Grounds Maintenance<br><br>**(continued over)** | - | Info | No action required in respect of this RFI. | Agreed | | n/c |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 |
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| 135 (contd) | **Mechanical**<br><br>- AHU's<br>- Chillers<br>- Boilers<br>- Pumps<br>- CHP<br>- Controls<br>- Sanitary fittings/water consumption<br><br>**Electrical**<br>- Lighting lamps<br>- Lighting controls<br>- UPS<br><br>**Medical systems**<br>- Pneumatic Tube systems<br>- Medical gases<br>- Robotics<br><br>**Vertical Transportation**<br>- Escalators<br>- Lifts<br><br>We would be pleased if the Board could confirm this is acceptable or alternatively advise any other elements/systems that would be required.<br><br>Your response at the earliest would be gratefully appreciated. | | | | Agreed | | |
| 136 | Re Laboratories: Equipment<br><br>We would be pleased if the Board could confirm if an Equipment List will be issued for the Laboratories for the Bidders to price or alternatively please advise what the Board require bidders to provide in the submission in relation equipment to the Laboratory facility | - | Info | This will comprise an aspect of the Stage E Laboratories Design Information | Agreed | | |
| 137a | Re Laboratories: Bills of Quantities/M&E Tender Addendum 022<br><br>We would be pleased if the Board could confirm if they require the bidder to complete pricing information using the Bills of Quantities and tender addendum 022 format or the pricing templates included in Volume 3. | - | Info | No action required in respect of this RFI. | Agreed | | |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 |
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| 137b | Re Medical Equipment on Schedule of Components<br><br>We would be pleased if the Board could confirm if they require the bidder to price for the following medical equipment items contained on the Schedule of Components.<br><br>IMG026 IMAGE INTENSIFIER and X-RAY TUBE FLUOROSCOPY, U-arm, floor mounted, (intensifier underneath the table, x-ray tube above)<br>IMG061 IMAGER, COMPUTER TOMOGRAPHY (CT) , 16 slice unit<br>IMG066 TABLE PATIENT - CT imager, floating top, (Part of IMG061)<br>IMG082 IMAGER, MAGNETIC RESONANCE IMAGING (MRI), open<br>IMG083 TABLE PATIENT - MRI imager, movable top, on castors, (Part of IMG082<br><br>**Continued over** | - | Info | No action required in respect of this RFI. | Not Agreed | Refer to Brookfield Bid submission Volume 6 which identifies equipment allowed for within bid. | Equipment list to be adjusted to reflect items that have been omitted in commercial adjustment (e.g. renal equipment and other medical equipment). |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 |
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| 137b (cont'd) | IMG021 IMAGE INTENSIFIER UNIT, C-arm, mobile<br>IMG023 IMAGE INTENSIFIER, monitor, (Part of IMG021)<br>IMG024 IMAGE INTENSIFIER, monitor trolley, (Part of IMG021)<br>IMG070 IMAGER GAMMA CAMERA, digital, single detector, with monitor<br>IMG072 IMAGER GAMMA CAMERA, digital, multi detector/PET, with monitor<br>IMG073 TABLE PATIENT - SPECT, gamma camera, variable height, 970/730H 2060W 720D, Part of gamma camera)<br>IMG074 IMAGER COLLIMATOR RACK, gamma camera, 1300H 770W 800D, (Included in IMG070, IMG071, IMG091)<br>IMG075 IMAGER COLLIMATOR RACK, gamma camera PET, (Included in IMG072 and IMG091)<br>IMG076 IMAGER CART exchange collimator, gamma camera, 1270H 670W 910D, (Part of IMG070 and IMG072)<br>IMG077 CONSOLE UNIT and COMPUTER for gamma camera/PET, 1180H 1040W 900D, (Included in IMG070, IMG071, IMG072 and IMG091)<br>IMG079 IMAGER DISK UNIT optical, (Part of IMG077)<br>IMG116 IMAGE GENERATOR/POWER DISTRIBUTION CABINET, (Part of fluoroscopy imager) | | | | Agreed | | |


**continued**

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 |
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| 137b (cont'd) | IMG041 IMAGER MAMMOGRAPHY UNIT, with rotation of swivel U-arm, floor mounted<br>IMG042 IMAGER CONTROL CABINET and GENERATOR for mammography, approximate 2000H 1000W 1000D<br>IMG043 IMAGER POWER CABINET for mammography, with on/off and emergency off button, (Part of IMG041)<br>IMG044 CONTROL CONSOLE and RADIATION PROTECTION SCREEN for mammography unit, (Part of IMG041)<br>IMG055 IMAGER BONE DESITOMETRY UNIT, with rotating detector/X-ray tube and mowing couch, floor mounted, approximate 1500H 1500W 3000D<br>IMG056 IMAGER CONTROL CABINET for bone densitometry, approximate 1500H 750W 750D, (Part of IMG055)<br>IMG102 MONITOR viewing flat panel display for image intensifier, (Part of IMG025, IMG026, IMG028 and IMG030)<br>IMG104 TROLLEY for monitor image intensifier, (Part of IMG102)<br>IMG105 TABLE PATIENT - image intensifier, X-ray, floating top, (Part of IMG026, or IMG030)<br>IMG109 IMAGING CHAIR, with arms, tilt, on castors<br>IMG142 IMAGING, Computed Radiography Unit, low/medium-throughput, CR plate reader, o/a 1415H 730W 700D<br>**continued** | | | | Agreed | | |
| 137b (cont'd) | XRA001 X-RAY UNIT TUBE, dental, mobile<br>XRA007 X-RAY IMAGING UNIT, adjustable arm 1840/580mm, electric, mobile, battery driven, 1840H 2240W 660W | | | | Agreed | | |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 |
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| 138 | There is no # 138 (137a and 137b however). | | | | Agreed | | n/c |
| 139 | We would be pleased if you can provide any information detailing the existing Arts program within the Board and in particular any existing art strategy within the Southern General Hospital. | - | Info | This information is addressed under the BIW Log to be issued to Brookfield under separate cover. | Agreed | To Check BIW log | n/c |
| 140 | Please advise whether the mortuary building referred to in the 1978 Thorburn report when discussing the trial shaft, is the same mortuary building that is adjacent to the Urology and Pathology units to the east of the existing heli-pad. | - | Info | No action required in respect of this RFI. | Agreed | | n/c |
| 141 | Re Mock Ups<br><br>We would be pleased if the Board would confirm if they are happy for Brookfield to price for the provision of the following mock ups or alternatively add or delete any other rooms you wish us to include.<br><br>Single bed en suite with touch down space<br><br>4 bed bay with en suite<br><br>Dirty Utility<br><br>Clean Utility<br><br>Consultant's Exam room | - | Info | No action required in respect of this RFI. | Agreed | | Discuss mock-up location, timing, extent with BE prior to contract. |
| 142 | Re: Laboratories/Permit to Discharge Certificate<br><br>We would be pleased if the Board would confirm if there are any substances that require special treatment prior to discharge into the drainage system.<br><br>In addition, would the Board confirm that they will procure the Permit to Discharge Certificate. | Y | - | This is an aspect of the design that the Contractor is responsible for and requires to develop and satisfy in the Laboratory element of the scheme. | Not Agreed | Confirmed in dialogue that there were no requirements for special drainage. Board to procure the Permit to Discharge Certificate | |
| 143 | Re: Laboratories Design- Home Office Requirements<br><br>We would be pleased if the Board would confirm if the design of the Labs facility or any distinct parts of the facility is/are required to meet any Home Office standards. | - | Info | This will comprise an aspect of the Stage E Laboratories Design Information | Agreed | | BE to comply with original RFI response as ER requirement. |
| 144 | Have, and how have, the Labs team achieved the 80kgCO2/m2/annum design energy target? | Y | | This is an aspect of the design that the Contractor is responsible for and requires to develop and satisfy in the Laboratory element of the scheme. | Not Agreed | As clarified in Brookfield Bid submission, the ITSFB design does not currently meet this requirement and any fundamental change to the Labs Scheme that may be required to be implemented, if practical, to achieve this energy target will be a Change under the Contract | Compliance to be achieved upon connection to the Energy Centre. |

| Ref | Information Requested | Add | No Change / Info | Board Comment 1 | Status | Brookfield Comment | Board Comment 2 |
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| 145 | Re: Cladding Materials to Labs & FM Buildings<br><br>There seems to be some discrepancy on cladding material information shown on the Planning drawings compared to information in Pricing Schedules and the Outline Architectural Specifications. We would be pleased if the Board would clarify and confirm which document takes precedent. | - | Info | This will comprise an aspect of the Stage E Laboratories Design Information | Agreed | | Planning drawings and outline specification take precedence per original RFI response. |
| 146 | Further to TAD 00025 with the Laboratories Ecological Report attached, we would be pleased if the Board would confirm if it is the intention of the Board to procure a Bat Survey on the Laboratories the Energy Centre Site and the Main Hospital Site as indicated in the URS Report dated July 2009 section 6.1.2 , Page 7. | Y | - | The bat survey is available from the Board w/c 23 November 2009. | Agreed* | *Bat survey is still awaited. | Bat survey will be uploaded to BIW Volume 6 (new volume) |
| 147 | Re Energy Centre<br><br>We would be pleased if the Board would urgently confirm the start date of the Energy Centre as there appears to confusion as to the verbal advice given at the last dialogue meeting. | - | Info | No action required in respect of this RFI. | Agreed | Brookfield would note that all Works in this regard is currently included in Stage 3 Works. | Energy Centre will be part of Stage 3 and expectation is that the shell, as a minimum, will be completed in year 1 to coincide with completion of laboratories. |

**New South Glasgow Hospitals Project**
**Bid Submission Clarifications**
**Bidder: 1 (Brookfield)**

| Item | Topic/Bid Reference | Board Clarification | Bidder Response | ADD | NO CHANGE / INFO | BOARD COMMENT |
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| Technical Clarification 1 | | | | | | |
| **General** | | | | | | |
| 0.0 | | | | | | |
| **Logistics** | | | | | | |
| 1.0 | Site Parking | You have options but no firm plans for site parking, please confirm that the provision for site parking (incl any delivery area/holding area/lay-down areas off site) for all phases are included in your priced bid. | Brookfield have considered a number of options with regards to temporary parking/holding areas etc during the construction period and should we be selected would wish to discuss with the Board and other interested parties these arrangements to develop a strategy for the benefit of the Project. In the meantime, we confirm our prelims identify pricing allowances for the relevant Stages and refer you to the logistics section. In addition, our procurement strategy with regards the supply chain will include for the provision of temp parking spaces and this will be identified in the cost when packages are let accordingly. I.e. the amounts in the Prelims will be supplemented by amounts in the trade cost plan. We also recognise that using local labour will enable us to encourage the use of public transport to mitigate the requirement for extensive on site/off site temporary parking. Finally whilst we identified on the risk register temporary parking as being an issue to resolve, we felt a combination of the above will be sufficient to deal temporary parking and this reduced the risk element to acceptable. | | NC | Costs contained within prelimns, trade cost plans and risk<br>Brookfield will provide a summary paper of draft proposals for off site parking |
| 2.0 | Delivery Team | Several of your proposed delivery team appear to have commitments to another healthcare scheme (i.e. Peterborough). Please confirm how your delivery team will be deployed in line with the NSGH timescales and your programme requirements. | We reaffirm our commitment that the proposed delivery team will be deployed in accordance with the NSGH timescales and our programme requirements. Taking each stage:<br><br>- Labs Construction Team:<br>The individuals noted are available now, and no longer have commitments on Peterborough.<br><br>- FBC/Core team:<br>The individuals are available now, and have already been working on the NSGH project.<br><br>- Adult/Children's Team:<br>The individuals identified will be available before November 2010.<br>At Peterborough, the Mental Health Unit and City Care Centre have already been completed on programme and handed over to the Trust earlier this year. This has released some of the individuals who have since being involved in the bid submission. The main Acute facility is 3 months ahead of programme and notice will be given shortly to confirm the end of September 2010 date for handover. Many departments are being closed off progressively (as some of the Board's team will have witnessed during the recent site visit). By the end of 2009, the Acute facility will be into testing and commissioning phase and we are confident that a September 2010 completion is likely and the individuals will be available as scheduled. | | NC | |
| **Design/HP** | | | | | | |
| 3.0 | Entrances | Confirm your proposals for significant entrances to the site per ER requirement in this regard. | The NSGH campus masterplan has been configured to provide clear entrances which lead directly to the primary arrival space at the heart of the campus. Entrances have been designed in plan form to provide the | | NC | |

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| | | | necessary function and capacity to respond to highway requirements associated with the various modes of transport. Significant entrances are to be delivered as features within the context of both the wayfinding and public art strategies. The entrances are important as part of the legibility and identity of the rejuvenated hospital campus. To achieve this it will be necessary for the design team to work with the Board to determine the correct balance between an innovative and unique site-specific response (informed by public art) and the guidance for standardised signage contained within the NHS Scotland guidance for signage and branding for use within NHS sites (which we have reviewed). For this reason our designs have not been developed beyond the concept stage in advance of Stage 2 engagement. The attached concept images illustrate the general potential for an entrance feature sign at the primary Govan Road entrance to<br>the site, but should not be considered a firm design proposal at this point. We can confirm that the commercial proposal includes provision for this approach.<br><br>Our drawing GIL-WS-00-PL-502 illustrates the signage hierarchy and proposed locations for the various sign types. This includes the proposed location of campus gateway signage features at the key entrances to the campus. It is intended that the main entrances should include feature lighting as part of the significant entrance features. It should be noted that the entrances need to be considered in parallel with the design and quality of the main arrival square, as this forms an important part of the entrance and arrival sequence and experience. The point of entrance and the route to the arrival square should therefore be considered as part of the entrance arrangement. | | | |
| 4.0 | Specification | Confirm your proposals for electronic information points per ER requirement (7.15.4) in this regard. | In response to the ER requirement (7.15.4) we have made provision for 1x 'Real Time Public Transport System' electronic Information Point externally at the Bus Drop-Off Area.<br><br>Additionally, in response to ER requirement (7.2.19), as part of our Wayfinding Strategy we have proposed electronic/interactive 'You Are Here' maps in the Main Entrance Foyers to both the Adult and Children's Hospitals.<br><br>Please refer to our Wayfinding Strategy contained within **Volume 3.0; Section 3.2** for further details of our proposals and imagery. | | info | |
| 5.0 | Interstitial Blinds | Confirm your strategy for interstitial blinds to external windows/façade and internal observation screens (this to include a cross-section detail of your proposal(s)). | Interstitial Blinds have been included in our priced bid to **internal** glazed screens generally to all Bedrooms, including those within Critical Care (Adult Hospital and Children's PICU), AAU and all Inpatient Wards (Adult and Children's Hospitals).<br>In addition, interstitial blinds have been included to internal door vision panels as part of our Internal Door detailed proposals. Our Internal Door Strategy is contained within the Introduction to<br>Volume 2.0; Section 2.21<br>- Door & Ironmongery Schedules. Where a door is noted in the Schedule as being<br>'obscurable'<br>, this equates to a vistamatic type vision panel with interstitial blinds.<br><br>Please note that our priced bid does not currently have a provision for internal blinds or curtains which are not integral to the internal fabric of | Y | | Interstitial blinds are to be included for all external windows.<br><br>This was allowed for as an adjustment to our original bid |

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| | | | the building. In our past experience these items would be included in the Equipment List. We have priced this List accordingly as requested by the Board, and would be pleased to debate with the Board further whether these items should be included within the Equipment List.<br><br>With respect to **external** windows, we have included for interstitial blinds to all external windows in patient areas within Critical Care (Adult Hospital and Children's PICU).<br><br>Again, please note that our priced bid does not currently have a provision for internal blinds or curtains which are not integral to the internal fabric of the building.<br><br>Please refer our separate attachments for the requested detailed section drawings, our Internal Glazed Screen Strategy Document and External Windows Privacy Strategy Document. | | | |
| **M&E Services** | | | | | | |
| 6.0 | | | | | | |
| **Renewables/Sustainability/BREEAM** | | | | | | |
| 7.0 | Carbon | You noted at the presentation of 21 September you're your variant 2 for Laboratories will achieve the 80Kg CO2m2 – can you confirm that your compliant bid achieves this target also. | Achieving the 80kg CO2 m2 for both the compliant and Variant Option 1 Laboratory bid will be dependant on the construction of the Energy Centre, with which the overall solution is integrated. **RFI 144** refers and is attached for ease of reference.<br><br>As noted in **RFI 147** (attached) the Energy Centre is dependant on FBC and commencement of Stage 3.<br><br>Variant Option 2 offers an integrated M&E plant solution and the early construction of the Energy Centre shell and core to house it. This may be achieved through an advanced design and planning process and cash flow solution indicated in Volume 16 of our bid submission. | | info | Note that stand alone Labs does not achieve 80kg $CO_2/m^2$ |
| 8.0 | BREEAM | Clarify BREEAM Ene 1 score – 8 and 11 referred to in different sections. | Please note the correct score is 8 and we apologise for the confusion. | | info | |
| 9.0 | Renewables | Confirm which LZC and renewables are included in the bid. | LZC –<br>3MW Combined Heat and Power units.<br>High efficient friction less bearing chillers providing COP 9.<br>1000kW Absorption chiller unit.<br>Active chilled beams.<br>Variable speed pumps.<br>Natural daylighting.<br>Natural ventilation.<br><br>Renewables.<br>12no Vertical axis wind turbines. | Y | | |
| 10.0 | Energy Model | Confirm that the energy model is fully compatible with the servicing strategies set out in volume 3 in particular the use of a sealed building with chilled beams. | Brookfield confirm the energy model is fully compatible with the requirements as set out in Volume 3 in particular the use of sealed building with chilled beams. | Y | Info | Refer to Sustainability and Energy Issues<br>This situation may change dependent upon the conclusion of the ward ventilation issue |
| 11.0 | Energy Monitoring | Confirm that the energy monitoring system illustrated is included in the bid. | Brookfield confirm the energy monitoring system is included in the bid. | | Info | Refer to M&E Schedule for confirmation of position on building metering |
| 12.0 | Energy Management | Has active energy management been included for by BE post construction as per clarification? | Brookfield confirm we will provide active monitoring, reporting and fine tuning during the 24 months DLP period. Please refer to our Volume 3 Sec 3.24 Item 1 Building Services Commissioning Strategy, Post Occupancy DLP Period for further information. | Y | | |

| Item | Topic/Bid Reference | Board Clarification | Bidder Response | | | |
|---|---|---|---|---|---|---|
| Technical Clarification 2 | | | | | | |
| **General** | | | | | | |
| 1.0 | Bid Return Section 5 – Component / Product & Manufacturer Schedule | Noted that M&E related items do not appear in Section 5.<br><br>Clarification required of M&E component/product and manufacturers as well as (for all elements) that listed names will be utilised or "equal and approved" component/product manufacturers. | Full component schedule is as detailed in ***Appendix Q1*** attached<br><br>This indicates the quality of manufacturers proposed for components / products | | | Component manufacturer Schedule to be completed<br>Schedule issued to Board for comment |
| 2.0 | Bid Return Section 7 – SHTM Compliance | **Mandatory Section** – clarification is required with regard to the following items:<br><br>**SHTM85 and SHTM86** – these are relevant as the design joins the existing hospitals, what are the proposals to comply in this regard.<br><br>**Health and Safety Action Notices (HSANs)** – require to confirm will comply with rather than "with reference to".<br><br>**NHSE10 and SN(01)01** – confirmation that anti-ligature is included in A&E as well as DFCP.<br><br>**NHSE HN04** – confirmation that anti-ligature is included in A&E as well as DFCP.<br><br>**SFPN3** – clarification required of how compliance with updated document will be achieved/documented.<br><br>**SHTM2010** – confirmation required that design will comply with rather than "with reference to".<br><br>**SHTM2003** – notes that the services follow the principles set down in the HTM – clarification of compliance with the SHTM required (and specifically compliance with the services dimensions to be provided).<br><br>**SHTM2024 Part 4** – confirmation required that original maintenance provisions are included and priced in the bid. | Full clarifications have been provided in the attached<br>***Q2 Appendix*** | | | Compliance appears generally in order but reference to missing document and reference to other bodies to be clarified, general note accepting compliance narrative in good faith but that compliance would require to be demonstrated during the detailed design.<br><br>Need to check this further, don't have Q2 appendix |
| 3.0 | Bid Return Section 7 – SHTM Compliance | Where no specific options have been listed in your bid return (ref ERs 5.2.3) clarify that all options remain available to the Board with no additional costs to the Board. | We have endeavoured in our bid submission to confirm in detail the basis of our design, specifications and cost plan. To avoid uncertainty these proposals need to take priority over the various options given in the various documents scheduled in tables 2 and 3 of the ER's.<br><br>We are however conscious that within the various documents there are options that the Board may feel would enhance the scheme and assist in producing an exemplar facility. We are more than happy to review any options with the Board, within the confines of the cost plan, to ensure that the optimum solution is adopted across the project" | | | |
| **Logistics** | | | | | | |
| - | - | No items in this TC. | | | | |
| **Design/HP** | | | | | | |
| 4.0 | H+S Landscape | Courtyards – clarify what is intended by white gravel? | The white gravel is a aesthetic material used in geographical arrangements | Y | | |

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| | | | producing dramatic patterned landscapes when viewed from above. This material can be laid loose or bound to correspond to the courtyards function. Please refer to drawings GIL-WS-00-EF-S04 Courtyard Design Intent. ***See Appendix Q4-7 attached*** | | | |
| 5.0 | H+S Landscape | Aside from the separately identified therapy courtyards is there any access or intended function for the remaining courtyards indicated? | The other courtyards have the potential to be accessed depending on the adjacent hospital departments, to be developed further with the board. Please refer to drawings GIL-WS-00-EF-S04 Courtyard Design Intent<br>***See Appendix Q4-7 attached*** | Y | | |
| 6.0 | H+S Landscape | External Works Layout Dwg No. CD-WS-00-PL-711-01 indicates concrete blocks to the front of the hospital. The masterplan Dwg No. GIL-WS-00-PL-100 indicates exposed aggregate concrete paving. The Outline Specification for roads, car parks, pavements and cycle paths suggests paving in these areas will be natural stone granite. Can we clarify actual proposals for these areas? | The palette of materials has been selected to provide a cost effective high quality environment. Natural granite is proposed to the entrance thresholds with concrete pavers with exposed granite aggregate proposed to the arrival square. Please refer to drawings GIL-WS-00-EF-S05 Arrival Square Pavement Design intent<br>***See Appendix Q4-7 attached*** | Y | | |
| 7.0 | H+S Landscape | The drawings indicate a limited number of bike shelter locations (2No.)? Is this correct or are other bike shelter locations intended? | The two cycle shelters shown on the master plan are key structural features place near the main entrances, other cycle stands are located throughout the site in key location. Please refer to drawings GIL-WS-00-EF-S06 Cycle Parking Strategy and GIL-WS-00-PL-115 Vehicle Movements- Cycles<br>***See Appendix Q4-7 attached*** | Y | | |
| **M&E Services** | | | | | | |
| 8.0 | M&E Services | Please indicate any deviations from M&E elements of the ER's. | The following deviations are proposed:<br>• UPS autonomies proposed are compliant with SHTM 06-01 and differ in some respects from the ERs. | | | Refer to RFI Log<br>Agreed |
| | | | • The proposals for automatic lighting controls as described in Volume 3 Section 3.12 and Volume 4 Section 4.3.6 differs in some respect from the ERs. | | | Refer to RFI Log<br>Agreed |
| | | | • A single energy centre is proposed split into two plant spaces with 4 hour fire separation to provide the resilience of two separate energy centres. | Y | | This needs to be accepted as a derogation against the ER's which call for 2 Energy Centres |
| | | | • N+1 has not been provided to all plant as noted in Volume 2/1 Clause 8.1.1.17. N+1 has been included to all energy source plant, pumps, heat exchangers and duplicate motors provided on air handling plant. | | | Addressed on M&E Design Summary<br>Agreed |
| | | | • Dual path distribution has not been provided on all systems as this would be impractical for piped systems and specialist electrical systems, e.g fire alarms. Supplies from the energy centre have an element of duplication for resilience and electrical power distribution has A & B separation throughout using diverse routes wherever possible. | | | Addressed on M&E Design Summary<br>Agreed |
| | | | • Bulk water storage has been based on the busiest 12 hour period rather than 24 hour as suggested in volume 2/1 clause 8.2.8.2. It is considered that with duplicate incoming water mains to the site a reduced water storage capacity will reduce the risk of legionella. | | | Deviation not accepted<br>Awaiting response from Board on ZBP water storage calcs. Brookfield proposal now moves water tanks into Energy Centre. |
| 9.0 | M&E Services | Please confirm that racks will be provided for Client's active equipment. | The following allowances have been made:-10 racks in each of the adult's and the children's hospital main comms rooms, and<br>2 racks in each hub room | | | Deviation from ER's not accepted<br><br>The ER's call for<br><br>C1-C6 External comms<br>S1-S10 Board servers<br>E1-E8 General board equipment.<br>B1-B6 contractors equipment including patching BMS CCTV raid etc.<br>3 racks in each hub room<br>Agreed |

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| 10.0 | M&E Services | Please confirm that BMS IP network will be fully stand alone and that all active equipment has been included. | Yes | | NC | |
| 11.0 | M&E Services | Please confirm that asset tagging system has been included and that all services equipment shall be tagged. | Included | | NC | Plant replacement strategy for large items requires to be further developed in Stage 2 Agreed but should be on comment below |
| 12.0 | M&E Services | What function does scaffolding platform have in plant replacement strategy for transformers and generators. | The scaffolding platform allows a level surface for the equipment to be withdrawn from the plant space and craned off to ground level | | info | |
| 13.0 | M&E Services | Confirm that reference to BOC should be “Air Products”. | Yes | | info | |
| 14.0 | M&E Services | Please provide luminaire details to supplement pictorial views | Refer to separate document outlining details ***See Appendix Q14 attached*** | Y | | |
| 15.0 | M&E Services | Please confirm light switches will be selected to suit lighting control system. | Yes | | NC | |
| 16.0 | M&E Services | Please confirm that bedside adjustable luminaires will be a modern low energy high output units. | Yes | | NC | |
| 17.0 | M&E Services | Please confirm fire alarm PC includes incident location graphics. | Included | | NC | |
| 18.0 | M&E Services | Please confirm that 4 CHP units have been proposed as the narrative (schedule indicates 3). | Three CHP units are proposed | | info | |
| 19.0 | M&E Services | Television outlets on equipment schedule (are these back up for the CAT6A for digital distribution via the patient entertainment system? | YES, This allows flexibility and future proofing | | info | |
| 20.0 | M&E Services | Please provide details on the proposed patient entertainment systems. | Refer to supplementary schematic MER-XX-XX-SM-1400-001 outlining details ***See Appendix Q20 attached*** | Y | | |
| 21.0 | M&E Services | Please advise how Renal & Specialist Departments water temperature requirements will be achieved. | This system will interact with the BMS which monitors the temperature and, if required, dumps RO water from the circulating loop to maintain optimum temperature conditions. A heat sanitise cycle is also allowed for. | Y | | |
| 22.0 | M&E Services | Confirm reference to 5A Switches equipment schedule should be 20A. | Confirmed | | NC | |
| 23.0 | M&E Services | Please confirm that metering will be provided to meet BREEAM requirements. | Yes | | NC | |
| 24.0 | M&E Services | Please advise proposals for water spillage protection from fan coils in secondary comms room. | Drip drays and leak detection | Y | | Positioning of leak detection to be included in ER’s for clarity Amended ER’s to be issue dfor Brookfield to check<br><br>See Item 34 Appendix B |
| 25.0 | M&E Services | Please confirm compliance with maintainability and area isolation requirements. | Maintainability and area isolation will be incorporated in the design to give compliance. Individual rooms will have isolation of components such as sanitary ware and terminal heating/cooling devices. It will not be possible to isolate each individual room for lighting and power. It will be possible to isolate each individual circuit, and with each room having at least two circuits the room will continue to function | | | Electrical compliance noted however operational resilience for water, PMGS, heating, cooling etc to be reconciled in Stage 2. Board indicated that Resilience only referred to Energy Centre and they were to confirm (See item 35 below) |
| 26.0 | M&E Services | Please confirm that the renal Central Concentrate Delivery system is included (adult hospital). | Yes | | Info | |
| 27.0 | M&E Services | Please confirm that all services comply with HAI – SCRIBE. | The Services Engineer will be part of the overall SCRIBE team along with the Board’s Infection Control Manager, Clinical Advisers, Facilities Manager, and Departmental Representatives, plus the other members of the design team and other relevant specialists. The Services Engineer will discharge the duties as set | | info | |

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| | | | out in HAI-SCRIBE Implementation Strategy | | | |
| 28.0 | M&E Services | Please confirm that all plant and equipment will be suitably isolated to prevent transmission of noise and vibration. | Yes | | info | |
| 29.0 | M&E Services | Please confirm that full environmental proving off all rooms will be provided. | Yes | | Info | |
| 30.0 | M&E Services | Please confirm that all metering requirements will be provided in accordance with the ER's and BREEAM requirements. | Yes | | NC | |
| 31.0 | M&E Services | Please confirm that all services elements are included to meet the fire engineering solution, e.g. stair pressurisation, smoke control etc. | Yes | | Info | |
| 32.0 | M&E Services | Please confirm that ICT cooling has been included and provide details. | Yes, this is achieved with a chilled water solution, via crac units and fan coil units, as appropriate. | | Info | |
| 33.0 | M&E Services | Please confirm that specialist drainage has been included. | Included | | Info | |
| 34.0 | M&E Services | Please confirm that leak detection has been included. | Included | | Info | |
| 35.0 | M&E Services | Please indicate percentage capacity of all water service pipework mains from the energy centre to the main buildings for resilience. | The A and B circuits are sized for 66% of the maximum operational load. The A & B circuits from the energy centre are primary circuits and totally isolated from the secondary plantroom circuits via the plate heat exchanger units. It is envisaged that any routine maintenance | Y | | Addressed on M&E Design Summary<br>Agreed though still to be finalised |
| **Renewables/Sustainability/BREEAM** | | | | | | |
| - | - | No items in this TC. | | | | |
| **Laboratories** | | | | | | |
| 36.0 | Laboratories | The Values on Labs Summary Page for Overhead and Profit do not correspond with % values provided on Stage 1 or Incoming Utility Costs Associated with Stage 1. | This is Correct. The figures are calculated by adding 6.2% plus an apportioned value for overhead recovery. | | | |
| 37.0 | Laboratories | On Labs Final Summary Page (Page 4 of Submission) £281,552.00 in included for Additional Fee and Profit on Max Cost. If you apply the %'s from elsewhere on the page this value would be approx £43K less? | Unlike the way the Board have asked us to submit the MPTC Calculator Brookfield methodology for calculating Overhead and Profit is by taking this amount against Prime Cost excluding Fees which actually means that in the case of the Laboratory Building the gross margin on Prime Cost is circa 7.5% and thus provides the number given. | | | Final Contract MPTC now refers as figures were amended in Commercial Clarification No.3 |
| 38.0 | Laboratories | Can you confirm extent of tunnels included within Stage 1 Section | The bid is based upon the URS and BMJ drawings issued under addendum 34. The basement and tunnels are reduced for the variant option and are as detailed within our Volume 13 of the bid.<br>The extent of tunnels are as per the BMJ demarcation lines identified on the above BMJ drawings | | | Brookfield require the route of the tunnels to be reviewed to ensure that the Labs building and the Adult and Childrens Hospital align. There is currently a mismatch in propose routes that needs to be resolved |
| 39.0 | Laboratories | No evidence of anything noted as "Provisional". Please confirm or provide detail of items to be considered as Provisional. The Bills make reference to "general assumptions". Please confirm that they are not to be considered provisional. | There are no provisional items within the cost plan | | | |
| 40.0 | Laboratories | Substructure: Please confirm what exactly the £100k allowance is for fire escape and stairs includes for. | Fire strategy requirements dictate that an escape tunnel and stair will be required from the basement tunnel that is not currently indicated by BMJ or URS drawings.<br>Cost allowance included is based on similar staircase and concrete enclosure to adult basement tunnel. | | | |

<table>
<tr><td>41.0</td><td>Laboratories</td><td>Substructure: Allowance has been included for 14 Nr lift pits. Please confirm Nrs. Current drawing shows 12 Nr FF, goods & staff Lifts and 4 Nr lifts in connection with Robotics.</td><td>Confirmed, all lift pits are as detailed on the drawings are covered either in this specific item or in general substructure measurement.</td><td></td><td></td><td></td></tr>
<tr><td>42.0</td><td>Laboratories</td><td>Upper Floors: Please confirm all allowances for recesses or thickening of slabs is included.</td><td>Confirmed, included in rates</td><td></td><td></td><td></td></tr>
<tr><td>43.0</td><td>Laboratories</td><td>Stairs:  Number of assumptions/clarifications: Design team to appraise/comment to facilitate in the removal from pricing docs.</td><td>No assumptions made in Cost Plan</td><td></td><td></td><td></td></tr>
<tr><td>44.0</td><td>Laboratories</td><td>Ext Walls: Please identify where Spec item 1.12 (louvers to office block) appear in your bid.</td><td>Allowance taken in copper cladding section.</td><td></td><td></td><td></td></tr>
<tr><td>45.0</td><td>Laboratories</td><td>Ext Walls: Ext brise soleil system included. Not stated as being required on previous dwgs.</td><td>Builders work drawings received 24th August show indication of Brise Soleil and we have based our provision on this.</td><td></td><td></td><td></td></tr>
<tr><td>46.0</td><td>Laboratories</td><td>Windows: Window sizes do not tally with C&B's original measure</td><td>Window are measured from the latest issue drawings as opposed to original C&B measure</td><td></td><td></td><td></td></tr>
<tr><td>47.0</td><td>Laboratories</td><td>Ext Doors: Please advise where Revolving entrance doors are included.</td><td>Taken in External Walls section of Cost Plan</td><td></td><td></td><td></td></tr>
<tr><td>48.0</td><td>Laboratories</td><td>M&E: Please provide details of how M&E values arrived at and if possible provide detailed back up.</td><td>Listed below are the M&E values submitted in our Bid based on a quantity of 25,322 m2<br><br>
<table>
<tr><th>Item</th><th>Unit Rate (£)</th><th>Estimated Cost (£)</th></tr>
<tr><td>5A Sanitary Appliances</td><td>17.09</td><td>432,833.63</td></tr>
<tr><td>5C Disposal Installations</td><td>22.67</td><td>574,000.24</td></tr>
<tr><td>5D Water Installations</td><td>47.58</td><td>1,097,899.44</td></tr>
<tr><td>5E-G Mechanical Installations</td><td>332.69</td><td>8,424,257.16</td></tr>
<tr><td>5H Electrical Installations</td><td>149.68</td><td>3,790,277.99</td></tr>
<tr><td>5I Gas & other fuel installations</td><td>3.73</td><td>94,353.60</td></tr>
<tr><td>5K Protective Installations</td><td>3.13</td><td>79,580.60</td></tr>
<tr><td>5L Communication Installations</td><td>157.22</td><td>3,981,165.48</td></tr>
<tr><td>5N BWICS</td><td>39.42</td><td>998,193.24</td></tr>
<tr><td>5M Special Installations</td><td>11.96</td><td>557,040.00</td></tr>
</table>
<br>See Appendix Q48 for the Summary and details. This information is also included with our response to RFI 007</td><td></td><td></td><td>Note that as a result of Commercial Clarification No. 3 some of these figures may have been amended. For example a reduction was made to Communication Installations. Final Cost Plan to be updated to reflect the final amendments that result in MPTC Figures included within the Final Contract Conditions</td></tr>
<tr><td>49.0</td><td>Laboratories</td><td>M&E Lifts: Current drawings show 4 Nr FF Lifts, 4 Nr Goods</td><td>Drawings show 16nr lifts which we have priced.</td><td></td><td></td><td></td></tr>
</table>

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| | | Lifts, 3 Nr Passenger Lifts and 1 Nr Mortuary Lifts. This does not correspond with your bid. Please advise. | | | | |
| 50.0 | Laboratories | Siteworks: Imported fill for backfilling. Is there no potential to re-use excavated materials ? | Option to re-use excavated material is limited and will require extensive double handling and logistical issues retaining a clean site. | | | |
| 51.0 | Laboratories | Siteworks: No inclusion of barrier system to service yard. Please advise. | Included in bid | | | |
| 52.0 | Laboratories | Ext Services: £5k allowed for main water distribution. Seems low | The allowance is for the final connection between a valved connection on the site water mains and the laboratory building boundary.<br>Site water mains and pipe work within the building are covered within the energy centre section. | | | |
| 53.0 | Laboratories | Please provide statement on Inflation allowances included. | Given that this work will be primarily secured in Year 2010 no allowance has been made for any inflation of the Net Package Costs. It is assumed that all packages can be procured at 2009 prices. There is an allowance within the preliminaries for a 3% staff increase in Jan 2010 and a similar increase in 2011. | | | |
| 54.0 | Laboratories | Has audio/visual system to Mortuary been included? If so, where and how much. | An allowance of £10k has been made with the M&E section of the Tender Bid | | | |
| 55.0 | Laboratories | Please confirm that the Cat 3 Containment Facilities Spec referred to in Clause 1.0, Appendix C1.2 of Outline Architect Spec is included. Is so, please advise where and provide breakdown of value. | The wall, floor and ceiling finish items are based on Polyflor.<br>Single Leaf Doors £ 17,500.00<br>1 /12 Leaf Doors £ 5,000.00<br>Wall Finishes £ 47,900.00<br>Floor Finishes £ 17,300.00<br>Ceiling Finishes £ 8,650.00<br>Safe Change Filters £ 12,000.00<br>Cat 3 Light Fittings £ 8,500.00<br>£ 116,850.00<br>All costs above are net of Sub-Contract Prelims (The percentage additions for S/C Prelims are 10% on internal doors, floors and ceilings and 19% on walls) , B.E. Prelims and B.E. OH&P | | | |
| 56.0 | Laboratories | Has allowance been included in bid for various treatments to soffits under 1F slab in open yard or entrance areas? | Included in bid. | | | |
| 57.0 | Laboratories | Design fees included are different to the fees provided to Bidders. Please provide details of difference. | The difference in design fee for the laboratories is due to additional consultants identified as being required to advise on building control and CDM. We have also made an allowance within the risk register to cover additional fees to the design team resulting from an increase in their scope of works | | | These additional fees were subsequently removed and allowance only made for fees provided. Final fee for BMJ was as per advised by the Board in ITSFB in the sum of £1,156,800. |
| 58.0 | Laboratories | Please confirm that all temporary services connections prior to Energy Centre being completed are included | Main incoming services are included within the energy centre section.<br>Allowance has been made for local temporary service connections until Energy Centre is sufficiently progressed. | | | |
| 59.0 | Laboratories | Please confirm that all robotics costs included in Hospital element of bid. | Confirmed | | | Assumed that current Labs building design caters for robotics |
| 60.0 | Laboratories | Please identify any costs associated with pneumatics included in the Labs element of your bid. | An allowance £62,200 has been included within section 5L Communications of the bid. This includes for the distribution Pipe work and Receivers within the Labs, but does not include any of the main plant elements which are included within the main hospital buildings. See Appendix Q60 for further information | | | |

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| Technical Clarification 3 | | | | | | |
| **General** | | | | | | |
| 1.0 | LCC | n relation to any perceived LCC benefits/savings over the period, can you provide supporting details/justification of same. | Our Life Cycle Cost Analysis, contained within Volume 12.8 of our submission, provides full details of the breakdown of Life Cycle Costs for each element of the project. We believe that this provides the supporting details/justification, however, should there be any specific areas where you feel further information is required we will be happy to provide it. | | info | |
| **Logistics** | | | | | | |
| - | - | No items in this TC. | - | | | |
| **Design/HP** | | | | | | |
| 2.0 | Energy Centre | Please confirm the location in your compliant bid the Energy Centre Layout plan reflecting the retention of the Stage D Laboratories design. | We would enclose drawing NA-EC-00-PL-251-020 that shows the energy centre from our masterplan located against the stage D laboratory design.<br><br>There is some flexibility with regard to the plan location that would require BMJ input should our bid prove to be successful.<br><br>The laboratory stage D design shows all main plant within the laboratory building plant rooms, which enables the laboratory building to operate stand alone.<br><br>The compliant bid for the Energy Centre does allow for some plant in the current designs; namely Standby Generators and Boiler capacity as detailed in Volume 3 Sections 3.8 & 3.10 and Volume 4 Section 4.55. | | | Subject to Development in Stage 2 |
| **M&E Services** | | | | | | |
| - | - | | - | - | | |
| **Renewables/Sustainability/BREEAM** | | | | | | |
| 3.0 | - | Please confirm that your compliant laboratory scheme will achieve BREEAM Excellent. | Our assessment of the compliant stage D design BREEAM rating is 65 which achieves very good but falls 5 points short of an excellent rating. The main reason for this shortfall is the difficulty in achieving the energy target of 80kgCO2/m2 without linking the laboratory building to the energy centre as confirmed in the Board response to RFI144.<br>There are a number of other options that could be looked at to improve the BREEAM rating such as reduction in CO2 emissions, limiting water consumption etc. These are not currently part of the compliant scheme. | | | Statement required identifying that “excellent” will be achieved via connection to Energy Centre once completed – existing Lab plant to become resilience<br>Agreed based upon stage D design available at tender stage |
| **Laboratories** | | | | | | |
| - | - | No items in this TC. | - | | | |
| Technical Clarification 4 | | | | | | |
| - | - | No items in this TC. | - | | | |
| **Logistics** | | | | | | |
| - | - | No items in this TC. | - | | | |
| **Design/HP** | | | | | | |
| 1.0 | Schedule of Accommodation | Clarity is required with regard to your Schedule of Accommodation. The attached Appendix A identifies the area assessment presently (in column C). Please identify each actual figure in the column D ‘Confirmation’ listing to reflect the following (with item 3 provided separately):<br><br>1. **Gross departmental area** (including planning and engineering and departmental circulation) for each | Please find attached the completed Appendix A which has identified the actual area figures requested to be clarified in column D ‘Confirmation’.<br><br>We have assumed the ‘Y’ noted against Section Number 1 is the Board’s acceptance that this information has already been provided by Brookfield in Volume 1; Sections 1.1, 1.2, 1.3, 1.4 of our Bid Submission.<br><br>In addition, please note that the Total Gross Floor Area noted in our submission | | | Board SoA to be in contract<br>Check on Board comments on Brookfield SofA being undertaken by Brookfield. To be further agreed |

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| | | department and the total for each hospital<br>2. **Net departmental area** (sum of net as drawn/designed rooms only) for each department and the total for each hospital<br>3. **Net room areas** (excluding all ducts, pipe boxing and service zones) listed room by room and by department<br>4. **Circulation area** (departmental) for each department and the total for each hospital<br>5. **Communications and plant areas** (interdepartmental circulation horizontal and vertical and main plant rooms and risers) for each hospital<br>**Total gross floor area** for each hospital. | did not include the % Planning allowance. This SOA was generated by Codebook, and was an accurate 'As Drawn Area' which excluded the thickness of the internal partitions. This has now been included in the completed Appendix A. These figures represent the GIFA which has been priced and included within the Cost Plan. | | | |
| 2.0 | MRI replacement | Please confirm your proposals (methodology, routes and structural provision to support) the replacement/retro fit of MRI equipment. | In the absence of specific MRI product information, the building footprint areas identified on the plans as housing MRI installations have been checked against a 7.5 tonne magnet installation (example from a recent comparable project).<br>In each case it was noted that the floor and foundation structures as currently presented could be appropriately detailed to facilitate the incorporation of this equipment.<br>The proposed transit route for the MRI installation is not known but is expected to be either through double access doors at ground level, along corridors and possibly via a wall knock-out access panel into the proposed room. Alternatively, the MRI unit could be delivered to the FM area and transported via the service tunnel to a lift and then to the corridor etc as above. The floor and foundation structures for the possible routes noted above have been checked against the 7.5t load and noted to be able to be appropriately detailed to facilitate the incorporation of this equipment.<br>The final location of any such equipment will require to be specifically checked against the details of the actual equipment proposed. | | | This will be subject to Design Development Review<br>Allowance based upon 7.5t MRI load |
| **M&E Service** | | | | | | |
| 3.0 | M&E Services | Please confirm pipework types for DH&CW, CHW and heating. | For DH&CW pipework, Stainless Steel Mapress by Gilbert (or equivalent) is proposed up to 67mm dia. And an ABS type material will be used on sizes above this. Copper will not be used on these systems.<br>For CHW & LTHW, carbon steel galvanised Mapress by Gilbert (or equivalent), Large bore, mild steel medium grade tube, Victaulic mechanical couplings (or equivalent).<br>For MTHW mild steel heavy grade tube fully welded/flanged. | | | |
| 4.0 | M&E Services | Please provide more clarity (detail) with regard to your proposed lighting controls. | A mixture of automatic 'absence' and 'presence' detection will be provided.<br><br>Presence detection: detector switches lighting on and off.<br>Extent of provision: intermittently occupied areas such as WCs, en suites, corridors, ward kitchens, stores, plant rooms, services risers, hospital streets, bathrooms etc.<br><br>Absence detection: lights manually switched on, detector extinguishes lighting in unoccupied room.<br>Extent of provision: offices, consulting rooms etc.<br><br>In addition, in rooms benefiting from daylight, luminaires near windows will be dimmable, regulated by the amount of daylight available.<br><br>Dimmable lighting has been included where specifically required by the ADB sheets.<br><br>Automatic control of lighting in rooms which have plenty of natural light will be regulated by means of a photocell within the space to ensure the required LUX is achieved by the combination of ambient and artificial light. | | | Refer RFI Log<br>Agreed |
| 5.0 | M&E Services | Please confirm that duty / stand-by plate heat exchangers | Packaged plate heat exchangers/buffer vessels will be arranged to provide | | | |

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| | | will be provided for Domestic hot water. | run/standby as described in Volume 4 Specification 4.28 and Volume 5 Schedule 5.2. | | | |
| 6.0 | M&E Services | Please provide details of proposed thermostatic mixing valves for DHW. | Taps with integral TMV3 will be used wherever suitable (refer to attached data sheet). In situations where these are not appropriate separate TMV3 thermostatic mixing valves will be used such as Oventrop Brawa-Mix 97 (or equivalent). | | | |
| 7.0 | M&E Services | Please provide details of trench make up for main services. | Trench depths, spacings and backfill will be as NHS Model Engineering Specifications C01 for pipe services and C41 for electrical services. Buried pre-insulated heating and chilled water mains will be in accordance with the system manufacturer's recommendations but will be similar to above. | | | Refer to M&E Design Summary<br>M&E Design Summary does not address general trenching for incoming services |
| 8.0 | M&E Services | Please confirm that twin regulating valves have been included for gas supplies. | Yes confirmed | | | |
| 9.0 | M&E Services | Please confirm that NRV will be fitted at each fire isolation valve as ER's. | Yes confirmed | | | |
| 10.0 | M&E Services | Please confirm mechanical air change rate for the ward tower. | A typical ward in the tower has the following air change rates to either meet the ADB requirements or achieve the environment conditions:<br>• Bedrooms 2.5 ACH (related to ensuite extract rate and air volume for chilled beam unit loadings)<br>• Ensuites 10 ACH<br>• Clean Utility 6ACH<br>• Disposal Hold 10 ACH<br>• Pantry 6 ACH<br>• Dirty Utility 10 ACH<br>• Equipment store<br>• Cleaner 5 ACH<br>• Nurse base Up to 12 ACH to balance extract from utility spaces, etc<br>• Office/meeting 4 ACH | | | Refer to M&E Design Summary<br>Agreed although still to be finalised |
| 11.0 | M&E Services | Please confirm type of fire Extinguishants gas proposed for the main Comms rooms. | The main comms rooms will be protected by a gaseous fire suppression system, the two gases for consideration at detailed design stage are NOVEC1230 and FM200. Both gases have attributes and issues; NOVEC1230 has a Global Warming Potential(GWP) of 1, while FM200 has a GWP of 2900. Certainly NOVEC1230 is kinder to the environment, but it is less kind to the IT assets it is protecting due to the much greater temperature drop when released, over FM200. The rapid rate of change of temperature has been shown to result in failure of the electronic components. The hope is that the suppression gas is never released and that the systems operate on a double knock strategy of operation | | | Subject to detailed review Stage 2 |
| 12.0 | M&E Services | Please indicate the plant resilience for hot and cold water services, e.g. full duplicate or is one extra unit proposed per plant area? | HWS calorifiers are provided in groups to serve zones of the building. Each group includes a standby calorifier. Refer to Volume 5 Schedule 5.2 Calorifier. | | | |
| 13.0 | M&E Services | Further to your responses to TC#2, the items listed in the attached Appendix B require further clarification/responses. | As noted on Appendix B | | | |
| **Renewables/Sustainability/BREEAM** | | | | | | |
| - | - | No items in this TC. | - | | | |
| **Laboratories** | | | | | | |
| - | - | No items in this TC. | - | | | |
| Technical Clarification 5 | | | | | | |

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| **General** | | | | | | |
| 1.0 | LCC | Please check and confirm/clarify 60 year LCC values. | We can confirm the 60 year LCC values, which are based on the same assumptions as the 30 year values. The assumptions and detail are outlined within the LC Models provided. | | | |
| 2.0 | LCC | Please resubmit LCC rates as per Volume 4 Clarification Technical 19n0 – Item 8 Table 1 Item 4.0. | The LCC rates have been derived from detailed LC models based on the Specification and Capital Cost information in the Brookfield (Doig & Smith) Capital Cost Plans ("*Stage 3 Bid Cost Plan"* and *"Stage 1 Non-Compliant Bid Cost Plan"*). These cost plans have been submitted based on the NSGH bid deliverable cost plan breakdown requirements.<br><br>In line with these the LC Models have therefore only been able to been built for:<br><br>1) The Acute Adult and Children's Hospital;<br><br>2) The Laboratory Building<br><br>3) The External Works<br><br>Refer to Appendix 1 for Hospital Benchmarks used. | | | |
| 3.0 | FM | Please provide information in connection with derivation of FM services £/m2/yr rate – e.g. Sample Range, Hospital Type, Level of Service. Ditto as against differing Facilities e.g. Hospital/Lab etc. | The £/$m^2$/yr rate for FM Services is based on an average cost derived from the Davis Langdon FM database which includes detailed FM service costs and specifications across a suitable range of appropriate projects. The database has been adjusted to reflect the current size and location of this Project. | | | |
| 4.0 | FM | Please provide breakdown of FM rate as per requirements of Table 1 Item 6.3 (Management/Staff/Contracted/Materials/Equipment costs) | An indication of the expected split of FM costs is as follows:<br>Management / Admin: 12.5%<br>Staff: 37.5%<br>External Contracts: 25%<br>Materials: 20%<br>Equipment: 5% | | | |
| 5.0 | Software | Please confirm that your Zutec software has been included in your priced proposals (this to include access, licensing and any necessary product maintenance requirements). Further please advise of system compatibility (i.e. does this interface with 'standard' software packaging and provision such as Microsoft products). | We confirm Zutec software/service is included in our priced proposals. This includes the access, licensing and associated product maintenance requirements during the 2 year DLP. We would also highlight that Zutec have included an additional 12 months beyond the 2 year DLP as a benefit to the project.<br><br>Zutec system is compatible with Microsoft products. Besides overcoming the logistics of handling volumes of hard copies, it provides an efficient and quick means to search/locate project information/data. This facility is also available remotely (from anywhere with internet connection).<br><br>At the end of DLP, a hard drive of the project information uploaded at that time will be handed over to the Board. The information in that hard drive is readable using internet browser (ie. Only software required to read/run the data is an Internet Explorer). This information can be exported/copied into Microsoft Word or Excel.<br><br>Should the Board wish to use the Zutec website to make ongoing updates to the project database beyond DLP, Zutec is able to offer a hosting solution on a monthly or annual fee basis. | | | |
| **Logistics** | | | | | | |
| - | - | No items in this TC. | - | | | |
| **Design/HP** | | | | | | |

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| 6.0 | Fire Strategy | Can you confirm the qualified chartered fire engineer who will develop your design/strategy moving forwards. | The qualified chartered fire engineer overseeing our design development from WSP is:<br><br>Ryan McCreadie – Associate Director<br>BEng (Hons), PhD, MIFireE, Ceng<br>Chartered Engineer with the Engineering Council Division of the IFE.<br>Membership number – 00035119.<br><br>Mr McCreadie is assisted by the following WSP fire engineers:<br><br>Tom Grace – Associate Director<br>BE (Civil), ME (Fire), CPEng, MIFE, MSFPE, MIEAust<br><br>and<br><br>Kenny Hamill – Senior Fire Engineer<br>BSc (Hons) MRICS MIFireE | | | |
| 7.0 | Fire Strategy | It is noted that the smoke control proposal for the atrium relies on the decomposition of the ETFE roof based on a smoke/gas hot gas temperatures. What contingency planning would you recommend with regard to business continuity in this regard? | The ETFE roof system will be designed to ensure that the ‘hot wire’ activation only occurs in the highly unlikely event where a major fire occurs from adjoining areas into the atrium.<br><br>This activation sequence will be developed/14inalized in conjunction with the Fire Authority and the Board. However, we have considered the following features to limit the need for ‘hot wire’ activation:<br><br>• The environmental ventilation strategy for the atrium space includes for high level (side) vents to the ETFE roof and this will be used to support the smoke strategy in the early stages of fire development within the atrium (prior to any ‘hot wire’ activation).<br><br>• Lower volumes of buoyant smoke (at a temperature below ETFE failure) can be exhausted via the natural vent system.<br><br>• The vent sizes will be based on fire engineering calculations using BRE 368 for smoke management systems.<br><br>• Controlled fire load to atrium base by using fire load island philosophy. Fire loads will be concentrated into specific areas and separated by minimum distance to mitigate against fire spreading throughout the atrium base.<br>• The design fire size will be within the capacity for the natural vent system.<br><br>Furthermore and to reduce the threat of a major conflagration from adjoining areas into the atrium the following design features will be in place:<br><br>• Fire separation of areas opening onto atrium<br><br>• Sprinklers to areas adjoining atrium and appropriate areas in the atrium itself<br><br>• Glazing at ward levels to prevent smoke ingress from atrium to adjoining circulation areas<br><br>• Fire separation between clinical areas and circulation areas adjoining atrium<br>In developing the ‘hot wire’ activation sequence with the Enforcing Authorities and the Board, the aim is to filter out and avoid unnecessary occurrence by subjecting the activation to a number of “knocks/triggers”. It is envisaged that this multiple layer control will firstly involve detection of a fire within the compartment adjacent to and off the atrium that may spread into the atrium. This detection is then subject to another knock whereby a manual override is provided to allow a suitable investigation period to establish cause of alert and validation of the size of the fire threat for ‘hot wire’ system to be finally activated. | | | |

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| | | | In the next stage of our design development, we will assess the possibility of limiting the loss of the ETFE roof to partial sections only (ie. Sufficient to vent the fire size to be agreed with the Enforcing Authorities). We will also assess to further minimize the impact of damaged roof on the operation for the clinical side of the Hospital by for example having glazed (smoke) separation to the atrium as mentioned above.<br><br>In reference to the contingency planning with regard to the business continuity, we believe that the ETFE roof 'hot wire' system would only occur in a very significant fire incident. In this scenario, the Hospital building itself is likely to have extensive damages and will be subject to major business continuity contingency planning. | | | |
| 7.0 | **M&E Service** | | | | | |
| 8.0 | Lift Study | Please confirm that your reference to the Exemplar in the lift study is erroneous and provide bed movement time from the ground floor to the top storey ward. | The data provided was based on the population figures issued by the client in the exemplar report. The approx time taken to move a bed from Ground to top storey ward will be 42 seconds assuming no intermediate stops (door opening at ground to door opening at top floor). On average each journey will take - 60 seconds including intermediate stops. | | | Subject to detailed review Stage 2<br>Brookfield proposed lift speeds to be retained |
| 9.0 | Maintenance | Please confirm that a maintenance gantry in the atrium (ventilation actuator maintenance) is included in your priced proposals. | Actuators will be located externally (IP65 rated) for ease of maintenance.<br><br>Localised access facilities will be provided as necessary. | | | Refer to M&E Design Summary<br>Not covered on M&E Design Summary |
| **Renewables/Sustainability/BREEAM** | | | | | | |
| 10.0 | U-Value | Please confirm your primary U-values for (i) Glazing, (ii) Fabric and (iii) Roof. | Glazing 1.4 W/m$^2$K inc frame<br>External wall 0.3 W/m$^2$K<br>Roof 0.25 W/m$^2$K | | | |
| 11.0 | Permeability | Please confirm your building permeability. | The air permeability (infiltration) will be in accordance with the ERs Volume 2/1 App M&E.4/3.3.5(1) i.e 5m$^3$/hr/m$^2$ @ 50Pa | | | |
| **Laboratories** | | | | | | |
| - | - | No items in this TC. | - | | | |

**APPENDIX B**
**NSGH – Bid Evaluation – TC#4 Items from TC # 2 which require further clarification**

| Prev TC ref | Original Item | Action update required | Bidder Response | | | |
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| 1 | List received of suggested suppliers | Client not aware of several e.g. Switchgear, fire alarm, Nurse call and wholesalers used for several systems please provide details and confirm that any changes will require agreement with the Board (up to three manufacturers for each M E & PH item) | The list of suggested suppliers gives an indication of the manufacture/suppliers of the components proposed. The final selection of components will be by agreement with the Board from a selection of no fewer that 3 manufacturers unless specialist equipment dictates otherwise | | | Updated list provided and qualified on the basis of final selection being "equal" or "best value" Suggest wording should be "of equal standard or quality" |
| 10 | Please confirm that BMS IP network will be fully stand alone and that all active equipment has been included. | Yes. Please provide supporting narrative for the included BMS IP network. E.g. raid storage, servers racks switches etc | The BMS kernel is built on two fault tolerant servers configured in a primary and hot standby fashion. The operating system will be Linux based with a SQL database for data management. The storage of BMS data will be on a RAID configured system and this will hold the immediate data live for 1 month. The SQL will be used for back up functionality and subsequent long terms analysis of the BMS system.<br>The system will have a primary fibre backbone with the appropriate Cisco managed switches breaking out into the copper IP networks at local system level. | | | |
| 11 | Tagging | Included. Please provide supporting narrative. e.g. tags are electronic integrated in the WIFI systems etc | The Tagging system works on RFID technology and there are two methods of operation.<br>1. For items such as wheelchairs, the system will display graphically the | | | |

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| | | | location of the asset and can be polled to find the nearest required equipment, such as staff requiring a wheelchair.<br>2. Other items can be set up so that they are governed by a boundary and if the asset is brought beyond this defined boundary, an alarm is triggered. | | | |
| 12 | Scaffolding will be used to land generators and transformers | Is this practical, will the scaffolding have permanent foundations etc. | The majority of replacement and maintenance items detailed in the plant replacement strategy in Volume 3.23 of our submission are dealt with via the FM lifts.<br><br>It is anticipated that the expected frequency for the replacement of the major plant items is once every 20-25 years or so in normal circumstances, if at all, and, if required, likely to take place during a period of planned major plant renewal.<br><br>It is considered that it is a reasonable strategy to allow for the erection of a temporary scaffolding working platform to facilitate the removal and replacement of equipment. A structure of this type with sufficient height and capacity can be easily erected at reasonable cost using readily available materials and labour.<br><br>It will be possible to erect such a temporary structure using standard scaffolding details with the footings bearing onto the ground externally, but with protection applied to the surface finishes.<br>It is possible to incorporate permanent concrete foundations to facilitate this work but it is unlikely that the specific scaffolding arrangement will be available during the initial construction work to enable a specific design to be constructed, or that the scaffolding proposals will not change over time and render the installed foundations redundant.<br><br>Where the equipment is required to be transported over the flat roof to reach a loading platform, the structure has sufficient design load capacity to facilitate this but with the actual roof finishes requiring protection as noted in the bid documentation. | | | Refer to M&E Design Summary<br>Agreed |
| 13 | Medical gases and VIE | Please provide details of the plant resilience for medical air, 02, vacuum surgical air gas scavenging and nitrous oxide | All medical gas systems and plant are designed as per the current SHTM02-01, resilience within the selected plant items being provided in the following way:<br>Medical Air; a quadruplex plant will be provided, one compressor will act as a permanent standby, the remaining three compressors will be rotated through the demand requirements, this will insure boiling off of any excess condensate.<br>O2; two VIE stores will be provided, each store will be selected to provide 100% of the calculated demand, the stores will be configured as a run and standby mode.<br>AGSS; all AGSS pumps will be selected as duplex units, each pump will be rated to 100% of the calculated load. Each duplex plant will serve only four operating theatres.<br>Nitrous Oxide; a 2 x 10 manifold system with full automatic changeover facilities will be provided complete with a 2 x 1 ESM (emergency) manifold back up, all manifolds will be fully alarmed.<br>All other Air4 and Air 7 systems will have similar manifold systems complete with alarms and automatic changeover facilities | | | |
| 14 | luminaire details | Please provide info on LED and feature lighting luminaires | Refer to attached supplementary information | | | |
| 17 | Fire alarm PC includes incident location graphics | Please confirm fire alarm PC includes incident location graphics | Confirmed as included | | | |
| 20 | Patient entertainment systems. | Schematic representation noted. Please provide equipment details e.g. infrastructure, equipment, patient interface etc. | The primary patient and staff interface within the ward spaces, is based on a unit, such as the Lincor system. These units are connected back over CAT6A cables to the local hub rooms to an appropriate Cisco managed switch. At this point the system is connected back to the head end, via fibre network. The head end, is a fault tolerant server solution with various interfaces to broadcast | | | Refer to M&E Design Summary<br>Not covered on M&E Design Summary |

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| | | | receiver equipment.<br>It is possible for this system to be integrated with medical records IT to have the local interface become part of the clinical information management at the bedside. This is not included in this proposal at this time. There is only one screen in the patient space that covers all functionality. | | | |
| 23 | Please confirm that metering | BREEAM compliance noted, please provide a narrative e.g. central monitoring and storage | Metering of engineering services will be provided in accordance with the requirements of the ERs, BREEAM and GIL 65. All metering points will be monitored, recorded and stored on the BMS. | | | |
| 24 | Water spillage protection in secondary comms room. | It is noted that fan coils will have drip trays. On the assumption that the drip tray is full please advise how fan coils can be used in secondary comms rooms while ensuring that the equipment will be protected | Subject to the final layout of the comms rooms options for the fan coil units include positioning high level detection in the drip trays linked to the FCU operation, or more preferably locating the FCU outside of the comms room and ducting the conditioned air into the room. | | | |
| 25 | Please confirm compliance with maintainability and area isolation requirements. | Compliance on Electrical services noted, please confirm compliance with maintainability and area isolation requirements. | Isolation of electrical services will be possible as follows:<br><br>It will be possible to isolate an entire HV ring by opening protective devices at each end in the energy centre.<br><br>Sections of HV ring may be isolated by selective switching of devices at substations along the length of the ring.<br><br>Transformers may be isolated at the associated ring main units.<br><br>Main LV Switchboards may be isolated by opening their main incomer.<br><br>Submains cables to sub switchboards may be isolated by opening their protective device.<br><br>Sub switchboards may be isolated by opening their main incomer.<br><br>A minimum of 2 distribution boards will be provided per department and final circuits will be interleaved so far as is practicable (see below). Thus isolation of one distribution board will affect half of the circuits in the area served by that board.<br><br>The majority of rooms will be provided with at least 2 lighting and 2 small power circuits. Exceptions will be rooms with one luminaire or one socket outlet such as toilets, cupboards, risers and so on where it would be impractical to provide duplication.<br><br>The ERs appear to require each individual room to be capable of isolation without impact upon adjoining areas. We have not interpreted this to mean that each room should be provided with dedicated electrical circuits. Strict adherence to this requirement would result in a minimum of 4 circuits dedicated to each room ie: Side A lighting, Side A power, Side B lighting, Side B power. A department with 100 rooms would require 400 circuits which equates to say 10 no. 18 way 3 phase distribution boards. There would be a considerable impact on the size of the local sub switchboards and the quantity of submains cabling as well as on the quantity of final circuit cable containment systems and space requirements to accommodate the distribution boards and large sub switchboards. | | | Refer to M&E Design Summary<br>M&E Design Summary has less detail than this response. Brookfield to confirm that Design Summary adequately records agreements. Unless the Board can identify items within the Brookfield response to this clarification then this response should stand as it is the basis upon which the price has been calculated. |
| 28 | Plant and equipment will be suitably isolated to prevent transmission of noise and vibration. | Compliance noted, please provide narrative on proposals | Sound and vibration control for ventilation systems are described in Volume 4 Specification 4.33 giving proposals for plant attenuation, cross-talk attenuation and vibration control under fans etc.<br><br>Major plant such as chillers, generators, compressor etc. will be provided with spring isolation mounts as required to reduce vibration.<br><br>Vibration isolation of pumps will be assessed with the pump manufacturer to determine the most appropriate method of isolation, with spring pipe hangers | | | Refer to M&E Design Summary<br>Where ?? This response should be the agreed position. |

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| | | | provided adjacent to pump assemblies.<br><br>Plant noise breakout to site boundaries and intrusive noise into adjacent buildings will be controlled by sound attenuators in the fresh air intakes to all plant to meet the limiting noise criteria for the hospital site. | | | |
| 29 | Please confirm that full environmental proving off all rooms will be provided. | Compliance noted, please provide narrative on proposals | A full environmental check on all rooms will be provided. This will be undertaken at the commissioning stage of the project, all rooms will be put through a range of internal conditions to prove the capacity within the systems to increase and or decrease the space temperatures within a set time line. These tests will be trend logged within the BMS over a given period of time and any faults found will be addressed before final handover. | | | |
| 31 | Please confirm that all services elements are included to meet the fire engineering solution, e.g. stair pressurisation, smoke control etc | Compliance noted, please provide narrative on proposals | All service elements have been included to meet the Section 2.10 Fire Strategy report.<br>Fire engineering has been used wherever beneficial to meet, or surpass, the minimum fire safety performance standards contained within the various guidance documents. To achieve this the services strategy includes for areas such as detection / alarm systems; escape bed lift provision; smoke dispersal from stair protected zones / fire fighting shafts / lift lobbies, atrium smoke and ventilation strategy; basement smoke control / clearance strategy; fire damper actuation etc. | | | To be developed Stage 2<br>Brookfield Fire Strategy and Fire Engineered solution to take precedence over Board ER Fire Strategy |
| 34 | Please confirm that leak detection has been included. | Compliance noted, please provide narrative on proposals | The leak detection systems will be developed during the detailed design phase and will utilise linear detection elements, broken into appropriate lengths. The system will form part of the BMS, with a graphic interface of the overall system. Leak detection will be logged under the BMS alarm handling and it will also be possible to configure plant shut down or other intervention, on the presence of a leak being detected. | | | |
| 35 | Please indicate percentage capacity of all water service pipework mains from the energy centre to the main buildings for resilience. | Heating response noted, please provide narrative for CWS and CHWS | The site water mains feed directly into the hospital with bulk storage in the basement. No CWS is fed from the Energy Centre.<br><br>HWS is generated locally within the plant areas to feed the various zones of the building. No HWS is fed from the Energy Centre. | | | Refer to M&E Design Summary<br>Likely to be amended if water storage tanks are moved into the energy centre |

**New South Glasgow Hospitals Project**
**Bid Submission Clarifications**
**Bidder: 1 (Brookfield)**

| Item | Topic/Bid Reference | Board Clarification | Bidder Response | ADD | NO CHANGE / INFO | BOARD COMMENT |
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| Technical Clarification 1 | | | | | | |
| **General** | | | | | | |
| 0.0 | | | | | | |
| **Logistics** | | | | | | |
| 1.0 | Site Parking | You have options but no firm plans for site parking, please confirm that the provision for site parking (incl any delivery area/holding area/lay-down areas off site) for all phases are included in your priced bid. | Brookfield have considered a number of options with regards to temporary parking/holding areas etc during the construction period and should we be selected would wish to discuss with the Board and other interested parties these arrangements to develop a strategy for the benefit of the Project. In the meantime, we confirm our prelims identify pricing allowances for the relevant Stages and refer you to the logistics section. In addition, our procurement strategy with regards the supply chain will include for the provision of temp parking spaces and this will be identified in the cost when packages are let accordingly. I.e. the amounts in the Prelims will be supplemented by amounts in the trade cost plan. We also recognise that using local labour will enable us to encourage the use of public transport to mitigate the requirement for extensive on site/off site temporary parking. Finally whilst we identified on the risk register temporary parking as being an issue to resolve, we felt a combination of the above will be sufficient to deal temporary parking and this reduced the risk element to acceptable. | | NC | ~~Costs contained within prelimnsprelims, trade cost plans and risk~~<br>~~Brookfield will provide a summary paper of draft proposals for off site parking~~<br><br>Brookfield have identified options for car parking as well as the associated cost allowances. A decision on which option will be taken up to be made post-contract. |
| 2.0 | Delivery Team | Several of your proposed delivery team appear to have commitments to another healthcare scheme (i.e. Peterborough). Please confirm how your delivery team will be deployed in line with the NSGH timescales and your programme requirements. | We reaffirm our commitment that the proposed delivery team will be deployed in accordance with the NSGH timescales and our programme requirements. Taking each stage:<br><br>- Labs Construction Team:<br>The individuals noted are available now, and no longer have commitments on Peterborough.<br><br>- FBC/Core team:<br>The individuals are available now, and have already been working on the NSGH project.<br><br>- Adult/Children's Team:<br>The individuals identified will be available before November 2010.<br>At Peterborough, the Mental Health Unit and City Care Centre have already been completed on programme and handed over to the Trust earlier this year. This has released some of the individuals who have since being involved in the bid submission. The main Acute facility is 3 months ahead of programme and notice will be given shortly to confirm the end of September 2010 date for handover. Many departments are being closed off progressively (as some of the Board's team will have witnessed during the recent site visit). By the end of 2009, the Acute facility will be into testing and commissioning phase and we are confident that a September 2010 completion is likely and the individuals will be available as scheduled. | | NC | |
| **Design/HP** | | | | | | |
| 3.0 | Entrances | Confirm your proposals for significant entrances to the site per ER requirement in this regard. | The NSGH campus masterplan has been configured to provide clear entrances which lead directly to the primary arrival space at the heart of the campus. Entrances have been designed in plan form to provide the | | NC | |

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| | | | necessary function and capacity to respond to highway requirements associated with the various modes of transport. Significant entrances are to be delivered as features within the context of both the wayfinding and public art strategies. The entrances are important as part of the legibility and identity of the rejuvenated hospital campus. To achieve this it will be necessary for the design team to work with the Board to determine the correct balance between an innovative and unique site-specific response (informed by public art) and the guidance for standardised signage contained within the NHS Scotland guidance for signage and branding for use within NHS sites (which we have reviewed). For this reason our designs have not been developed beyond the concept stage in advance of Stage 2 engagement. The attached concept images illustrate the general potential for an entrance feature sign at the primary Govan Road entrance to<br>the site, but should not be considered a firm design proposal at this point. We can confirm that the commercial proposal includes provision for this approach.<br><br>Our drawing GIL-WS-00-PL-502 illustrates the signage hierarchy and proposed locations for the various sign types. This includes the proposed location of campus gateway signage features at the key entrances to the campus. It is intended that the main entrances should include feature lighting as part of the significant entrance features. It should be noted that the entrances need to be considered in parallel with the design and quality of the main arrival square, as this forms an important part of the entrance and arrival sequence and experience. The point of entrance and the route to the arrival square should therefore be considered as part of the entrance arrangement. | | | |
| 4.0 | Specification | Confirm your proposals for electronic information points per ER requirement (7.15.4) in this regard. | In response to the ER requirement (7.15.4) we have made provision for 1x ‘Real Time Public Transport System’ electronic Information Point externally at the Bus Drop-Off Area.<br><br>Additionally, in response to ER requirement (7.2.19), as part of our Wayfinding Strategy we have proposed electronic/interactive ‘You Are Here’ maps in the Main Entrance Foyers to both the Adult and Children’s Hospitals.<br><br>Please refer to our Wayfinding Strategy contained within **Volume 3.0; Section 3.2** for further details of our proposals and imagery. | | info | |
| 5.0 | Interstitial Blinds | Confirm your strategy for interstitial blinds to external windows/façade and internal observation screens (this to include a cross-section detail of your proposal(s)). | Interstitial Blinds have been included in our priced bid to **internal** glazed screens generally to all Bedrooms, including those within Critical Care (Adult Hospital and Children’s PICU), AAU and all Inpatient Wards (Adult and Children’s Hospitals).<br>In addition, interstitial blinds have been included to internal door vision panels as part of our Internal Door detailed proposals. Our Internal Door Strategy is contained within the Introduction to<br>Volume 2.0; Section 2.21<br>- Door & Ironmongery Schedules. Where a door is noted in the Schedule as being<br>‘obscurable’<br>, this equates to a vistamatic type vision panel with interstitial blinds.<br><br>Please note that our priced bid does not currently have a provision for internal blinds or curtains which are not integral to the internal fabric of | Y | | Interstitial blinds are ~~to be~~ ~~to be~~ included ~~for~~ ~~for~~to all external windows.<br><br>~~This was allowed for as an adjustment to our original bid~~ |

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| | | | the building. In our past experience these items would be included in the Equipment List. We have priced this List accordingly as requested by the Board, and would be pleased to debate with the Board further whether these items should be included within the Equipment List.<br><br>With respect to **external** windows, we have included for interstitial blinds to all external windows in patient areas within Critical Care (Adult Hospital and Children's PICU).<br><br>Again, please note that our priced bid does not currently have a provision for internal blinds or curtains which are not integral to the internal fabric of the building.<br><br>Please refer our separate attachments for the requested detailed section drawings, our Internal Glazed Screen Strategy Document and External Windows Privacy Strategy Document. | | | |
| **M&E Services** | | | | | | |
| 6.0 | | | | | | |
| **Renewables/Sustainability/BREEAM** | | | | | | |
| 7.0 | Carbon | You noted at the presentation of 21 September you're your variant 2 for Laboratories will achieve the 80Kg CO2m2 – can you confirm that your compliant bid achieves this target also. | Achieving the 80kg CO2 m2 for both the compliant and Variant Option 1 Laboratory bid will be dependant on the construction of the Energy Centre, with which the overall solution is integrated. **RFI 144** refers and is attached for ease of reference.<br><br>As noted in **RFI 147** (attached) the Energy Centre is dependant on FBC and commencement of Stage 3.<br><br>Variant Option 2 offers an integrated M&E plant solution and the early construction of the Energy Centre shell and core to house it. This may be achieved through an advanced design and planning process and cash flow solution indicated in Volume 16 of our bid submission. | | info | Note that stand alone Labs does not achieve 80kg $CO_2/m^2$ |
| 8.0 | BREEAM | Clarify BREEAM Ene 1 score – 8 and 11 referred to in different sections. | Please note the correct score is 8 and we apologise for the confusion. | | info | |
| 9.0 | Renewables | Confirm which LZC and renewables are included in the bid. | LZC –<br>3MW Combined Heat and Power units.<br>High efficient friction less bearing chillers providing COP 9.<br>1000kW Absorption chiller unit.<br>Active chilled beams.<br>Variable speed pumps.<br>Natural daylighting.<br>Natural ventilation.<br><br>Renewables.<br>12no Vertical axis wind turbines. | Y | | |
| 10.0 | Energy Model | Confirm that the energy model is fully compatible with the servicing strategies set out in volume 3 in particular the use of a sealed building with chilled beams. | Brookfield confirm the energy model is fully compatible with the requirements as set out in Volume 3 in particular the use of sealed building with chilled beams. | Y | Info | Refer to Sustainability and Energy Issues<br>~~This situation may change dependent upon the conclusion of the ward ventilation issue~~. |
| 11.0 | Energy Monitoring | Confirm that the energy monitoring system illustrated is included in the bid. | Brookfield confirm the energy monitoring system is included in the bid. | | Info | Refer to M&E ~~Schedule~~ ~~Schedule~~Clarification Log for confirmation of position on building metering |
| 12.0 | Energy Management | Has active energy management been included for by BE post construction as per clarification? | Brookfield confirm we will provide active monitoring, reporting and fine tuning during the 24 months DLP period. Please refer to our Volume 3 | Y | | |

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| | | | Sec 3.24 Item 1 Building Services Commissioning Strategy, Post Occupancy DLP Period for further information. | | | |
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| Item | **Topic/Bid Reference** | **Board Clarification** | **Bidder Response** | | | |
| Technical Clarification 2 | | | | | | |
| **General** | | | | | | |
| 1.0 | Bid Return Section 5 – Component / Product & Manufacturer Schedule | Noted that M&E related items do not appear in Section 5.<br><br>Clarification required of M&E component/product and manufacturers as well as (for all elements) that listed names will be utilised or “equal and approved” component/product manufacturers. | Full component schedule is as detailed in ***Appendix Q1*** attached<br><br>This indicates the quality of manufacturers proposed for components / products | | | Component manufacturer Schedule ~~to be completed~~<br>~~Schedule issued to Board for comment~~<br><br>Agreed Schedule Included in Volume 5 of Contract Data Part 2 |
| 2.0 | Bid Return Section 7 – SHTM Compliance | **Mandatory Section** – clarification is required with regard to the following items:<br><br>**SHTM85 and SHTM86** – these are relevant as the design joins the existing hospitals, what are the proposals to comply in this regard.<br><br>**Health and Safety Action Notices (HSANs)** – require to confirm will comply with rather than “with reference to”.<br><br>**NHSE10 and SN(01)01** – confirmation that anti-ligature is included in A&E as well as DFCP.<br><br>**NHSE HN04** – confirmation that anti-ligature is included in A&E as well as DFCP.<br><br>**SFPN3** – clarification required of how compliance with updated document will be achieved/documented.<br><br>**SHTM2010** – confirmation required that design will comply with rather than “with reference to”.<br><br>**SHTM2003** – notes that the services follow the principles set down in the HTM – clarification of compliance with the SHTM required (and specifically compliance with the services dimensions to be provided).<br><br>**SHTM2024 Part 4** – confirmation required that original maintenance provisions are included and priced in the bid. | Full clarifications have been provided in the attached ***Q2 Appendix*** | | | ~~Compliance appears generally in order but reference to missing document and reference to other bodies to be clarified, general note accepting compliance narrative in good faith but that compliance would require to be demonstrated during the detailed design.~~<br><br>~~Need to check this further, don't have Q2 appendix~~<br><br>Compliance to be as per tables in Volume 7 of Contract Data Part 2 |
| 3.0 | Bid Return Section 7 – SHTM Compliance | Where no specific options have been listed in your bid return (ref ERs 5.2.3) clarify that all options remain available to the Board with no additional costs to the Board. | We have endeavoured in our bid submission to confirm in detail the basis of our design, specifications and cost plan. To avoid uncertainty these proposals need to take priority over the various options given in the various documents scheduled in tables 2 and 3 of the ER's.<br><br>We are however conscious that within the various documents there are options that the Board may feel would enhance the scheme and assist in producing an exemplar facility. We are more than happy to review any options with the Board, within the confines of the cost plan, to ensure that the optimum solution is adopted across the project" | | | Compliance to be as per tables in Volume 7 of Contract Data Part 2 |
| **Logistics** | | | | | | |
| - | - | No items in this TC. | | | | |

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| **Design/HP** | | | | | | |
| 4.0 | H+S Landscape | Courtyards – clarify what is intended by white gravel? | The white gravel is a aesthetic material used in geographical arrangements producing dramatic patterned landscapes when viewed from above. This material can be laid loose or bound to correspond to the courtyards function. Please refer to drawings GIL-WS-00-EF-S04 Courtyard Design Intent. ***See Appendix Q4-7 attached*** | Y | | |
| 5.0 | H+S Landscape | Aside from the separately identified therapy courtyards is there any access or intended function for the remaining courtyards indicated? | The other courtyards have the potential to be accessed depending on the adjacent hospital departments, to be developed further with the board. Please refer to drawings GIL-WS-00-EF-S04 Courtyard Design Intent<br>***See Appendix Q4-7 attached*** | Y | | |
| 6.0 | H+S Landscape | External Works Layout Dwg No. CD-WS-00-PL-711-01 indicates concrete blocks to the front of the hospital. The masterplan Dwg No. GIL-WS-00-PL-100 indicates exposed aggregate concrete paving. The Outline Specification for roads, car parks, pavements and cycle paths suggests paving in these areas will be natural stone granite. Can we clarify actual proposals for these areas? | The palette of materials has been selected to provide a cost effective high quality environment. Natural granite is proposed to the entrance thresholds with concrete pavers with exposed granite aggregate proposed to the arrival square. Please refer to drawings GIL-WS-00-EF-S05 Arrival Square Pavement Design intent<br>***See Appendix Q4-7 attached*** | Y | | |
| 7.0 | H+S Landscape | The drawings indicate a limited number of bike shelter locations (2No.)? Is this correct or are other bike shelter locations intended? | The two cycle shelters shown on the master plan are key structural features place near the main entrances, other cycle stands are located throughout the site in key location. Please refer to drawings GIL-WS-00-EF-S06 Cycle Parking Strategy and GIL-WS-00-PL-115 Vehicle Movements- Cycles<br>***See Appendix Q4-7 attached*** | Y | | |
| **M&E Services** | | | | | | |
| 8.0 | M&E Services | Please indicate any deviations from M&E elements of the ER's. | The following deviations are proposed:<br>• UPS autonomies proposed are compliant with SHTM 06-01 and differ in some respects from the ERs. | | | Refer to RFI Log<br>~~Agreed~~ |
| | | | • The proposals for automatic lighting controls as described in Volume 3 Section 3.12 and Volume 4 Section 4.3.6 differs in some respect from the ERs. | | | Refer to RFI Log<br>~~Agreed~~ |
| | | | • A single energy centre is proposed split into two plant spaces with 4 hour fire separation to provide the resilience of two separate energy centres. | Y | | This needs to be accepted as a derogation against the ER's which call for 2 Energy Centres |
| | | | • N+1 has not been provided to all plant as noted in Volume 2/1 Clause 8.1.1.17. N+1 has been included to all energy source plant, pumps, heat exchangers and duplicate motors provided on air handling plant. | | | ~~Addressed on M&E Design Summary.~~<br>~~Agreed~~<br><br>Refer to M&E Clarifications Log |
| | | | • Dual path distribution has not been provided on all systems as this would be impractical for piped systems and specialist electrical systems, e.g fire alarms. Supplies from the energy centre have an element of duplication for resilience and electrical power distribution has A & B separation throughout using diverse routes wherever possible. | | | ~~Addressed on M&E Design Summary.~~<br>~~Agreed~~<br><br>Refer to M&E Clarifications Log |
| | | | • Bulk water storage has been based on the busiest 12 hour period rather than 24 hour as suggested in volume 2/1 clause 8.2.8.2. It is considered that with duplicate incoming water mains to the site a reduced water storage capacity will reduce the risk of legionella. | | | ~~Deviation not accepted.~~<br>~~Awaiting response from Board on ZBP water storage calcs. Brookfield proposal now moves water tanks into Energy Centre.~~<br><br>Refer to M&E Clarifications Log |
| 9.0 | M&E Services | Please confirm that racks will be provided for Client's active equipment. | The following allowances have been made:-10 racks in each of the adult's and the children's hospital main comms rooms, and<br>2 racks in each hub room | | | Deviation from ER's not accepted<br><br>The ER's ~~call for~~ requirement noted below, is agreed as included and to be provided by the Contractor<br><br>C1-C6 External comms |

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| | | | | | | S1-S10 Board servers<br>E1-E8 General board equipment.<br>B1-B6 contractors equipment including patching BMS CCTV raid etc.<br>3 racks in each hub room<br>Agreed |
| 10.0 | M&E Services | Please confirm that BMS IP network will be fully stand alone and that all active equipment has been included. | Yes | | NC | |
| 11.0 | M&E Services | Please confirm that asset tagging system has been included and that all services equipment shall be tagged. | Included | | NC | Plant replacement strategy for large items requires to be further developed in Stage 2<br>Agreed but should be on comment below |
| 12.0 | M&E Services | What function does scaffolding platform have in plant replacement strategy for transformers and generators. | The scaffolding platform allows a level surface for the equipment to be withdrawn from the plant space and craned off to ground level | | info | |
| 13.0 | M&E Services | Confirm that reference to BOC should be “Air Products”. | Yes | | info | |
| 14.0 | M&E Services | Please provide luminaire details to supplement pictorial views | Refer to separate document outlining details<br>***See Appendix Q14 attached*** | Y | | |
| 15.0 | M&E Services | Please confirm light switches will be selected to suit lighting control system. | Yes | | NC | |
| 16.0 | M&E Services | Please confirm that bedside adjustable luminaires will be a modern low energy high output units. | Yes | | NC | |
| 17.0 | M&E Services | Please confirm fire alarm PC includes incident location graphics. | Included | | NC | |
| 18.0 | M&E Services | Please confirm that 4 CHP units have been proposed as the narrative (schedule indicates 3). | Three CHP units are proposed | | info | |
| 19.0 | M&E Services | Television outlets on equipment schedule (are these back up for the CAT6A for digital distribution via the patient entertainment system? | YES, This allows flexibility and future proofing | | info | |
| 20.0 | M&E Services | Please provide details on the proposed patient entertainment systems. | Refer to supplementary schematic MER-XX-XX-SM-1400-001 outlining details<br>***See Appendix Q20 attached*** | Y | | |
| 21.0 | M&E Services | Please advise how Renal & Specialist Departments water temperature requirements will be achieved. | This system will interact with the BMS which monitors the temperature and, if required, dumps RO water from the circulating loop to maintain optimum temperature conditions. A heat sanitise cycle is also allowed for. | Y | | |
| 22.0 | M&E Services | Confirm reference to 5A Switches equipment schedule should be 20A. | Confirmed | | NC | |
| 23.0 | M&E Services | Please confirm that metering will be provided to meet BREEAM requirements. | Yes | | NC | |
| 24.0 | M&E Services | Please advise proposals for water spillage protection from fan coils in secondary comms room. | Drip drays and leak detection | Y | | Positioning of leak detection to be included in ~~ER's for~~ ~~clarityclarity,~~ design development. ~~Amended ER's to be issue dfor Brookfield to check.~~<br><br>See Item 34 Appendix B |
| 25.0 | M&E Services | Please confirm compliance with maintainability and area isolation requirements. | Maintainability and area isolation will be incorporated in the design to give compliance with ER's 8.1.5. Individual rooms will have isolation of components such as sanitary ware and terminal heating/cooling devices. It will not be possible to isolate each individual room for lighting and power. It will be possible to isolate each individual circuit, and with each room having at least two circuits the room will continue to function | | | ~~Electrical compliance noted however operational resilience for water, PMCS, heating, cooling etc to be reconciled in Stage 2.~~ ~~Board indicated that Resilience only referred to Energy Centre and they were to confirm (See item 35 below)~~<br>Design to achieve ER's including 8.1.3 and |

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| | | | | | | 8.1.5 |
| 26.0 | M&E Services | Please confirm that the renal Central Concentrate Delivery system is included (adult hospital). | Yes | | Info | |
| 27.0 | M&E Services | Please confirm that all services comply with HAI – SCRIBE. | The Services Engineer will be part of the overall SCRIBE team along with the Board's Infection Control Manager, Clinical Advisers, Facilities Manager, and Departmental Representatives, plus the other members of the design team and other relevant specialists. The Services Engineer will discharge the duties as set out in HAI-SCRIBE Implementation Strategy | | info | |
| 28.0 | M&E Services | Please confirm that all plant and equipment will be suitably isolated to prevent transmission of noise and vibration. | Yes | | info | |
| 29.0 | M&E Services | Please confirm that full environmental proving off all rooms will be provided. | Yes | | Info | |
| 30.0 | M&E Services | Please confirm that all metering requirements will be provided in accordance with the ER's and BREEAM requirements. | Yes | | NC | |
| 31.0 | M&E Services | Please confirm that all services elements are included to meet the fire engineering solution, e.g. stair pressurisation, smoke control etc. | Yes | | Info | |
| 32.0 | M&E Services | Please confirm that ICT cooling has been included and provide details. | Yes, this is achieved with a chilled water solution, via crac units and fan coil units, as appropriate. | | Info | |
| 33.0 | M&E Services | Please confirm that specialist drainage has been included. | Included | | Info | |
| 34.0 | M&E Services | Please confirm that leak detection has been included. | Included | | Info | |
| 35.0 | M&E Services | Please indicate percentage capacity of all water service pipework mains from the energy centre to the main buildings for resilience. | The A and B circuits are sized for 66% of the maximum operational load. The A & B circuits from the energy centre are primary circuits and totally isolated from the secondary plantroom circuits via the plate heat exchanger units. It is envisaged that any routine maintenance | Y | | ~~Addressed on M&E Design Summary.~~ ~~Agreed though still to be finalised~~ Refer to M&E Clarification Log |
| **Renewables/Sustainability/BREEAM** | | | | | | |
| - | - | No items in this TC. | | | | |
| **Laboratories** | | | | | | |
| 36.0 | Laboratories | The Values on Labs Summary Page for Overhead and Profit do not correspond with % values provided on Stage 1 or Incoming Utility Costs Associated with Stage 1. | This is Correct. The figures are calculated by adding 6.2% plus an apportioned value for overhead recovery. | | | All responses will be addressed in Stage D to Stage E alignment |
| 37.0 | Laboratories | On Labs Final Summary Page (Page 4 of Submission) £281,552.00 in included for Additional Fee and Profit on Max Cost. If you apply the %'s from elsewhere on the page this value would be approx £43K less? | Unlike the way the Board have asked us to submit the MPTC Calculator Brookfield methodology for calculating Overhead and Profit is by taking this amount against Prime Cost excluding Fees which actually means that in the case of the Laboratory Building the gross margin on Prime Cost is circa 7.5% and thus provides the number given. | | | ~~Final Contract MPTC now refers as figures were amended in Commercial Clarification No.3~~ |
| 38.0 | Laboratories | Can you confirm extent of tunnels included within Stage 1 Section | The bid is based upon the URS and BMJ drawings issued under addendum 34. The basement and tunnels are reduced for the variant option and are as detailed within our Volume 13 of the bid. The extent of tunnels are as per the BMJ demarcation lines identified on the above BMJ drawings | | | ~~Brookfield require the route of the tunnels to be reviewed to ensure that the Labs building and the Adult and Childrens Hospital align. There is currently a mismatch in propose routes that needs to be resolved.~~ |
| 39.0 | Laboratories | No evidence of anything noted as "Provisional". Please confirm or provide detail of items to be considered as Provisional. The Bills make reference to "general assumptions". Please confirm that they are not to be | There are no provisional items within the cost plan | | | |

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| | | considered provisional. | |
| 40.0 | Laboratories | Substructure: Please confirm what exactly the £100k allowance is for fire escape and stairs includes for. | Fire strategy requirements dictate that an escape tunnel and stair will be required from the basement tunnel that is not currently indicated by BMJ or URS drawings.<br>Cost allowance included is based on similar staircase and concrete enclosure to adult basement tunnel. |
| 41.0 | Laboratories | Substructure: Allowance has been included for 14 Nr lift pits. Please confirm Nrs. Current drawing shows 12 Nr FF, goods & staff Lifts and 4 Nr lifts in connection with Robotics. | Confirmed, all lift pits are as detailed on the drawings are covered either in this specific item or in general substructure measurement. |
| 42.0 | Laboratories | Upper Floors: Please confirm all allowances for recesses or thickening of slabs is included. | Confirmed, included in rates |
| 43.0 | Laboratories | Stairs: Number of assumptions/clarifications: Design team to appraise/comment to facilitate in the removal from pricing docs. | No assumptions made in Cost Plan |
| 44.0 | Laboratories | Ext Walls: Please identify where Spec item 1.12 (louvers to office block) appear in your bid. | Allowance taken in copper cladding section. |
| 45.0 | Laboratories | Ext Walls: Ext brise soleil system included. Not stated as being required on previous dwgs. | Builders work drawings received 24th August show indication of Brise Soleil and we have based our provision on this. |
| 46.0 | Laboratories | Windows: Window sizes do not tally with C&B's original measure | Window are measured from the latest issue drawings as opposed to original C&B measure |
| 47.0 | Laboratories | Ext Doors: Please advise where Revolving entrance doors are included. | Taken in External Walls section of Cost Plan |
| 48.0 | Laboratories | M&E: Please provide details of how M&E values arrived at and if possible provide detailed back up. | Listed below are the M&E values submitted in our Bid based on a quantity of 25,322 m2 |

| Item | Unit Rate (£) | Estimated Cost (£) |
|---|---|---|
| **5A** Sanitary Appliances | 17.09 | 432,833.63 |
| **5C** Disposal Installations | 22.67 | 574,000.24 |
| **5D** Water Installations | 47.58 | 1,097,899.44 |
| **5E-G** Mechanical Installations | 332.69 | 8,424,257.16 |
| **5H** Electrical Installations | 149.68 | 3,790,277.99 |
| **5I** Gas & other fuel installations | 3.73 | 94,353.60 |
| **5K** Protective Installations | 3.13 | 79,580.60 |
| **5L** Communication Installations | 157.22 | 3,981,165.48 |
| **5N** BWICS | 39.42 | 998,193.24 |

~~Note that as a result of Commercial Clarification No. 3 some of these figures may have been amended. For example a reduction was made to Communication Installations. Final Cost Plan to be updated to reflect the final amendments that result in MPTC Figures included within the Final Contract Conditions.~~

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| **5M** Special Installations | 11.96 | 557,040.00 |

See ***Appendix Q48*** for the Summary and details. This information is also included with our response to RFI 007

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| 49.0 | Laboratories | M&E Lifts: Current drawings show 4 Nr FF Lifts, 4 Nr Goods Lifts, 3 Nr Passenger Lifts and 1 Nr Mortuary Lifts. This does not correspond with your bid. Please advise. | Drawings show 16nr lifts which we have priced. |
| 50.0 | Laboratories | Siteworks: Imported fill for backfilling. Is there no potential to re-use excavated materials ? | Option to re-use excavated material is limited and will require extensive double handling and logistical issues retaining a clean site. |
| 51.0 | Laboratories | Siteworks: No inclusion of barrier system to service yard. Please advise. | Included in bid |
| 52.0 | Laboratories | Ext Services: £5k allowed for main water distribution. Seems low | The allowance is for the final connection between a valved connection on the site water mains and the laboratory building boundary.<br>Site water mains and pipe work within the building are covered within the energy centre section. |
| 53.0 | Laboratories | Please provide statement on Inflation allowances included. | Given that this work will be primarily secured in Year 2010 no allowance has been made for any inflation of the Net Package Costs. It is assumed that all packages can be procured at 2009 prices. There is an allowance within the preliminaries for a 3% staff increase in Jan 2010 and a similar increase in 2011. |
| 54.0 | Laboratories | Has audio/visual system to Mortuary been included? If so, where and how much. | An allowance of £10k has been made with the M&E section of the Tender Bid |
| 55.0 | Laboratories | Please confirm that the Cat 3 Containment Facilities Spec referred to in Clause 1.0, Appendix C1.2 of Outline Architect Spec is included. Is so, please advise where and provide breakdown of value. | The wall, floor and ceiling finish items are based on Polyflor.<br>Single Leaf Doors £ 17,500.00<br>1 /12 Leaf Doors £ 5,000.00<br>Wall Finishes £ 47,900.00<br>Floor Finishes £ 17,300.00<br>Ceiling Finishes £ 8,650.00<br><br>Safe Change Filters £ 12,000.00<br>Cat 3 Light Fittings £ 8,500.00<br>£ 116,850.00<br><br>All costs above are net of Sub-Contract Prelims (The percentage additions for S/C Prelims are 10% on internal doors, floors and ceilings and 19% on walls) , B.E. Prelims and B.E. OH&P |
| 56.0 | Laboratories | Has allowance been included in bid for various treatments to soffits under 1F slab in open yard or entrance areas? | Included in bid. |
| 57.0 | Laboratories | Design fees included are different to the fees provided to Bidders. Please provide details of difference. | The difference in design fee for the laboratories is due to additional consultants identified as being required to advise on building control and CDM. We have also made an allowance within the risk register to cover additional fees to the design team resulting from an increase in their scope of works |
| 58.0 | Laboratories | Please confirm that all temporary services connections prior to Energy Centre being completed are included | Main incoming services are included within the energy centre section.<br>Allowance has been made for local temporary service connections until Energy Centre is sufficiently progressed. |
| 59.0 | Laboratories | Please confirm that all robotics costs included in Hospital | Confirmed |

~~These additional fees were subsequently removed and allowance only made for fees provided. Final fee for BMJ was as per advised by the Board in ITSFB in the sum of £1,156,800.~~

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~~Assumed that current Labs building design~~

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| | | element of bid. | | | | |
| 60.0 | Laboratories | Please identify any costs associated with pneumatics included in the Labs element of your bid. | An allowance £62,200 has been included within section 5L Communications of the bid. This includes for the distribution Pipe work and Receivers within the Labs, but does not include any of the main plant elements which are included within the main hospital buildings. See Appendix Q60 for further information | | | caters for robotics |

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| Technical Clarification 3 | | | | | | |
| **General** | | | | | | |
| 1.0 | LCC | n relation to any perceived LCC benefits/savings over the period, can you provide supporting details/justification of same. | Our Life Cycle Cost Analysis, contained within Volume 12.8 of our submission, provides full details of the breakdown of Life Cycle Costs for each element of the project. We believe that this provides the supporting details/justification, however, should there be any specific areas where you feel further information is required we will be happy to provide it. | | info | |
| **Logistics** | | | | | | |
| - | - | No items in this TC. | - | | | |
| **Design/HP** | | | | | | |
| 2.0 | Energy Centre | Please confirm the location in your compliant bid the Energy Centre Layout plan reflecting the retention of the Stage D Laboratories design. | We would enclose drawing NA-EC-00-PL-251-020 that shows the energy centre from our masterplan located against the stage D laboratory design.<br><br>There is some flexibility with regard to the plan location that would require BMJ input should our bid prove to be successful.<br><br>The laboratory stage D design shows all main plant within the laboratory building plant rooms, which enables the laboratory building to operate stand alone.<br><br>The compliant bid for the Energy Centre does allow for some plant in the current designs; namely Standby Generators and Boiler capacity as detailed in Volume 3 Sections 3.8 & 3.10 and Volume 4 Section 4.55. | | | Subject to Development in Stage 2 |
| **M&E Services** | | | | | | |
| - | - | | - | - | | |
| **Renewables/Sustainability/BREEAM** | | | | | | |
| 3.0 | - | Please confirm that your compliant laboratory scheme will achieve BREEAM Excellent. | Our assessment of the compliant stage D design BREEAM rating is 65 which achieves very good but falls 5 points short of an excellent rating. The main reason for this shortfall is the difficulty in achieving the energy target of 80kgCO2/m2 without linking the laboratory building to the energy centre as confirmed in the Board response to RFI144.<br>There are a number of other options that could be looked at to improve the BREEAM rating such as reduction in CO2 emissions, limiting water consumption etc. These are not currently part of the compliant scheme. | | | Statement required identifying that “excellent” will be achieved via connection to Energy Centre once completed – existing Lab plant to become resilience<br>Agreed based upon stage D design available at tender stage |
| **Laboratories** | | | | | | |
| - | - | No items in this TC. | - | | | |
| Technical Clarification 4 | | | | | | |
| - | - | No items in this TC. | - | | | |
| **Logistics** | | | | | | |
| - | - | No items in this TC. | - | | | |
| **Design/HP** | | | | | | |

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| 1.0 | Schedule of Accommodation | Clarity is required with regard to your Schedule of Accommodation. The attached Appendix A identifies the area assessment presently (in column C). Please identify each actual figure in the column D 'Confirmation' listing to reflect the following (with item 3 provided separately):<br><br>1. **Gross departmental area** (including planning and engineering and departmental circulation) for each department and the total for each hospital<br>~~1.~~2. **Net departmental area** (sum of net as drawn/designed rooms only) for each department and the total for each hospital<br>~~1.~~3. **Net room areas** (excluding all ducts, pipe boxing and service zones) listed room by room and by department<br>~~1.~~4. **Circulation area** (departmental) for each department and the total for each hospital<br>~~1.~~5. **Communications and plant areas** (interdepartmental circulation horizontal and vertical and main plant rooms and risers) for each hospital<br>**Total gross floor area** for each hospital. | Please find attached the completed Appendix A which has identified the actual area figures requested to be clarified in column D 'Confirmation'.<br><br>We have assumed the 'Y' noted against Section Number 1 is the Board's acceptance that this information has already been provided by Brookfield in Volume 1; Sections 1.1, 1.2, 1.3, 1.4 of our Bid Submission.<br><br>In addition, please note that the Total Gross Floor Area noted in our submission did not include the % Planning allowance. This SOA was generated by Codebook, and was an accurate 'As Drawn Area' which excluded the thickness of the internal partitions. This has now been included in the completed Appendix A. These figures represent the GIFA which has been priced and included within the Cost Plan. | | | ~~Board SoA to be in contract~~<br>~~Check on Board comments on Brookfield SofA being undertaken by Brookfield. To be further agreed~~<br><br>Agreed SoA included | **Formatted:** Strikethrough<br>**Formatted:** Strikethrough<br>**Formatted:** Strikethrough<br><br>**Formatted:** Bullets and Numbering |
| 2.0 | MRI replacement | Please confirm your proposals (methodology, routes and structural provision to support) the replacement/retro fit of MRI equipment. | In the absence of specific MRI product information, the building footprint areas identified on the plans as housing MRI installations have been checked against a 7.5 tonne magnet installation (example from a recent comparable project).<br>In each case it was noted that the floor and foundation structures as currently presented could be appropriately detailed to facilitate the incorporation of this equipment.<br>The proposed transit route for the MRI installation is not known but is expected to be either through double access doors at ground level, along corridors and possibly via a wall knock-out access panel into the proposed room. Alternatively, the MRI unit could be delivered to the FM area and transported via the service tunnel to a lift and then to the corridor etc as above. The floor and foundation structures for the possible routes noted above have been checked against the 7.5t load and noted to be able to be appropriately detailed to facilitate the incorporation of this equipment.<br>The final location of any such equipment will require to be specifically checked against the details of the actual equipment proposed. | | | This will be subject to Design Development Review<br>Allowance based upon 7.5t MRI load | |
| **M&E Service** | | | | | | |
| 3.0 | M&E Services | Please confirm pipework types for DH&CW, CHW and heating. | For DH&CW pipework, Stainless Steel Mapress by Gilbert (or equivalent) is proposed up to 67mm dia. And an ABS type material will be used on sizes above this. Copper will not be used on these systems.<br>For CHW & LTHW, carbon steel galvanised Mapress by Gilbert (or equivalent), Large bore, mild steel medium grade tube, Victaulic mechanical couplings (or equivalent).<br>For MTHW mild steel heavy grade tube fully welded/flanged. | | | All pipework agreed as stainless steel throughout | |
| 4.0 | M&E Services | Please provide more clarity (detail) with regard to your proposed lighting controls. | A mixture of automatic 'absence' and 'presence' detection will be provided.<br><br>Presence detection: detector switches lighting on and off.<br>Extent of provision: intermittently occupied areas such as WCs, en suites, corridors, ward kitchens, stores, plant rooms, services risers, hospital streets, bathrooms etc.<br><br>Absence detection: lights manually switched on, detector extinguishes lighting in unoccupied room.<br>Extent of provision: offices, consulting rooms etc.<br><br>In addition, in rooms benefiting from daylight, luminaires near windows will be dimmable, regulated by the amount of daylight available. | | | Refer RFI Log<br>~~Agreed~~ | **Formatted:** Strikethrough<br>**Formatted:** Strikethrough |

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| | | | Dimmable lighting has been included where specifically required by the ADB sheets.<br><br>Automatic control of lighting in rooms which have plenty of natural light will be regulated by means of a photocell within the space to ensure the required LUX is achieved by the combination of ambient and artificial light. | | | |
| 5.0 | M&E Services | Please confirm that duty / stand-by plate heat exchangers will be provided for Domestic hot water. | Packaged plate heat exchangers/buffer vessels will be arranged to provide run/standby as described in Volume 4 Specification 4.28 and Volume 5 Schedule 5.2. | | | |
| 6.0 | M&E Services | Please provide details of proposed thermostatic mixing valves for DHW. | Taps with integral TMV3 will be used wherever suitable (refer to attached data sheet). In situations where these are not appropriate separate TMV3 thermostatic mixing valves will be used such as Oventrop Brawa-Mix 97 (or equivalent). | | | |
| 7.0 | M&E Services | Please provide details of trench make up for main services. | Trench depths, spacings and backfill will be as NHS Model Engineering Specifications C01 for pipe services and C41 for electrical services. Buried pre-insulated heating and chilled water mains will be in accordance with the system manufacturer's recommendations but will be similar to above. | | | Refer to M&E ~~Design Summary~~ Clarification Log<br>~~M&E Design Summary does not address general trenching for incoming services~~ |
| 8.0 | M&E Services | Please confirm that twin regulating valves have been included for gas supplies. | Yes confirmed | | | |
| 9.0 | M&E Services | Please confirm that NRV will be fitted at each fire isolation valve as ER's. | Yes confirmed | | | |
| 10.0 | M&E Services | Please confirm mechanical air change rate for the ward tower. | A typical ward in the tower has the following air change rates to either meet the ADB requirements or achieve the environment conditions:<br>• Bedrooms 2.5 ACH (related to ensuite extract rate and air volume for chilled beam unit loadings)<br>• Ensuites 10 ACH<br>• Clean Utility 6ACH<br>• Disposal Hold 10 ACH<br>• Pantry 6 ACH<br>• Dirty Utility 10 ACH<br>• Equipment store<br>• Cleaner 5 ACH<br>• Nurse base Up to 12 ACH to balance extract from utility spaces, etc<br>• Office/meeting 4 ACH | | | Refer to M&E ~~Design Summary~~ Clarification Log<br>~~Agreed although still to be finalised~~ |
| 11.0 | M&E Services | Please confirm type of fire Extinguishants gas proposed for the main Comms rooms. | The main comms rooms will be protected by a gaseous fire suppression system, the two gases for consideration at detailed design stage are NOVEC1230 and FM200. Both gases have attributes and issues; NOVEC1230 has a Global Warming Potential(GWP) of 1, while FM200 has a GWP of 2900. Certainly NOVEC1230 is kinder to the environment, but it is less kind to the IT assets it is protecting due to the much greater temperature drop when released, over FM200. The rapid rate of change of temperature has been shown to result in failure of the electronic components. The hope is that the suppression gas is never released and that the systems operate on a double knock strategy of operation | | | Subject to detailed review Stage 2 |
| 12.0 | M&E Services | Please indicate the plant resilience for hot and cold water services, e.g. full duplicate or is one extra unit proposed per plant area? | HWS calorifiers are provided in groups to serve zones of the building. Each group includes a standby calorifier. Refer to Volume 5 Schedule 5.2 Calorifier. | | | |
| 13.0 | M&E Services | Further to your responses to TC#2, the items listed in the attached Appendix B require further clarification/responses. | As noted on Appendix B | | | |

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| **Renewables/Sustainability/BREEAM** | | | | | | |
| - | - | No items in this TC. | - | | | |
| **Laboratories** | | | | | | |
| - | - | No items in this TC. | - | | | |
| Technical Clarification 5 | | | | | | |
| **General** | | | | | | |
| 1.0 | LCC | Please check and confirm/clarify 60 year LCC values. | We can confirm the 60 year LCC values, which are based on the same assumptions as the 30 year values. The assumptions and detail are outlined within the LC Models provided. | | | |
| 2.0 | LCC | Please resubmit LCC rates as per Volume 4 Clarification Technical 19n0 – Item 8 Table 1 Item 4.0. | The LCC rates have been derived from detailed LC models based on the Specification and Capital Cost information in the Brookfield (Doig & Smith) Capital Cost Plans ("*Stage 3 Bid Cost Plan"* and *"Stage 1 Non-Compliant Bid Cost Plan"*). These cost plans have been submitted based on the NSGH bid deliverable cost plan breakdown requirements.<br><br>In line with these the LC Models have therefore only been able to been built for:<br><br>1) The Acute Adult and Children's Hospital;<br><br>2) The Laboratory Building<br><br>3) The External Works<br><br>Refer to Appendix 1 for Hospital Benchmarks used. | | | |
| 3.0 | FM | Please provide information in connection with derivation of FM services £/m2/yr rate – e.g. Sample Range, Hospital Type, Level of Service. Ditto as against differing Facilities e.g. Hospital/Lab etc. | The £/m$^2$/yr rate for FM Services is based on an average cost derived from the Davis Langdon FM database which includes detailed FM service costs and specifications across a suitable range of appropriate projects. The database has been adjusted to reflect the current size and location of this Project. | | | |
| 4.0 | FM | Please provide breakdown of FM rate as per requirements of Table 1 Item 6.3 (Management/Staff/Contracted/Materials/Equipment costs) | An indication of the expected split of FM costs is as follows:<br>Management / Admin: 12.5%<br>Staff: 37.5%<br>External Contracts: 25%<br>Materials: 20%<br>Equipment: 5% | | | |
| 5.0 | Software | Please confirm that your Zutec software has been included in your priced proposals (this to include access, licensing and any necessary product maintenance requirements). Further please advise of system compatibility (i.e. does this interface with 'standard' software packaging and provision such as Microsoft products). | We confirm Zutec software/service is included in our priced proposals. This includes the access, licensing and associated product maintenance requirements during the 2 year DLP. We would also highlight that Zutec have included an additional 12 months beyond the 2 year DLP as a benefit to the project.<br><br>Zutec system is compatible with Microsoft products. Besides overcoming the logistics of handling volumes of hard copies, it provides an efficient and quick means to search/locate project information/data. This facility is also available remotely (from anywhere with internet connection).<br><br>At the end of DLP, a hard drive of the project information uploaded at that time will be handed over to the Board. The information in that hard drive is readable using internet browser (ie. Only software required to read/run the data is an Internet Explorer). This information can be exported/copied into Microsoft Word | Y | | |

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| | | | or Excel.<br><br>Should the Board wish to use the Zutec website to make ongoing updates to the project database beyond DLP, Zutec is able to offer a hosting solution on a monthly or annual fee basis. | | | |
| **Logistics** | | | | | | |
| - | - | No items in this TC. | - | | | |
| **Design/HP** | | | | | | |
| 6.0 | Fire Strategy | Can you confirm the qualified chartered fire engineer who will develop your design/strategy moving forwards. | The qualified chartered fire engineer overseeing our design development from WSP is:<br><br>Ryan McCreadie – Associate Director<br>BEng (Hons), PhD, MIFireE, Ceng<br>Chartered Engineer with the Engineering Council Division of the IFE.<br>Membership number – 00035119.<br><br>Mr McCreadie is assisted by the following WSP fire engineers:<br><br>Tom Grace – Associate Director<br>BE (Civil), ME (Fire), CPEng, MIFE, MSFPE, MIEAust<br><br>and<br><br>Kenny Hamill – Senior Fire Engineer<br>BSc (Hons) MRICS MIFireE | | | |
| 7.0 | Fire Strategy | It is noted that the smoke control proposal for the atrium relies on the decomposition of the ETFE roof based on a smoke/gas hot gas temperatures. What contingency planning would you recommend with regard to business continuity in this regard? | The ETFE roof system will be designed to ensure that the 'hot wire' activation only occurs in the highly unlikely event where a major fire occurs from adjoining areas into the atrium.<br><br>This activation sequence will be developed/14inalized in conjunction with the Fire Authority and the Board. However, we have considered the following features to limit the need for 'hot wire' activation:<br><br>• The environmental ventilation strategy for the atrium space includes for high level (side) vents to the ETFE roof and this will be used to support the smoke strategy in the early stages of fire development within the atrium (prior to any 'hot wire' activation).<br><br>• Lower volumes of buoyant smoke (at a temperature below ETFE failure) can be exhausted via the natural vent system.<br><br>• The vent sizes will be based on fire engineering calculations using BRE 368 for smoke management systems.<br><br>• Controlled fire load to atrium base by using fire load island philosophy. Fire loads will be concentrated into specific areas and separated by minimum distance to mitigate against fire spreading throughout the atrium base.<br>• The design fire size will be within the capacity for the natural vent system.<br><br>Furthermore and to reduce the threat of a major conflagration from adjoining areas into the atrium the following design features will be in place:<br><br>• Fire separation of areas opening onto atrium<br><br>• Sprinklers to areas adjoining atrium and appropriate areas in the atrium itself<br><br>• Glazing at ward levels to prevent smoke ingress from atrium to adjoining | Y | | |

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| | | | circulation areas<br><br>• Fire separation between clinical areas and circulation areas adjoining atrium<br>In developing the 'hot wire' activation sequence with the Enforcing Authorities and the Board, the aim is to filter out and avoid unnecessary occurrence by subjecting the activation to a number of "knocks/triggers". It is envisaged that this multiple layer control will firstly involve detection of a fire within the compartment adjacent to and off the atrium that may spread into the atrium. This detection is then subject to another knock whereby a manual override is provided to allow a suitable investigation period to establish cause of alert and validation of the size of the fire threat for 'hot wire' system to be finally activated.<br><br>In the next stage of our design development, we will assess the possibility of limiting the loss of the ETFE roof to partial sections only (ie. Sufficient to vent the fire size to be agreed with the Enforcing Authorities). We will also assess to further minimize the impact of damaged roof on the operation for the clinical side of the Hospital by for example having glazed (smoke) separation to the atrium as mentioned above.<br><br>In reference to the contingency planning with regard to the business continuity, we believe that the ETFE roof 'hot wire' system would only occur in a very significant fire incident. In this scenario, the Hospital building itself is likely to have extensive damages and will be subject to major business continuity contingency planning. | | | |
| 7.0 | **M&E Service** | | | | | |
| 8.0 | Lift Study | Please confirm that your reference to the Exemplar in the lift study is erroneous and provide bed movement time from the ground floor to the top storey ward. | The data provided was based on the population figures issued by the client in the exemplar report. The approx time taken to move a bed from Ground to top storey ward will be 42 seconds assuming no intermediate stops (door opening at ground to door opening at top floor). On average each journey will take - 60 seconds including intermediate stops. | | | ~~Subject to detailed review Stage 2~~<br>~~Brookfield proposed lift speeds to be retained~~<br><br>Lift Analysis to be carried out in Stage 2 |
| 9.0 | Maintenance | Please confirm that a maintenance gantry in the atrium (ventilation actuator maintenance) is included in your priced proposals. | Actuators will be located externally (IP65 rated) for ease of maintenance.<br><br>Localised access facilities will be provided as necessary. | Y | | ~~Refer to M&E Design Summary~~<br>~~Not covered on M&E Design Summary~~ |
| **Renewables/Sustainability/BREEAM** | | | | | | |
| 10.0 | U-Value | Please confirm your primary U-values for (i) Glazing, (ii) Fabric and (iii) Roof. | Glazing 1.4 W/m$^2$K inc frame<br>External wall 0.3 W/m$^2$K<br>Roof 0.25 W/m$^2$K | Y | | |
| 11.0 | Permeability | Please confirm your building permeability. | The air permeability (infiltration) will be in accordance with the ERs Volume 2/1 App M&E.4/3.3.5(1) i.e 5m$^3$/hr/m$^2$ @ 50Pa | Y | | |
| **Laboratories** | | | | | | |
| - | - | No items in this TC. | - | | | |

**APPENDIX B**
**NSGH – Bid Evaluation – TC#4 Items from TC # 2 which require further clarification**

| Prev TC ref | Original Item | Action update required | Bidder Response | | | |
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| 1 | List received of suggested suppliers | Client not aware of several e.g. Switchgear, fire alarm, Nurse call and wholesalers used for several systems please provide details and confirm that any changes will require agreement with the Board (up to three manufacturers for each M E & PH item) | The list of suggested suppliers gives an indication of the manufacture/suppliers of the components proposed. The final selection of components will be by agreement with the Board from a selection of no fewer that 3 manufacturers unless specialist equipment dictates otherwise | | | ~~Updated list provided and qualified on the basis of final selection being "equal" or "best value" Suggest wording should be "of equal standard or quality"~~<br><br>Refer Volume 5 of Contract Data Part 2 |
| 10 | Please confirm that BMS IP | Yes. Please provide supporting narrative for the included BMS IP network. E.g. raid storage, servers racks switches | The BMS kernel is built on two fault tolerant servers configured in a primary and hot standby fashion. The operating system will be Linux based with a SQL | Y | | |

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| | network will be fully stand alone and that all active equipment has been included. | etc | database for data management. The storage of BMS data will be on a RAID configured system and this will hold the immediate data live for 1 month. The SQL will be used for back up functionality and subsequent long terms analysis of the BMS system.<br>The system will have a primary fibre backbone with the appropriate Cisco managed switches breaking out into the copper IP networks at local system level. | | | |
| 11 | Tagging | Included. Please provide supporting narrative. e.g. tags are electronic integrated in the WIFI systems etc | The Tagging system works on RFID technology and there are two methods of operation.<br>1. For items such as wheelchairs, the system will display graphically the location of the asset and can be polled to find the nearest required equipment, such as staff requiring a wheelchair.<br>~~1.~~2. Other items can be set up so that they are governed by a boundary and if the asset is brought beyond this defined boundary, an alarm is triggered. | Y | | |
| 12 | Scaffolding will be used to land generators and transformers | Is this practical, will the scaffolding have permanent foundations etc. | The majority of replacement and maintenance items detailed in the plant replacement strategy in Volume 3.23 of our submission are dealt with via the FM lifts.<br><br>It is anticipated that the expected frequency for the replacement of the major plant items is once every 20-25 years or so in normal circumstances, if at all, and, if required, likely to take place during a period of planned major plant renewal.<br><br>It is considered that it is a reasonable strategy to allow for the erection of a temporary scaffolding working platform to facilitate the removal and replacement of equipment. A structure of this type with sufficient height and capacity can be easily erected at reasonable cost using readily available materials and labour.<br><br>It will be possible to erect such a temporary structure using standard scaffolding details with the footings bearing onto the ground externally, but with protection applied to the surface finishes.<br>It is possible to incorporate permanent concrete foundations to facilitate this work but it is unlikely that the specific scaffolding arrangement will be available during the initial construction work to enable a specific design to be constructed, or that the scaffolding proposals will not change over time and render the installed foundations redundant.<br><br>Where the equipment is required to be transported over the flat roof to reach a loading platform, the structure has sufficient design load capacity to facilitate this but with the actual roof finishes requiring protection as noted in the bid documentation. | | | ~~Refer to M&E Design Summary~~<br>~~Agreed~~ |
| 13 | Medical gases and VIE | Please provide details of the plant resilience for medical air, 02, vacuum surgical air gas scavenging and nitrous oxide | All medical gas systems and plant are designed as per the current SHTM02-01, resilience within the selected plant items being provided in the following way:<br>Medical Air; a quadruplex plant will be provided, one compressor will act as a permanent standby, the remaining three compressors will be rotated through the demand requirements, this will insure boiling off of any excess condensate.<br>O2; two VIE stores will be provided, each store will be selected to provide 100% of the calculated demand, the stores will be configured as a run and standby mode.<br>AGSS; all AGSS pumps will be selected as duplex units, each pump will be rated to 100% of the calculated load. Each duplex plant will serve only four operating theatres.<br>Nitrous Oxide; a 2 x 10 manifold system with full automatic changeover facilities will be provided complete with a 2 x 1 ESM (emergency) manifold back up, all manifolds will be fully alarmed.<br>All other Air4 and Air 7 systems will have similar manifold systems complete with alarms and automatic changeover facilities | Y | | |
| 14 | luminaire | Please provide info on LED and feature lighting luminaires | Refer to attached supplementary information | Y | | |

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| | details | | | | | |
| 17 | Fire alarm PC includes incident location graphics | Please confirm fire alarm PC includes incident location graphics | Confirmed as included | Y | | |
| 20 | Patient entertainment systems. | Schematic representation noted. Please provide equipment details e.g. infrastructure, equipment, patient interface etc. | The primary patient and staff interface within the ward spaces, is based on a unit, such as the Lincor system. These units are connected back over CAT6A cables to the local hub rooms to an appropriate Cisco managed switch. At this point the system is connected back to the head end, via fibre network. The head end, is a fault tolerant server solution with various interfaces to broadcast receiver equipment.<br>It is possible for this system to be integrated with medical records IT to have the local interface become part of the clinical information management at the bedside. This is not included in this proposal at this time. There is only one screen in the patient space that covers all functionality. | | | Refer to M&E Design Summary<br>Not covered on M&E Design Summary |
| 23 | Please confirm that metering | BREEAM compliance noted, please provide a narrative e.g. central monitoring and storage | Metering of engineering services will be provided in accordance with the requirements of the ERs, BREEAM and GIL 65. All metering points will be monitored, recorded and stored on the BMS. | | | |
| 24 | Water spillage protection in secondary comms room. | It is noted that fan coils will have drip trays. On the assumption that the drip tray is full please advise how fan coils can be used in secondary comms rooms while ensuring that the equipment will be protected | Subject to the final layout of the comms rooms options for the fan coil units include positioning high level detection in the drip trays linked to the FCU operation, or more preferably locating the FCU outside of the comms room and ducting the conditioned air into the room. | | | |
| 25 | Please confirm compliance with maintainability and area isolation requirements. | Compliance on Electrical services noted, please confirm compliance with maintainability and area isolation requirements. | Isolation of electrical services will be possible as follows:<br><br>It will be possible to isolate an entire HV ring by opening protective devices at each end in the energy centre.<br><br>Sections of HV ring may be isolated by selective switching of devices at substations along the length of the ring.<br><br>Transformers may be isolated at the associated ring main units.<br><br>Main LV Switchboards may be isolated by opening their main incomer.<br><br>Submains cables to sub switchboards may be isolated by opening their protective device.<br><br>Sub switchboards may be isolated by opening their main incomer.<br><br>A minimum of 2 distribution boards will be provided per department and final circuits will be interleaved so far as is practicable (see below). Thus isolation of one distribution board will affect half of the circuits in the area served by that board.<br><br>The majority of rooms will be provided with at least 2 lighting and 2 small power circuits. Exceptions will be rooms with one luminaire or one socket outlet such as toilets, cupboards, risers and so on where it would be impractical to provide duplication.<br><br>The ERs appear to require each individual room to be capable of isolation without impact upon adjoining areas. We have not interpreted this to mean that each room should be provided with dedicated electrical circuits. Strict adherence to this requirement would result in a minimum of 4 circuits dedicated to each room ie: Side A lighting, Side A power, Side B lighting, Side B power. A department with 100 rooms would require 400 circuits which equates to say 10 no. 18 way 3 phase distribution boards. There would be a considerable impact on the size of the local sub switchboards and the quantity of submains cabling as well as on the quantity of final circuit cable containment systems and space requirements to accommodate the distribution boards and large sub | Y | | ~~Refer to M&E Design Summary~~<br>~~M&E Design Summary has less detail than this response. Brookfield to confirm that Design Summary adequately records agreements. Unless the Board can identify items within the Brookfield response to this clarification then this response should stand as it is the basis upon which the price has been calculated.~~<br><br>The specific ER requirement at 8.1.5.4 is to be achieved by the Contractor |

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| | | | switchboards. | | | |
| 28 | Plant and equipment will be suitably isolated to prevent transmission of noise and vibration. | Compliance noted, please provide narrative on proposals | Sound and vibration control for ventilation systems are described in Volume 4 Specification 4.33 giving proposals for plant attenuation, cross-talk attenuation and vibration control under fans etc.<br><br>Major plant such as chillers, generators, compressor etc. will be provided with spring isolation mounts as required to reduce vibration.<br><br>Vibration isolation of pumps will be assessed with the pump manufacturer to determine the most appropriate method of isolation, with spring pipe hangers provided adjacent to pump assemblies.<br><br>Plant noise breakout to site boundaries and intrusive noise into adjacent buildings will be controlled by sound attenuators in the fresh air intakes to all plant to meet the limiting noise criteria for the hospital site. | | | ~~Refer to M&E Design Summary.~~<br>~~Where ?? This response should be the agreed position.~~ |
| 29 | Please confirm that full environmental proving off all rooms will be provided. | Compliance noted, please provide narrative on proposals | A full environmental check on all rooms will be provided. This will be undertaken at the commissioning stage of the project, all rooms will be put through a range of internal conditions to prove the capacity within the systems to increase and or decrease the space temperatures within a set time line. These tests will be trend logged within the BMS over a given period of time and any faults found will be addressed before final handover. | | | |
| 31 | Please confirm that all services elements are included to meet the fire engineering solution, e.g. stair pressurisation, smoke control etc | Compliance noted, please provide narrative on proposals | All service elements have been included to meet the Section 2.10 Fire Strategy report.<br>Fire engineering has been used wherever beneficial to meet, or surpass, the minimum fire safety performance standards contained within the various guidance documents. To achieve this the services strategy includes for areas such as detection / alarm systems; escape bed lift provision; smoke dispersal from stair protected zones / fire fighting shafts / lift lobbies, atrium smoke and ventilation strategy; basement smoke control / clearance strategy; fire damper actuation etc. | | | ~~To be developed Stage 2.~~<br>~~Brookfield Fire Strategy and Fire Engineered solution to take precedence over Board ER Fire Strategy~~<br><br>Contractor to develop a fire engineered strategy which complies with Appendix R of the ER's and provides a solution for the design. |
| 34 | Please confirm that leak detection has been included. | Compliance noted, please provide narrative on proposals | The leak detection systems will be developed during the detailed design phase and will utilise linear detection elements, broken into appropriate lengths. The system will form part of the BMS, with a graphic interface of the overall system. Leak detection will be logged under the BMS alarm handling and it will also be possible to configure plant shut down or other intervention, on the presence of a leak being detected. | | | |
| 35 | Please indicate percentage capacity of all water service pipework mains from the energy centre to the main buildings for resilience. | Heating response noted, please provide narrative for CWS and CHWS | The site water mains feed directly into the hospital with bulk storage in the basement. No CWS is fed from the Energy Centre.<br><br>HWS is generated locally within the plant areas to feed the various zones of the building. No HWS is fed from the Energy Centre. | | | ~~Refer to M&E Design Summary.~~<br>~~Likely to be amended if water storage tanks are moved into the energy centre~~<br><br>Refer to M&E Clarification Log |

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**From:** Mark Baird
**To:** karen.connelly[redacted]
**Date:** 15/12/2009 08:16
**Subject:** Fw: M&E Log
**Attachments:** M&E Log

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From: "Ross Ballingall" [redacted]
To: Hall, David [redacted]
To: Baird, Mark [redacted]
Cc: Lovejoy, Chris [redacted]
Cc: Bicknell, Tim [redacted]
Cc: <ed.mcintyre [redacted]

Sent: 15/12/2009 07:39:17
Subject: M&E Log

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cheers

Ross

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**NSGH**
**WARD VENTILATION DESIGN STRATEGY**

**Board Requirement**

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Therefore, the sole use of mechanical ventilation was explored, again using thermal modeling.

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**Conclusion**

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**From:** "GSH@[redacted]
**To:** "Mark Baird" <[redacted]
**CC:** "Glasgow Filing" <Glasgow.Filing[redacted]
**Date:** 16/12/2009 09:08
**Subject:** RE: NSGH - today

OK see you at 10.30 hilling ton ?
Stewart

---

From: Mark Baird [redacted]
Sent: 16 December 2009 08:51
To: GSH@[redacted]
Cc: David Hall
Subject: NSGH - today

Stewart,
Things for today:
1) Review of BE M+E statements on the log to date.
2) Air Changes - WW to take Board through this + specific query = do we think SHTM 03-01 is driven by temperature or HAI for stated nr oa air changes;
3) Water Storage - take Board through this + maybe a table of volumes etc all in the same 'currency' - I.e. Notes going around discuss in m3 and litres per person and per bed - some comfort/clarirty on this needed;
4) Distribution Pipework - looks like 3 x 50per cent will be requested;
Thanks,
Mark.

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<http://www.curriebrown.com/newsitem.php?id=98>
"Sunday Times Profit Track 100 Companies 2009"
<http://www.curriebrown.com/newsitem.php?id=97>

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**From:** "GSH@[redacted]
**To:** "Mark Baird" [redacted]
**CC:** "GSH@[redacted] "Glasgow Filing" <Glasgow.Filing[redacted]
**Date:** 15/12/2009 10:04
**Subject:** RE: M&E Log

Mark,
On ventilation we see this as a sensible , practical solution and Energy efficient although it doesn't strictly comply with the SHTM,only further proviso is that room should be kept at a neutral or slightly negative pressure as per the SHTM which needs to be incorporated in extract system sizing
On the water pipe resilience ,which applies to all services from the Energy Centre, either solution technically satisfies the ER's the 100 % solution probably easier to physically separate, proposals for which need to be signed off although maybe this falls into Design Development
Regards
Stewart McKechnie
Director

<http://www.emediauk-uk.co.uk/6221=01-02BLlogo.gif>
Wallace Whittle Ltd, 8 Elmbank Gardens, Glasgow, G2 4NQ
Tel: (0141) 221 9866 Fax: (0141) 221 6088
Email: glasgow@[redacted]
http://www.wallacewhittle.com <http://www.wallacewhittle.com/>

Registered Office: 8 Elmbank Gardens, Glasgow, G2 4NQ Registered in Scotland No. 111930

<http://www.emediauk-uk.co.uk/6221=01-02BLlogo05.gif>

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From: Mark Baird[redacted]
Sent: 15 December 2009 08:41
To: GSH[redacted]
Cc: David Hall
Subject: Fw: M&E Log

Stewart,
If you can review and advise re ventilation + option choice on flow pipes (pros + cons of options and recommendation).
Regards,
Mark.

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-----Original Message-----
From: "Ross Ballingall" [redacted]
To: Hall, David [redacted]
To: Baird, Mark [redacted]
Cc: Lovejoy, Chris [redacted]
Cc: Bicknell, Tim [redacted]
Cc: <ed.mcintyre [redacted]

Sent: 15/12/2009 07:39:17
Subject: M&E Log

Mark

Attached latest update of M&E Log. There are a couple of bits that I still need to get an answer on but thought I would issue anyway. I have also attached a paper by ZBP on the Wards Ventilation Strategy. They have discussed this with Stuart at WW who seems to support it.

cheers

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**From:** Mark Baird
**To:** karen.connelly@[redacted]
**Date:** 15/12/2009 08:16
**Subject:** Fw: M&E Log
**Attachments:** M&E Log

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Cc: Lovejoy, Chris [redacted]
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**From:** Baird, Mark(Mark Baird)
**To:** gsh[redacted]
**CC:** Hall, David
**Date:** 16/12/2009 18:44
**Subject:** NSGH - air changes

Stewart,
Think we have a way forward on this one, need a calculation carried out however tomorrow morning to prove our resolution.
This involves litrespersecond, air changes etc and therefore requires your technical input and illustration.
Can we have support for halfhour/hour in the morning please (say 0930hrs or earlier if it suits).
Regards,
Mark.

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NHS
Greater Glasgow and Clyde

Project Offices
St Andrews House
80 Queen Elizabeth Avenue
Hillington
Glasgow
G52 4NQ

Mr. D. Ross
Currie & Brown UK Ltd
140 West Campbell Street
Glasgow
G2 4TZ

Date: 18th January 2010
Your Ref:
Our Ref: PJM
Tel. No: [redacted]
Fax No:
Email:

Dear Mr. Ross

**NEW SOUTH GLASGOW HOSPITALS – LEAD CONSULTANT AND TECHNICAL TEAM FEES FOR STAGE 1 LABORATORY PROJECT AND STAGE 2 DESIGN DEVELOPMENT MAIN BUILD**

I refer to recent dialogue regarding fees for the next stages of the project and write to confirm the agreed fee envelope for the key stages as follows.

**New Laboratory Project**

The fee allocation for a period of 116 weeks commencing Tuesday 5th January 2010 are as follows;

| Activity | Fee Allowance | Remarks |
|---|---|---|
| Project Management support | £196,620 | Based on input of 2 days (15hrs) per week by Mark Baird. |
| Cost Management | £287,100 | Based on input of 2 cost managers each for 2days (15hrs) per week. |
| **Agreed Budget Total** | £483,720 | |

**New Adult & Children's Hospitals**

The fee allocation for a period of 57 weeks commencing Tuesday 5th January 2010 are as follows;

| Activity | Fee Allowance | Remarks |
|---|---|---|
| Conclusion of Contract | £76,389 | This work is complete. |
| Project Management support | £141,702 | Based on input of 3 days (22hrs) per week by David Hall. |
| Cost Management | £254,790 | Based on input of 2 cost managers each for 2days (15hrs) per week. In addition input from Director at 2 days per week (15hrs). |
| PM Support - Commissioning | £59,000 | This a sum of money is allocated for provision of advice and support as provided by Paul Fairie (£93.31/hr) on a call off basis and only by instruction by either the Project Director or Project Manager. This sum may not be fully expended over the 57 week period. |
| CDMC service | £30,000 | Support provided by URS Corporation as part of your team for the period. Fee split £25k / £5k - Hospitals / Laboratories. |
| Healthcare Planning support | £20,000 | Input as required at key stages during design development, input subject to agreement with Project Director/Manager. |
| Building Services support | £40,000 | Input as required during design and package development in line with Appendix K of ITPD requirements, input subject to agreement with Project Director/Manager. |
| **Agreed Budget Total** | £621,881 | |

**Project Management Support**
The inputs by David Hall and Mark Baird will be developed over the next 2-3 weeks based on the attached schedules for both Design Development (Schedule A) and construction works on the Laboratory Project (Schedule B).

**Cost Management**
Inputs by the Cost Managers will generally follow the requirements listed in the attached Schedule C.

**Monthly Look Ahead**
As previously discussed the Board want to ensure that the input by Currie & Brown is managed within an agreed cost envelope, and that any pressures are highlighted and additional work agreed in advance of this being undertaken. I propose that we meet on a monthly basis to review progress and deal with any specific areas of concern. We can jointly agree the most appropriate time to do this, and I suggest this is tagged onto the monthly Commercial Group meetings.

**Work Outwith the Agreed Budgets**
The agreed budgets are considered as a ceiling subject to additional activities being agreed with the Project Director / Manager. On this basis, it is the responsibility of Currie & Brown staff to manage their time and input within these allowances, work undertaken without approval will be at your risk. It is understood that workload may fluctuate by week and the agreed allowances are an average input over the period.

**Delegation of Duties**
As the Board are undertaking the role of Project Manager we require to delegate a range of duties which will most likely mirror the attached schedules A-C. I propose that David and Mark meet with myself and Alan Seabourne to agree duties for both Project Manager and Cost Advisor, please let me know if you wish to undertake this task.

To conclude, I would like to be clear that the Board value the work and support the Currie & Brown team have brought to the project up to this stage, and look forward to jointly taking the project into the construction stage.

Yours sincerely

[redacted]

**Peter J. Moir**

**Head of Major Projects**

Cc Alan Seabourne Project Director

**New South Glasgow Hospitals and Laboratory Project**

**Project Management Support – Schedule A** (This reference not NEC related)

**Design Development Stage for Main Hospitals**

Key activities and tasks to be undertaken during the 57 week programme commencing 5th January 2010.

- Support the Project Director/ Manager to ensure that the Design Programme is progressing on schedule and to flag and action necessary requirements to ensure the milestones of project programme(s) are achieved.
- Participate in the design development user group sessions as required to support the Hospital Project Managers to deliver their objectives within time and cost.
- In conjunction with the Project Manager, control all early warning issues arising from design development and manage, control, report these warnings to relevant staff/groups. Provide mitigation advice to Project Director/Manager to mitigate all potential cost increases and prolongations to the works programme.
- Liaise with cost advisers to keep them aware of all potential cost issues.
- Liaise with the project Manager to keep him aware of all potential cost and programme issues.
- Oversee, manage and control other Technical Adviser input to Stage 2, ensuring that the Project Director/Manager is aware of all activities and resource requirements.
- Set out programme of work for Technical Adviser input to ensure Design is developed and compliant with contract (Employer's Requirements and Works Information).
- Attend meetings, groups as required to complete stage 2, ensure adequate liaison and co-ordination is made regarding programme of works, etc.
- Keep Project Manager fully informed about project management support in terms of need and resources.
- Attend risk management and reduction meetings as directed by the Project Director/Manager and assist with the review and update of the project risk register.
- Input to Full Business Case development and completion for submission to NHS Board.
- Complete NEC3 duties as required by Project Manager. For example, assisting the Project Manager to:
    - give notice of ambiguities or inconsistencies in the documents. To give instructions resolving ambiguities or inconsistencies
    - Accept particulars of the Contractor's design or to give reason for non-acceptance.
    - Accept particulars of the design of equipment or to give reasons for non-acceptance.

- Accept replacements persons proposed by the Contractor or to give reasons for non-acceptance.
- Assess the amount due for payment at each assessment date. To decide the first assessment date to suit the procedures of the parties
- Consider any application from the Contractor when assessing amounts due for payment. To give the contractor details of how amounts due have been assessed.
- Notify the Contractor of the compensation events which arise from the giving of instructions or changing of earlier decisions. To instruct the Contractor to submit quotations unless the event arises from a fault of the Contractor.
- Extend the time allowed for the submission of quotations and replies if the contractor agrees. To notify the Contractor of any agreed extensions for the submission of quotations or replies.
- Correct the description where a change to Works Information makes the description of the Condition for a Key Date incorrect.
- decide whether the Contractor did not give any early warning of compensation event which should have been given and to notify the contractor of his decision.
- Assist the PM to review potential effects to programme and assist with development of strategies to mitigate any prolongation as required.

This schedule generally summarises the key Project Manager supporrt services required by the Board commencing 5th January 2010, for periods;

Stage 2 – Design Development of Main Hospitals Duration 57 weeks.

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**New South Glasgow Hospitals and Laboratory Project**

**Project Management Support – Schedule B** (This reference not NEC related)

**Laboratory Project – Site Works**

**Type of Support**

- Management of Construction programme and to accept any revisions in association with the Project Manager.
- Co-ordination of all Technical Adviser requirements (Advise on their input level and resource)
- Attend meetings as agreed with Project Director/Manager.
- Active management of all technical actions required to complete project.
- Close liaison with contractor to provide Project Manager with information on raising Early Warnings and managing these through the construction programme, providing Project Manager with mitigation strategies
- Liaising with the client to develop and deliver all interface issues such as: equipment/IT plans and commissioning plans, etc.
- Working in conjunction with Project Manager and Cost Advisor(s) to ensure adequate liaison and co-ordination is provided to assure progress is made regarding works, costs, payments, etc.
- Keep Project Manager fully informed about project management support in terms of need and resources.
- Support Project Manager to manage project risks and monitor and report on risk register items.
- To support the Project Manager in monitoring and controlling testing and inspection process.
- Complete NEC3 duties as required by Project Manager. For example, assisting the Project Manager to:
    - give notice of ambiguities or inconsistencies in the documents. To give instructions resolving ambiguities or inconsistencies
    - Accept particulars of the Contractor's design or to give reason for non-acceptance.
    - Accept particulars of the design of equipment or to give reasons for non-acceptance.
    - Accept replacements persons proposed by the Contractor or to give reasons for non-acceptance.
    - Assess the amount due for payment at each assessment date. To decide the first assessment date to suit the procedures of the parties
    - Consider any application from the Contractor when assessing amounts due for payment. To give the contractor details of how amounts due have been assessed.

- Notify the Contractor of the compensation events which arise from the giving of instructions or changing of earlier decisions. To instruct the Contractor to submit quotations unless the event arises from a fault of the Contractor.
- Extend the time allowed for the submission of quotations and replies if the contractor agrees. To notify the Contractor of any agreed extensions for the submission of quotations or replies.
- Correct the description where a change to Works Information makes the description of the Condition for a Key Date incorrect.
- decide whether the Contractor did not give any early warning of compensation event which should have been given and to notify the contractor of his decision.

Work in a collaborative manner with the Project Director/Manager, Cost Advisor, Supervisor, NHS Client Team and the Contractor.

This schedule generally summarises the key Project Manager support services required by the Board commencing 5th January 2010, for periods;

Stage 1 – Laboratory Project Site Works Duration 116 weeks.

**New South Glasgow Hospitals and Laboratory Project**

**Cost Management – Schedule C** (This reference not NEC related)

**Design Development Stage for Main Hospitals – Works Stage for Laboratory Project**

**NEC3 Engineering and Construction Contract - Option 'C' target contract with activity schedule; scheme contract)**

The Cost Advisor will report to the named Project Manager for the NEC Contract.
Note the full services are listed below, those not required have been struck through.

~~1. Assist with investigation into and evaluation of procurement strategy~~

2. Advise on VAT liability. Utilising the free VAT advisory service provided by Department of Health

3. Monitor VAT advice and the application of that advice and provide ad-hoc reports to Department of Health liaising with the free Department of Health VAT assessment & advisory section. Also liase with the Board's VAT advisor and Board Finance Manager.

4. Provide the NHS Client with general advice on the NEC3 ECC Contract.

5. Assist in establishing key dates for the proposed scheme and advise the NHS Client on programme and completion strategy for inclusion in the Scheme Contract.

~~6. Advise on the capital costs associated with any proposed contract phasing~~

~~7. Assist in preparation or validation of a conceptual scheme total construction cost, if possible, to establish financial scope of work for inclusion in the scheme pack and contract.~~

~~8. Assist in establishing appropriate level of Delay damages for the *works* and Sections~~

~~9. Provide the NHS Client with advice on NEC3 insurance provisions and Scheme specific options.~~

~~10. Assist in preparation of a Scheme Pack to be issued for return of expression of interest by the Principal Supply Chain Partner (PSCP)~~

- ~~Scope of work generally~~
- ~~Prepare Draft Scheme Contract and Agreement The National Integrated Construction Framework for NHS Scotland Template for the Scheme Contract~~
- ~~Include Works Information and Site Information in draft scheme contract document~~
- ~~Advise NHS Client on use of standard options in Scheme Contract~~

~~11. Participate in open day and selection of PSCP and PSCM's.~~

~~12. Finalise draft Scheme Contract for acceptance and issue by NHS Client to selected PSCP~~

~~13. Prepare letter of appointment for NHS Client to engage PSCP.~~

14. Attend regular (usually monthly) NHS Client meetings.

15. Provide cost review advice service during design development stage for main hospitals specifically assisting the Project Manager to review both early warnings and compensation events and any cost related processes.

**Post Contract**

1. Provide and maintain appropriate support for the Client's *Project Manager*, including assist the *Project Manager* to carry out the following during the life the scheme

    - Compile reports and recommendations for submission to the Project Steering Group and Project Board.
    - Prepare Management Control forms (MCP) as required by Capital Investment Manual for submission to NHS Client on monthly/quarterly programme as appropriate.
    - Maintain appropriate communications with the contractor (Brookfield).
    - Maintain appropriate communications with the Board's Director of Finance and the Board's Finance Team, provide guidance and information relative to cashflow, valuation as required.
    - Validation of the proposals for risk management & transfer, and corresponding contingency adjustments.
    - Participate in DART workshop to establish scheme specific analysis of risks leading to a cost effective and jointly owned Risk Register
    - Provide advice on all aspects of insurance for the project.
    - Assist with the validation of cost components other than construction.
    - Participation in Value Management & Value Engineering process lead by the contractor – ~~based on a one half-day workshop and validation of cost impacts arising as submitted by the *Contractor.*~~
    - ~~Prepare priced submission for indexation, send to DTI who will carry out indexation and analyse and report on same.~~
    - Validation of Life Cycle Cost advice prepared by the contractor.
    - ~~Participate in development of the target Price up to setting of Target Total of the Prices by checking and substantiating the PSCP's proposal in context of 'open book accounting'~~
    - Monitor and review performance of contract administration by the contractor.

- Assist with the implementation of an Early Warning and other contractual procedures using the pro forma documentation pack, work with project Manager and Project Management support to maintain up to date and accurate system.
- Monitor VAT advice and the application of that advice and provide ad-hoc reports to NHS Client.
- Assist the Project Manager to establish and manage an internal Change Control Reporting Procedure, which is compatible with contractual procedures, for all potential Compensation Events (change) whether initiated by the Client through the *Project Manager*, the *Project Manager* or by the contractor. The purpose of this procedure being to :
    - Alert all parties to <u>all</u> change whether considered having any implications or not.
    - Circulate the relevant information to all parties.
    - Facilitate the assessment (with contractor, NHS Client and Client Advisors input where appropriate) of the implications of all change – scheme cost, programme and quality - in advance of instruction to the contractor.
    - Enable decisions to be taken by the NHS Client whether to approve (i.e. proceed with) or not approve (i.e. abandon) the proposed changes and to identify actions needed to accommodate the implications of both actual and approved potential changes.
    - Facilitate the central registering of <u>all</u> change.
- Attend monthly progress meetings chaired by the *Project Manager*
- Attend regular (usually monthly) Client meetings

2. Assist the *Project Manager* during Stage 3 FBC to

    a. Administer the ECC contract

    - Monitor the Accepted Programme
    - Monitor expenditure against the contractors FBC expenditure profile
    - Review *Contractor* forecast of Defined Cost
    - Perform acceptance of proposed subcontractors
    - Perform early warning duties
    - ~~Input to the development of the target Price – and make recommendations to *Project Manager* in respect of value for money.~~
    - Validation of Price Model.
    - Propose updated key dates for the contract, and provide the *Project Manager* with advice on the cost aspects of the programme

- Perform assessment duties,
- Review contractors assessment application
- Prepare assessment documents and certification for issue by the *Project Manager*
- Prepare compensation event notifications for the *Project Manager*
- Advice to the *Project Manager* on compensation events notified by the contractor
- Evaluate compensation quotations and advise on Defined Cost implications and contractual acceptability

~~b. Work with the PSCP to develop a realistic target (for the design completion, construction commissioning and handover Stage of the scheme) that can be used as the foundation for agreeing the Prices (target for stage 4).~~

~~c. To arrive at a mutually acceptable stage 4 total of the Prices (target) for proposal to the NHS Client; including participating in DART workshop to establish levels and apportion responsibilities for identified risk~~

~~d. Work with the PSCP to establish proposals in respect of documentation and procedures in anticipation of completing the scheme:~~

e. Completion of FBC

Assist the Project Manager to agree total of Defined Cost of the Stage for updating of the FBC *Activity Schedule* and adjustment to the Summary Total of the Prices.

If the scheme is terminated assist the *Project Manager* and advise the NHS Client on the Termination Procedure.

3. Assist the *Project Manager* during the construction and handover to

   a. Administer the NEC3 ECC contract

      - Monitor the Accepted Programme
      - Monitor expenditure against the contractors FBC expenditure profile
      - Review contractors forecast of Defined Cost
      - Perform acceptance of proposed subcontractors
      - Perform early warning duties
        - Input to the development of the target Price – and make recommendations to *Project Manager* in respect of value for money.
        - Validation of Price Model.
      - Propose updated key dates for the contract, and provide the *Project Manager* with advice on the cost aspects of the programme
      - Perform assessment duties including, assess the price of work done (PWDD) through the

validation of records of Defined Cost submitted by the contractor and compliance with the Schedule of Cost Components. Take site particulars as necessary; assess progress against programme and liaise with the *Project* Manager to determine any disallowed costs that may apply. Agree with contractor the amount due and report same to the *Project Manager*

- Review contractors assessment application
- Prepare assessment documents and certification for issue by the *Project Manager*
- Assist with preparation of compensation event notifications for the *Project Manager*
- Advice to the *Project Manager* on compensation events notified by the contractor.
- Evaluate compensation quotations and advise on Defined Cost implications and contractual acceptability
- Monitoring work related to Provisional Amounts in the contract and adjusting same.
- Validate construction cost profiles – as prepared by the contractor – following monthly or other event driven programme reviews
- Monthly reporting of the financial status of the project bringing together and summarising the construction cost all Compensation Events (change), advised to date, together with anticipated change and incorporating the construction expenditure profile.
- Validate, negotiate and agree the final account including *share* calculations.
- Assist the *Project Manager* in the administration of the contract during the Defects period and calculations for the Final Amount Due at the end of the *Defects Date.*

Work with Supervisor to review implications of rectifying defects in terms of cost and programme.

Work in a collaborative manner with the Project Director/Manager, Project Manager support team, Supervisor, NHS Client Team and the Contractor.

This schedule generally summarises the key Cost Advisor services required by the Board commencing 5th January 2010, for periods;

| | |
|---|---|
| Stage 2 – Design Development of Main Hospitals | Duration 57 weeks. |
| Stage 1 – Laboratory Project Site Works | Duration 116 weeks. |

# NHS Greater Glasgow & Clyde

# New South Glasgow Hospitals and Laboratory Project

# High Level Information Pack – Supervisor Role

**February 2010**

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Appendix 1 – Selection of Contractors Design Drawings (As tender)
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## 1.0 PURPOSE OF HIGH LEVEL INFORMATION PACK (HLIP)

NHS Greater Glasgow and Clyde (the Board) require the services of a Supervisor to support their Project Team with the delivery of the new £842m hospital redevelopment at the Southern General Hospital in Govan.

The Board's Project Team have spent the last eighteen months developing the brief, project requirements and works information and issued their Invitation to Participate in Competitive Dialogue (ITPD) to three design and build teams at the beginning of May 2009. The ITPD process lasted approximately 4.5 months with the three teams all returning their submissions on 11th September. There followed an intense period of evaluation by the Board's team and their advisers that numbered nearly 40 persons. The evaluation concluded in early November 2009 with the announcement of the selection of a preferred bidder on 6th November 2009. A contract was signed on the 18th December 2009 with Brookfield Construction UK Ltd (Brookfield).

The procurement of the New South Glasgow Hospitals Project (the "Project") comprises a new adult acute hospital, a new children's hospital, laboratory facilities, associated FM support areas and other site facilities and infrastructure on the existing hospital site at the Southern General in Govan, Glasgow.

The Project involves a capital investment in the region of £670m inc. VAT to provide in the order of 167,000 m2 of new hospital facilities comprising;

- a 1,109 bed adult acute hospital – 107,000 sq.m.
- a 240 bed Children's Hospital – 36,000 sq.m.
- new laboratory facilities – 25,000 sq.m.
- support accommodation including a new energy centre, facilities management base and general roads and site infrastructure.

The Board have decided to procure the services of the Supervisor through the Frameworks Scotland arrangement, that has been established by Health Facilities Scotland. This HLIP has been developed to incorporate the relevant guidance, information and documentation to provide prospective PSC companies with adequate background information on the projects to allow them to prepare a comprehensive response to the Board's enquiry.

This document provides a high level overview of the Board's plans to redevelop the Southern General Hospital complex, rather than generate another comprehensive document for the project the Board would also direct the reader to the electronic copy of the Board's 2009 Campus Masterplan. This document provides a great deal of background information about the project, although it is based on the Board's exemplar design and not the design that will be taken forward with Brookfield. The Board have included a selection of drawings representing the Brookfield scheme design as submitted within their tender in Appendix 1, and these should be used to inform the preparation of your submission.

The contract being used by the Board to deliver the three projects with Brookfield is the NEC 3 Option C, the Board wish to make the Supervisor appointment under NEC 3 Option A – priced contract with activity schedule based on the current contract programmes.

Any questions arising from this document should be addressed to;

Peter Moir
Head of Major Projects
NHS Greater Glasgow & Clyde
[redacted]

## 2.0 BACKGROUND AND STRATEGIC CONTEXT

### NHS Greater Glasgow and Clyde

The Board is Scotland's largest health board. Formed in April 2006, it joined the Clyde region of the former Argyll & Clyde Health Board with the former Greater Glasgow Health Board to create NHS Greater Glasgow and Clyde. The Board has 44,000 staff serving a total population of 1.2million people, with a budget of c£2.6billion.

Acute services are delivered from 10 hospitals, 3 of which lie within Clyde and the remaining 7 are located within the Greater Glasgow area. The geographical area covered includes West Dunbartonshire, Inverclyde, Renfrewshire, East Renfrewshire, East Dunbartonshire, Glasgow City, South Lanarkshire (Rutherglen & Cambuslang) and North Lanarkshire.

Within Glasgow, the Western Infirmary and Gartnavel General Hospitals operate in tandem delivering acute care in the west-end of the city. In the north-east of the city acute care is delivered from Stobhill Hospital and Glasgow Royal Infirmary. The Victoria Infirmary serves the south-east and the Southern General Hospital the south-west of the city. Services for children are provided centrally from the Royal Hospital for Sick Children, Yorkhill. Full adult Accident and Emergency services are provided at the Western Infirmary, Glasgow Royal Infirmary, the Victoria Infirmary and the Southern General Hospital. Stobhill Hospital has a casualty department which is covered by Consultant staff from Glasgow Royal Infirmary and the Western Infirmary.

### Acute Services Review

Over the last ten years the Board has been developing its Acute Services Review ("ASR") to modernise the acute adult health service in Glasgow. The ASR proposals were approved in 2002 and subsequently updated in 2006 to reflect the decision that the New Children's Hospital would be located on the Southern General site. The strategy is to reduce the number of adult inpatient sites from the current five hospital sites to three, all of these providing acute receiving facilities, with two sites providing A&E and trauma services. The A&E and trauma services will be located at the Glasgow Royal Infirmary and the Southern General sites, with the acute receiving facility only at Gartnavel General. This will involve building a new inpatient hospital on the Southern General site and refurbishment/smaller builds at the Glasgow Royal Infirmary and Gartnavel General sites.

The ASR proposals will be delivered in four distinct phases as follows;

| **Phase 1 - Complete** | **Phase 2** |
|---|---|
| West of Scotland Cancer Centre at Gartnavel;<br>Replacement of major elements of Victoria Infirmary and Stobhill Hospital with the development of new Stobhill and Victoria Hospitals;<br>The transfer of Cardiothoracic Services to Golden Jubilee Hospital; and<br>Laboratory development on Gartnavel site. | New maternity build at Southern General Hospital allowing full closure of Queen Mother's Hospital (completed Nov 09 transfer Jan 10);<br>New Children's Hospital allowing full closure of Royal Hospital for Sick Children;<br>New build major acute hospital for South Glasgow (enabling closure of Western Infirmary, Victoria Infirmary and Mansionhouse Unit); and<br>New Build Laboratory Facility. |
| **Phase 3** | **Phase 4** |
| Glasgow Royal | Gartnavel General Hospital - redevelopment |

**ASR Final Configuration**

The conclusion of the ASR programme will create the following final configuration:

- New cancer hospital at Gartnavel General Hospital;
- Cardiothoracic service and interventional cardiology at Golden Jubilee Hospital;
- 2 maternity units (Princess Royal Maternity Hospital and Southern General Hospital);
- 2 new Ambulatory Care Hospitals (Stobhill/Victoria);
- 2 major acute sites (Southern General Hospital and Glasgow Royal Infirmary);
- 3rd acute inpatient site (Gartnavel General Hospital);
- New children's hospital; and
- Transfer of services and closure of Western Infirmary, old Stobhill Hospital, Victoria Infirmary, Mansionhouse Unit, Queen Mother's Hospital and Royal Hospital for Sick Children.

**Key Benefits**

It is anticipated that the Project will deliver the following range of benefits for patients and staff:

- Provision of high quality services which are timely, accessible and consistently available by providing local access to core medical and surgical services and consolidating specialist and tertiary services on fewer sites within the city;
- Investment in high tech equipment and Information Technology;
- Attention to design and landscaping to improve the patients overall care;
- Facilities that are fully accessible to all and DDA (Disability Discrimination Act) compliant;
- Reduced waiting times for treatment through the provision of more efficient services increasing clinical capacity by investment in Information Technology (IT), the concentration of clinical teams onto fewer sites, optimising departmental and functional relationships and improving access to diagnostic services such as laboratory services;
- Access to highly specialised care provided by skilled staff facilitated through the centralisation of adult acute services;
- Rapid, one stop services through high volume processing of diagnostic tests and an extended working day to fit in with new models of care;
- The support of a progressive and consistent elective workload due to the segregation of emergency and elective treatments;
- Enhanced staff skills and knowledge through improved retention and recruitment due to a radically better working environment;
- Modern, fit for purpose facilities which meet the needs of patients, visitors and staff; and
- Enhanced University links through co-location of an academic centre with the New South Glasgow Hospitals. This will enhance teaching, and research and play a significant role in attracting and retaining high quality staff in all disciplines.

**Critical Milestones Reached to Date**

The following key milestones have been achieved in the procurement of the Project to date:

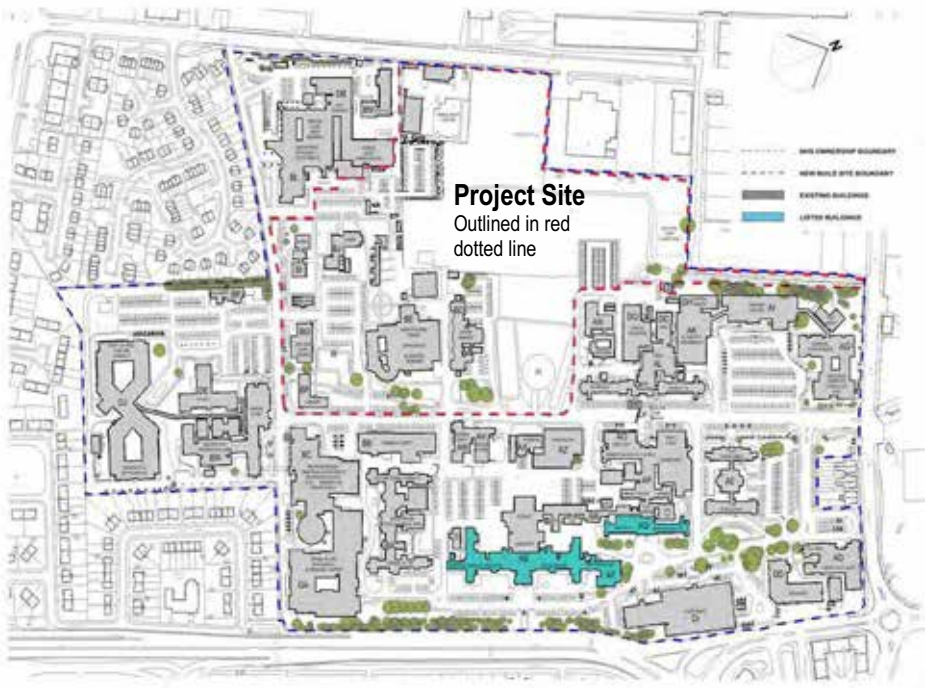
- Outline planning permission secured in April 2007;
- Outline Business Case approval by the Scottish Government in May 2008;
- Approval to proceed to market from Gateway 2 Review in January 2009;
- Publication of OJEU notice and Industry Day in February 2009;
- Section 75 agreement in July 2009;
- Return of Tenders 11th September 2009;
- Board approval of preferred bidder and announcement November 2009.
- Detailed planning consent for Laboratory Project in December 2009;
- Contract sign with Brookfield - 18th December 2009;
- Laboratory Project – FBC approval December 2009.

## 3.0 THE PROJECT

### 3.1 Introduction

The Southern General Hospital site extends to some 28.6 hectares and is located within the Govan area, lying to the south-west of Glasgow City Centre adjacent to the residential neighbourhood of Drumoyne and the industrial areas of Shieldhall and King George V Dock. The site is located 500 metres south of the River Clyde. The site's northern boundary is defined by Renfrew Road/Govan Road with the eastern boundary defined by Moss Road/A739 (Clyde Tunnel approach road). Langlands Drive and residential developments delineate the southern boundary and Hardgate Road runs north-westwards to identify the western boundary of the site.

The development site for the Project extends to some 8.6 hectares and is located in the west-central area of the hospital site as identified on the drawing below. The development site is bounded by operational healthcare buildings to three sides, with boundaries to neighbouring industrial areas to the north/north-west. The existing buildings within the development are to be demolished in advance of the Project.



### 3.2 Project Scope

The project includes the provision of 1,109 adult and 240 children's beds, with target works completion dates of March 2012 (Laboratories) and January 2015 (Hospitals). The bed numbers are illustrated below, the bulk of the beds will be provided in single rooms with en-suite facilities with the exception of critical care areas and a small percentage of 4 bed bays in the Children's wards.

| **Adult Hospital** | | **Children's Hospital** | |
|---|---|---|---|
| **Specialty** | **Beds** | **Specialty** | **Beds** |
| General Medicine (incl MHDU + AAU) | 405 | Inpatient (incl critical care areas) (*12 beds in maternity facility) | 193* |
| CCU | 20 | Short-stay (observation ward) | 20 |
| Stroke | 26 | Day Care/Day Surgery | 27 |
| Haematology | 14 | **Total Inpatient Beds** | **240** |
| Dermatology | 18 | | |
| Nephrology | 80 | | |
| Geriatric Medicine | 93 | | |
| Surgery & Vascular (incl AAU) | 164 | | |
| Urology | 39 | | |
| Orthopaedics/rehab | 139 | | |
| ENT | 31 | | |
| ITU | 20 | | |
| SHDU | 23 | | |
| Clyde / Contingency | 37 | | |
| **Total Inpatient Beds** | **1,109** | | |

### 3.3 New Adult Hospital

This will provide A&E services and acute specialist in-patient care as well as medical day services and out-patient clinics serving the local population. Key components of the facility will include:

**In Patient Accommodation** - Surgical beds (general surgery, orthopaedics, urology, vascular, ENT and renal); Medical beds; Acute Assessment Unit – 118 beds, ICU/HDU/CCU – 79 beds, Acute Stroke – 26 Beds and Care of the Elderly 93 beds.

**Out Patient Accommodation** Full range of general outpatient clinics including, among others, diabetic unit, respiratory, orthopaedics and urology.

**Day Services** 22 medical day bed area; 30 station dialysis unit.

**Treatment & Diagnostic Services** Emergency Department, 20 operating theatres, imaging, and endoscopy.

**Clinical Support Services** Pharmacy dispensary, medical physics, medical illustration. Laboratory services linked to the hospital by underground route and pneumatic tube system, aseptic unit within the children's hospital. The pneumatic system to extend across the abutment with maternity and the link to neurosciences to provide for expansion of the system to these areas.

**Non Clinical Support Services Main** entrance, medical records, administration, chaplaincy, social work, staff changing, switchboard, estates, facilities, security, catering, portering, domestic, management and energy centre.

### 3.4 New Children's Hospital

This will provide A&E services and a comprehensive range of inpatient and day case specialist medical and surgical paediatric services on a local, regional and national basis. The new development will also have outpatient facilities. The care strategy is that all of Glasgow's Children's Services (up to the age of 16 and up to 18 years where appropriate) will be provided at the New Children's Hospital. Of the 240 beds planned, around 20% of the beds will be for day patients and the balance for inpatient requirements. Key components of the facility will include:

**Outpatient Accommodation** - full range of Children's outpatient clinics including audiology, general paediatrics, orthopaedics, ENT etc;
**Day Services -** circa 10 medical day beds; 4 dialysis stations and circa 25 day surgery beds;
**Treatment & Diagnostic** - accident and Emergency, minor injuries, Imaging, 9 theatres, rehabilitation;
**Clinical Support Services** Aseptic unit, pharmacy, medical physics, medical illustration;
**Non Clinical Support Services** Facilities, ancillary services, administration, spiritual services, medical records, staff change, staff dining.

### 3.5 Laboratory Facilities

The new facilities will be one of two major laboratory sites in Glasgow (the other at Glasgow Royal Infirmary). The services to be delivered from the new laboratory build include biochemistry, haematology, medical genetics, microbiology, mortuary and post mortem. The mortuary and post mortem facilities include the re-provision of the Glasgow City mortuary which also provides forensic services for the city of Glasgow. The new building will be circa 25,000 sq.m., and will include a proportion of the Facilities Management accommodation noted below. Road infrastructure to support the operation of the laboratory function will require to be completed within the laboratory build phase to facilitate operation of the laboratory while the main hospitals are still being constructed.

### 3.6 Facilities Management Building and Energy Centre

The Board require the separation of facilities management (FM) traffic from patient and public traffic, and the facilities management services within the Laboratory Building will be linked to the main hospitals building via an underground tunnel system, this will provide for goods in and goods out as well as transfers to the laboratory and mortuary areas. A robotics (automatic material handling systems) solution for the movement of certain goods has been included within the project and will be developed in more detail over the next 12 months. Other elements of the FM facilities will be part of the main hospitals basement area. The approach to energy provision is that the new facility will provide energy on a site wide basis. The Energy Centre will be located adjacent to the Laboratory Building, but will be part of the hospitals build phase (Stage 3).

### 3.7 Retained Facilities

The remainder of the site will retain approximately 630 beds within the Institute of Neurological Sciences, Maternity, Spinal Injuries, Mental Health facilities and Langlands buildings. The Langlands facility provides older people's services, dermatology and services for the young physically disabled.

The new hospital will abut the neo-natal/maternity building to provide a physical link as well as link to the neurosciences building at Level 1. On completion of the new facilities and once staff and services have moved out, the Board will convert some of the older buildings to office and educational use. This work is currently not part of this commission for Supervisor.

### 3.8 Planning

As is noted above, Outline Planning was obtained in April 2007, subject to forty-three conditions and conditional on a Section 75 Agreement being concluded in respect of transportation issues, and this was concluded with Glasgow City Council in July 2009.

The contractor will be responsible for securing detailed planning consent and sign off of the campus masterplan during 2010, this process has already commenced with early meetings between the Council, the Board and Brookfield in December 2009 and January 2010. The submission date for planning is May 2010.

### 3.9 Masterplanning – 2009 Campus Masterplan

The Board were required to update their Campus Plan (2006) as part of the submission for detailed planning consent for the new Laboratory Project in July 2009. The 2009 Masterplan has been prepared for information and the Contractor and his Design team will be required to develop a final plan to reflect their design proposals for the site. The contractor has appointed Ironside Farrar as Planning Adviser for this process.

### 3.10 Site Investigations and Existing Site

The Board commissioned a site investigation (SI) of areas of the existing campus and the main build site. The resulting SI information is available if required by contacting the writer.

The Board will carry out certain enabling works in relation to the existing site to support and prepare for the construction period of the scheme. These include:

- demolition of the existing structures on the site (including the former residences, the catering/dining facilities and the conference facility);
- removal of foundations and roads within the site; and
- the diversion of the majority of the existing utilities from the site.

The Southern General is a live hospital site, and as such the Contractor and his team will face certain constraints in the delivery of the Project. Essential 'blue light' and other access routes will require to be kept clear and unobstructed by the Contractor at all times for the duration of the construction period, with interface protocols, communications plans and emergency/contingent planning to be discussed and agreed with the Board prior to start on site. The helipad will remain in operation until January 2011, when the tower cranes for the main build project will start to be erected. Prior to this a management protocol has been developed to take account of tower cranes located on the laboratory site and Car Park 1 site.

### 3.11 Equipment and ICT

The Contractor will supply and fit Group 1 equipment, Group 2 will be free issue by the Board and fitted by the Contractor, and the Board will supply (and fix where relevant) Group 3 and Group 4 equipment. The Contractor is required to provide all necessary fixings, supports and services connections and requirements to support all of the groups of equipment listed.

It should be noted that Information Management and Technology (IM&T) is out with the scope of this Project. The Board is procuring software and end-use hardware as part of a separate IM&T project. The contractor will install all computer infrastructure within the building such as node rooms, containment, boxes and cabling.

### 3.12 Energy and Sustainability

The Board have developed energy and sustainability strategies and targets in relation to the Project. These have been developed through consultation with the Carbon Trust, Waste Resources Action Programme (WRAP).

Energy and sustainability issues are very important to the Board at a project, The Board wish to achieve BREEAM Excellent ratings for all their new buildings.

### 3.13 Community Engagement

The Project Team and the Board's Community Engagement Managers have established the required community benefit considerations for incorporation in the procurement of the Project. These have been developed in line with the Scottish Government's Guidance on Community Benefits in Public Procurement. In particular the Board will seek to work in partnership to develop initiatives around the following:

- Targeted recruitment & training;
- Developing Small and Medium Enterprises (SMEs); and

Developing Social Enterprises

## 4.0 Project Management

### 4.1 Introduction

The Board has established a project organisation structure to oversee the implementation of the Acute Services Review (ASR), including this Project. The ASR Programme Board is responsible for the implementation of the ASR strategy. The ASR Programme Board consists of the Chief Executive; the Acute Services Chief Operating Officer; the Director of Acute Services Strategy, Implementation and Planning; the Project Director; Divisional Directors; Finance Director; Executive Medical and Nursing Directors; Partnership Representation; and a Senior Civil Servant.

A Project Director, who has executive responsibility for the implementation of the Project, and a Project Team have been appointed by the Board. The New South Glasgow Hospitals Executive Board has been established to ensure that all the governance and project milestones are achieved.

The Project Team includes a range of staff from clinical, operational, planning, facilities, finance and estates backgrounds and is responsible for the co-ordination of all workstreams, reporting to the Board through its governance structures. The Project Team is led by the Project Director and is supported by legal, financial and technical advisors, as identified below.

| Role | Individual/Organisation |
|---|---|
| Senior Responsible Owner | Ms Helen Byrne Director of Acute Services Strategy, Implementation and Planning |
| Project Sponsor | Mr Robert Calderwood - Board Chief Executive |
| Project Director | Mr Alan Seabourne Project Director – New South Glasgow Hospitals Project |
| Project Technical Lead | Mr Peter Moir - Head of Major Projects<br><br>Also named Project Manager in contract. |
| Board Lead Consultant & Cost Advisor | Currie & Brown UK Limited |
| Board Legal Advisor | Shepherd + Wedderburn LLP |
| Board Financial Advisor | Ernst & Young LLP |

A number of groups have been set up to support the Project as follows:

### 4.2 New South Glasgow Hospitals Executive Board

The New South Glasgow Hospitals Executive Board ("Executive Board") will have delegated authority to make executive decisions on critical points in the Project's process. The role of the Executive Board will be to oversee the overall process of the Project and to co-ordinate work streams. The Board will meet bi-monthly or more frequently depending upon the stage of the project and will report into the ASR Programme Board.

### 4.3 ASR Systems Redesign Group

The development of the New South Glasgow Hospitals will result in a number of radical changes not just in reconfiguring clinical services across Glasgow but also in working practices and the way in which patients receive their treatment. A comprehensive and co-ordinated process will be developed to take forward the re-design aspects and in an integrated fashion with staff, human resources and workforce planning to ensure both staff involvement and that the right number of staff and skills are available to support the new ways of working.

### 4.4 Procurement and Finance Group

This has been established to meet the requirement for specialist skills in relation to taking the procurement process forward, as well as with regard to the funding, affordability and value for money aspects.

### 4.5 Joint Project Team

The Joint Project Team is responsible for managing the day to day complexities of the Project. The Joint Project Team reports to the Executive Board and, where necessary, to the ASR Programme Board, the ASR Systems Redesign Group and the Procurement and Finance Group.

### 4.6 Site Programme Co-ordinating Group

There is a very substantial construction programme planned over the next six years at the Southern General Hospital. The site will continue to operate during the full construction programme and therefore there is an established group to monitor, co-ordinate and control all on-site works.

### 4.7 Other Groups

The Board are currently developing a meetings schedule with the Contractor, and the Supervisor will be required to attend a number of these as follows;

- Construction Interface Group
- Technical Design Group

An list of the various project focused groups and meetings is included in Appendix B, and meetings that require the attendance of the Supervisor are noted. A construction progress meeting remains to be added, and may substitute the Construction Interface Group.

The Board are currently reviewing the internal meeting arrangements as listed above to rationalise the number and frequency of meetings generally now that the procurement phase of the project has commenced..

### 4.8 The Brookfield Team

The core Brookfield team is listed in the following table, the team is being supplemented as they mobilise for construction of the Laboratory Project.

| New Adult and Children's Hospitals, Energy Centre and External Works | |
|---|---|
| **Role** | **Company** |
| D&B Contractor | Brookfield Construction UK Ltd |
| Architects | Nightingale Associates |
| Landscape Architects | Gillespies LLP |
| Cost Manager | Doig and Smith |
| Healthcare Planner | Tribal |
| Civil & Structural | WSP Group Ltd |
| M&E Design | Zisman Bowyer & Partners LLP |
| Planning Advisor | Ironside Farrar |
| Acoustics | Acoustic Logic Consultancy Ltd |
| Supply Chain Partners | Dunne Group |
| (At February 2010) | Mercury (M&E) |
| | Astins (Partitions) |
| | Structal (UK) Ltd (Envelope/cladding) |

| New Laboratory Block with novated Design Team | |
|---|---|
| **Role** | **Company** |
| D&B Contractor | Brookfield Construction UK Ltd |
| Architects | BMJ Architects |
| Cost Manager | Part of Currie & Brown commission as Lead Consultant. |
| Civil & Structural | UrRS Corporation |
| M&E Design | Wallace Whittle / Harley Haddow |
| Planning Advisor | Ironside Farrar |
| Supply Chain Partners | Dunne Group |
| (At January 2010) | Mercury (M&E) |
| | Astins (Partitions) |
| | Structal (UK) Ltd (Envelope/cladding) |

### 4.9 The Currie & Brown Team

| Lead Consultant Role | |
|---|---|
| **Role** | **Company** |
| Project Management Support | Currie & Brown |
| Cost Advisor | Currie & Brown |
| CDM Co-ordinator | URS Corporation |
| Civil & Structural | URS Corporation |
| M&E Design | Wallace Whittle |
| Healthcare Planner | Buchan Associates |
| Architect Advisor | HLM Architects |

## 5.0 PROGRAMME

5.1 The outline timetable for the procurement is as follows;

| Event | Milestone |
|---|---|
| Publication of OJEU (incl MoI and PQQ) | 10 February 2009 |
| Closing date for responses to PQQ | 20 March 2009 |
| Evaluation of PQQ responses and shortlisting of bidders | 08 April 2009 |
| Issue of Invitation to Participate in Competitive Dialogue (ITPD) to bidders | 01 May 2009 |
| Tender Return | 11 September 2009 |
| Evaluation of Bids and Contract Award to Brookfield Construction. | November 2009 |
| Stage 1 (Design + Construction of New Laboratories) commences | February 2010 |
| Stage 2 (Detailed Design of Adult, Children's and Infrastructure to FBC Submission) commences | January 2010 |
| Stage 2 completion, FBC and approval to proceed with Stage 3 | November 2010 |
| Stage 3 (Engagement to carry out the construction of the Adult, Children's and Infrastructure) commences | November 2010 |
| Stage 1 Completion (Construction) - Laboratory Facilities | March 2012 |
| Operational Date – Laboratory Facilities | June 2012 |
| Stage 3 Completion (Construction) – Hospitals | January 2015 |
| Operational Date – Hospitals | Summer 2015 |
| Stage 3A (Demolition of Surgical Block and associated buildings, and completion of soft landscaping) commences | Summer 2015 |
| Stage 3A completion | Summer 2016 |

## 6.0 PROCUREMENT STRATEGY

### 6.1 Introduction

The Board's procurement strategy has used the competitive dialogue procedure to facilitate discussion with bid teams around pre-determined technical and commercial matters. The outcome of the competitive dialogue process has selected Brookfield as the Board's preferred partner and the contract was concluded in December 2009. The Board have contracted with Brookfield under an NEC3 agreement to a) design and construct the new Laboratory Facility and b) design and construct the new Adult and Children's Hospital under a target price arrangement.

This strategy allowed the contract to be awarded following evaluation of the bids which were submitted in September 2009. Post contract award, the concurrent activities of the Contractor have commenced with completion of detailed design and building the Laboratories element of the Project whilst under taking design development of the main Hospitals element of the Project. The design development culminates in the FBC compilation and approvals: the FBC is an essential gateway which must be achieved to allow the commencement of the construction of the main Hospitals element of the Project.

The terms of the contract awarded (including the overall target price for the works and programme dates and activity schedule milestones) is based on the contractor's final tender response at the end of the competitive dialogue process. As is noted above, specific gateway criteria (including necessary business case approvals) have been incorporated into the design development, programme and activity schedule in the contract through to the commencement of construction of the Adult and Children's Hospital.

The design of the Laboratory Facility was more developed at tender stage than the main hospitals, and is summarised as follows, the Laboratory design team have been novated to Brookfield for this project.

| | **Design Stage at Tender** | **Design Stage at Contract Award** |
|---|---|---|
| Laboratory Block | RIBA Stage D | RIBA Stage E/F |
| Main Hospitals | RIBA Stage C | RIBA Stage C |

In summary the stages of the project can be summarised as follows;

| **Stage** | **Heading** | **Outline Activities/Milestones** |
|---|---|---|
| Stage 0 | Competitive Dialogue | Bid and design development leading to submission of technical and cost information in final tenders. Identify maximum target price and agree pain/gain share. Select contractor – contract award. |
| Stage 1 | Construct Laboratories | Consecutive to Stage 0 and concurrent with Stage 2. |
| Stage 2 | Detailed Design of Adult, Children's and Infrastructure to FBC Submission | Design development of adult and children's hospitals. |
| Stage 3 | Construct Adult and Children's Hospital | Consecutive to Stage 2. |
| Stage 3A | Demolition of Surgical Block and associated buildings and completion of soft landscaping | Consecutive to Stage 3. |

### 6.2 Construction Agreement

This contract is based on the standard template NEC3 – Engineering and Construction Contract Option C Target Contract with Secondary Option Clauses as stated in Contract Data. Unlike the Frameworks Scotland arrangement the contract has pain/gain incentivisation both above and below the target price.

The contract covers the design development and construction of:

- Associated Infrastructure.
- Laboratory Buildings;
- Adult Hospital;
- Children's Hospital; and

The Target Price for the Project has been agreed at contract award and will comprise three distinct areas with separate Programme and Activity Schedule details, namely:

- Conclusion of design and construction of the Laboratory Buildings;
- Design Development to FBC Stage for the Adult and Children's Hospitals; and
- Conclusion of design and construction of the Adult and Children's Hospitals.

Both target and maximum prices have been agreed with Brookfield.

## 7.0 ROLE OF SUPERVISOR

### 7.1 Introduction

The Board will make the appointment for the role of Supervisor based on the delivery of a complete service for the three projects. However, the Board confirm that they reserve the right to conclude the commission at each stage noted below. The Supervisor will also require to have written authorisation from the Project Director or his nominee before commencing work on any stage from inception of the commission. Note the stages referred to below are project related and do not refer to Frameworks Scotland standard paperwork.

**Stage 1** - the Supervisor's commission will commence with the construction of the new Laboratory Facility and associated facilities management and waste management areas, roads and external works. AS an initial duty the Supervisor will be required to familiarise themselves with the works information for this project which will be time consuming.

During **Stage 2**, assist the Board and the Lead Consultant to review information developed by the contractor and as set out in Appendix 3. The Supervisors focus will be on a general overview of proposals for construction. The Supervisor will not be involved in any of the 1:200, 1:50 or ADB design development and sign off process.

**Stage 3/3A** - Once the Board have secured FBC approval for the new Adult and Children's Hospitals, Energy Centre and balance of site roads and externals works, the Board, subject to agreement with the consultant/Supervisor, will confirm approval for the Supervisor to extend their role to include these stages.

| Project | Approx. Floor Area | Guide Construction Cost inc VAT | Duration | Remarks |
|---|---|---|---|---|
| **Stage 1** – New laboratory Project | 25,000 sq.m | £87.8m | March 2010 to May 2012 | Site works only. |
| **Stage 2 –** Design Development of Adult & Children's Hospitals | | | From appointment to October 2010. | Refer Appendix 3 for input at this stage. |
| **Stage 3** – New Adult and Children's Hospitals | Adult – 107,000 sq.m Kids – 36,000sq.m | £560.7m | November 2010 to March 2015 | Site works only. |
| **Stage 3A** – Demolitions and completion of Ext. Works | | £5.05m | July 2015 to August 2016 | Site works only. |

7.2 Indicative fee schedules for Supervisor services should be broken down into the stages noted in the table above. Repondees should set out their plans to deliver the service by stage based on the standard Framework services for NEC3 contracts.

**THE SCOPE OF SERVICES**

Note: to the *Employer* and the *Consultant*

This Scope of Services may contain provisions that affect the conditions of contract.

Such provisions apply and take precedence unless agreed otherwise between the Parties.

## 1.0 INTRODUCTION

1.1 The *Employer's* objectives

The *Employer's* objectives for the *services* are:

- To appoint a Professional Advisor (the *Consultant)* to the position of *Supervisor* providing advice and assistance to the Project Director and *Project Manager* in management of the Board's projects at Southern General Hospital.
- For the appointed *Consultant* to support the Project Director and *Project Manager* by carrying out the 'Duty of the *Supervisor*' appended to this Scope of Services and any other duty required by the Scope of Services.
- For the appointed *Consultant* to actively engage in a policy of mutual trust and co-operation in his dealings with the Principal Supply Chain Partner (Brookfield) and all other members of the supply chain and other Consultants thus contributing to development of an environment that will promote harmonious and cooperative conduct encompassing the whole of the human resources necessary to complete the scheme.
- To avoid contractual disputes and manage procedures by providing, to support the Project Director and *Project Manager,* a *Consultant* knowledgeable and experienced in the application of the Engineering and Construction Contract – Option C target contract with activity schedule as applied to Frameworks Scotland schemes.

1.2 Contract philosophy and general principles of application

1.2.1 Contract philosophy:

- The basis of this contract is the NEC3 Professional Services Contract (PSC) Option A – Priced contract with activity schedule. Amendments to the PSC are as detailed in the template provided as a basis for the scheme specific contract.
- If an inconsistency occurs between the published NEC3 Professional Services Contract and the several documents forming this contract then the documents forming this contract takes precedence unless the *Employer* and *Consultant* agree to the contrary.

1.2.2 General principles of application

The appointment may be awarded to the *Consultant* at any stage of development of the main works scheme contract for Stage 1, Stage 2 Design Development to Stages 3 and 3A construction delivery and handover stage. The award will be staged and approval must be received in writing from the Project Director or his nominee before proceeding. The Stages are set out in Section 7.1.

- In this contract the contract documents are prepared such that the *Employer* may engage the *Consultant* at any Stage. Once the *Consultant* is appointed the only change to the contract is by compensation event procedures.
- The principles of the PSC Option A Priced contract with activity schedule are applied to each stage of the *service* through the identified gateways (Stage 1, Stage 2 Design Development to Stages 3 and 3A construction delivery and handover stage).
- The Scheme Proposal includes lump sum Prices and activity schedule together with a detailed forecast of the *expenses* for each stage of the *services* together with other information stated in the scheme documents.
- Progress through the scheme gateways thereafter is achieved by the *Employer's* gateway pro forma 'Agreement to continue the *services*'.

**1.3 Deliverables**

In Providing the Services the appointed *Supervisor* delivers competent management actions and procedures;

- Assisting in development of the *works* scheme contract in conjunction with the *Project Manager* and the *Contractor,* following appointment of the *Contractor* to the scheme contract.

**1.4 Brief description of the scheme**

The *works* scheme contract is for;

The construction of circa 167,000 square metres of new build mixed acute healthcare estate, commencing with a new Laboratory Block, and subject to FBC approval in November 2010, the construction of a new Adult and Children's Hospital facility. All projects will have a commissioning period.

**1.5 Project programme**

Key milestones are included within the project timetable in Section 5.0.

## 2.0 SCOPE OF SERVICES

### 2.1 Introduction

2.1.1 The general scope of the *service* is provided for in the 'Schedule of Duties for *Supervisor*. See Appendix 'A'.

2.1.2 The duties for this scheme commence at:

- Stage 1 - Laboratory Block secured FBC approval December 2009, and construction commences in February 2010 through to completion on site March 2012. Duties of the Supervisor will commence from appointment through March 2012. NEC 3 does not recognise defects post practical completion (PC), it is therefore assumed commission will cease at PC.
- The new Adult and Children's Hospitals secured OBC approval in May 2008, the Board are developing the FBC during the Stage 2 - Design Development process Jan-Sept 2010 and intend submitting the full business case (FBC) in October 2010 ending with approval by CIG in November 2010, Stage 3 - construction works will commence soon after in November 2010. The duties of the Supervisor will commence in March 2010 and complete in summer 2016 with the completion of Stage 3A.

### 2.2 Additional requirements

2.2.1 The Health Board identifies additional *services* required but not provided for in the Schedule of Duties for *Supervisor* generally or for a specific phase:

Not applicable, or subject to detailed discussion and negotiation.

### 2.3 Places of work

- The workplace is generally in the *Employer's* offices at the site based office complex. The Project Director and his team will be based on site with the Contractors team. The Employer will be located on site from May 2010 through to Summer 2016. This arrangement will be for all stages of commission.

  Address: Hardgate Road, Govan, Glasgow.

  - The *Consultant* may perform agreed duties at his own offices with prior permission from the Project Director.

    The *Consultant* will be provided with 'hot desk' office accommodation at the *Employer's* site offices and will be expected to conduct the bulk of their work from this location.

## 2.4 Other constraints placed on the *Consultant*

### 2.4.1 Hours of work

The *Consultant* is required to provide attendance on the NHS Health Board during the *services* as follows;

Overtime in addition to the stated hours may only be reimbursed to the *Consultant* where prior permission has been obtained from the *Employer* and a compensation event notified and accepted.

The *Consultant* identifies and allows for Incidental overtime not resulting from instruction of the *Employer* or actions of the PSCP the Prices in the Form of Scheme Proposal.

- Stages 1, 2, 3 and 3A

  This relates to construction and handover of the new adult and children's hospitals, the new laboratory block and the site infrastructure works. Attendance of normal working day within the operating hours as below;

  | | | |
  |---|---|---|
  | Monday to Friday | start 08.00am | finish 05.30pm |
  | Saturday | start 08.00am | finish 01.00pm (as required but infrequent) |

- *Main works *Defects Period* – ad hoc hours for the *services*

### 2.4.2 Provision of equipment

In addition to facilities at the *Consultant's* offices, staff are to be provided with personal notebook computers for use at offices of the *Employer* and *Contractor*. These computers are to be included within the consultants overhead costs and will not be provided by the Employer or the Contractor.

Computer software minimum requirement is:

- Microsoft Office
- Microsoft Project
- Adobe Acrobat
- Autocad or minimum Autocad reading software for project drawings.

The project will utilise a web based email, document, drawing and NEC3 management software and the consultant will have access to this system, this will include standard NEC forms similar to the Health Facilities Scotland CAT system. The main communication tool on the project will be the web based system.

**2.4.3 Procedures and reporting**

The *Consultant* complies with the requirements of the Project Director/*Project Manager* and as further detailed in this scope part 7.1

2.4.4 Relationships with the PSCP (*Brookfield*)

The *Consultant* co-operates with the PSCP in the manner stated in the *works* scheme contract as well as in this contract to:

- Deliver the scheme completed on time, within the PSCP contract agreed total of the Prices and accepted compensation events to the required standard of build.
- Achieve the most cost effective construction and commercial solutions to scheme contract compensation events on behalf of the NHS Greater Glasgow & Clyde.
- Manage the programme effects of change thus avoiding unnecessary delay in completion of the scheme contract.
- Ensure readily available means of communication by regular personal meetings and interaction with the PSCP's staff and consultants on a day by day basis.
- Ensure that all handover procedures are complied with and that that the *works* scheme is operational and secure in all its aspects at Completion.

2.4.5 Limit of *Consultant's* authority

The *Consultant* has no authority, except as may be delegated by the *Project Manager,* to enter into any agreement with the PSCP in respect of commercial discussions that may occur whilst undertaking the Duties of the *Supervisor*.

**3.0 The Prices**

**3.1 Introduction**

3.1.1 The *Consultant* provides the Prices and activity schedule (s) together with *forecast expenses* using the Excel workbook (Priced contract with activity schedule and *forecast expenses*) adopted by Frameworks Scotland.

3.1.2 The Prices for the activity schedule derived from the framework tender percentage fee structure embodied in Frameworks Scotland. Note: due to the duration of the commission, PSC's are asked to consider and review the rates to be included in their schedules, and are further asked to consult with the HFS Framework Manager prior to submitting their proposal. The priced activity schedule should identify the applicable stages of the contract, e.g. Stages 1, 2, 3 and 3A and Defects Date period and close out based on the Boards Stage budgets in table in section 7.0. Option C management, design and construction contract; the framework registered fee structure percentage is applied for each applicable stage in the scheme. The *Consultant* identifies the monthly charge for the period of the stage as a derivative of the stage Price for payment. *Forecast expenses* are identified in the Scheme Excel workbook provided by Frameworks Scotland framework.

**3.2 *Staff Rates***

3.2.1 *Staff rates* maybe those rates embodied in Frameworks Scotland. Note: due to the duration of the commission, PSC's are asked to consider and review the rates to be included in their schedules, and are further asked to consult with the HFS Framework Manager prior to submitting their proposal.

3.2.2 *Staff Rates* include general risk. However operational risk should be reflected in the forecast of resources to be allocated and the hours to be worked in each stage.

3.2.3 Inflation will be based on current Framework arrangement of RPI.

**3.3 *Expenses***

3.3.1 All normal out of pocket travel and office overhead expenses are to be included within individual hourly staff rates. This should include photocopy and binding costs for 10 monthly Supervisor progress reports throughout the life of the commission.

3.3.2 Specialist surveys, tests or visits to sites out with the Glasgow conurbation as required by the Employer, will be reimbursed at cost with management handling charge. These costs will only be chargeable after written agreement has been provided by the Project Director

**3.4 The Prices**

3.4.1 The Prices proposed by the *Consultant* are to be calculated using *staff rates (see notes in 3.1 above)* and other applicable items from the Frameworks Scotland agreement.

3.4.2 The Prices are only amended where a compensation event is accepted.

**4.0 Programme**
**4.1 Introduction**

4.1.1 In complying with the contract (PSC 31.2) the *Consultant,* incorporates details of any programme provided by the *Employer*:

- An outline programme, a Gantt chart reflecting the anticipated periods for Stages 1, 2, 3 and 3A handover/Defects period plus 4 weeks.

4.2 First programme for acceptance

4.2.1 The programme is submitted to the *Employer* for acceptance based on

- The *Employer's* programme as may be amended for the agreed *starting date*.

4.3 Revisions of the programme

4.3.1 The *Consultant* provides revisions to the Accepted Programme at the intervals stated in Contract Data Part one and prior to gateway entry at each stage, taking account of any programme applying for the PSCP *works* contract.

**5.0 *Consultant* resources – People**

5.1 Effect of the PSCP's programme

5.1.1 If the *Consultant* identifies that the PSCP's programme impacts on the *Consultant's* programme in respect of time and or resource this should be brought to the attention of the *Employer* by an early warning notification in order that the effect can be minimised.

**6.0 Commercial requirements**

6.1 The following requirements apply individually to each stage

6.2 Cash flow and expenditure projections for the Prices and forecast *expenses,*

6.2.1 Cash flow and expenditure projections are prepared by the *Consultant* in graphic format to coincide with the Accepted Programme for each of the stages and submitted to the *Employer* for acceptance.

6.2.2 The cash flow and expenditure projections demonstrate the indicative and current amounts for each stage at each assessment interval.

6.3 Records of Time and *expenses*

6.3.1 The *Consultant* maintains:

- Copies of all records relating
  - to total Time (Daily allocation records for his staff)
  - and *expenses*
- Records of all correspondence and meetings relevant to total Time Charge and *expenses* due to or paid to Sub-consultants.

6.4 Assessment procedures

6.4.1 Particular requirements of the *Employer* for *Consultant's* assessments and subsequent invoicing are as follows:

Monthly.

**6.5 Early warning**

6.5.1 The Project team and Contractor are developing a standard early warning process and forms similar to the NHS CAT system, this is still in development. Notifications are not to be transmitted verbally or by other communication.

6.5.2 The *Employer* requires the *Consultant* limits early warning to the procedures stated in PSC (16) and to close out each early warning without delay.

6.5.3 Early warning is not notified during progress or other meetings not specifically convened for the purpose of early warning.

6.5.4 Early warning/risk reduction meeting discussion is to be limited to the matter notified and not expanded into more general discussion. Where more than one matter is to be discussed each has its own agenda and individual record of the proposals considered and the decisions taken.

6.5.5 Early warning notifications /risk reduction meetings are not normally given / held for compensation events that have been notified in accordance with the contract.

**6.6 Compensation events**

6.6.1 Compensation events are instructed / notified using the standard notification and this will be part of the system currently in development as noted in 6.5.1.

6.6.2 A compensation event is not considered to be instructed / notified if any communication other than the standard notification is used.

6.6.3 The original of the compensation event notification is a 'live' document and is transmitted between the Parties as a record of submission, requirements and acceptance.

6.6.4 Compensation event quotations are to be detailed and supported by contemporary records / allocation sheets where the effect of the event is on 'the total Time Charge and *expenses* of the Time Charge for work already done'.

6.6.5 Compensation event quotations that do not have an impact on Sectional Dates for Completion or the Completion Date do not require revision of the programme to be submitted with the quotation unless instructed by the *Employer.*

6.6.6 For the avoidance of doubt, the principles of the contract apply to compensation events for all stages of the scheme.

The *Consultant* includes additional management resources in compensation event quotations only if the existing management structure and resources cannot contain the effect.

**7.1 Reporting**

- Monthly report CAT Master Register for the *service* to be submitted to the Project Director - Alan Seabourne. The report will include as a minimum aspects on performance, procedures, early warnings/ C Events, construction review, compliance, defects and information requirements.
- Other reports subsequently notified by NHS Greater Glasgow & Clyde.

7.2 Compliance with the CDM co-ordinator's pre-construction information – URS Corporation.

7.2.1 The *Consultant* includes relevant documentation within the scheme specific documents, including those prepared in conjunction with the PSCP.

7.3 Liaison with User Groups

Note – the Supervisor will not be involved with any user group discussion and will solely be involved with the construction and M&E aspects of the design development stage (Stage 2) and on site construction works for the Labs (Stage1) and Adult and Children's hospitals (Stages 3 and 3A).

7.4 Facilities for the *Employer/Project* Manager

[Include any requirements]

7.5 *Consultant* Quality Plan

7.5.1 The quality management system to be operated is to be compatible with the *Consultant* system identified during Frameworks Scotland selection process and developed to be *services* specific.

7.6 Handover at completion

7.6.1 The *Consultant* complies with the requirements of the *Employer* as developed during the Period of the Services.

7.6.2 Handover requirements and procedures are;

[List details]

7.7 Liaison with other Consultants

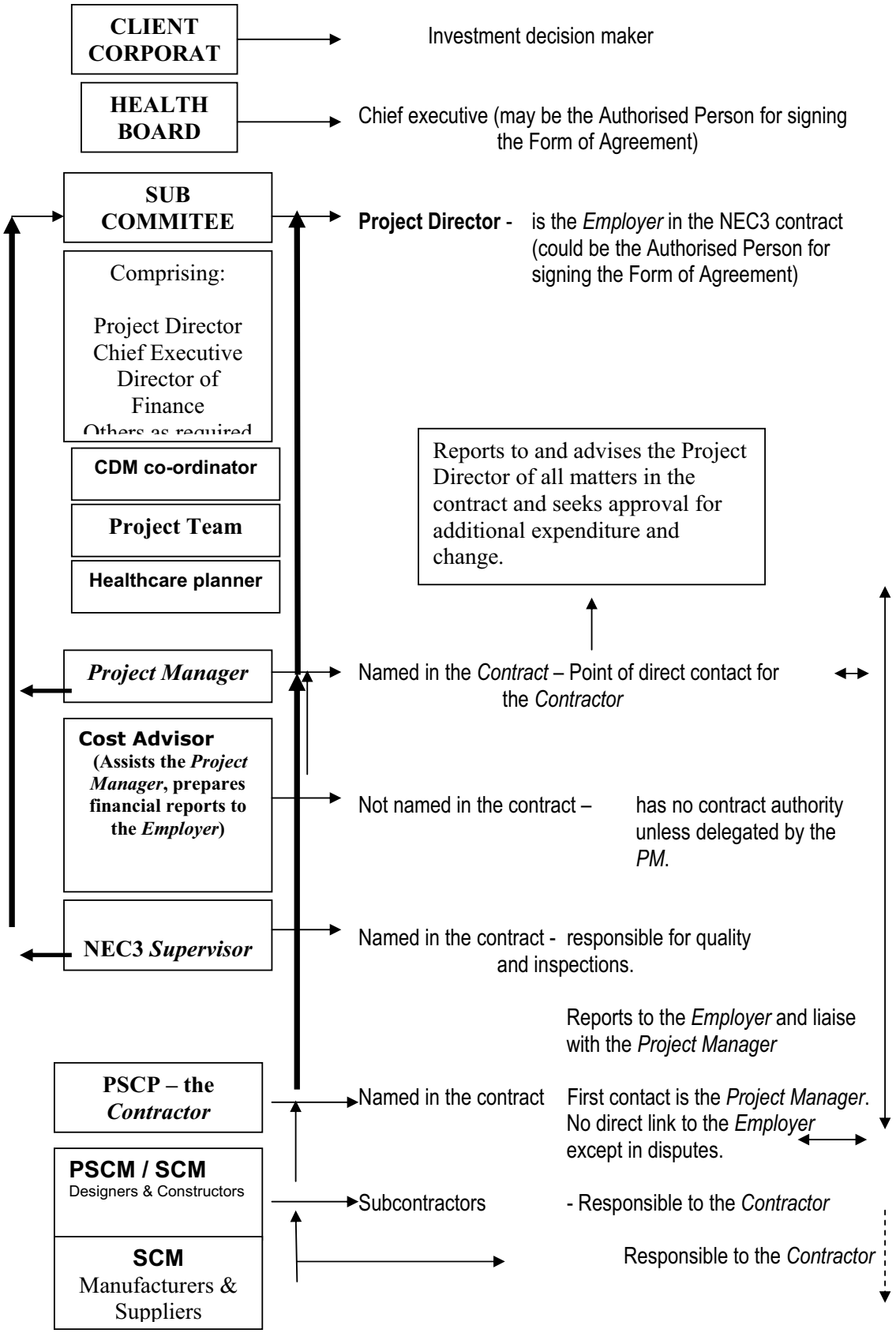
7.7.1 The Consultant liaises with other Consultants as directed by the Employer.

**APPENDIX A (to this section of the document)**

**Frameworks Scotland**

**Schedule of Duties for *Supervisor***

**(**For incorporation in the Scope of Service for appointment of the *Supervisor* under the NEC3 Professional Services Contract)


CLIENT CORPORAT
Investment decision maker
HEALTH BOARD
Chief executive (may be the Authorised Person for signing the Form of Agreement)
SUB COMMITEE
Project Director - is the Employer in the NEC3 contract (could be the Authorised Person for signing the Form of Agreement)
Comprising:
Project Director
Chief Executive
Director of Finance
Others as required
CDM co-ordinator
Project Team
Healthcare planner
Reports to and advises the Project Director of all matters in the contract and seeks approval for additional expenditure and change.
Project Manager
Named in the Contract – Point of direct contact for the Contractor
Cost Advisor (Assists the Project Manager, prepares financial reports to the Employer)
Not named in the contract – has no contract authority unless delegated by the PM.
NEC3 Supervisor
Named in the contract - responsible for quality and inspections.
Reports to the Employer and liaise with the Project Manager
PSCP – the Contractor
Named in the contract
First contact is the Project Manager. No direct link to the Employer except in disputes.
PSCM / SCM
Designers & Constructors
Subcontractors
- Responsible to the Contractor
SCM
Manufacturers & Suppliers
Responsible to the Contractor

**Duties Generally**

The *Supervisor* reports to the Project Director; liaises with the *Project Manager* and the Cost Advisor.

**Post-contract pre-construction, i.e. prior to main works construction delivery and handover**

The *Supervisor* may be called upon to carryout any of the following during Stage 2 – Design Development of the Adult and Children's Hospitals:

1. Offer practical construction advice and process guidance to the project team and take part in the scheme Dart process.

2. Liaise with the *Contractor* and Designers to establish tests and inspections to be carried out in accordance with Works Information and the *Contractor's* Works Information for his design; as part of the scheme Quality Assurance and acceptance Procedures.

3. Monitor site investigation operations.

4. Monitor and liaise with Utilities carrying out pre-construction diversions and installation of new services.

5. Monitor and inspect and accept PSCP (*Contractor*) enabling and other pre-construction work.

6. Issue Defect notices to the *Contractor* as necessary.

7. Inform the *Project Manager* of all Defects and unacceptable construction practices by the PSCP and other members of the supply chain.

8. Notify the *Project Manager;*

    - When Defects have been corrected
    - Those Defects the *Contractor* has not rectified within the *defects correction period.*
    - Those Defects the *Contractor* is unable or unwilling to correct.
    - Tests and inspections performed and accepted
    - Those tests and inspections performed but results found to be unacceptable.

9. Keep records of tests, inspections and acceptances for inclusion in the Health and Safety File as may be required by the CDM co-ordinator.

10. The Supervisor team will fully review and aquaint themselves with all the contract documentation including all design drawings, schedules, specifications, layouts at 1:500, 1:200 & 1:50, specialist suppliers detail drawings and all information listed in Appendix 3 (information to be provided by the contractor) to allow the Supervisor team to deliver to the Employer a robust efficient and effective service. Note as part of the review of the Stage 2 – Design Development for Adult and Children's Hospitals, the Supervisor team will be expected to review and comment on the contractors design proposals (drawings and specification) for construction as packages are developed in response to the works information requirements. Comments and observations will be relayed to the Project Manager. The Supervisor team will NOT be involved in the 1:200 and 1:50 design sign off process with the user groups and contractors design team.

**Post-contract construction, i.e. main works construction delivery and handover**

**Tests and inspections**

1. The *Supervisor* notifies the *Contractor* of his tests and inspections before it starts and afterwards notifies of its results. The *Supervisor* may watch any test done by the *Contractor.*( Clause 40.3)

2. The *Supervisor* does his tests and inspections without causing unnecessary delay to the work or a payment which is conditional on a test or inspection being successful. (Clause 40.5)

   Procedure Note: A payment which is conditional on a *Supervisor's* test or inspection becomes due at the later of the *defects date* and the end of the last *defect correction period* if;

   - The *Supervisor* has not done the test or inspection and
   - The delay to the test or inspection is not the *Contractor's* fault

1. The *Contractor* does not bring to Working Areas Plant and Materials which Works Information states are to tested or inspected prior to delivery until the *Supervisor* has notified the *Contractor* that they have passed the test or inspection. (Clause 41.1)

2. Until the *defects* date, the *Supervisor* may instruct the *Contractor* to search for a Defect. He gives his reason for the search with his instruction. Searching may include (Clause 42.1);

   - Uncovering, dismantling, re-covering and re-erecting work,
   - Providing facilities, materials and samples for tests and inspections done by the *Supervisor* and
   - Doing test and inspections which the Works Information does not require.

5. Until the *defects date*, the *Supervisor* notifies the *Contractor* of each Defect which he finds and the *Contractor* notifies the *Supervisor* of each Defect as soon as he finds it. Clause 42.2)

   Procedure Note: The *Contractor* corrects a Defect whether or not the *Supervisor* notifies him of it. (Clause 43.1)

6. The *Supervisor* issues the Defects Certificate at the later of the *defects date* and the end of the last *defect correction period.* (Clause 43.3)

   Procedure Note: Clause 11.2(6) The *Supervisor* issues the Defects Certificate – is either a list of Defects that the *Supervisor* has notified before the *defects date* which the *Contractor* has not corrected or, if there are no such Defects, a statement that there are none

7. Uncorrected Defects (Clause 45)

   Note; in order for the principles of this clause to be applied the *Supervisor* informs the *Project Manager* of the *Contractor's* failure to correct a notified Defect within its *defect correction period.*

8. Title (Clause 71.1)

The *Supervisor* marks Equipment, Plant and Materials which are outside the Working Areas if

This contract identifies them for payment and
The *Contractor* has prepared them for marking, as the Works Information requires

***Supervisor's* General obligations in the contract**

Clause 13.3 The *Supervisor r*eplies to communications within the *period for reply*

Clause 13.6 The *Supervisor* Issues certificates to the *Project Manager* and the *Contractor*

Clause 14.1 Acceptance by the *Supervisor* of a communication from the *Contractor* does not change the *Contractor's* responsibility for design

Clause 14.2 The *Supervisor* may carry out delegation of actions after notifying the *Contractor*

Clause 14.4 The *Employer* may replace the *Supervisor* after he has notified the *Contractor* of the name of the replacement

**Compensation events**

Procedure Note: The following actions/inactions of the *Supervisor* are compensation events
(The Supervisor does not issue a notification to the *Contractor* when one of the foregoing occurs. He notifies the *Project Manager* .)

60.1(6) The *Supervisor* does not reply to a communication from the *Contractor* within the period required by this contract

(8) The *Supervisor* changes a decision which he has previously communicated to the *Contractor*

(10) The *Supervisor* instructs the *Contractor* to search and no Defect is found unless the search is needed only because the *Contractor* gave insufficient notice of doing work obstructing a required test or inspection

(11) A test or inspection by the *Supervisor* causes unnecessary delay

***Contractor's* obligations to the *Supervisor* in this contract**

27.2 The *Contractor* provides access to work being done and to Plant and materials being stored for this contract.

27.3 The *Contractor* obeys an instruction which is in accordance with this contract and given by the *Supervisor'.*

## 9.0 SELECTION PROCEDURES AND MANAGEMENT ARRANGEMENTS

### 9.1 Selection Procedures

There will be no short listing process for this commission all selected companies who are invited to respond will be asked to prepare a submission and tender proposal (fee based on activity schedule), and will be asked to attend for interview. Written submissions and presentations at interview should focus on the team who will deliver the service, their experience, projects of similar type and value and clearly set out the services you propose to deliver to the Board. Listed below is minimum information required.

- General team experience – Supervisor role / laboratory / healthcare projects.
- Specific experience for this type of project – high value / NEC3.
- Names and CV's of proposed staff – full information, skills & experience.
- Clear statement of the availability of the above staff.
- PSC's should demonstrate a good knowledge of the project and how they would work with the NHS Board to deliver the project and work with the contract framework and project network.
- Responses should include fully worked up activity schedules with resources, rates and costs calculated and broken down as follows;
    - Stage 1 - Laboratory Project construction works.
    - Stage 2 – Adult and Children's Project package development review of construction information.
    - Stage 3 – Adult and Children's Hospitals construction works.
    - Stage 3A – Demolitions and Site Works construction works.

Responses should be limited to 20 sides of A4 maximum to be provided in hard copy (2 copies) and electronic format on CD in word or PDF format.

The Board propose a preparation period for responses of around 4 weeks. During this period the Board would like to meet individually with the teams to discuss the project and commission and also clarify any aspects with regard to this document and scope of service. Following this and subject to any further clarifications from the Board, the teams will be given a further two weeks to complete their submissions.

### 9.2 Timetable

| Step | Indicative Timetable |
|---|---|
| High Level Information Pack issued | 09.02.2010 |
| Information Meeting - informal 1 hr meeting with Board project team. | 19.02.2010<br>(time slot tbc 1.30 - 5.30pm) |
| Return of Supervisor Proposal | 05.03.2010 |
| Interviews | 11.03.2010 |
| Selection | 12.03.2010 |
| Appointment approved by NHS Greater Glasgow & Clyde. | tbc |

**9.3 Selection Criteria at Interview**

The Board will use the criteria set out below at interview and also for scoring :-

| Ref | Selection Criteria | Weighting |
|---|---|---|
| 1. | **Proposed personnel for the Project**<br>a) Who are the members of the proposed team?<br>b) What resources has the PSC available to assist the NHS Board?<br>c) Performance at interview | **25** |
| 2. | **Experience relevant to the Project**<br>a) What experience does the PSC have of similar work that can be brought to bear on the project?<br>b) How will the team bring added value to the project? | **25** |
| 3. | **Approach to the Project**<br>a) Fully worked up description of the resources and services delivered as part of the project, clearly setting out the teams input at each stage of the project. | **20** |
| 4. | **Overall Price** | **25** |
| | Overall price as submitted based on resource plans for each stage of the project | |
| 5. | **Applicable fees and rates of PSC as set out in the Agreement (as provided by HFS)** for additional work out with agreed scope. | **5** |
| | | |
| | **TOTAL** | **100** |

**9.3 Interviews**

The interview shall take the form of a presentation by the Consultants as to their proposed approach to the project in response to the selection criteria detailed above followed by questions from the interview panel. The interview will last for no longer than one hour with the presentation taking no longer than 25 minutes. A letter shall be issued to all Consultants following the shortlisting process. Further details regarding the interview shall be issued to shortlisted Consultants.

**9.4 Interview Panel**

The panel will comprise:

| | |
|---|---|
| Alan Seabourne | Project Director |
| Peter Moir | Head of Major Projects |
| Tbc | Finance Department |
| Tbc | Facilities Department |
| Sharon de Sykes | Capital Projects Advisor (HFS) |

Interviews will be held on either 11 or 12th March 2010, venue and times will be confirmed.

**9.5 Management Arrangements**

Queries raised during the preparation of your submission should be addressed to :

Peter Moir
Head of Major Projects
NHS Greater Glasgow & Clyde
St Andrews House
80 Queen Elizabeth Avenue
Hillington
Glasgow G52 4NQ
[redacted]

You are asked to provide confirmation by return that you will be submitting a proposal for this opportunity.

## APPENDIX – 1

Brookfield Design Drawings

- Masterplan
- Adult Acute Hospital
- Children's Hospital
- Laboratory Block

NHS Greater Glasgow and Clyde

Brookfield

ITPD Reference:
VOLUME 2
Section 2.1

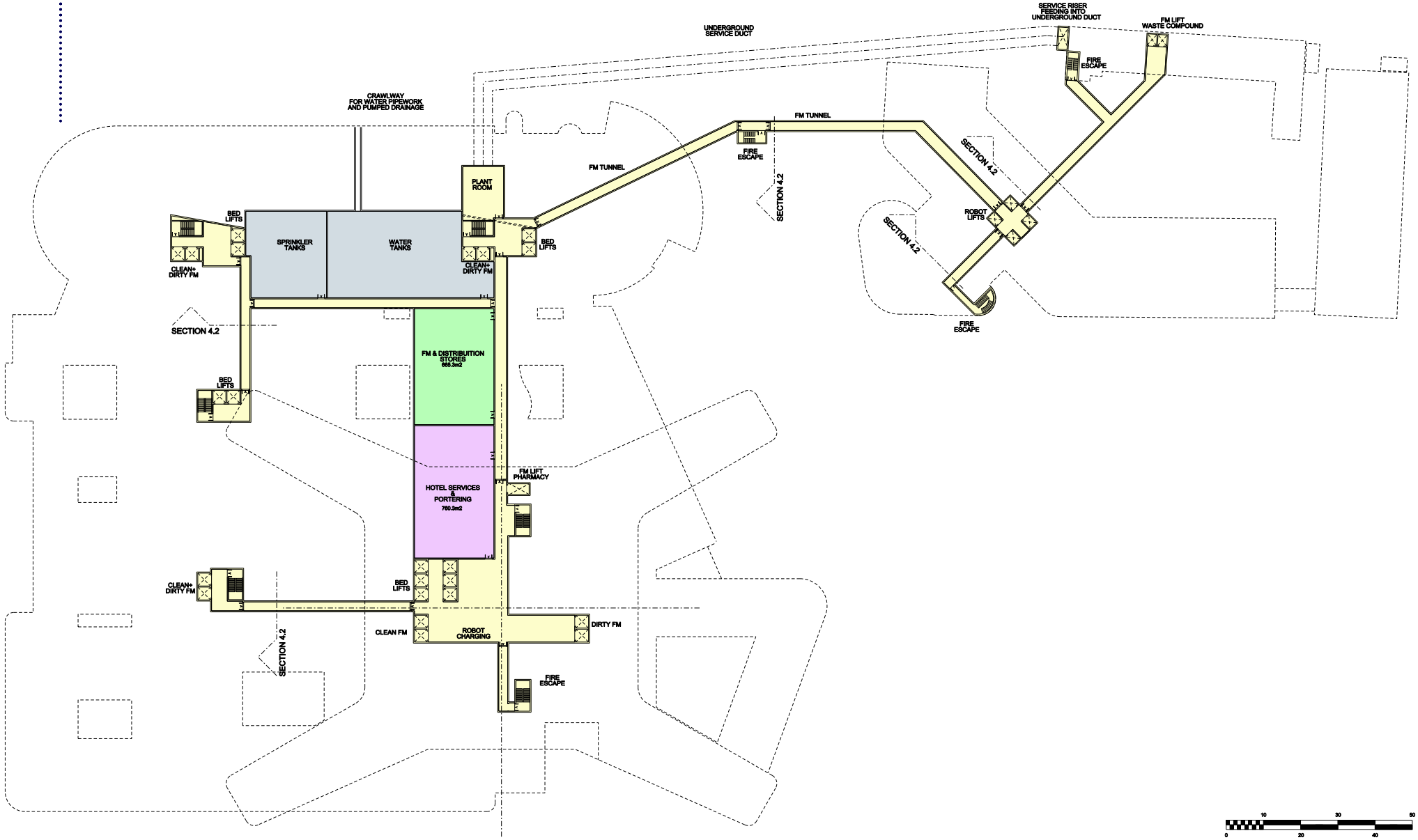
Masterplan Roof Render

New South Glasgow Hospitals (NSGH) Project ITPD

Date: 02.09.09
Scale @A1: 1:1250
Drawing Number:
Revision:

A49342285

Brookfield





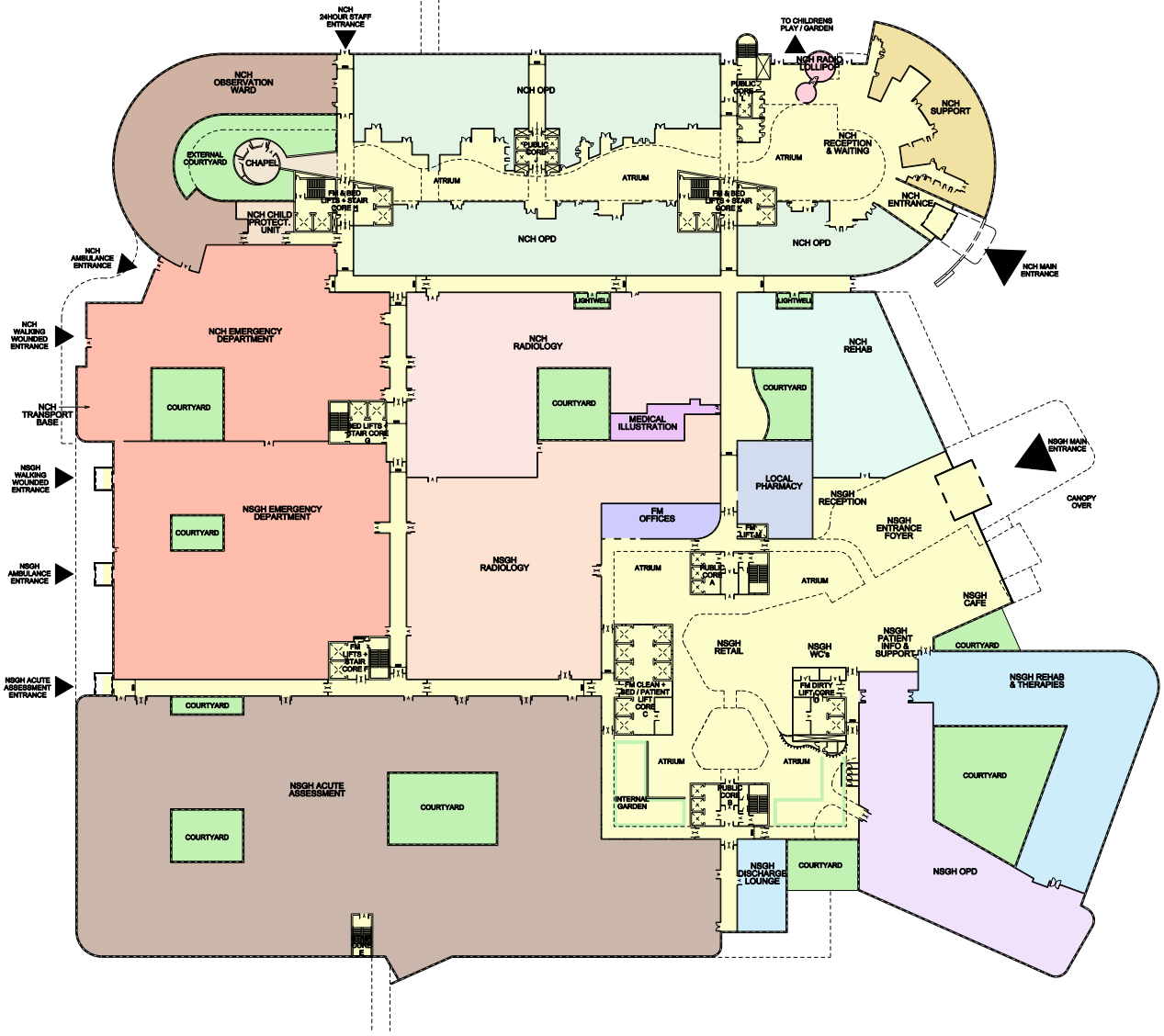

ITPD Reference:
VOLUME 2.0
Section 2.2
A49342285

BASEMENT FLOOR PLAN - DEPARTMENTAL ADJACENCIES

**New South Glasgow Hospitals (NSGH) Project ITPD**

Date: 30.07.09
Scale @A1: 1:500
Drawing Number: NA-xx-B1-PL-252-010
Revision: Tender

Brookfield






ITPD Reference:
VOLUME 2.0
Section 2.2
A49342285

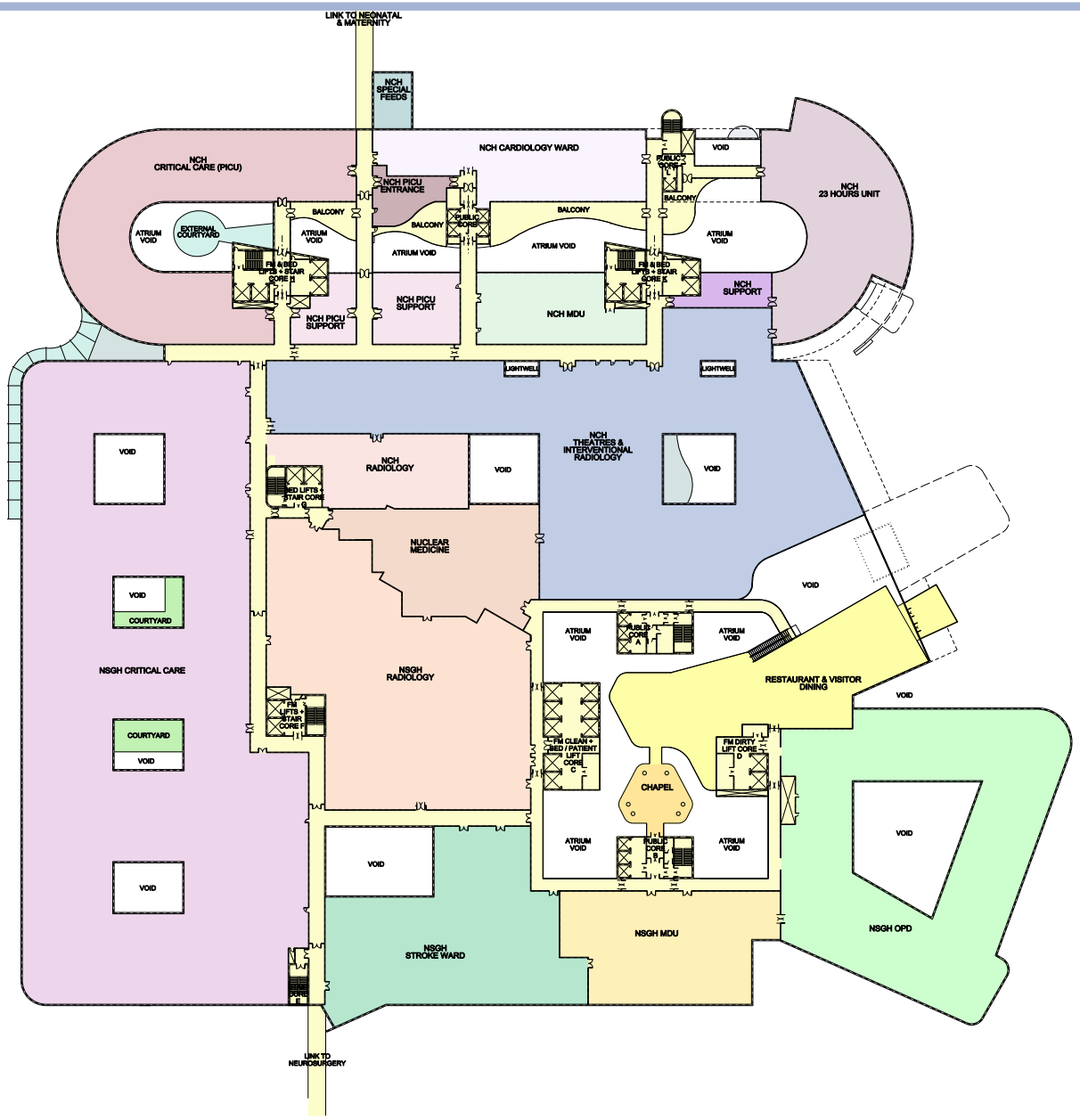
GROUND FLOOR PLAN - DEPARTMENTAL ADJACENCIES

**New South Glasgow Hospitals (NSGH) Project ITPD**

Date: 06.07.09
Scale @A1: 1:500
Drawing Number: NA-xx-00-PL-252-010
Revision: Tender

NHS Greater Glasgow and Clyde

Brookfield

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0 20 40

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ITPD Reference:
VOLUME 2.0
Section 2.2
A49342285

FIRST FLOOR PLAN - DEPARTMENTAL ADJACENCIES

**New South Glasgow Hospitals (NSGH) Project ITPD**

Date: 06.07.09
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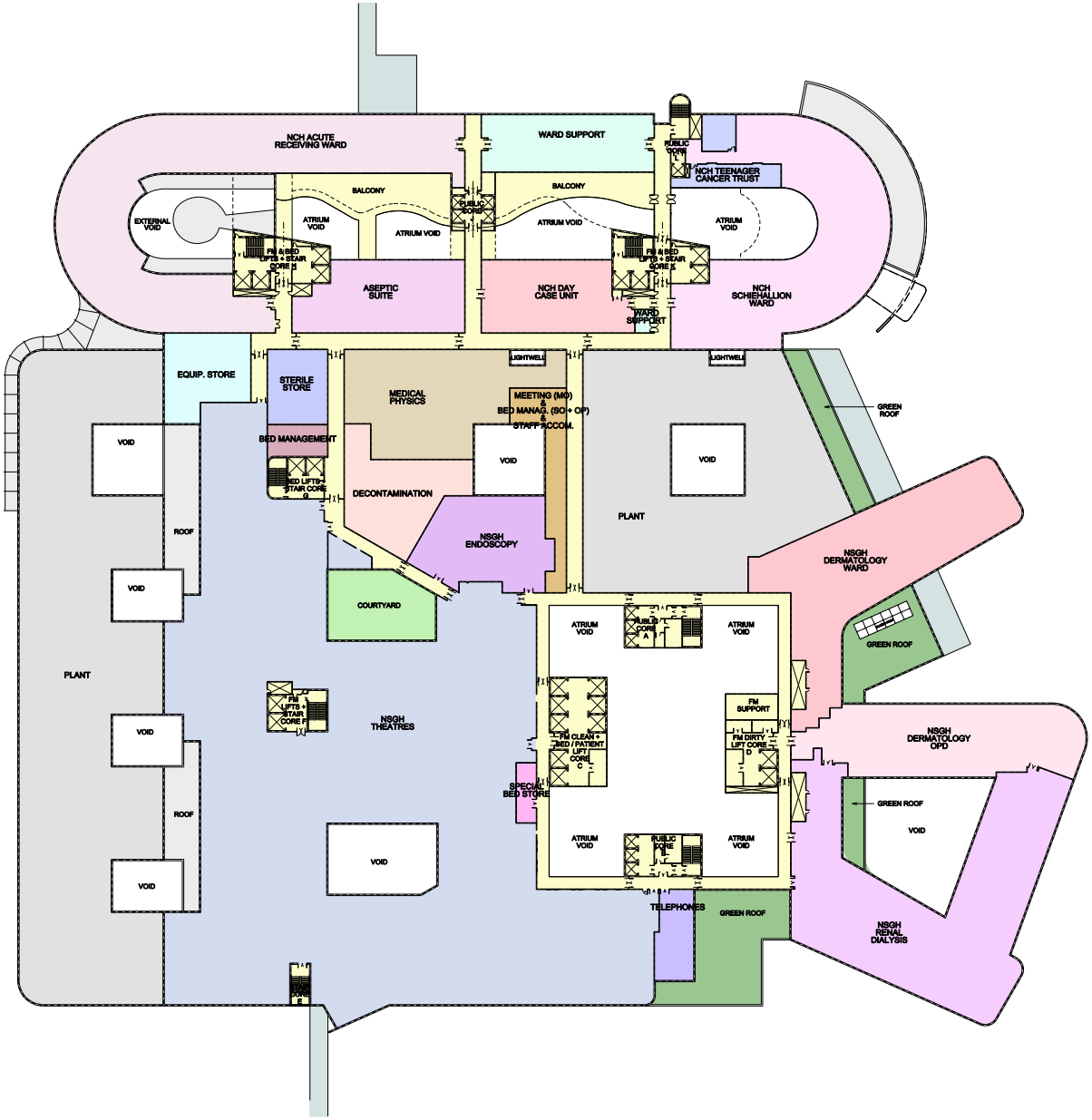
Revision: Tender

Brookfield






ITPD Reference:
VOLUME 2.0
Section 2.2
A49342285

SECOND FLOOR PLAN - DEPARTMENTAL ADJACENCIES

**New South Glasgow Hospitals (NSGH) Project ITPD**

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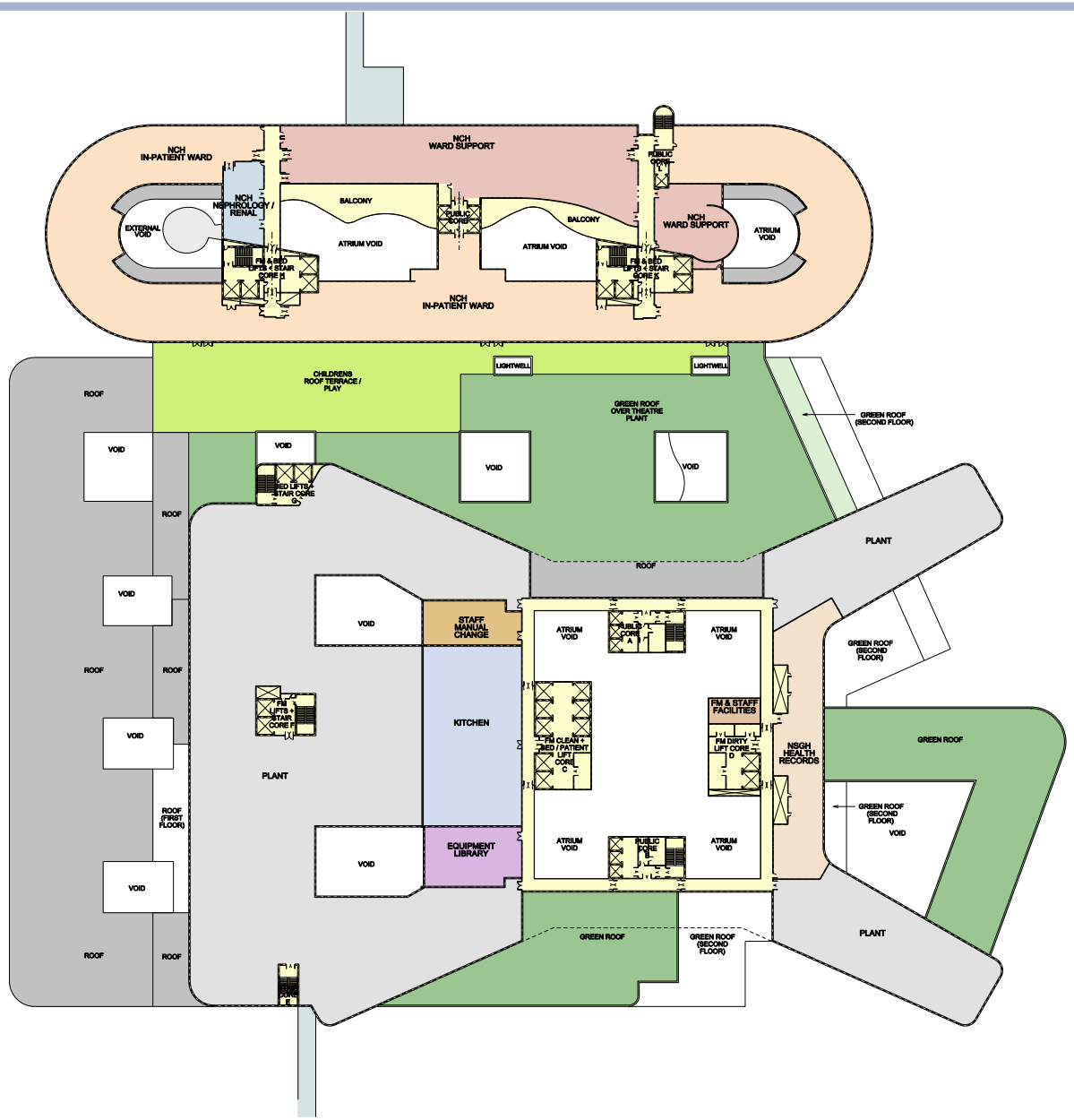
Revision: Tender

Brookfield






ITPD Reference:
VOLUME 2.0
Section 2.2
A49342285

THIRD FLOOR PLAN - DEPARTMENTAL ADJACENCIES

**New South Glasgow Hospitals (NSGH) Project ITPD**

Date: 06.07.09
Scale @A1: 1:500
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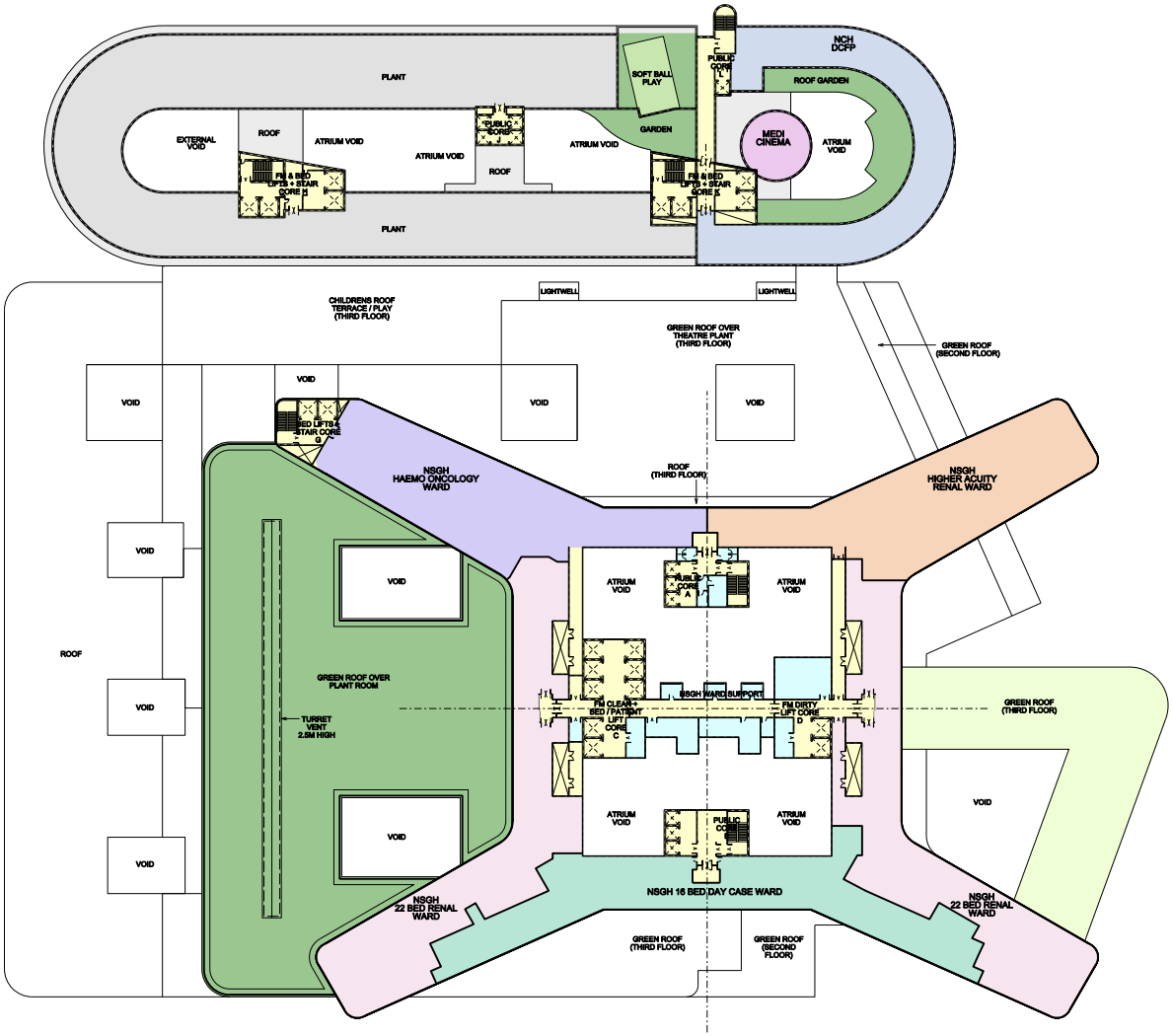
Revision: Tender

Brookfield






ITPD Reference:
VOLUME 2.0
Section 2.2
A49342285

FOURTH FLOOR PLAN - DEPARTMENTAL ADJACENCIES

**New South Glasgow Hospitals (NSGH) Project ITPD**

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Scale @A1: 1:500
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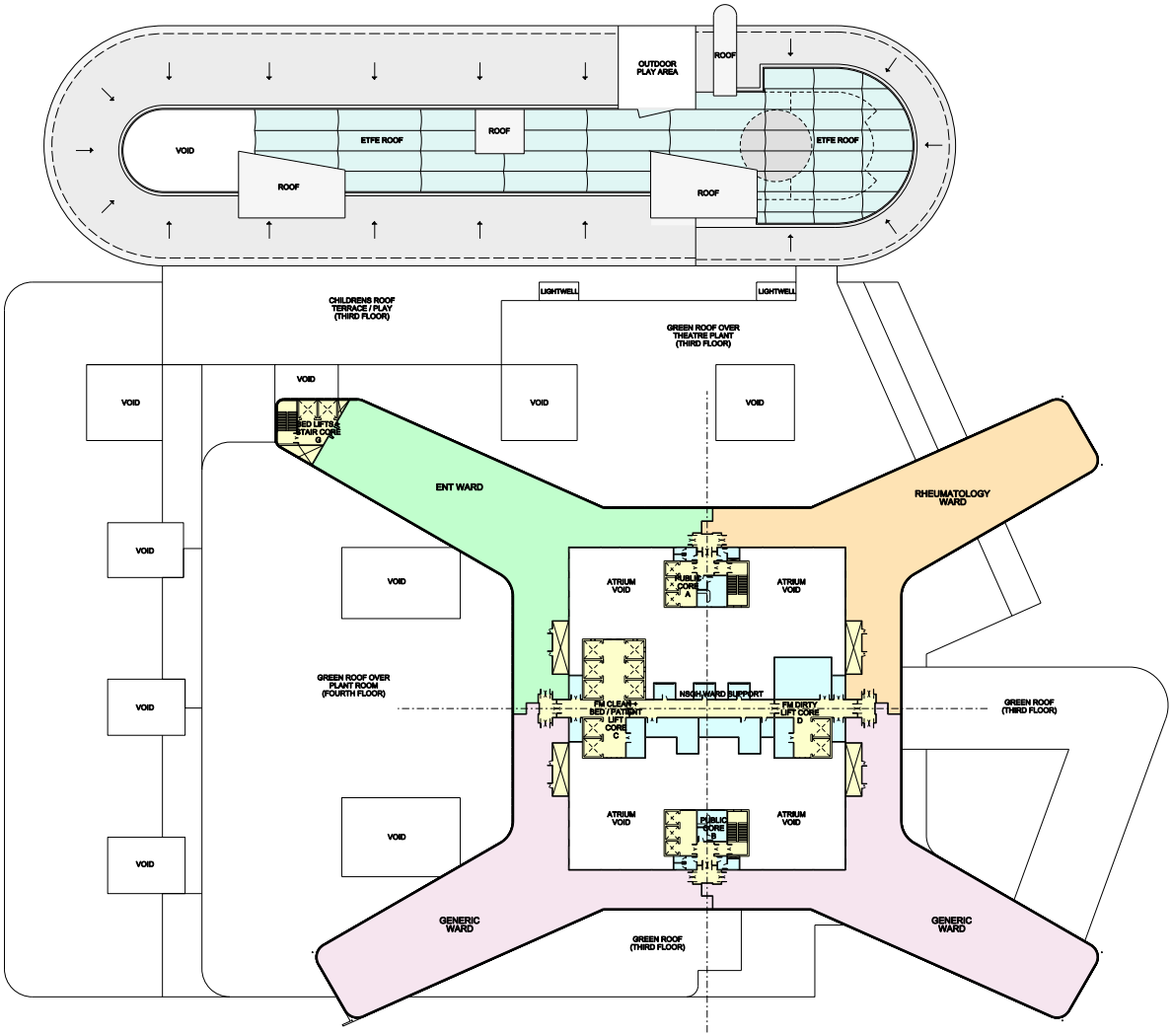
Revision: Tender






ITPD Reference:
VOLUME 2.0
Section 2.2
A49342285

FIFTH FLOOR PLAN - DEPARTMENTAL ADJACENCIES

**New South Glasgow Hospitals (NSGH) Project ITPD**

Date: 06.07.09
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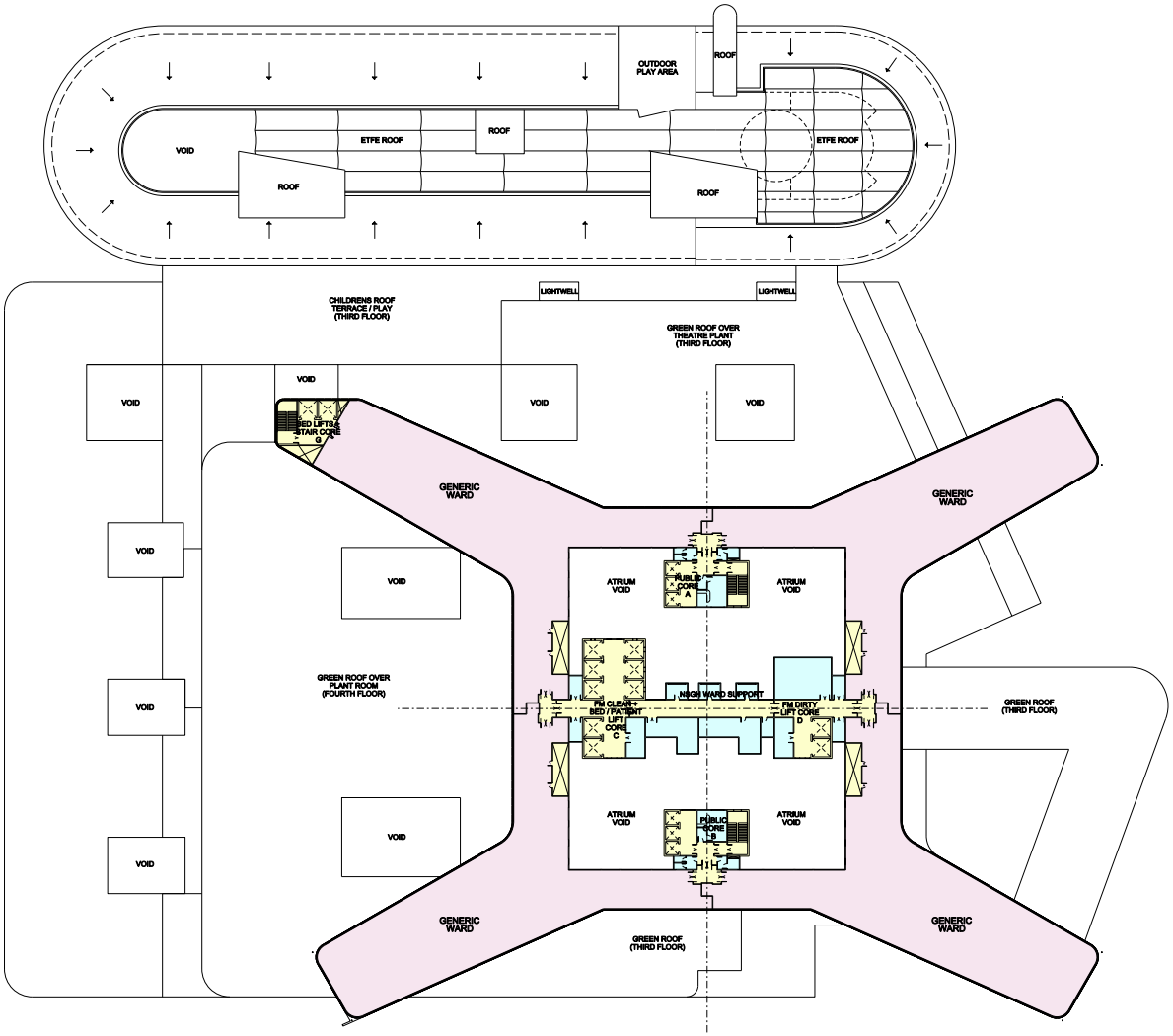
Drawing Number: NA-xx-05-PL-252-010
Revision: Tender

Brookfield

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ITPD Reference:
VOLUME 2.0
Section 2.2
A49342285

SIXTH FLOOR PLAN - DEPARTMENTAL ADJACENCIES

**New South Glasgow Hospitals (NSGH) Project ITPD**

Date: 06.07.09
Scale @A1: 1:500
Drawing Number: NA-xx-06-PL-252-010
Revision: Tender

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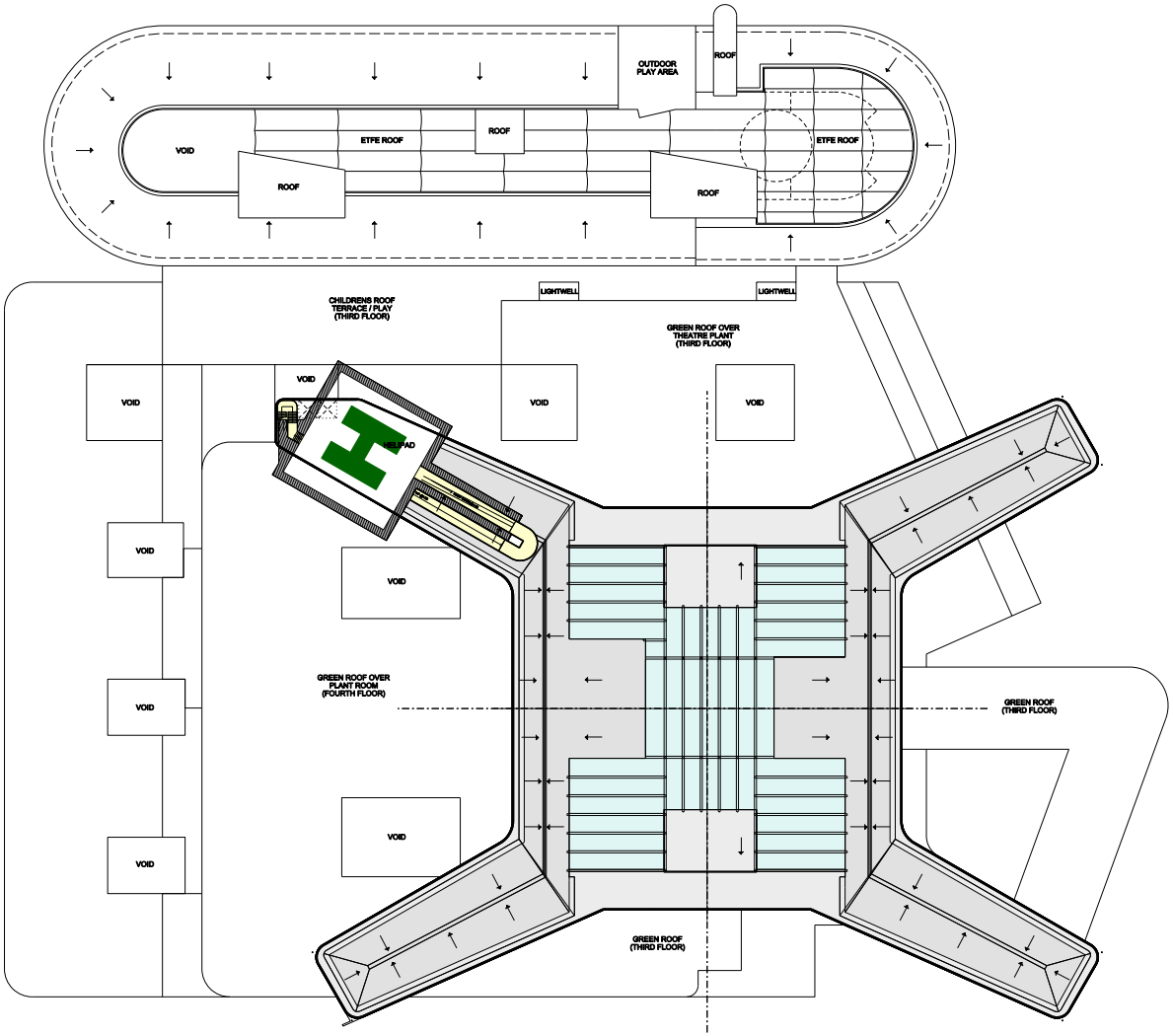


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677/47

ITPD Reference:
VOLUME 2.0
Section 2.2
A49342285

FOURTEENTH FLOOR PLAN - DEPARTMENTAL ADJACENCIES

**New South Glasgow Hospitals (NSGH) Project ITPD**

Date: 06.07.09
Scale @A1: 1:500
Drawing Number: NA-xx-14-PL-252-010
Revision: Tender

**Southern General Hospital Redevelopment Incorporating New Adult & Childrens Hospitals.**

**Outline Design Proposals for New Laboratory Development.**

**3D Concept Visual**

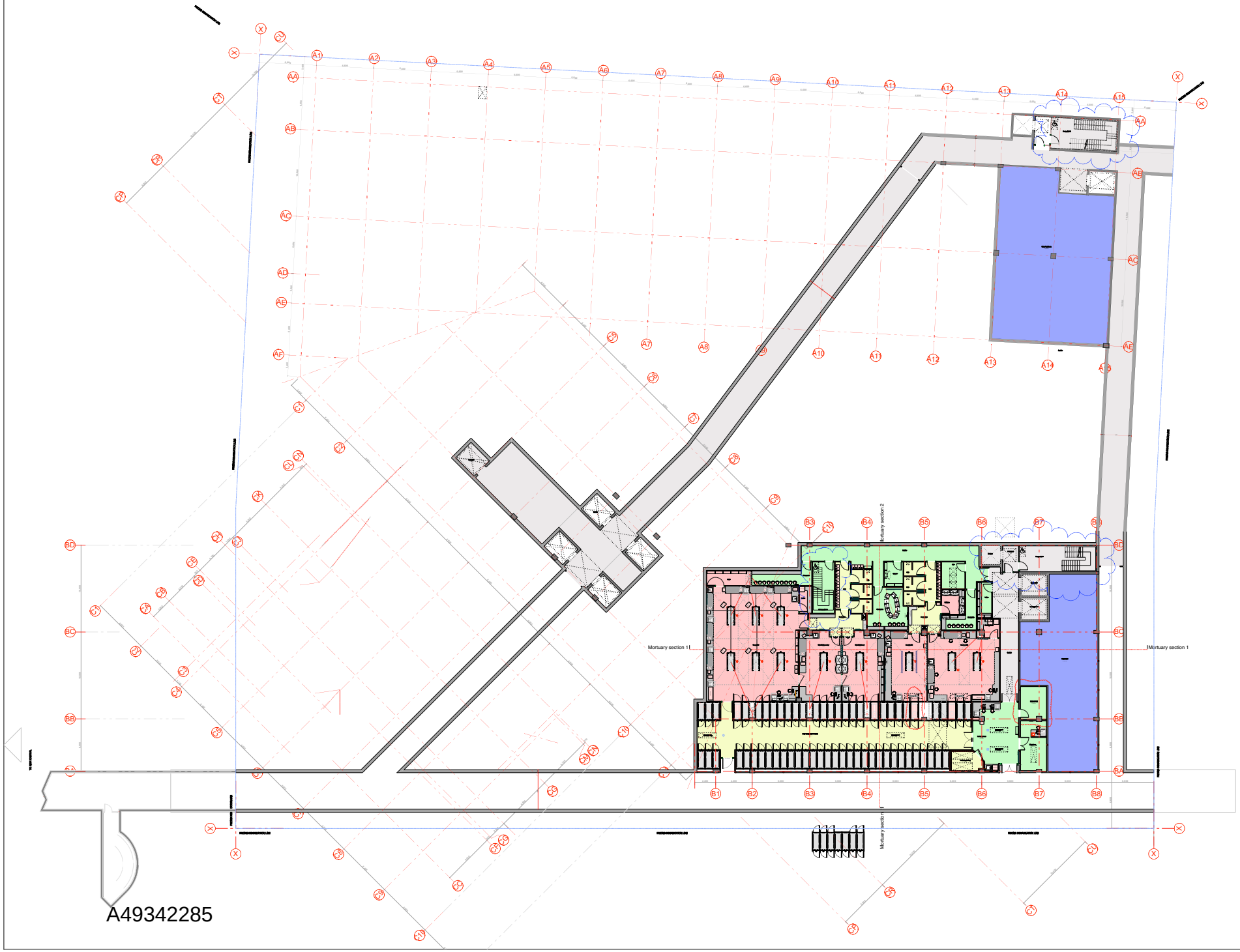
**Laboratory Building Proposals**

**View**

bmj architects · Currie & Brown · URS · h

© Boswell Mitchell & Johnston Architects, 2 Central Quay, 89 Hydepark Street, Glasgow, G3 8BW. 72-82 Rosebery Avenue, London, EC1R 4RW. Tel: 020 7833 9974. Fax: 020 7833 8255

2475 AF(05)19 09/06/2009




A49342285

| | Revision | Date |
|---|---|---|
| Revision D | Drawing Numbers Revised following the addition of the Interstitial Floor Void Plant Room Library at Level -1 | 12/08/2009 |
| Revision C | All Stair Cores labelled and numbered. | 16/10/2009 |
| | CONTRACT ISSUE | 01/12/2009 |
| Revision C | All Stair Cores upgraded to 2Hr enclosures in accordance with FF requirements. Lift removed between Levels -1 & 0 in the Body store area. General internal planning revisions as required to achieve user Sign off of 1:50 room layouts. | 11/01/2010 |
| | Issued for information Building Warrant Stage 1 | 11/01/2010 |

SOUTHERN GENERAL HOSPITAL REDEVELOPMENT

**NEW LABORATORY DEVELOPMENT**

**Level -1 Plan**
**Below Ground Robitic Service Tunnels to Main Hospital**

**Boswell Mitchell & Johnston**
Chartered Architects

- **Glasgow**
  2 Central Quay, 89 Hydepark Street
  Glasgow, G3-8BW
  Tel: 0141-271 3200 Fax: 0141-271 3201
  e-mail:glasgow@bmjarchitects.co.uk
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  e-mail:london@bmjarchitects.co.uk

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|---|---|---|---|
| Date | Feb 09 | 2475 | AL(00)01.C |
| Drawn | RD | | |

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A49342285

| | Revision | Date |
|---|---|---|
| Revision A | Drawing Numbers Revised following the addition of the Interstitial Service Floor above Mortuary at Level -1 | 12/08/2009 |
| Revision B | Stair Cores Plans Updated and numbered. | 16/10/2009 |
| | CONTRACT ISSUE | 01/12/2009 |
| Revision C | All Stair Cores upgraded to 2Hr enclosures in accordance with FF requirements. Lift removed between Levels -1 & 0 in the Body store area. General internal planning revisions as required to achieve user Sign off at 1:50 room layouts. | 11/01/2010 |
| | Issued for information Building Warrant Stage 1 | 11/01/2010 |

SOUTHERN GENERAL HOSPITAL REDEVELOPMENT

**NEW LABORATORY DEVELOPMENT**

**Level -1.5 Plan**
**Interstitial Service Floor Above Mortuary**

**Boswell Mitchell & Johnston**
Chartered Architects

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|---|---|---|---|
| Date | Feb 09 | 2475 | AL(00)02.C |
| Drawn | RD | | |

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| | Revision | Date |
|---|---|---|
| Revision A | Drawing Number Revised following the addition of the Interstitial Floor and Mortuary at Level -1 | 12/08/2009 |
| Revision B | Plant Zones Area Updated and numbered. | 16/10/2009 |
| | CONTRACT ISSUE | 01/12/2009 |
| Revision C | All Stair Cores upgraded to 2Hr enclosures in accordance with FF requirements. Lift removed between Levels -1 & 0 in the Body store area. General internal planning revisions as required to achieve user Sign off of 1:50 room layouts. Public areas of the mortuary revised to create a simpler friendlier environment. | 11/01/2010 |
| | Issued for information<br>Building Warrant Stage 1 | 11/01/2010 |

SOUTHERN GENERAL HOSPITAL REDEVELOPMENT

**NEW LABORATORY DEVELOPMENT**

**Level 0 Plan**
**Mortuary & Facilities Management**

**Boswell Mitchell & Johnston**
Chartered Architects

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| Scale | 1:200 @ A1 | Job No | Dwg No |
|---|---|---|---|
| Date | Feb 09 | 2475 | AL(00)03.C |
| Drawn | RD | | |

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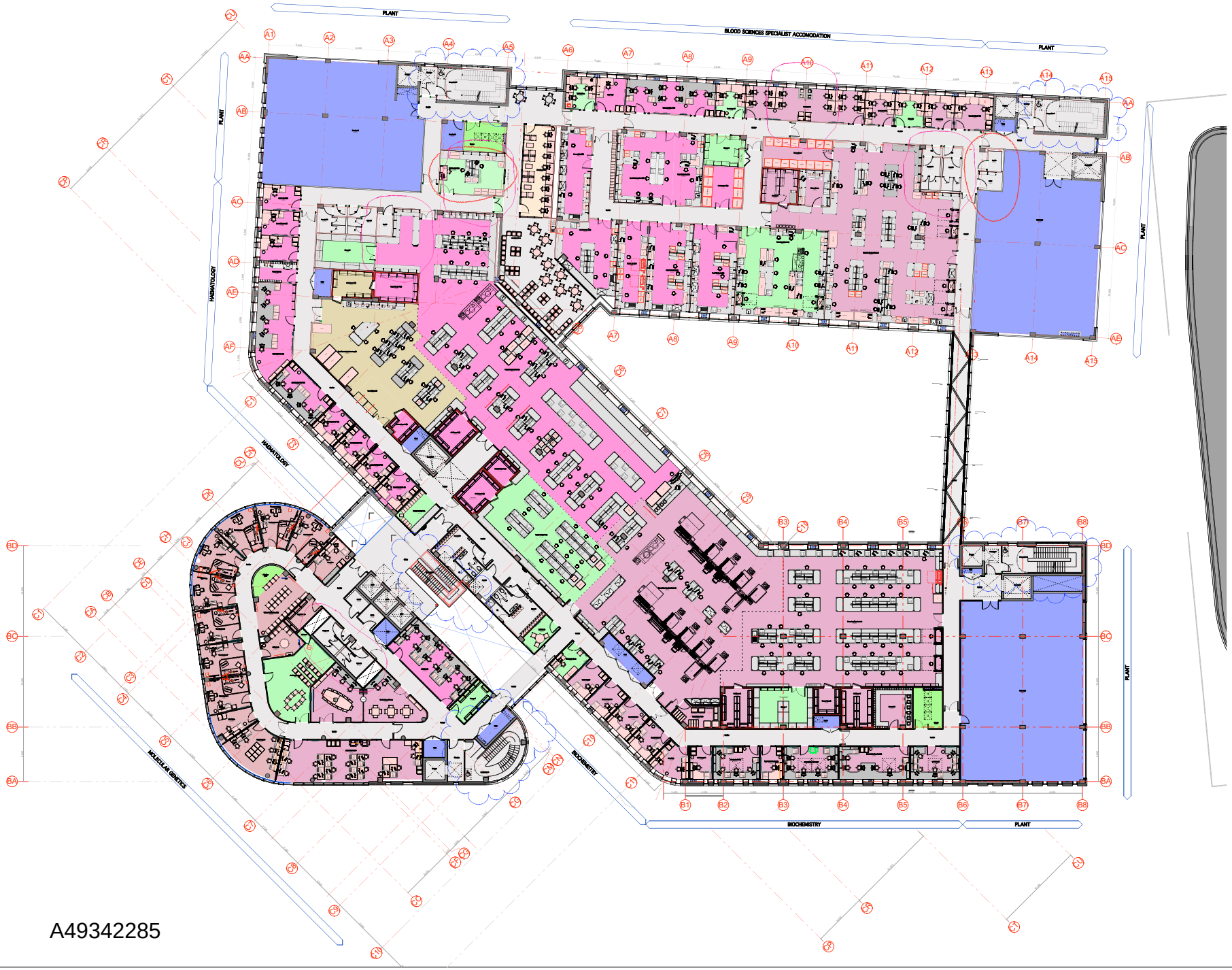


A49342285

| | Revision | Date |
|---|---|---|
| Revision A | Drawing Numbers Revised following the addition of the Interstitial Floor at Level -1 and the Library at Level -1<br>Layout Revised in Accordance with Users Detailed Brief. | 12/08/2009 |
| Revision B | 1. Lab Rm L1/B/052 deleted and adjacent Lab Layout revised.<br>2. Partition indicated centrally in Room L1/B/052 and printer worktop added.<br>3. Store indicated omitted from Reference Room L1/B/061.<br>4. Male & Female WC's L1/B/057 & 058 layout revised.<br>5. NEQAS Lab L1/B/043 amended.<br>6. Service Ducts added adjacent to Supply Store L1/A/002 and Meeting Room/Library L1/A/008.<br>All stair cores have been updated and numbered. | 16/10/2009 |
| | CONTRACT ISSUE | 01/12/2009 |
| Revision C | All Stair Cores upgraded to 2Hr enclosures in accordance with FF requirements. Lift removed between Levels -1 & 0 in the Body store area. General internal planning revisions as required to achieve user Sign off of 1:50 room layouts. | 11/01/2010 |
| | Issued for information<br>Building Warrant Stage 1 | 11/01/2010 |

SOUTHERN GENERAL HOSPITAL REDEVELOPMENT

**NEW LABORATORY DEVELOPMENT**

**Level 1 Plan**
**Blood Sciences**

**Boswell Mitchell & Johnston**
Chartered Architects

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- **London**
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  London EC1R 4RW
  Tel: 020 7833 9974 Fax: 020 7833 8255
  e-mail:london@bmjarchitects.co.uk

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| Scale | 1:200 @ A1 | Job No | Dwg No |
|---|---|---|---|
| Date | Feb 09 | 2475 | AL(00)04.C |
| Drawn | RD | | |

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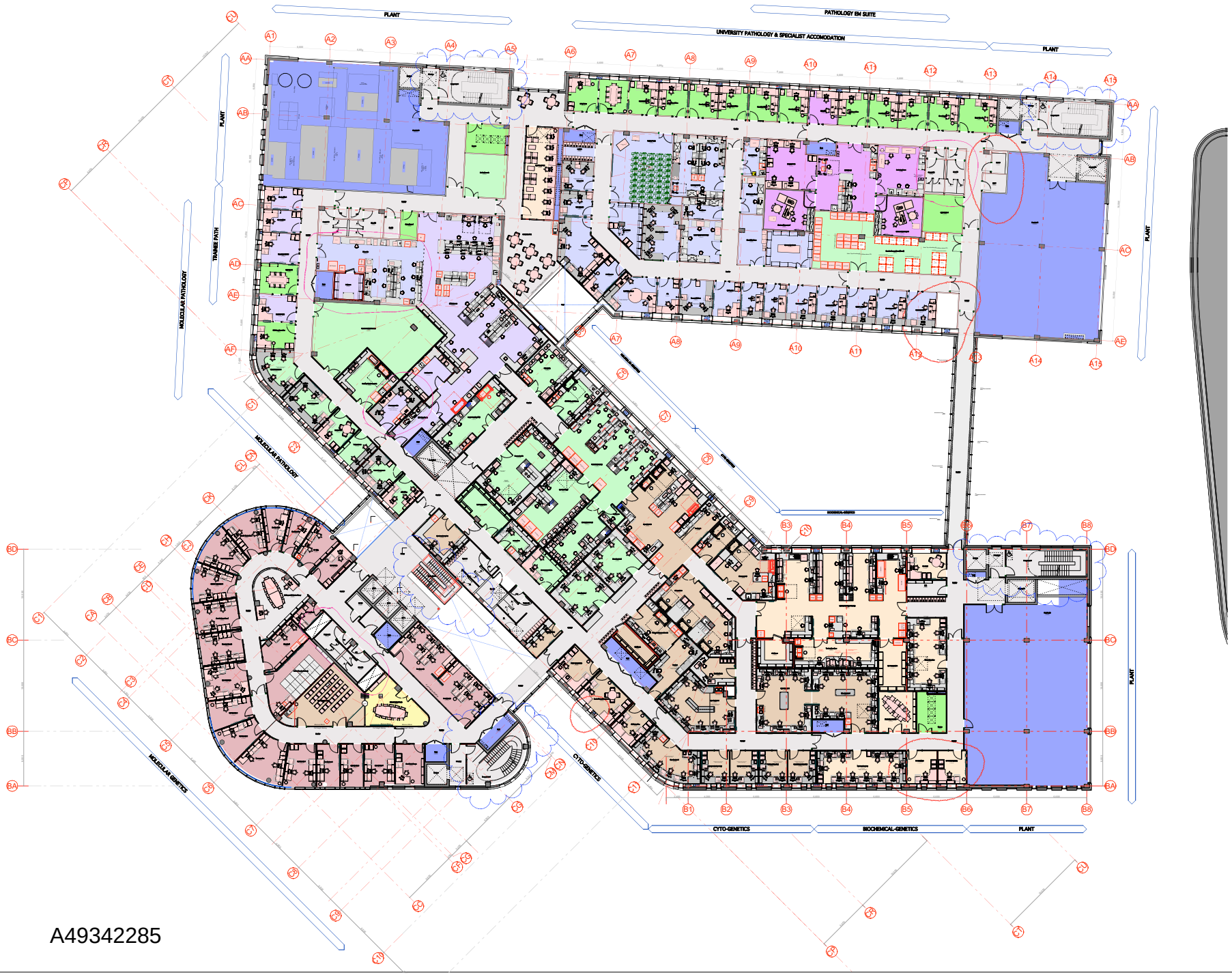


A49342285

| | Revision | Date |
|---|---|---|
| Revision D | Drawing Numbers Revised following the addition of the Interstitial Lung Disease Clinic on the Ground Storey at Level -1<br>Level 2 Plan Revised in accordance with Users Detailed Brief. | 12/08/2009 |
| Revision B | 1. Chemistry Suite L2B/G02b layout revised.<br>2. Fluorescence Mic L2B/G05 room width increase.<br>3. Male & Female WC's L2B/G05 & I36 layout revised.<br>4. Service Route added adjacent to Dictating Room L2A/I002 and Service Riser L2A/I001.<br>All stair cores have been updated and numbered. | 16/10/2009 |
| | CONTRACT ISSUE | 01/12/2009 |
| Revision C | All Stair Cores upgraded to 2Hr enclosures in accordance with FF requirements. Lift removed between Levels -1 & 0 in the Body store area. General internal planning revisions as required to achieve user Sign off of 1:50 room layouts. | 11/01/2010 |
| | Issued for information<br>Building Warrant Stage 1 | 11/01/2010 |

SOUTHERN GENERAL HOSPITAL REDEVELOPMENT

**NEW LABORATORY DEVELOPMENT**

**Level 2 Plan**
**Genetics & Pathology (Part)**

**Boswell Mitchell & Johnston**
Chartered Architects

- **Glasgow**
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| Scale | 1:200 @ A1 | Job No | Dwg No |
|---|---|---|---|
| Date | Feb 09 | 2475 | AL(00)05.C |
| Drawn | RD | | |

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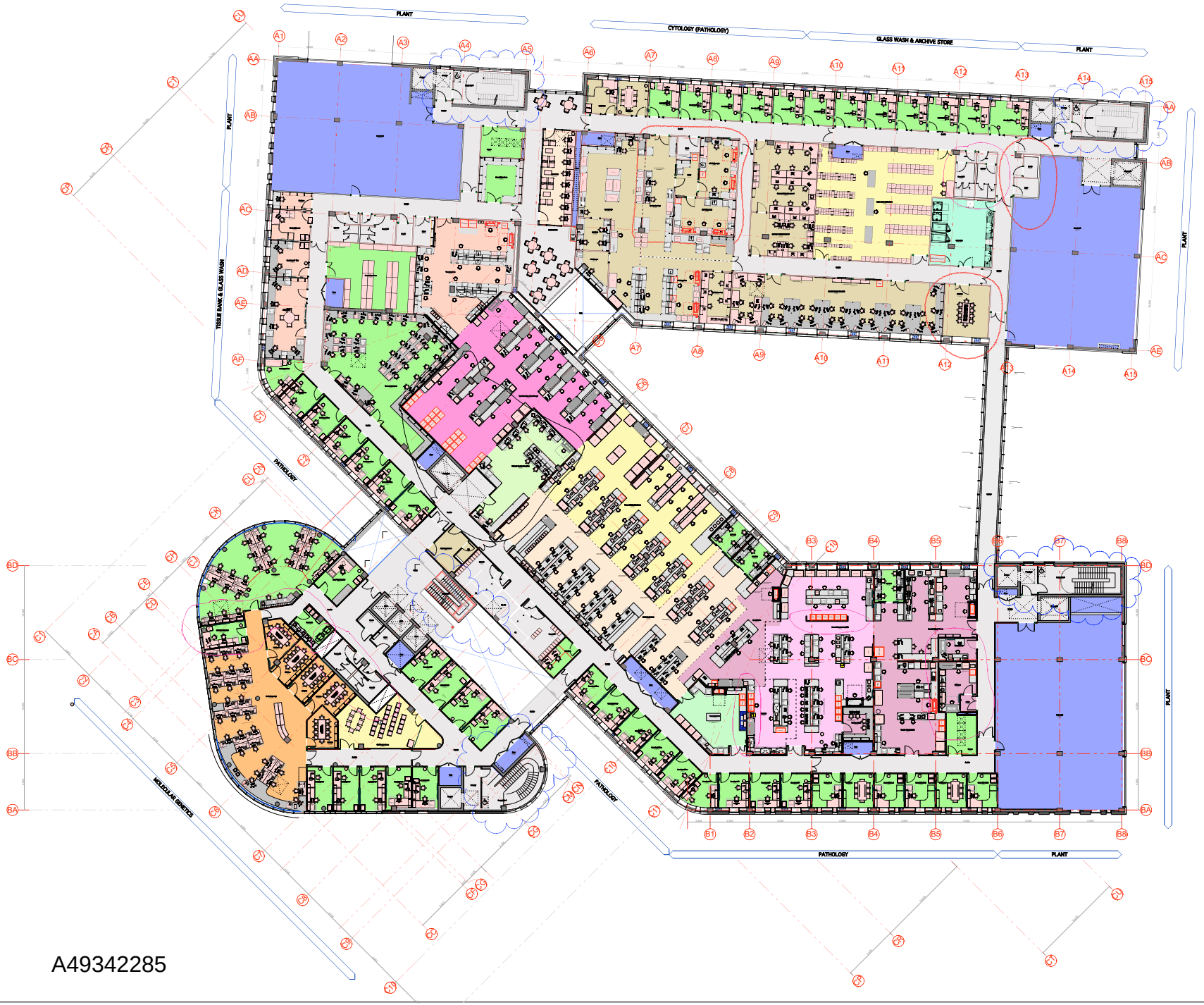


A49342285

| | Revision | Date |
|---|---|---|
| Revision A | Drawing Numbers Revised following the addition of the Interstitial Floor and the Plantroom Gallery at Level -1 | 12/08/2009 |
| Revision B | Revised in accordance with Users Detailed Brief.<br>1. Level 3 Lab 3/B/029a added & CJD Room L3/B/029a revised<br>2. Cellular Base Lab L3/B/028 location amended and room size decreased<br>3. Corridor wall between Prep Room L3/B/024 & University (ICC) L3/B/021 repositioned.<br>4. Male & Female WC's L3/B/075 & 076 layout revised.<br>5. Half height partition indicated between ICC L3/B/021 & Immuno Stainer area.<br>6. Service Ducts added adjacent to Print Room L3/A/002 & Staff Room L3/A/009.<br>7. Arrangement of Secretary Supervisor L3/A/023 & Print Room L3/A/002 revised.<br>All stair cores have been updated and numbered. | 16/10/2009 |
| | CONTRACT ISSUE | 01/12/2009 |
| Revision C | All Stair Cores upgraded to 2Hr enclosures in accordance with FF requirements. Lift removed between Levels -1 & 0 in the Body store area. General internal planning revisions as required to achieve user Sign off of 1:50 room layouts. | 11/01/2010 |
| | Issued for information<br>Building Warrant Stage 1 | 11/01/2010 |

SOUTHERN GENERAL HOSPITAL REDEVELOPMENT

**NEW LABORATORY DEVELOPMENT**

**Level 3 Plan Pathology**

**Boswell Mitchell & Johnston**
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|---|---|---|---|
| Date | Feb 09 | 2475 | AL(00)06.C |
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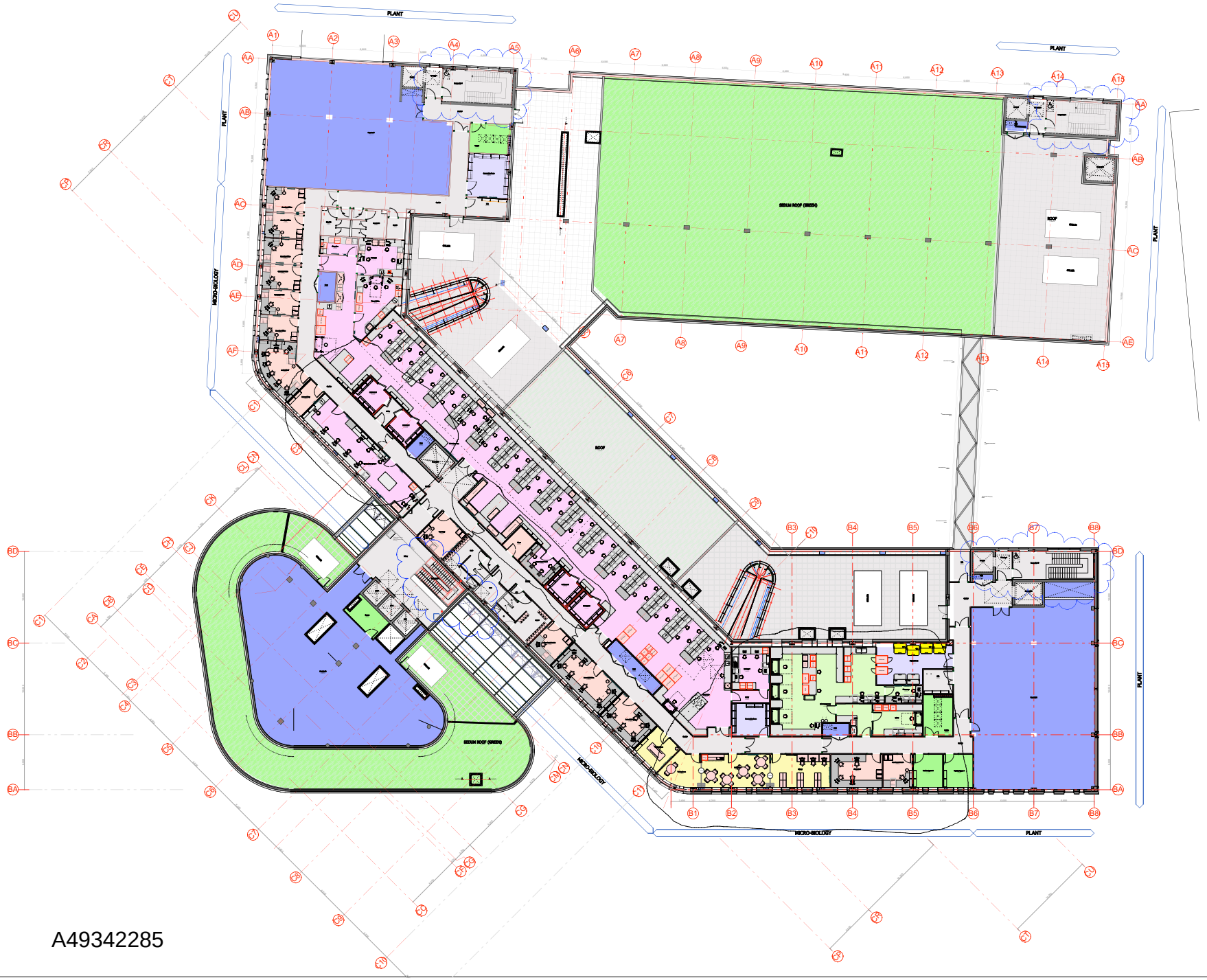


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| | Revision | Date |
|---|---|---|
| Revision A | Drawing Numbers Revised following the addition of the Interstitial Floor and Plant Room/Gallery at Level -1 | 12/08/2009 |
| Revision B | Rooms Revised in accordance with Users Detailed Brief. All Rooms Now Updated and numbered. | 16/10/2009 |
| | CONTRACT ISSUE | 01/12/2009 |
| Revision C | 1. Micology 1 L4/B/028, Lobby L4/B/029 & Consumables L4/B/030 relocated and areas increased.<br>2. Cellfil L4/B/031 layout revised & 2No. Autoclaves indicated at repositioned wall to Disposal Room L4/B/035.<br>3. Autoclave omitted from Cellfil Room L4/B/033.<br>4. Lobby L4/B/032 increased.<br>5. Admin Staff Office L4/B/003 relocated to grid B4 (previously Library).<br>6. Staffroom L4/B/042 area revised to incorporate area for Library L4/B/041.<br>7. Coldrooms L4/B/023 -/024 & Hotroom L4/B/025 relocated.<br>8. Immunology area L4/B/02 relocated in area previously taken by Coldrooms L4/B/023.<br>9. Store added adjacent to L4/B/002.<br>10. Specimen Reception L4/B/001 enlarged into area previously Admin Staff L4/B/003.<br>11. Workstations to Consultant Rooms L4/B/006 - 011 & -/040 changed to fixed benching and WHB's omitted from these rooms. | 11/12/2009 |
| Revision D | All Stair Cores upgraded to 2Hr enclosures in accordance with FF requirements. Lift terminus at between Levels -1 & 0 in the Body store area. General internal planning revisions as required to achieve user Sign off of 1:50 room layouts. | 11/01/2010 |
| | Issued for information<br>Building Warrant Stage 1 | 11/01/2010 |

SOUTHERN GENERAL HOSPITAL REDEVELOPMENT

**NEW LABORATORY DEVELOPMENT**

**Level 4 Plan**
**Micro-Biology**

**Boswell Mitchell & Johnston**
Chartered Architects

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|---|---|---|---|
| Date | Feb 09 | 2475 | AL(00)07.D |
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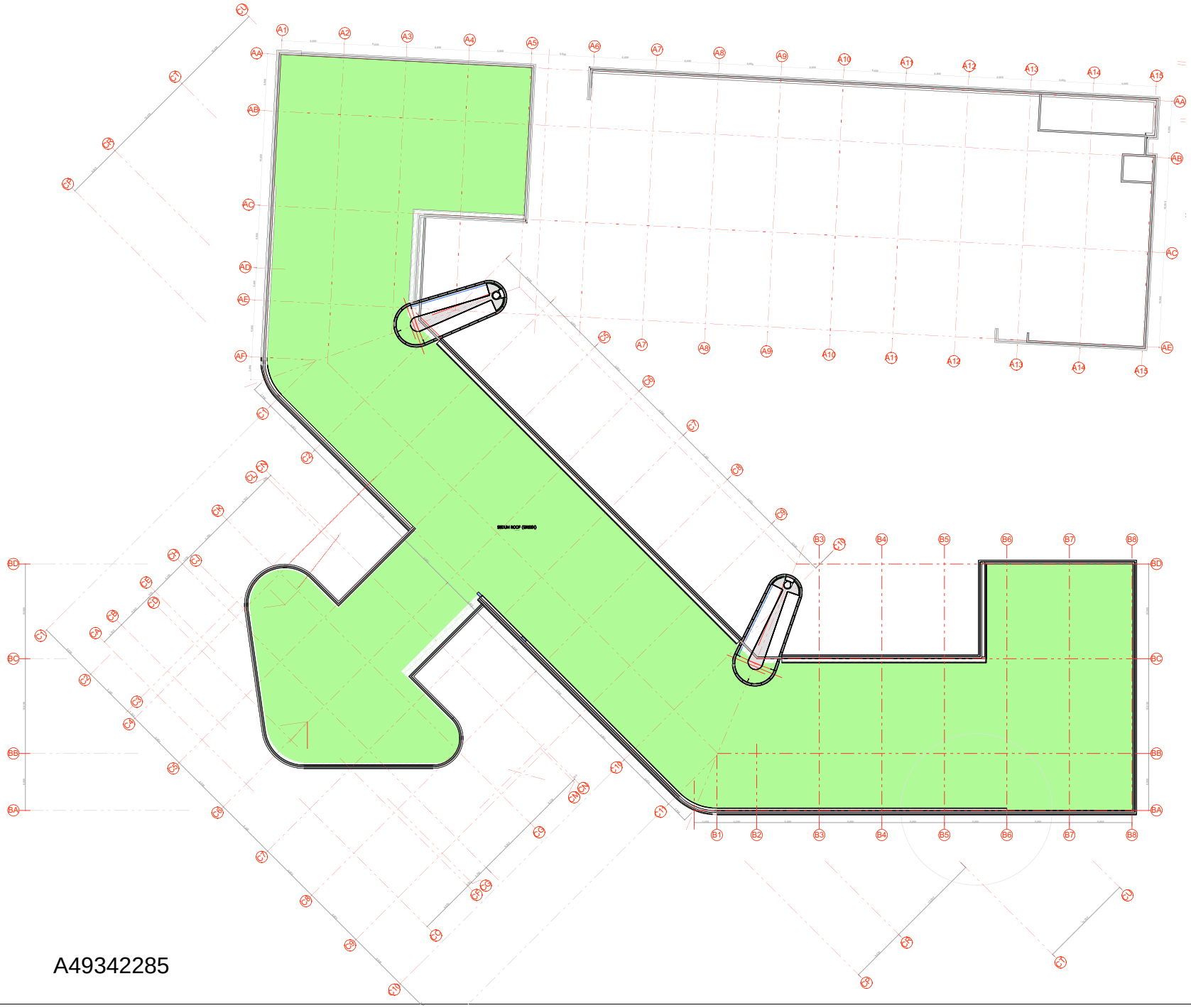
| | Revision | Date |
|---|---|---|
| Revision | Drawing Numbers Revised following the addition of the Interstitial Floor Plant Room Delivery at Level -1 | 12/08/2009 |
| | CONTRACT ISSUE | 01/12/2009 |
| Revision B | All Stair Cores upgraded to 2Hr enclosures in accordance with FF requirements. Lift removed between Levels -1 & 0 in the Body store area. General internal planning revisions as required to achieve user Sign off of 1:50 room layouts. | 11/01/2010 |
| | Issued for information Building Warrant Stage 1 | 11/01/2010 |

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SOUTHERN GENERAL HOSPITAL REDEVELOPMENT

**NEW LABORATORY DEVELOPMENT**

**Level 5 Plan**
**Roof Plan**

**Boswell Mitchell & Johnston**
Chartered Architects

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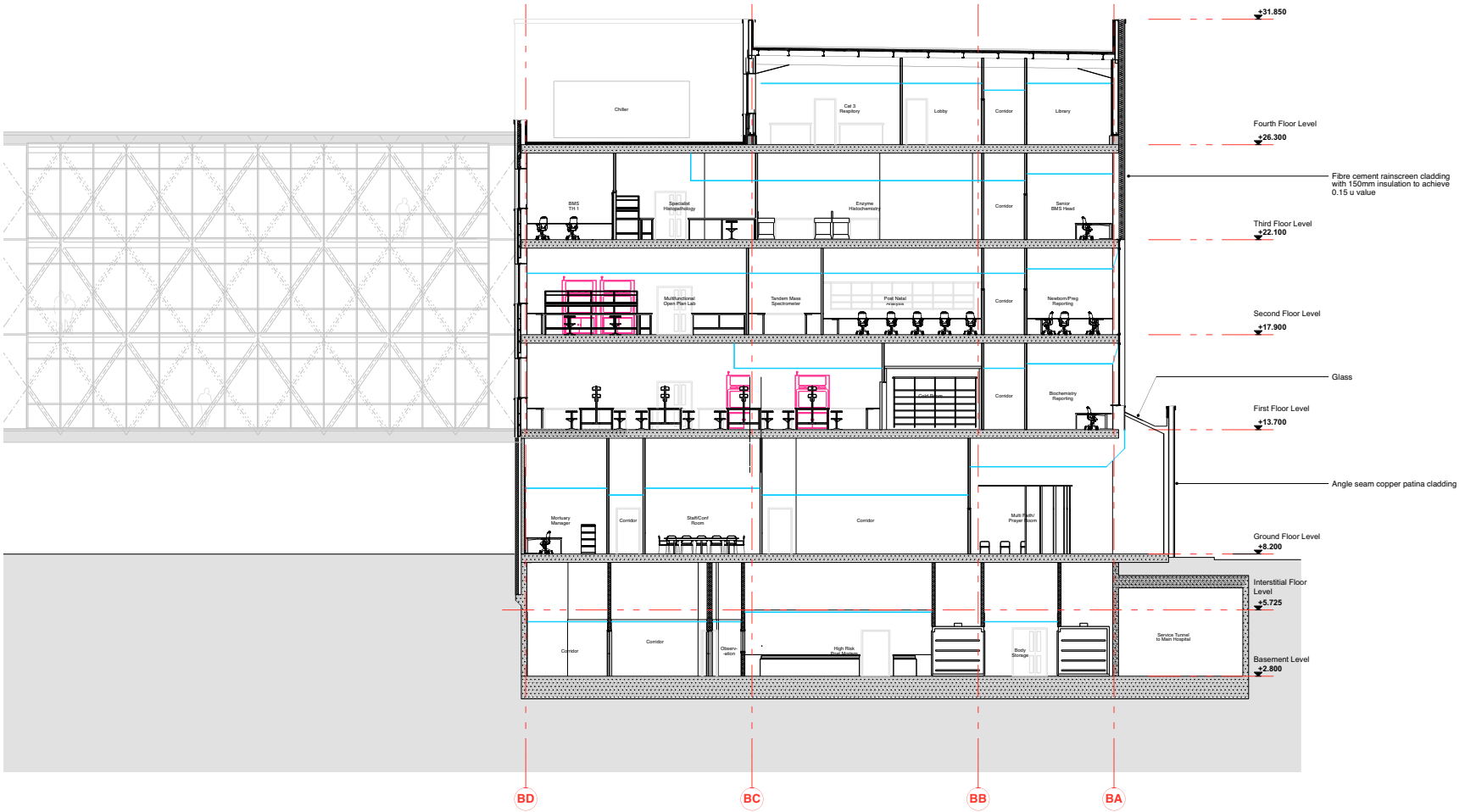


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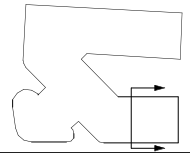
| | Revision | Date |
|---|---|---|
| | CONTRACT ISSUE | 01/12/2009 |

Location plan



SOUTHERN GENERAL HOSPITAL REDEVELOPMENT

**NEW LABORATORY DEVELOPMENT**

**Section A-A**

**Boswell Mitchell & Johnston**
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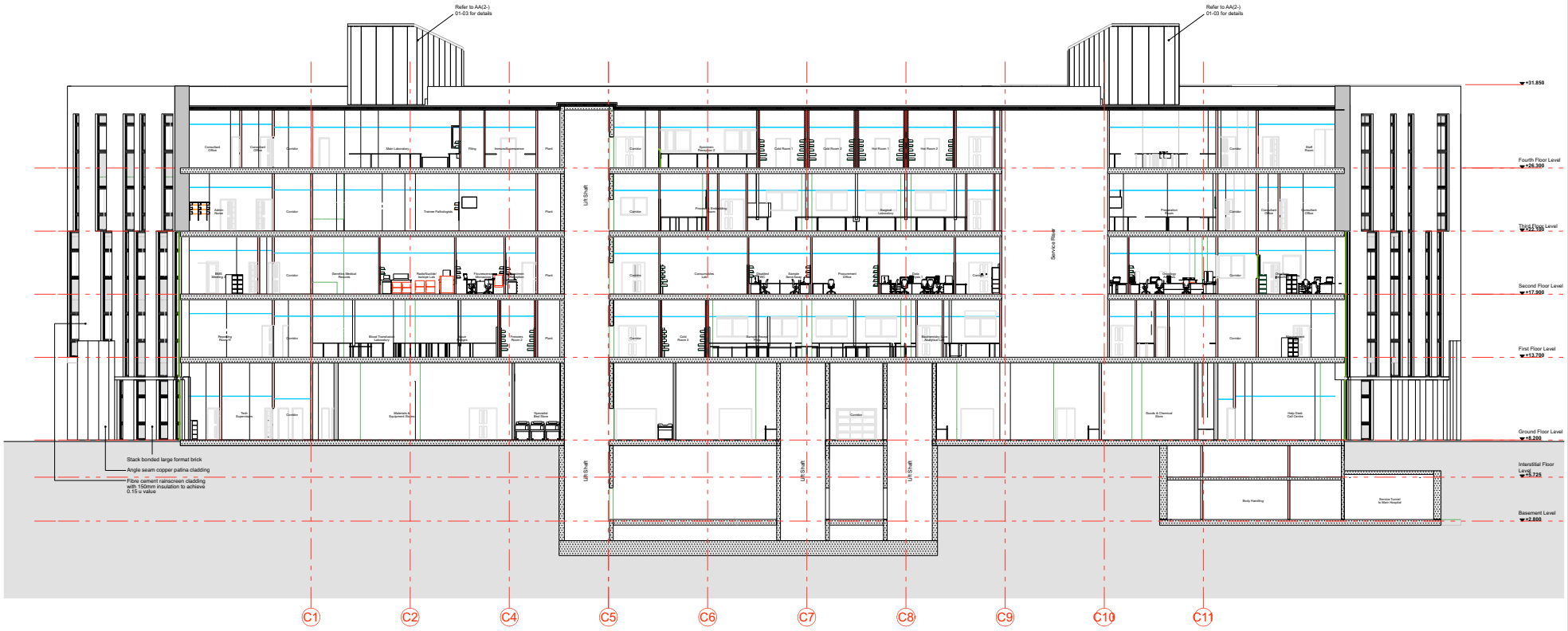


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| Revision | Date |
|---|---|
| CONTRACT ISSUE | 01/12/2009 |

Location plan

SOUTHERN GENERAL HOSPITAL REDEVELOPMENT

NEW LABORATORY DEVELOPMENT

Section B-B

Boswell Mitchell & Johnston
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**APPENDIX – 2**

Management structure – group meetings

# NEW SOUTH GLASGOW HOSPITALS PROJECT CONSTRUCTION MANAGEMENT

| Group | Project Steering Group | Project Management Group | Commercial Group | Construction Interface Group | Technical Design Group | Design and Healthy Environment Strategy Group *(Sub-group of Technical Design Group)* | Joint Commissioning Group | Medical Planning Groups | IT Group | Equipment Selection Group |
|---|---|---|---|---|---|---|---|---|---|---|
| **Remit (refer to Group remits paper)** | - On a monthly basis identify key Strategic Drivers for the coming quarter.<br>- Carry out a monthly review of Project Strategic Drivers providing direction to the Project management Group as required.<br>- Carry out a monthly review of project issues (reported from sub groups via the PMG) that have not been cleared at sub group level.<br>- Provide direction to the sub groups on the resolution of issues.<br>- Monitor and identify any shortfalls in Project resources.<br>- Monitor critical path of Project Programme | - Manage change control<br>- Monitor short term design, procurement and construction programmes<br>- Monitor project administration ie diary, document control, meetings<br>-Oversee work of sub groups<br>- Monitor sign off progress of sub groups<br>- Monitor Community Benefit progress<br>- Unblock sub group issues<br>- Report key issues to Steering Group | - Manage Changes to Brief<br>- Manage Payment Process<br>- Manage valuations and costs<br>- Manage Risk Register<br>- Manage Early Warning/Compensation Event process<br>- Report key issues to Project Management Group | - Identify short term works on site particularly any that may impact upon the hospital activities<br>- Identify short term Hospital activities that may impact upon the construction works<br>- Communicate construction activities to relevant 3rd parties<br>- Monitor impact of works on surrounding area<br>- Report key issues to the Project Management Group | - Ensure that planning Applications are submitted on time<br>- Ensure that Planning Conditions are discharged on time<br>- Ensure that Building Warrant application is submitted on time and all queries closed out<br>- Monitor design compliance with the ER's and CP's.<br>- Monitor design sign off<br>- Monitor progress of key design strategies – fire, access control, acoustics etc<br>- Manage any derogations from ER's and CP's<br>- Manage any clarifications required against ER's and CP's<br>- Monitor design programme<br>- Manage Mock up and samples programme and signoff<br>- Report any key issues to the Project Management Grp | - Review how art can best be incorporated into the scheme<br>- Agree Project Art Strategy<br>- Advice the design process of opportunities for art<br>- Advise the design process and spatial and technical requirements for art<br>- Report any key issues to the Technical Design Group | - Monitor the production of a Project Commissioning Plan<br>- Monitor the production of a Project Commissioning Programme including operational commissioning<br>- Review the design for "commissionability"<br>- Manage specialist validations required ie pharmacy, CSSD, mortuary<br>- Ensure equipment installation programme co-ordinated with main commissioning programme<br>- Report any key issues to the Project Management Group | - Monitor the Medical Planning Programme and clear any blockages<br>- Monitor resource levels required to meet programme<br>- Monitor the medical planning sign off process and identify any critical delays<br>- Ensure that other sub groups ie IT and Equipment feed into the medical planning process<br>- Manage mock ups for functionality sign off<br>- Monitor production of Room Data Sheets<br>- Report changes to the Project Management Group | - Produce Project IT Strategy in sufficient time to inform the main design<br>- Ensure that IT spatial requirements are co-ordinated with the main design<br>- Ensure that IT technical requirements are incorporated into the design<br>- Ensure that Equipment IT requirements are identified sufficiently early to inform the main design<br>- Report any issues to the Technical Design group | - Monitor the inclusion of Equipment spatial and technical information on the Loaded Plans and Room Data Sheets<br>- Ensure that Equipment spatial and technical information is provided to meet the design programme<br>- Ensure that Equipment selection and procurement is carried out in time to meet the design and construction programme<br>- Manage the approval of Equipment Selection<br>- Manage change control in relation to Equipment provisions<br>- Ensure that Equipment installation and commissioning is integrated into the Joint Commissioning Group<br>- Report key issues to the Project Management Grp |
| **Member-Ship**<br><br>**(Leads indicated in red)** | **Alan Seabourne**<br>Alan McCubbin<br>David Hall<br>Douglas Ross<br>Peter Moir<br><br>Chris Lovejoy<br>Ed McIntyre<br>Neil Murphy<br>Ross Ballingall<br>Steve Pardy<br>Tim Bicknell | **Alan Seabourne**<br>David Hall<br>Peter Moir<br>Douglas Ross<br>Mark Baird<br><br>Ross Ballingall<br>Paul Serkis<br>David Bower<br>Darren Smith<br>Ed McIntyre<br>Tom Allan | Alan McCubbin<br>Alan Seabourne<br>**Douglas Ross**<br>Peter Moir<br><br>Paul Serkis<br>Eric Napier<br>Tom Allan | Hugh McDermont<br>Sam Suddese<br>Shiona Frew<br>Estates Dept<br>Facilities Dept<br>Health & Safety Supervisor<br><br>**Alan Keeley**<br>Dave Jordan<br>Kevin Graham<br>Dave Bower<br>Norman Sutherland | Alan Seabourne<br>David Hall<br>Frances Wrath<br>Heather Griffin<br>Karen Connelly<br>Mairi Macleod<br>Peter Moir<br>Infection Control Supervisor<br><br>**Darren Smith**<br>Manny Ajuwon<br>Chris Lovejoy<br>Ed McIntyre<br>Emma White<br>Alastair Leighton | Alex McIntyre<br>**Anna Bazendale**<br>Dan Harley<br>David Hall<br>Dorothy Cafferty<br>Frances Wrath<br>Heather Griffin<br>Jackie Sands<br>Kate Munro<br>Louise Watson<br>Mairi Macleod<br>Peter Moir<br><br>Darren Smith<br>Neil Murphy<br>Liz Petrovitch<br>Tom Littlewood | **Fiona McCluskey**<br>Frances Wrath<br>Heather Griffin<br>Karen Connelly<br>Mairi Macleod<br>**Peter Moir**<br>Supervisor<br>C&B Support<br><br>Ross Ballingall<br>Chris Lovejoy<br>Ed McIntyre<br>Dave Bower<br>Ron King | Alan Seabourne<br>David Hall<br>Fiona McCluskey<br>Frances Wrath<br>Heather Griffin<br>Mairi Macleod<br>Infection Control<br><br>**Darren Smith**<br>Emma White<br>Paul Britton<br>Dave Bower | **Alan Seabourne (tbc)**<br>Frances Wrath<br>Hugh McDermont<br>Karen Connelly<br>Mark Greig<br>Marion Stewart and/or<br>Alisdair Finlayson<br>C&B Support<br><br>Chris Lovejoy<br>Tony Duddy<br>Ed McIntyre<br>Steve Pardy | Frances Wrath<br>Hugh McDermont<br>Karen Connelly<br>Peter Moir<br>**Robert Stewart**<br>C&B Support<br><br>Dave Bower<br>Darren Smith<br>Manny Ajuwon<br>Chris Lovejoy<br>Steve Pardy |
| **Attendees** | To be identified as required | To be identified as required | To be identified as required | TA Advisers as required | TA Advisers as required | To be identified as required | Clinical reps/ Technical Advisers as required | To be identified as required | To be identified as required | To be identified as required |
| **Frequency of Meetings** | Monthly – Last Tuesday of each month 4pm | Every Tuesday 12.30pm | Every Tuesday 9am | Every Thursday 2pm | Every week - to be scheduled out | By Agreement | 1 per month - to be scheduled out | Every week - to be scheduled out | 3rd Friday of every month 9am (TBC) | 3rd Friday of every month 1pm (TBC) |
| **Reports to:** | New South Glasgow Hospitals and Labs Project Executive Board through Alan Seabourne | Project Steering Group | Project Management Group | Project Management Group | Project Management Group | Technical Design Group | Project Management Group | Project Management Group | Technical Design Group | Project Management Group |

The agenda of the Project Management Group may expand to create a separate Construction Group

These groups will merge at some point

## APPENDIX – 3

Stage 2 – Design Development Adult & Children's Hospitals
List of Design Requirements for FBC to be provided by the Contractor

The following Appendix lists the design information to be provided by the Contractor during the design development stages of the projects.

The Supervisor team will be expected to familiarise themselves with this information to enable the team to deliver a service to the requisite standards and ensure the construction works meets the Board's quality and functional requirements in the works information. The Supervisor team will also be asked to review and comment of the package / construction related elements in respect of compliance with the works information as they are developed.

The appendix lists the information to be completed by the Contractor and agreed (where relevant) with the Board in advance of FBC in October/November 2010.

**Generally**
**Contractors Proposals Report:** A full and comprehensive response to the Employer's Requirements clearly demonstrating compliance.

**Full Production Information:** Drawings as required by SGHD to achieve Full Business Case, including FPI of the drawings listed in this Appendix K.

**Specifications:** Full NBS specifications.

**Architectural (including landscaping, fire and acoustics)**
**Location Plan 1:1250**
**Existing Site Plan(s) 1:500**
Indicating the following information;
• Reference Datum Point for levels
• Building Lines
• Existing buildings, trees, hedges surface materials
• Existing levels
• Existing services and drainage
• Dotted outline of new buildings
• Principal Setting out lines
• Extent of Contractor's compound, fencing etc
• Contractor's site access
• Areas identified for stockpiling topsoil, turf, spoil etc
• Positions and references of trial holes, borings etc
• Site Boundary

**Site Plan as proposed 1:500;**
Indicating the following information;
• Site Boundary
• Existing buildings, trees, hedges to be retained
• Existing level or features to be retained
• New Buildings indicated referencing entrances and exits
• New roads, pavings, fire paths, hard landscaping etc
• New levels
• Outline of/or reference to soft landscaping proposals
• Reference grid including principal setting out lines
• Manhole covers, gulley gratings, service covers, underground ducts etc
• Lamp standards and lighting bollards

**Setting Out Plans 1:500/1:200;**
Indicating the following information;
• Setting out dimensions/coordinates for the new building perimeter, roads, pavings, fire paths, hard landscaping etc related back to reference grid.

**General Arrangement Floor and Roof Plans 1:100/1:50;**
Indicating the following information;
• Reference grid
• Structural columns and walls

• Lifts, ducts, staircases
• Windows, internal partitions, doors
• Room names and numbers
• Key section references
• Roof falls
• Plant equipment in outline
• Ridges, hips, eaves, parapets, gutters etc

**General Arrangement Elevations 1:100 / 1:50;**
Indicating the following information;
• Existing Ground Level/Finished ground level
• Floor levels
• Reference grid
• Walls ,doors , windows
• Roof structures
• Cladding/panel materials
• Movement joints
• Rainwater pipes , soil and vent pipes
• Outline of adjoining buildings

**General Arrangement Sections 1:100 / 1:50;**
Indicating the following information;
• Floor and roof construction
• Walls and windows
• Internal walls/partitions
• Floor to Floor heights
• Basements
• Service voids

**Key Elevations for Special Areas 1:50 e.g. Main Entrances, Ward Tower, Junctions of Key Building Materials;**
Indicating the following information;
• Components – cross referencing detail drawings
• Glazing and panel materials, blinds , louvers, opening windows etc
• Positioning or setting out of critical joints in materials

**Fire Drawings 1:100 & 1:50;**
Indicating the following information;
• Location of all fire compartment and sub compartment walls
• Location of fire stops in ceiling voids
• Areas with fire resisting sealed ceiling
• Fire doors including their fire rating and whether self closing
• Fire fighting equipment i.e. extinguishers , hosereels, fire blankets, dry riser inlets and outlets
• Fire lifts
• Reference to details

**Internal Plan Drawings 1:50;**
Indicating the following information;
• Reference to structural grid
• Columns and structural walls, lift shafts, movement joints
• Changes in floor level
• External wall and window construction, window cills. Walls and openings – setting out dimensions.
• Internal glazed screen types and setting out
• Staircase plans – setting out
• Staircase and lift numbers
• Partitions and duct enclosures – positions and openings
• Doors – positions and swings, fire resistance and self closure
• Sanitary fittings, sizes and positions
• IPS sizes and positions
• Fixed mechanical and electrical equipment – types in outline
• Fixed fire fighting equipment – size and position
• Fire protection and means of escape requirements
• Access to crawlways, ducts, subways and trenches, plant etc
• Layout of lift pit, access ladders, stair/lift shaft smoke vents and lift motor room
• Fixed joinery and hardware
• Ceiling layouts incorporating all ceiling services and access requirements
• Wayfinding/Signage drawings indicating size and position
• Rainwater pipes, soil and vent pipes – dimensional position
• Reference to details through external walls, load bearing walls, window/door jambs, heads etc
• Cavity Barriers
• Internal finishes – floor, ceiling, walls

**Detailed Roof Plan(s) 1:50;**
Indicating the following information;
• Reference Grid
• Levels and finishes types
• Movement Joints
• Roof pavings
• Falls
• Parapets, copings
• Flashings, gutters and outlets
• Handrails, changes in level, ladders and steps
• Fire separation walls above or within the roof
• Fire protections and means of escape requirements across or through roof
• Roof lights
• Enclosures for fire equipment or plant
• Vent terminals, drainage vent pipes, flues, lightening protection, aerials
• Fixed equipment above roof (i.e. window cleaning apparatus)
• Fixed mechanical and electrical equipment and plant above roof
• Reference to details through eaves, ridges, balconies etc

**Detailed Sections 1:20 / 1:10;**
Indicating the following information;
• Window cill and head heights
• Balconies
• Roof construction and finish, drainage falls
• Eaves, parapets, gutters etc
• Rooflights, louvers, shading devices
• Lift pits
• Basement construction and tanking
• Damp proof coursing and membranes
• Partitions and doors – heights and junctions
• Datum for levels
• Existing ground/finishes ground level
• Reference to structural grid
• Floor to floor heights
• Suspended ceiling heights and profiles
• Movement joints
• Slab/beam construction
• Cavity Barriers

**Staircase and Lift Details 1:50 / 1:20;**
Indicating the following information;
• Reference to structural grid
• Setting out of treads risers , landings and relationship to structure, external wall, ceilings
• Lines of nosings with setting out dimensions to individual stair flights, landings and stairwell
• Non-slip inserts or safety nosings etc
• Handrails
• Balustrades and fixings – setting out
• Reference to details
• Pit Details

**Detail Drawings 1:5;**
As required to sufficiently indicate key construction details.

**All 1:50 Room Layouts and RDS agreed with the Board**

**Services Systems**
All of the items included for stage one with any proposed variations highlighted.
Detailed program of Information release
All work to complete outline, detailed, final proposal stages.
All input required for Detailed Planning and Building Regulation Compliance.
CLG Approved National Calculation Methodology Tool Compliance report on SPP6 and PAN84.
Full Dynamic modelling of the Building Environment
Provision of condensation analysis for each element of the building

Provision of comprehensive engineering solutions for the Mechanical, Public Health, Medical Gases, Electrical and Lift services solutions including:

Design Calculations
• Detailed Design Drawings for all elements of the works (1:100 and 1:50);
• Detailed Specifications for all elements of the works;
• Detailed Plant schedules for all elements of the works;
• Construction drawings for all elements of the works (1:100 and 1:50);
• Manufacturer's drawings for all elements of the works (1:20 and 1:50);
• Working drawings including:
• General layout drawings of the complete works (1:50);
• Builders work drawings (1:50):
• Detailed layouts showing the location of all equipment including cable, cable tray, conduit, trunking in switchrooms and plant rooms (1:20);
• Assembly drawings of all factory built equipment and site built assemblies (1:20 and 1:50);
• System diagrams and circuit wiring diagrams for all installations and equipment (A1 to ensure legibility);
• Multi-trade co-ordination drawings (1:20);
• Plantroom layout drawings (1:20); and
• Co-ordination sections at key "pinch" points (1:20).

Commissioning settings for all elements of the works, including microbiological testing proposals for operating theatres and specialist ventilation.
Risk assessments and detailed design statement in accordance with CDM.
Lift Installation proposals
Issue of Co-ordination drawings to demonstrate compliance with health documents and integration of services within the building fabric and structural solution.
Acoustic report indicating solutions proposed for all elements of the works
Issue of fully integrated Asset management system for all elements of the works

Fully integrated as fitted drawings for all elements of the works.
Fully integrated as operation and maintenance manuals for all elements of the works
Fully integrated Planned Preventative Maintenance System.
Completion of all testing and system warranty documentation
Building leakage testing
Server room air integrity test certificates
Building Log Book
Building user guides
Confirmation that the design fully complies with the requirements of the Employers Requirements, M&E appendices 1 to 6, all HTM's, HBN's, SHTM's and current legislation.
Proposals for environmental proving of all systems
.

**Civils and Structural**

**General External Infrastructure Works**
***Documents***
Schedule of Information that will be passed to NHS GG&C on completion of the works in respect of roads and drainage works

***Drawings***
Detailed 1:500 scale Phasing plans / temporary works plans for the implementation of roads and drainage infrastructure linked to programme

**Roads**
**Documents**
Stage 1 and Stage 2 Road Safety Audit
Specification for Roads and Hardstandngs

**Drawings**
*1:500 scale plans showing:-*
Curve Radii
Corner Radii
Swept Path analysis on bus routes and service accesses
Pedestrian Crossings
Footways, Cycleways, Cycletracks
Carriageway, footway and cycleway widths
Car Parking arrangements with distribution of spaces and use identified
Areas of differing Carriageway Construction
Traffic Signs and Road Markings
Kerbing Layouts
Roads Drainage system
All crossfalls, supereleveation and cambers
Indicative Signalised layouts at external roads
*Typical Sections and details to appropriate scale showing:-*
Carriageway Construction
Capping provision
Footway / Cycleway Construction
Pedestrian Crossing point arrangements
Kerb Types

***Drainage***
***Documents***
Flood Risk Assessment, undertaken by the Contractor but in the ownership of NHS GG&C.
Flood Risk Strategy
Drainage Management Strategy.
Deliverables for these reports as per Employers Requirements
Drainage maintenance schedule
Correspondence from SEPA confirming the Agency's approval/support of :-
SUDS Strategy
Flood Risk Assessment
Proposals for discharge to the watercourse
Proposals for re-alignment of the watercourses
Correspondence from Scottish Water confirming the Authority's approval/support of :-
Proposed discharge to the public drainage system

Correspondence from Glasgow City Council confirming the Council's approval/support of :-
Flood Risk Assessment and Flood Risk Management Strategy
Calculations for the whole sewerage system.
Calculations in support of the upgrading of culverts in the site
Specification for Drainage works, including proposals for the treatment of existing redundant drainage.

**Drawings**
*1:1250 (or greater) plans showing :-*
Drainage provision in support of SUDS and Drainage Strategy
*1:500 scale plans showing:-*
Culvert upgrading drawings
Amendments to the public sewerage system
Layout of roads and buildings
Layout of sewers, outfalls, underground storage, and SUDS features
Long sections showing proposed levels, existing ground levels, together with chambers, chainages, gradients, pipe sizes, pipe materials, and SUDS features
Structures or trees which are, or shall be, greater than 10m high within 10m of proposed drainage.
Long sections should be to an exaggerated scale, with the horizontal scales the same as the plan

***Details***
Chamber Details and Pipe Bedding Details

**Traffic Management Strategy**
Written statement on maintaining access, Public Transport, Pedestrian flow, Ambulance access/routes, Public Safety including any proposals for the promotion of Traffic Regulation Orders.

**Acute Adults & Children's Hospital, Car Parks, Laboratory Building and Energy Centre Documents**
Design Philosophy Statement taken from initial bid and expanded through to and agreed at FBC.
Specific design detail should include information on:
• Loadings
• Imposed Movements
• Performance Requirements
• Construction Implications
• Design Interfaces
• Materials

In addition to initial bid document, the Design Philosophy Statement should include:
6. Modelling and Analysis
6.1 Description of overall structural behaviour
6.2 Description of modeling, analysis and design
6.3 Methods of design covering e.g. foundations, retaining walls, slabs, columns, staircases.
7. Calculations
7.1 Sample calculations undertaken
7.2 Software used
7.3 Standard details
8. Checking

**Drawings**
For FBC drawings should be developed that reflect the equivalent of RIBA Stage F, Tender Status as a minimum. Drawings status enable a robust cost to be agreed with Client.

**Specifications**
Full Tender Status specifications are required.

**Further Site Investigations.**
Detail any further site investigations proposed.

**Unknowns**
Method/strategy for advising of site unknowns encountered to Client, e.g. hospital waste (buried).

**Sub-Contracts**
List of major works to be sub-contracted.

## APPENDIX - 4

Design Acceptance Procedure

Supervisor will be involved in this procedure

**Reviewable Design Data**

Within the Design Development process all information will be subject to review in three categories:

- For approval
- For acceptance
- For comment

The procedure to be adopted will be used to review and approve/accept/comment, as appropriate, a range of deliverables such as clinical functionality at department and room level, specifications including finishes, colour schemes, and materials and components.

Pro-formas, based upon the attached example will be provided for each category and these will be utilised to record the design development process.

Clinical functionality* both at department level and for individual room layouts will typically follow a staged process of review and sign-off, in line with the Stage 2 Design Development Programme.

Items such as finishes, colour scheme and materials will similarly follow a staged process, however, it is envisaged, that they could be concluded in less iterations.

Components and specifications for acceptance will typically follow a two stage process of submission/comment/re-submission/acceptance.

The pro-formas will be set-out to record the history of the Design Review Process and it is envisaged that each drawing, specification or schedule will have its own sheet to record and sign-off where appropriate the contractor's design.

At each review the Board will consider the design information provided by the contractor, against the Works Information, and will respond within the Stage 2 programme timescales, confirming the level of approval/acceptance/comment and providing supporting narrative or marked up drawings with status coded as follows:

A - no comment proceed to construction
B - comments but proceed to construction taking comments on board and
C - comments resubmit with amendments.
D - rejected

The Board will ensure that all responses are signed off by the appropriate staff, to record user and managerial acceptance of the design element under review.

The data set out in the attached table 1 indicates the proposed extent for Approval and Acceptance with all other data being for comment. The list is not however exhaustive and a final agreed list will be prepared jointly within 2 calendar months of contract execution, on the understanding that table 1 is a minimum requirement.

* Clinical Functionality

a) the following matters as shown on the 1:500 scale adjacency layouts
   I. the points of access to and within the Sites and the buildings:
   II. the relationship between one or more buildings that comprise the development:
   III. the adjacencies between different Hospital departments:

b) The following matters as shown on 1:200 scale departmental layouts
   I. The points of access to and within the Site and the buildings
   II. The relationship between one or more buildings
   III. The adjacencies between different Hospital departments
   IV. The adjacencies between rooms within the Hospital departments

c) The quantity, description and areas (in square metres) of those rooms and spaces shown on the agreed schedules of accommodation.

d) The location and relationship of equipment, furniture, fittings and user terminals as shown on the 1:50 loaded room plans in respect of:
   I. All bed and trolley positions
   II. Internal room elevations
   III. Actual ceiling layouts

e) The location of and the inter-relationships between rooms within a department as shown on the 1:200 departmental layouts

f) The fire strategy

g) Infection control

But only insofar as each of the matters listed in (a) to (g) above relate to or affect clinical use.

**NEW SOUTH GLASGOW HOSPITALS**

**List of Data for Review**

TABLE 1

| **Drawn Information** | | |
|---|---|---|
| Scale | Content | Aspect of review |
| 1:500 | Block plans noting | Site and whole hospital operation relationship to existing site operations. |
| | 1. The point of access to and within the Site and the buildings; | |
| | 2. The relationship between one or more buildings that comprise the development; | |
| | 3. The location of and adjancencies between different hospital departments and corridors | |
| 1:200 | Departmental layouts and floor plans noting | Clinical functionality, room relationships within departments |
| | 1. The adjacencies between different hospital departments and corridors; | |
| | 2. The quantity, description and areas (in square metres) of these rooms and spaces shown on the Accommodation Schedule; | |
| | 3. The location of the inter-relationships between rooms within a department | |
| 1:50 | Room layout drawings including | Clinical functionality, location of equipment |
| | 1. The location and relationship of equipment, | |
| | (i) Group 1 and group 2 equipment | |
| | (ii) Internal room elevations | |
| | (iii) actual ceiling layouts | |
| | (iv) all bed and trolley positive | |
| | Departmental plans to show building systems | |
| | Equipment | |
| | 1. Items of equipment as shown on the Equipment Schedule incorporated into the Room data Sheets and the operational temperature tolerances. | |

| **Design Information** | |
|---|---|
| **Item** | **Aspects (specification including)** |
| External Finishes | Lifecycle, maintenance, H&S |
| Hard Landscaping | Colour, layout, maintenance, lifecycle, H&S. |
| Soft Landscaping | Colour, layout, maintenance, lifecycle, H&S. |
| External furniture | Colour, maintenance, lifecycle, H&S. |
| Interior design public space | Colour schemes, layout, wayfinding, maintenance, lifecycle. |
| Interior design public corridors | Colour schemes, layout, wayfinding, maintenance, lifecycle. |
| Wall finishes | Colour, maintenance, lifecycle, H&S. |
| Wall protection, handrails balustrades | Colour, maintenance, lifecycle, H&S. |
| Floor finishes | Colour, maintenance, lifecycle, H&S. |
| Plumbing fittings/tapware | Colour, maintenance, lifecycle, H&S. |
| Sanitaryware/IPS panels | Colour, maintenance, lifecycle, H&S. |
| WC cubicles and prefab partitions | Colour, maintenance, lifecycle, H&S. |
| External and Internal doors, door furniture and ironmongery including schedules | Colour, maintenance, lifecycle, H&S. Glazing, door protection, door configuration. |
| Light fittings all areas | Colour, maintenance, lifecycle, H&S. |
| Ceiling layouts | Colour, maintenance, lifecycle, H&S. |
| Nurses stations | Colour, layout, maintenance, lifecycle, H&S. |
| Reception desks | Colour, layout, maintenance, lifecycle, H&S. |
| Blinds and curtains | Colour, maintenance, lifecycle, H&S. |
| Lifts | Colour, maintenance, lifecycle, H&S. |
| Group 1 fitted furniture | design, materials for construction, colour, maintenance |
| Schedules of components for M&E systems | Colour, maintenance, lifecycle, H&S. |
| Bedhead layouts | Colour, service layout,maintenance, lifecycle, H&S. |
| Public lighting design | Colour, layout, maintenance, lifecycle, H&S. |
| Public art | Art strategy |
| External and internal signage | Colour, maintenance, lifecycle, H&S. |
| Electrical fittings | Colour, maintenance, lifecycle, H&S. |
| Mechanical & Electrical drawings To reflect architects 1:50's for rooms and departments | Review against Room Data Sheets, project specification and architects 1:50 drawings |

The above are in addition to key design requirements as set out in SHTM's and advisory documentation as included in Volume 7.

| NEW SOUTH GLASGOW HOSPITALS & LABORATORY PROJECT<br>DESIGN ACCEPTANCE PROCEDURE | |
|---|---|
| **Building:** | **Issued by:** |
| **Subject:** | **Date issued:** |
| **Aspect for Review:** | **Date return:** |

| DESIGN REVIEW HISTORY | | | |
|---|---|---|---|
| | Level of Approval | Approval Date | Remarks |
| Design Review 1 | | | |
| Design Review 2 | | | |
| Design Review 3 | | | |

| BOARD RESPONSE | |
|---|---|
| **Level of Approval** | |
| **Information referred to:** | |
| | |
| | |
| | |
| **Detailed comment:** | |

**Approval Levels**: **A**= No comment. **B**= Proceed subject to comments. **C**= Resubmit with amendments. **D**=Rejecte

| BOARD ACCEPTANCE SIGN OFF | | | |
|---|---|---|---|
| User Group Lead: | | Date: | |
| Design Manager: | | Date: | |
| Project Manager: | | Date: | |

## NEW SOUTH GLASGOW HOSPITALS & LABORATORY PROJECT
## DESIGN ACCEPTANCE PROCEDURE

| | | | |
|---|---|---|---|
| **Building:** | Children's Hospital | **Issued by:** | Brookfield |
| **Subject:** | Theatres, Endoscopy & Recovery | **Date issued:** | 30.03.2010 |
| **Aspect for Review:** | Clinical Functionality | **Date return:** | 11.04.2010 |

**DESIGN REVIEW HISTORY**

| | Level of Approval | Approval Date | Remarks |
|---|---|---|---|
| Design Review 1 | C | 24.02.2010 | |
| Design Review 2 | B | 10.04.2010 | |
| Design Review 3 | | | |

**BOARD RESPONSE**

| | |
|---|---|
| **Level of Approval** | **B** |
| **Information referred to:** | Drg NA XX 01 PL 252 301 Rev 4 reviewed at meeting on 4th March 2010 |

**Detailed comment:**

Blah blah blah.....

**Approval Levels**: **A**= No comment. **B**= Proceed subject to comments. **C**= Resubmit with amendments. **D**=Rejecte

**BOARD ACCEPTANCE SIGN OFF**

| | |
|---|---|
| User Group Lead: | Date: |
| Design Manager: | Date: |
| Project Manager: | Date: |

NHS
Greater Glasgow and Clyde

Project Office
St Andrew's House
80 Queen Elizabeth Avenue
Hillington
Glasgow G52 4NQ

Mr Edward Davies
Capita Symonds
Skypark SP1
8 Elliot Place
Glasgow
G2 8EP

Date: 21st May 2010
Your Ref:
Our Ref: PJM
Tel. No: [redacted]
Fax No: [redacted]
Email: [redacted]

By surface mail and email

Dear Mr. Davies

**NEW SOUTH GLASGOW HOSPITALS AND LABORATORY PROJECT**
**APPOINMENT OF PROJECT SUPERVISOR**

On behalf of NHS Greater Glasgow and Clyde I accept your submitted Scheme Proposal dated 5th March 2010 and please accept this letter as notification of your appointment as *Supervisor* for Stages 1 and 2 of the above named scheme. The fees for Stages 1 and 2 amount to £160,000.00 ex VAT.,and this amount is capped subject to written confirmation by the Board of any additional works. The amounts within your offer that were considered to be expended in advance of the current appointment date will be held in reserve and utilised at the discretion of the Project Director. As you will be aware, Stages 3 and 3A are subject to full business case (FBC) approval by Scottish Government in November 2010, and your commission will only be extended to include Stages 3 and 3A once the FBC has been confirmed, this confirmation will be in writing.

The appointment is in accordance with the Frameworks Scotland Agreement and incorporates the Template for the Scheme Contract (NEC3; Professional Services Contract (PSC) Option A –Priced Contract with activity schedule) that details the contract obligations, payment and other processes. The PSC processes including programme and are to be entered into from commencement of work associated with this appointment.

The commencement date for the commission be Monday 31st May 2010 and I would ask you to provide me with written acceptance of this appointment in advance of this date. As *Consultant* you are not authorised to commence work until the 'Confirmation of acceptance of appointment as *Supervisor*' has been received and acknowledged by the Board at this address.

It is confirmed that the scope of work is as detailed in the HLIP scheme pack issued by the Board to you on 9th February 2010. The Board would like you to provide for the initial meeting the standard schedule for this appointment so that we can jointly work through and complete by mid June 2010.

In the meantime the Board personnel with whom you may communicate on any matter concerning the contract are.

Mr. Alan Seabourne
Project Director
[redacted]

Mr Peter Moir
Head of Major Projects (NEC3 Project Manager)
[redacted]

Please note the personnel named above are the only persons authorised to give instructions in accordance with the contract on behalf of the Board.

I look forward to a successful working relationship and if you have any queries please do not hesitate to contact either myself or the Project Director. The Project Team are due to move onto the construction site on 27th May 2010. We do not at present have full details of the new postal address, nor the telephone number, and on this basis I suggest we communicate by email from 27th May until I am able to confirm the above.

Yours sincerely,

[redacted]

**Peter J. Moir**

**Head of Major Projects**

Cc Alan Seabourne
Alan McCubbin

NHS
Greater Glasgow and Clyde

Project Office
Top Floor, Site Offices
Off Hardgate Road
Glasgow G51 4SX

Mr Edward Davies
Capita Symonds
Skypark SP1
8 Elliot Place
Glasgow
G2 8EP

Date: 28th March 2011
Your Ref:
Our Ref: PJM
Tel. No: [redacted]
Email: [redacted]

By surface mail and email

Dear Mr. Davies

**NEW SOUTH GLASGOW HOSPITALS AND LABORATORY PROJECT**
**APPOINMENT OF PROJECT SUPERVISOR – STAGE 3**

Further to my letter dated 21st May 2010 confirming your appointment to provide Project Supervisor services for Stages 1 & 2 for the above project, I now write to confirm the extension of your commission to include Stage 3, the construction phase of the New Adult and Children's Hospitals.

The appointment is in accordance with the Frameworks Scotland Agreement and incorporates the Template for the Scheme Contract (NEC3; Professional Services Contract (PSC) Option A –Priced Contract with activity schedule) that details the contract obligations, payment and other processes. The PSC processes including programme and are to be entered into from commencement of work associated with this appointment. It is confirmed that the scope of work is as detailed in the HLIP scheme pack issued by the Board to you on 9th February 2010.

The lump sum fee for Stage 3 is confirmed as £765,000.00 ex VAT and this sum should not be varied without the issue of a compensation event or confirmation in writing from the Project Director.

The commencement date for the commission for this stage is 28th March 2011, and I would ask you to provide me with written acceptance of this appointment.

Yours sincerely,

[redacted]

**Peter J. Moir**

**Deputy Project Director**

Cc Alan Seabourne
Alan McCubbin

Health Facilities Scotland
Property and Capital Planning

FRAMEWORKS SCOTLAND
EXCELLENCE IN HEALTHCARE CONSTRUCTION

NHS National Services Scotland

| | |
|---|---|
| **PROFESSIONAL SERVICES CONTRACT (PSC)**<br>**(June 2005 - with amendments June 2006)**<br><br>**OPTION A – PRICED CONTRACT** | **TEMPLATE;**<br>**SECTION 1**<br><br>**THE AGREEMENT, CONTRACT AND SCOPE OF SERVICES FOR THE APPOINTMENT OF A *SUPERVISOR***<br><br>**SECTION 2**<br>**MODEL FORMS OF PROPOSAL**<br><br>**SECTION 3**<br>**SCOPE OF SERVICES** |
| Section 1 – Agreement and contract<br>Section 2 – Model Forms of Proposal<br>Section 3 - Scope of Services | |
| Prepared by<br><br>Date<br>.....<br>Document Author (Signature) | **Controlled Copy Number** |
| Reviewed By<br><br>Date:<br>.....<br>(Signature)<br><br>Approved by<br><br>.....<br>(Signature) | This document is the property of Health Facilities Scotland (HFS) It shall not be reproduced in whole or in part, nor disclosed to a third party, without the written permission of (HFS). |

| Rev | Date | Approved By | Details of revision |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| | | | |

**The Agreement, Contract and Scope of Services for the appointment of a *Supervisor*;**

**The Health Board – NHS Greater Glasgow & Clyde**

**New South Glasgow Hospitals & Laboratory Project**

The whole Agreement comprises documents as follows;

**Section 1** **Form of Scheme Agreement and contract**

**Part one -** Form of Agreement – Scheme Contract Stages FBC, construction and handover

**Part two -** Appendices to the Form of Agreement – Agreements to proceed
'B' - FBC Stage 3 – Agreement to proceed
'C –Stage 4 - Construction and handover

**Part three -** Contract Data Part one – Data provided by the *Employer*

**Section 2** **Model forms of proposal**

**Part one –** Draft letter of appointment of *Consultant*

**Part two –** *Consultant* pro forma Entry Form of Scheme Proposal and gateway proposals

**Section 3** **The Scope of Services**

1 Introduction
2 Scope of *services*
3 The Prices
4 Programme
5 *Consultant* resources – People
6 Commercial requirements
7 Scheme specific requirements
8 Appendices

**Part one - Form of Agreement – Scheme Contract Stages FBC, construction and handover**

The Scheme Contract dated 24th May 2010

Between

The Health Board – NHS Greater Glasgow & Clyde

and

Capita Symonds

This Agreement incorporates the undertakings of Frameworks Scotland and the NEC3 Professional Services Contract Option A Priced contract with activity schedule with Secondary Option Clauses as stated in Contract Data, Part one – Data provided by the *Employer.*

Note on procedures adopted for completion of the documents;

- The scheme delivery is controlled by a 'Gateway Process' leading through the stages in the contract
- FBC and construction and handover are stages in the contract
- On initiating this Agreement identify the scheme entry level in the following by striking through the stages preceding the Consultant's appointment.
- Do not delete subsequent stages of the Form of Agreement (Appendices); leave open to be completed on *Employer's* agreement/instruction to continue the services for the next stage of the scheme.

**Note to be deleted on completion of the documents prior to entry into the Agreement;**

This template requires insertion of scheme specific information, process and detail to form the scheme contract.

In order that ensure that the integrity of the Frameworks Scotland is not compromised any amendment of this standard form to change the principles and processes identified in the framework is not to be undertaken without prior discussion and agreement of 'Health Facilities Scotland.

**NHS GREATER GLASGOW & CLYDE**

**New South Glasgow Hospitals & Laboratory Project**

**NEC3 Professional Services Contract – *Supervisor* (the *Consultant*)**

**Form of Agreement for the scheme contract;
Stages are FBC; Construction and handover**

Agreement between

NHS Greater Glasgow & Clyde of J B Russell House, Gartnavel Royal Hospital, 1055 Great Western Road Glasgow G12 0XH

(the *Employer)*

and

Capita Symonds, 8th Floor, The Beacon, 176 St Vincent Street, Glasgow G2 5SG

(the *Consultant)*

Whereas the *Employer* wishes to have provided the *services* of *Supervisor* for the **New South Glasgow Hospitals & Laboratory Project** scheme undertaking the duties briefly described as;

Providing assistance to the Health Board's Project Director and liaising with the *Project Manager* by carrying out *Supervisor* duties as stated in the Scope of services document identified in Contract Data Part one attached to this Agreement. The services being;

~~Stage 1 Providing assistance to the NHS team in developing the clinical need and preparing the Initial Agreement (IA) for submission to the NHS Health Board (The *Employer*) or by the NHS Board to Scottish Government Health Directorate Capital Investment Group.~~

~~Stage 2 Providing assistance to the Project Director and liaising with the *Project Manager* by carrying out *Supervisor* duties in connection with the scheme for the Outline Business Case (OBC) for submission to the NHS Health Board (The *Employer*) or by the NHS Board to Scottish Government Health Directorate Capital Investment Group.~~

Stage 3 Providing assistance to the Project Director and liaising with the *Project Manager* by carrying out *Supervisor* duties in connection with the scheme for the Full Business Case (FBC) including setting the target total for the Prices for the construction and handover stage of the scheme for submission to the NHS Health Board (The *Employer*) or by the NHS Board to Scottish Government Health Directorate Capital Investment Group.

Stage 4 Providing assistance to the Project Director and liaising with the *Project Manager* by carrying out *Supervisor* duties in connection with the scheme; for the period of construction and handover and the Principal Supply Chain Partner's Defect Date period plus 4 weeks.

Note for the purposes of this agreement the stage references are as follows;

| | |
|---|---|
| Stage 1 | Providing a service as Stage 4 on proceeding page for the period of construction and handover and the Principal Supply Chain Partner's Defect Date period plus 4 weeks.<br><br>**The new Laboratory Project at Southern General Hospital.** |
| Stage 2 | Providing a service as Stage 3 on proceeding page by carrying out *Supervisor* duties in connection with the scheme for the Full Business Case (FBC) including setting the target total for the Prices for the construction and handover stage of the scheme for submission to the NHS Health Board (The *Employer*) or by the NHS Board to Scottish Government Health Directorate Capital Investment Group.<br><br>**The design development stage for the New Adult & Children's Hospitals.** |
| Stage 3 | Providing a service as Stage 4 on proceeding page for the period of construction and handover and the Principal Supply Chain Partner's Defect Date period plus 4 weeks.<br><br>**The New Adult & Children's Hospitals.** |
| Stage 3A | Providing a service as Stage 4 on proceeding page for the period of construction and handover and the Principal Supply Chain Partner's Defect Date period plus 4 weeks.<br><br>**External works & landscaping.** |

Now it is agreed that;

1. The *Consultant* Provides the Services in accordance with the principles stated in Frameworks Scotland and the NEC3 Professional Services Contract together with the particular requirements of the scope of services applicable to this Agreement.

2. The *Employer* pays the *Consultant* the amount due in accordance with the conditions of contract applicable to each Stage of the Scheme, and as may be further described or limited by the Scope of Services.

3. The documents forming this Agreement are:

   - The *Employer's* letter of appointment dated 21st May 2010.
   - Contract Data Part one – Data provided by the *Employer.*
   - The *Consultant's* submitted and accepted Form of Scheme Proposal, reference New South Glasgow Hospitals and Laboratory Project Proposal for NEC3 Supervisor dated February 2010 , including Contract Data Part two - Data provided by the *Consultant*
   - Attachments to the *Consultant's* Form of Scheme Proposal

Executed on behalf of the *Employer* at Southern General Hospital on ~~the 10th September 2010~~ as follows:-

[redacted]
(Authorised official)

Before this witness:-

[redacted] .....

PATRICK MOWL .....Full name
SITE OFFICE ..... Address
HARDGATE RD GLASGOW .....

Executed on behalf of the *Consultant* ~~at Southern General Hospital 10th September 2010~~ on 28th May 2013 as follows:-

[redacted]
(Director/Authorised Signatory)

Before this witness:-

.....

.....Full name
..... Address
.....

**Part two - Appendices to the Form of Agreement – Agreements to proceed**

**'B' - FBC Stage 3 – Agreement to proceed**
**'C –Stage 4 - Construction and handover**

**NHS Greater Glasgow & Clyde**

**New South Glasgow Hospitals and Laboratory Project**

**NEC3 Professional Services Contract – *Supervisor* (the *Consultant*)**

**Appendix 'B' to the Form of Agreement**

**FBC, Stage 3 – Agreement to continue the *services***

**Scheme reference; New South Glasgow Hospitals & Laboratory Project.**

Agreement between NHS Greater Glasgow and Clyde

of J B Russell House, Gartnavel Royal Hospital, 1055 Great Western Road, Glasgow G12 0XH

(the *Employer)*

Whereas the *Employer* wishes the *Consultant* to Provide the Services through the following Stage:

**Stage 3** **Providing assistance to the Project Director and *Project Manager* by carrying out *Supervisor* duties for the NHS Greater Glasgow and Clyde in connection with the scheme.**

Signed for the *Employer* at Southern General Hospital on 10th September 2010 as follows:-

.....
(Authorised official)

**NHS Greater Glasgow & Clyde**

**New South Glasgow Hospitals and Laboratory Project**

**NEC3 Professional Services Contract – *Supervisor* (the *Consultant*)**

**Appendix 'C' to the Form of Agreement**

**Construction delivery and handover, Stage 4**
**– Agreement to continue and complete the *services***

**Scheme reference; New South Glasgow Hospitals & Laboratory Project**

Agreement between NHS Greater Glasgow & Clyde

•

of J B Russell House, Gartnavel Royal Hospital, 1055 Great Western Road, Glasgow G12 0XH (the *Employer)*

Whereas the *Employer* wishes the *Consultant* to Provide the Services through the following Stage:

| | |
|---|---|
| **Stage 4** | **Providing assistance to the Project Director and *Project Manager* by carrying out *Supervisor* duties in connection with the scheme; for the period of Construction delivery and handover and the Supply Chain Partner's Defect Date period plus 4 weeks.** |

Signed for the *Employer* at Southern General Hospital on 10th September 2010 as follows:-

.....
(Authorised official)

**Part three – Contract Data Part one – Data provided by the *Employer***

Entry level *FBC / *Construction and handover]

**Contract Data Part one - Data provided by the *Employer***

**Statements given in all Contracts**

| | |
|---|---|
| 1. General | • The *conditions of contract* are the core clauses and the clauses for main Option A, dispute resolution Option W2 and Secondary Options – X1, X2, X4, X8, X9, X18 and Z of the NEC3 Professional Services Contract (June 2005 - with amendments June 2006). |

- The *services* are

Providing assistance to the Health Board's Project Director and liaising with the *Project Manager* by carrying out *Supervisor* duties as stated in the Scope of services document identified in Contract Data Part one attached to this Agreement. The services being;

~~Stage 1 Providing assistance to the NHS team in developing the clinical need and preparing the Initial Agreement (IA) for submission to the NHS Health Board (The *Employer*) or by the NHS Board to Scottish Government Health Directorate Capital Investment Group.~~

~~Stage 2 Providing assistance to the Project Director by carrying out general management duties for NHS Health Board in connection with the scheme; and undertaking the specific duties of a Supervisor; preparing and administering the Outline Business Case (OBC), for submission to the NHS Health Board (The *Employer*) or by the NHS Board to Scottish Government Health Directorate Capital Investment Group.~~

Stage 3 Design Review (FBC) Appendix K
Providing assistance to the Project Director by carrying out general management duties for NHS Health Board in connection with the scheme; and undertaking the specific duties of a Supervisor; preparing and administering the Full Business Case (FBC) including setting the target total for the Prices for the Construction and handover stage of the scheme for submission to the NHS Health Board (The *Employer*) or by the NHS Board to Scottish Government Health Directorate Capital Investment Group.

Stage 4 Full Supervisor Service (Adult, Children's & Lab)
Providing assistance to the Project Director by carrying out *Supervisor* duties in connection with the scheme; for the period of Construction and handover and the Principal Supply Chain Partner's Defect Date period plus 4 weeks.

- The *Employer* is

  Name: **NHS Greater Glasgow & Clyde**

  Address:
  J B Russell House,
  Gartnavel Royal Hospital,
  1055 Great Western Road,
  Glasgow G12 0XH

- The person appointed to act on behalf of the *Employer* for this contract, unless notified otherwise is

  Name: **Mr Alan Seabourne** (Project Director)

  **Address:** NHS Greater Glasgow & Clyde
  Project Office - Top Floor Site Office
  Southern General Hospital Construction Site
  Hardgate Road
  Glasgow G51 4SX

- The selection of *Adjudicator* is to be confirmed;

John Hunter
Hunter Consulting
Commercial Centre
Stirling Enterprise Park
Stirling FK7 7BF

or

David Carrick
Hill International
Conference House
152 Morrison Street
The Exchange
Edinburgh
EH3 8EB

or

Alex Warrander
Brewer Consulting
Earlsgate House
35 St Ninian's Road
Stirling
FK8 2HE

or

George Ross
Morrison Ross Limited
21 Melville Terrace
Stirling
FK8 2NQ

or

Gordon Bathgate
Scott Wilson
Citypoint 2
25 Tyndrum Street
Glasgow
G4 0JY

- The Scope is in:

  Part 4 – the Scope of Services

- The *language of the contract* is English
- The *law of the contract* is the law of Scotland subject to the jurisdiction of the Courts of Scotland
- The *period for reply* is;

  Two (2) weeks

- The *period for retention* is zero. (No retention applicable or requested for this service).
- The *Adjudicator* nominating body is:

  The Royal Institute of Chartered Surveyors

- The *tribunal* is the Scottish Courts
- The following matters will be included in the Risk Register:

1. Delay caused by the *Contractor* or Others
2. Availability of *Consultant* resources
3. Adjudication on an action or lack of action by the *Consultant*
4. Failure of the *Consultant* to deliver the *services*
5. Change in the Scope

2. The Parties

Main Responsibilities

- The *Employer* provides access to the following persons, places and things

| access to | access date |
|---|---|
| The *Employer's* Project Director | On appointment of the *consultant* |
| The *Employer's* offices for the scheme | On appointment of the *consultant* |
| Any existing contract documents and records required for administration of the scheme | On appointment of the *consultant* |

3. Time

- The *starting date* is 24 May 2010

Optional Statement for Clause 3

- The *completion date* for the whole of the *services* is 22nd December 2016

- The *key dates* and conditions to be met are

| Condition to be met | *Key date* |
|---|---|
| Stage 4 | 28th March 2011 |

4. Quality

- The quality policy statement and quality plan is provided within 2 weeks of the Contract Date

- The *defects date* is 104 weeks after Completion of the whole of the *services.*

5. Payment

- The *assessment interval* is four (4) weeks or alternatively calendar monthly.

- The *currency of this contract* is the pound sterling (£)

- The *interest rate* is 8% above the rate of the base rate.

- Base rate is calculated by reference to the Bank of England base rate on 31 December or 30 June depending on when the date of the debt falls due. If the debt falls due in the first half of the year the base rate published on 31 December is used; for debts falling due in the second half of the year the base rate applicable on 30 June is used

Optional statements for Clause 5

Y(UK)2 is used and the final date for payment is not 14 days after the date when payment is due

- The period within which payment is made is three weeks

- The *expenses* stated by the *Employer* are

| Item | amount |
|---|---|

8. Risks and insurance

- The amounts of insurance and the periods for which the *Consultant* maintains insurance are

| **Event** | **Cover** | **Period following Completion of the whole of the *services* or earlier termination** |
|---|---|---|
| Failure of the *Consultant* to use normal skill and care normally used by professionals providing services similar to the *services* | £5,000,000.00 (Five million pounds Sterling)<br>In respect of each claim, without limit to the number of claims | 12 years |
| Death of or bodily injury to a person ( not an employee of the *Consultant*) or loss of or damage to property resulting from an action or failure to take an action by the *Consultant* | £10,000,000.00 (Ten million pounds Sterling)<br>In respect of each claim, without limit to the number of claims | 6 months. |
| Death of or bodily injury to employees of the *Consultant*) arising out of and in course of their employment in connection with this contract | £10,000,000.00 (Ten million pounds Sterling)<br>In respect of each claim, without limit to the number of claims | 6 months. |

2.

**Option X1 is used (see Z9 Amendment to Option X1: Price adjustment for inflation)**

- Price adjustment for inflation in respect of Stages (1, 2, and 3) for IA, OBC, FBC and Stage 4- *staff rates* occurs every two years from the date of the Frameworks submission.

- The index is the Average Index of Earnings without bonus

  published on the website of the Office of National Statistics (http://www.statistics.gov.uk)

**If Option X8 is used**

- The collateral warranty agreements are to be in the form to be provided by CSA

**If Option X18 is used**

- The Contractor's liability to the employer for indirect or consequential loss is limited to 10% of the total of the Prices

- The *Consultant's* liability to the *Employer* for Defects that are not found until after the *defects date* is limited to 10% of the total of the Prices

- The end of the *liability date* is 12 years after Completion of the whole of the *services*

**If Option Z is used**

The additional conditions of contract are

**Z 1 New Clause – Assignation**

- The *Employer* has the right to assign this contract to another NHS body without having to seek the *Consultant's* consent.
- The *Employer* notifies the *Consultant* of the intention to assign the contract to another NHS body.
- The *Employer* notifies the *Consultant* of the assignation of the contract to another NHS body

**Z 2 Interpretation and the law – Amendment to Clause 12**

Delete Clause 12.4

**Z 3 General –- Prevention Clause 18**

Delete Clause 18

**Z 4 Payment - Amendment to Clause 50.2**

Third sentence, after "change in the amount due since the previous invoice" add "The change in amount due is limited to the *Consultant's* total expenditure cash flow forecast amount (including the *forecast expenses*) for the *assessment interval* as shown in the *Consultant's* current cash flow forecast"

**Z 5 Payment - Addition to Clause 50**

50.5 Where the *Consultant's* assessment exceeds the amount for the assessment interval as shown in the *Consultant's* current cash flow forecast accepted by the *Employer* then the invoice is limited to the amount forecast. Any amount exceeding the forecast is not invoiced but held over to the next assessment interval, where if the assessment again exceeds the *Consultant's* cash flow forecast for the assessment interval the process is repeated. This clause does not apply where the *Consultant* provides a valid and acceptable reason for an exception to the limitation prior to submission of the invoice.

**Z 6 Compensation events – Amendment to Clause 60.1**

Delete Clause 60.1 (11)

**Z 7 Reasons for termination – Additions to Clause 90.3**

- The *Employer* may terminate prior to or if the submitted Initial Agreement (IA) proposal is not acceptable

- The *Employer* may terminate prior to or if the submitted Outline Business Case (OBC) proposal is not acceptable
- The *Employer* may terminate prior to or if the submitted Full Business Case (FBC) proposal is not acceptable
- The *Employer* may terminate if the *Project Manager* notifies that he has been unable to agree a target being the total of the Prices for Constructions delivery and handover with the *Contractor* prior to submitting the Full Business Case (FBC)

**Z 8 Procedures on termination – Addition to clause 91.1**

The *Consultant* hands over to the *Employer* all hard copy and electronic data prepared for the *services*, including material prepared by a subconsultant. At such termination the *Employer* has the right to use such material for completion of the *works*.

**Z 9 Amendment to Option X1: Price adjustment for inflation**

Z9.1 Delete X1.1, X1.2 X1.3, 1.4, 1.5 and 1.6 and substitute the following:

The *staff rates* to be incorporated in the contract are fixed for two years (24 months) from the date of the Frameworks Scotland tender submission; thereafter they are subject to adjustment for Price Fluctuations applied as follows:

After a period of 24 months the *staff rates* [R] will be twice subject to adjustment for price fluctuation. Firstly by application of the difference between the latest published index for the Average Index of Earnings without bonus [AIE] available at the Contract Date [i(2)] and the AIE 12 months earlier [i(1)]. Secondly this revised rate is then subject to the same change in index to derive the midpoint of the subsequent 24 month period. The *staff rates* (including those for subconsultants) produced by the application of this adjustment for price fluctuation apply for the second 24 months period of the contract. Hence the new *staff rate* for the second 24 month period is defined as:-

$$R(new) = \{ R \times i(2)/i(1) \} \times [i(2)/i(1)]$$

Each 24 month period thereafter the procedure in paragraph 2 is repeated, applying the difference in the AIE indices prevailing at date of the review and the same index that applied 12 months earlier.

The price fluctuations percentage calculations will be undertaken by the *Consultant* and submitted to the Employer for review prior to acceptance. The percentage change to the *staff rates* will be incorporated into the contract by amendment of the *staff rates* identified in Contract Data Part 2 – Data provided by the *Consultant*.

Z9.5 The Time Charge for compensation events is assessed using the staff rates current at the time of the compensation event

Z9.6 line 2, delete 'first' and insert 'second'.

Line 3 after 'anniversary' insert 'and at two year intervals thereafter'.

**Z 10 Rights of third parties – new clause**

Nothing in this contract confers or purports to confer any right to enforce any of its terms on any person who is not a party to it."

**Z 11 Amendment to The *Consultant's* obligations 21;** 21.4

Line 2 after '*Employer*' – insert 'for acceptance'

**Z 12 Communications – add new bullet point to 1. General; clause 13.1**

- The Board confirm the use of Sypro Contract Administration Toolkit for the duration of the project, the Consultant will be provided with training and full access to the web based toolkit to deliver this service.

**Z 13 Reasons for termination clause 90 – amendment**

Delete clause 90.4

**Z 14 Limitation to payment to the *Consultant* in respect of expenses stated by the Employer**

- Payment of expenses in addition to those already included within the lump sum fee bid are to be in accordance with clause 3.3.2 of the Board's tender document.

**Section 2** **Model forms of proposal**

**Part one –** Letter of Appointment of the *Consultant*

**Part two –** *Consultant* pro forma Entry Form of Scheme Proposal and gateway proposals

**Part one – draft letter of appointment of the *Consultant***

Project Office
St Andrew's House
80 Queen Elizabeth Avenue
Hillington
Glasgow G52 4NQ

NHS Greater Glasgow and Clyde

Mr Edward Davies
Capita Symonds
Skypark SP1
8 Elliot Place
Glasgow
G2 8EP

Date: 21st May 2010
Your Ref:
Our Ref: PJM
Tel. No: [redacted]
Fax No:
Email:

By surface mail and email

Dear Mr. Davies

**NEW SOUTH GLASGOW HOSPITALS AND LABORATORY PROJECT**
**APPOINMENT OF PROJECT SUPERVISOR**

On behalf of NHS Greater Glasgow and Clyde I accept your submitted Scheme Proposal dated 5th March 2010 and please accept this letter as notification of your appointment as *Supervisor* for Stages 1 and 2 of the above named scheme. The fees for Stages 1 and 2 amount to £160,000.00 ex VAT., and this amount is capped subject to written confirmation by the Board of any additional works. The amounts within your offer that were considered to be expended in advance of the current appointment date will be held in reserve and utilised at the discretion of the Project Director. As you will be aware, Stages 3 and 3A are subject to full business case (FBC) approval by Scottish Government in November 2010, and your commission will only be extended to include Stages 3 and 3A once the FBC has been confirmed, this confirmation will be in writing.

The appointment is in accordance with the Frameworks Scotland Agreement and incorporates the Template for the Scheme Contract (NEC3; Professional Services Contract (PSC) Option A –Priced Contract with activity schedule) that details the contract obligations, payment and other processes. The PSC processes including programme and are to be entered into from commencement of work associated with this appointment.

The commencement date for the commission be Monday 31st May 2010 and I would ask you to provide me with written acceptance of this appointment in advance of this date. As *Consultant* you are not authorised to commence work until the 'Confirmation of acceptance of appointment as *Supervisor*' has been received and acknowledged by the Board at this address.

It is confirmed that the scope of work is as detailed in the HLIP scheme pack issued by the Board to you on 9th February 2010. The Board would like you to provide for the initial meeting the standard schedule for this appointment so that we can jointly work through and complete by mid June 2010.

In the meantime the Board personnel with whom you may communicate on any matter concerning the contract are.

Mr. Alan Seabourne
Project Director
Manager)
[redacted]

Mr Peter Moir
Head of Major Projects (NEC3 Project
[redacted]

Please note the personnel named above are the only persons authorised to give instructions in accordance with the contract on behalf of the Board.

I look forward to a successful working relationship and if you have any queries please do not hesitate to contact either myself or the Project Director. The Project Team are due to move onto the construction site on 27th May 2010. We do not at present have full details of the new postal address, nor the telephone number, and on this basis I suggest we communicate by email from 27th May until I am able to confirm the above.

Yours sincerely,

**Peter J. Moir**

**Head of Major Projects**

Cc Alan Seabourne
Alan McCubbin

CAPITA SYMONDS

24th May 2010

**Our ref** CS\GEN\PFI\L\10052403CP\DR

**For the attention of Mr Peter Moir**
**Head of Major Projects**

NHS Greater Glasgow and Clyde
Project Office
St Andrew's House
80 Queen Elizabeth Avenue
Hillington
Glasgow
G52 4NQ

Dear Peter

**New South Glasgow Hospitals and Laboratory Project**
**Appointment of Project Supervisor – Confirmation of Acceptance of Appointment as Project Supervisor**

We confirm acceptance of the Appointment and entry into Stages 1 and 2 of the contract with limitations as stated in the letter of appointment.

Yours sincerely

p.p. [redacted]

**Edward Davies** BSc MSc FRICS MAPM ACIArb
**Director Technical Advisor Services**

Skypark SP1 , 8 Elliot Place , Glasgow G3 8EP
Tel 0141 285 3600 Fax 0141 847 0915 www.capitasymonds.co.uk
Capita Symonds Limited

Registered Office: 71 Victoria Street, Westminster, London SW1H 0XA. Registered in England No. 2018542.
Part of The Capita Group Plc. www.capita.co.uk

**Part two – *Consultant* pro forma Contract Data Part two; Entry Form of Scheme Proposal and gateway proposals**

**Introduction**

The process of Scheme Proposal submissions by the *Consultant* and subsequent acceptance by the *Employer* leading to the signing of the Form of Agreement for the PSC Option A – Priced contract is as follows.

**1 The Form of Scheme Proposal is provided by the *Consultant* as follows;**

1.1 The *Employer* selects *Consultants* to receive invitations to submit scheme proposals for PSC Option A Priced contracts.

1.2 The *Employer* prepares and issues a scheme pack invitation containing Contract Data Part one – Data provided by the *Employer*, Scope of Services and programme appropriate to the delivery of the scheme requirements for all stages of the scheme e.g. IA, OBC, FBC and construction and handover including main works Defects Date plus 4 weeks

1.3 The *Consultant* prepares, within the time stated in the letter of invitation, and submits for acceptance by the *Employer*;

- The scheme Entry Form of Scheme Proposal together with;
    - Contract Data Part two – data provided by the *Consultant*
    - The activity schedule
    - Pricing workbook
    - Overall and stage programmes for acceptance
    - Attachments as listed in the proposal

1.4 The submitted proposal being acceptable to the *Employer* the Parties seal the Scheme Contract by signing the Form of Agreement.

1.5 Thereafter the *Consultant*'s progress through each subsequent Stage of the contract is an offer to continue to Provide the Services at the accepted Prices.

1.6 Where there is a change in the Scope of Services following appointment to the scheme, this is dealt with as a compensation event. When such change affects a Stage to be entered the Prices for the Stage should be adjusted before the *Employer* gives his Agreement to proceed.

**2 Appendices to the Scheme Contract**

2.1 When the *Employer* is satisfied the Stage Form of Proposal submission acceptable he prepares, signs and issues to the *Consultant* the Appendix to the Scheme

Agreement as a confirmation that the Scheme may proceed to the next Stage under the Agreement.

2.3 The *Consultant* does not proceed from the current Stage until he has received the signed Appendix to the Scheme Contract.

2.4 Pro forma Agreement to Proceed documents are included in the template Agreement, Part two.

**3 Pro forma documents for submission of the Scheme Proposals**

3.1 Pro forma documents to be completed for the Scheme Proposals are included hereinafter at 3.4.

3.2 Attachments to be included with each Scheme Proposal as appropriate to the Stage are identified at 4.0 following.

**4 Example Scheme Proposals**

4.1 The Proposals following are structured on the *Consultant* being appointed at Stage 1 – IA

4.2 Where a *Consultant* is appointed at a later Stage than IA then it is necessary to;

- amend the opening statement by removing reference in the first line 'continue'
- Insert at (a)

  The scheme pack and invitation to submit a Proposal that includes;

  - Contract Data Part one – data provided by the *Employer*
  - Scope of Services

4.3 Attachments to the Scheme Proposals

4.3.1 The following Attachments are required;

A – Programme previously accepted by the *Employer* – Stage IA
B – Programme previously accepted by the *Employer* – Stage OBC
C – Programme previously accepted by the *Employer* – Stage FBC
D – Programme previously accepted by the *Employer* – Construction and handover Stage

Other information or submissions as may be required at each stage, e.g.

Parent Company Guarantee

Certificates of Insurance
Proposed subcontractors
Proposed material suppliers and manufacturers
Procurement Strategy

4.4 Contract Data Part two – data provided by the *Consultant*

4.4.1 Complete the following as necessary to provide the Contract Data for the particular stage proposal being submitted;

Entry level *IA/*OBC /* FBC / *Construction and handover at [Date]

**Contract Data Part two – Data provided by the *Consultant***

**Statements given in all contracts**

- The *Consultant* is

  Name Capita Symonds Limited

  Address 8th Floor, The Beacon, 176 St Vincent Street, Glasgow, G2 5SG

- The *key persons* are

| | |
|---|---|
| (1) Name | John Redmond |
| Job | Senior Project Manager |
| Responsibilities | Lead Supervisor |
| Category | Professional P1 |
| Experience | Independent Tester on the New Birmingham Hosp |
| | Independent Tester on the Rowanbank Clinic, Glas |

| | |
|---|---|
| (2) Name | John Kilbane |
| Job | Senior Project Manager |
| Responsibilities | Deputy Lead Supervisor |
| Category | Professional P2 |
| Experience | Independent Tester on the New Southmead Hospi |
| | Independent Tester support on the New Birmin scheme |
| | Independent Tester support on the Rowanbank Cli |
| | Independent Certifier on Sheffield University Resid |

| | |
|---|---|
| | Independent Certifier on Barnsley BSF Phase 1 and |
| | Independent Certifier on Essex BSF Phase 1 |

| | |
|---|---|
| (3) Name | Willie Roxburgh |
| Job | Consultant |
| Responsibilities | Civil and Structural |
| Category | Professional P1 |
| Experience | Independent Tester (C&S) on the Kirkcaldy Ho (GHMSS) |
| | Independent Tester (C&S) on the New Stobhil Hospital scheme |
| | Independent Tester (C&S) on the Rowanbank Clini |
| | Independent Tester (C&S) on the Lochgilphead Ho |

| | |
|---|---|
| (4) Name | Graeme Bruce |
| Job | Associate Director |
| Responsibilities | Mechanical and Electrical |
| Category | Professional P1 |
| Experience | Monklands Hospital - Main Switchboard ar Generator Renewal |
| | Community Maternity Unit, Montrose |
| | Mental Health Units, Fife |
| | Scottish Blood Transfusion HQ |
| | Dumfries and Galloway Royal Infirmary, Extension |

| | |
|---|---|
| (5) Name | Dave Ramsay |
| Job | Technical Director |
| Responsibilities | (Senior Peer Review) General Compliance |
| Category | Professional P1 |
| Experience | Independent Tester on the Enniskillen Hospital |
| | Independent Tester on the New Southmead Hospi |
| | Independent Tester on the Victoria Hospital, Kirkc |
| | Independent Tester on the New Victoria and Stol Glasgow |
| | |

| | |
|---|---|
| (6) Name | John Haggarty |
| Job | Assistant Project Manager |
| Responsibilities | General Compliance |
| Category | Professional P3 |
| Experience | Independent Tester support on New Birmingham H |
| | Independent Tester support on Enniskillen Hospita |

| | |
|---|---|
| (7) Name | Allan Follett |
| Job | Mechanical Engineer |
| Responsibilities | Mechanical and Electrical Support |
| Category | Professional P2 |
| Experience | Monklands Hospital - Heamatology/Med Gas Upg AHUs |

| | |
|---|---|
| | EEC Aberdeen Royal |
| | Service Yard, Victoria Fife |
| | Kinross Health Centre |
| | Largs Medical Centre |
| | Raigmore Cath Labs |

| | |
|---|---|
| (8) Name | John Robertson |
| Job | Principal Electrical Engineer |
| Responsibilities | Mechanical and Electrical Support |
| Category | Professional P2 |
| Experience | Monklands Hospital - Main Distribution System Up |
| | Generator/NCU Replacement Various Sites |
| | Authorised Elec Person Training – NHS Scotland |
| | Monklands HV Ring Works |

- The *staff rates* are

| Name/category | Rate |
|---|---|
| John Redmond/Professional P1 | £70/hr |
| John Kilbane/Professional P2 | £58/hr |
| Willie Roxburgh/Professional P1 | £70/hr |

| | |
|---|---|
| Graeme Bruce/Professional P1 | £70/hr |
| Dave Ramsay/Professional P1 | £70/hr |
| John Haggarty/Professional P3 | £45/hr |
| Allan Follett/Professional P2 | £58/hr |
| John Robertson/Professional P2 | £58/hr |

- The following matters will be included in the Risk Register.
  - It is understood that the Contractor will have their own operational testing, commissioning, validation and site quality procedures. The details of these are unknown at this stage. In order to mitigate this, we proposed to undertake a detailed review of the procedures to be put in place with findings to be published after review;
  - Resourcing was based on Brookfield construction programmes as referenced below. Any revisions to this programme are likely to result in a change to the resourcing requirements and associated fee;
    - 10-02 Stage 1 Updated programme week 8 – Feb 2010
    - 10-02 Stage 2 Updated programme week 8 – Feb 2010
    - 100106 Stage 3 Contract Construction Programme BCL-GS3-CN03-0001
    - 100106 Stage 3a Contract Construction Programme BCL-GS4-CN02-0001

- Compensation Events that impact upon resourcing may result in an amendment to the fee;
- In the event of delay to project completion, our fee will likely require amendment;
- We have not incorporated resourcing during the Board fit-out following project completion;
- Capita Symonds have limited involvement in RDD and no involvement in design sign-off or pre-approval.

**Optional Statements**

**If a programme is to be identified in the Contract Data**

- The programme identified in the Contract Data is
  - 10-02 Stage 1 Updated programme week 8 – Feb 2010
  - 10-02 Stage 2 Updated programme week 8 – Feb 2010
  - 100106 Stage 3 Contract Construction Programme BCL-GS3-CN03-0001
  - 100106 Stage 3a Contract Construction Programme BCL-GS4-CN02-0001

**If the *Consultant* states any expenses**

- The *expenses* stated by the *Consultant* are

All expenses are included in amount the hourly rates noted above

- The *activity schedule is;*

  "NSGH – Supervisor Activity Schedule.xls" which covers stages 1, 2, 3 and 3a, subject to approval to proceed to each stage.

**If the *Consultant* requires additional access**

- The *Employer* provides access to the following persons, places and things

| Access to | *Access date* |
|---|---|
| Construction site | From appointment |

4.2 *Consultant* proposals to be submitted to the *Employer* for acceptance for each stage within this contract; pro forma documents as follows;

Headed note paper of the *Consultant*

NHSScotland Health Board

Address

Dear Sirs,

**New South Glasgow Hospitals & Laboratory Project**
**Appointment of *Supervisor***
**Stage 3 Form of Scheme Proposal: FBC**
**New South Glasgow Hospitals & Laboratory Project NEC3 Supervisor Proposal**

We hereby offer to continue to Provide the Services through FBC in accordance with:

(a) Our accepted entry level Scheme Form of Proposal and Accepted Programme for FBC ;

(b) This FBC Proposal, including;

- Revised *forecast expenses* for the Stage in the amount of

  £ 25,000 (Twenty Five Thousand Pounds) (Excluding VAT)

- *Activity schedule* amended for change in the Scope of Services as agreed in compensation event numbers;

  1. list compensation events

On receipt of your written acceptance thereof and *completed Agreement to proceed/ *completion of the Agreement, we shall commence Stage 3 FBC In accordance with the Accepted Programme.

..... Dated this day of 200[ ]

on behalf of Capita Symonds Limited, 8th Floor, The Beacon, 176 St Vincent Street, Glasgow, G2 5SG

**NHS Greater Glasgow & Clyde**

**New South Glasgow Hospitals & Laboratory Project**
**Stage 3 Form of Scheme Proposal: FBC *Supervisor***

**Appendix 'A' to form of Scheme Proposal: FBC**

*** New South Glasgow Hospitals & Laboratory Project NEC3 Supervisor Proposal**

## *ACTIVITY SCHEDULE* SUMMARY TOTAL OF THE PRICES

The *Consultant*, hereinafter, enters copy of the *activity schedule* prepared for the amended Prices and *forecast expenses* as required;

Headed note paper of the *Consultant*

NHSScotland Health Board

Address

Dear Sirs,

**New South Glasgow Hospitals & Laboratory Project Appointment of *Supervisor***
**Stage 4 Form of Scheme Proposal: construction and handover**
**New South Glasgow Hospitals & Laboratory Project NEC3 Supervisor Proposal**

We hereby offer to complete the *services* in accordance with:

(a) Our accepted entry level Scheme Form of Proposal and Accepted Programme for construction and handover;

(b) This Stage 4 Proposal, including;

- Revised *forecast expenses* for the Stage in the amount of

£ 135,000 (One Hundred and Thirty Five Thousand Pounds) for Labs, £765,000 (Seven Hundred and Sixty Five Thousand Pounds) for Adults and Children's and £45,000 (Forty Five Thousand Pounds) for the Demolitions and Landscaping (Stage 3A) (Excluding VAT)

- *Activity schedule* amended for change in the Scope of Services as agreed in compensation event numbers;

1. list compensation events

On receipt of your written acceptance thereof and *completed Agreement to proceed/ *completion of the Agreement, we shall commence Stage 4 completion and handover In accordance with the Accepted Programme.

..... Dated this day of 200[ ]

on behalf of *Capita Symonds Limited, 8th Floor, 176 St Vincent Street, Glasgow, G2 5SG*

**NHS Greater Glasgow & Clyde**

**New South Glasgow Hospitals & Laboratory Project**
**Stage 4 Form of Scheme Proposal: Construction and handover *Supervisor***

**Appendix 'A' to form of Scheme Proposal: Construction and handover**

**New South Glasgow Hospitals & Laboratory Project NEC3 Supervisor Proposal**

***ACTIVITY SCHEDULE* SUMMARY TOTAL OF THE PRICES**

The *Consultant*, hereinafter, enters copy of the *activity schedule* prepared for the amended Prices and *forecast expenses* as required;

## Section 3 – The Scope of Services

### 1.0 Introduction

1.1 The *Employer's* objectives
1.2 Contract philosophy and general principles of application
1.3 Deliverables
1.4 Brief description of the scheme
1.5 Project programme

### 2.0 Scope of services

2.1 Introduction
2.2 Additional requirements
2.3 Places of work
2.4 Other constraints placed on the *Consultant*

### 3.0 The Prices and limitation to payment to the *Consultant*

3.1 Introduction
3.2 *Staff rates*
3.3 Expenses
3.4 The forecast Time Charge at appointment to the contract
3.5 The Prices

### 4.0 Programme

4.1 Introduction
4.2 First programme for acceptance
4.3 Revisions of the programme

### 5.0 *Consultant* resources – Persons

5.1 Effect of the *Contractor's* programme

### 6.0 Commercial requirements

6.1 Cash flow and expenditure projections for Prices and *expenses*
6.2 Records of total Time and *expenses*
6.3 Assessment procedures
6.4 Early warning
6.5 Compensation events

### 7.0 Scheme specific requirements

7.1 Reporting
7.2 Compliance with the Construction phase Health and Safety Plan
7.3 Liaison with User Groups

7.4 Facilities for the *Employer/Project* Manager
7.5 *Consultant* Quality Plan
7.6 Handover at completion

## 8.0 Appendices

Appendix 'A' Schedule of Duties for Project Director and *Project Manager*
Appendix 'B' Project Programme
Appendix C Consultant and Contractor Endorsement for the Prevention of HAI for NHSScotland

## THE SCOPE OF SERVICES

Note: to the *Employer* and the *Consultant*

This Scope of Services may contain provisions that affect the conditions of contract.

Such provisions apply and take precedence unless agreed otherwise between the Parties.

### 1.0 INTRODUCTION

1.1 The *Employer's* objectives

The *Employer's* objectives for the *services* are:

- To appoint a Professional Advisor (the *Consultant)* to the position of *Supervisor* providing advice and assistance to the Project Director and Project *Manager* in management of the NHS Health Board scheme contract.
- For the appointed *Consultant* to support the Project Director and *Project Manager* by carrying out the 'Duty of the *Supervisor*' appended to this Scope of Services and any other duty required by the Scope of Services.
- For the appointed *Consultant* to actively engage in a policy of mutual trust and co-operation in his dealings with the Principal Supply Chain Partner (PSCP) and all other members of the supply chain and other Consultants thus contributing to development of an environment that will promote harmonious and cooperative conduct encompassing the whole of the human resources necessary to complete the scheme.
- To avoid contractual disputes and manage procedures by providing, to support the Project Director and *Project Manager,* a *Consultant* knowledgeable and experienced in the application of the Engineering and Construction Contract – Option C target contract with activity schedule as applied to Frameworks Scotland schemes.

1.2 Contract philosophy and general principles of application

1.2.1 Contract philosophy:

- The basis of this contract is the NEC3 Professional Services Contract (PSC) Option A – Priced contract with activity schedule. Amendments to the PSC are as detailed in the template provided as a basis for the scheme specific contract.
- If an inconsistency occurs between the published NEC3 Professional Services Contract and the several documents forming this contract then the documents forming this contract takes precedence unless the *Employer* and *Consultant* agree to the contrary.

1.2.2 General principles of application

The appointment may be awarded to the *Consultant* at any phase of development of the main works scheme contract from the conceptual IA stage through, OBC, FBC and the construction delivery and handover stage;

The appointment may be awarded to the *Consultant* at any stage of development of the main works scheme contract from conceptual IA stage through, OBC, FBC and the construction delivery and handover stage;

- In this contract the contract documents are prepared such that the *Employer* may engage the *Consultant* at any Stage. Once the *Consultant* is appointed the only change to the contract is by compensation event procedures.
- The principles of the PSC Option A Priced contract with activity schedule are applied to each stage of the *service* through the identified gateways (IA, OBC, FBC and the construction and handover stage.
- The Scheme Proposal includes lump sum Prices and activity schedule together with a detailed forecast of the *expenses* for each stage of the *services* together with other information stated in the scheme documents.
- Progress through the scheme gateways thereafter is achieved by the *Employer's* gateway pro forma 'Agreement to continue the *services*'.

## 1.3 Deliverables

In Providing the Services the appointed *Supervisor* delivers competent management actions and procedures;

- For the proposed scheme pre *Contractor* (PSCP) appointment in accordance with the requirements of the Appendix A to this scope: Schedule of Duties for *Supervisor.*
- Assisting the Project Director and liaising with the *Project Manager* in preparation of scheme packs; identifying tests and procedures within the remit of the *Supervisor* for inclusion in the scheme packs.
- Assisting in development of the *works* scheme contract in conjunction with the *Project Manager* and the *Contractor,* following appointment of the *Contractor* to the scheme contract.

## 1.4 Brief description of the scheme

The *works* scheme contract is for the following projection description as Section 3 of the Tender Documentation:-

### 3.0 THE PROJECT

### 3.1 Introduction

The Southern General Hospital site extends to some 28.6 hectares and is located within the Govan area, lying to the south-west of Glasgow City Centre adjacent to the residential neighbourhood of Drumoyne and the industrial areas of Shieldhall and King George V Dock. The site is located 500 metres

south of the River Clyde. The site's northern boundary is defined by Renfrew Road/Govan Road with the eastern boundary defined by Moss Road/A739 (Clyde Tunnel approach road). Langlands Drive and residential developments delineate the southern boundary and Hardgate Road runs north-westwards to identify the western boundary of the site.

The development site for the Project extends to some 8.6 hectares and is located in the west-central area of the hospital site as identified on the drawing below. The development site is bounded by operational healthcare buildings to three sides, with boundaries to neighbouring industrial areas to the north/north-west. The existing buildings within the development are to be demolished in advance of the Project.

### 3.2 Project Scope

The project includes the provision of 1,109 adult and 240 children's beds, with target works completion dates of March 2012 (Laboratories) and January 2015 (Hospitals). The bed numbers are illustrated below, the bulk of the beds will be provided in single rooms with en-suite facilities with the exception of critical care areas and a small percentage of 4 bed bays in the Children's wards.

**Adult Hospital**

**Specialty/ Beds**
General Medicine (incl MHDU + AAU) 405
Stroke 26
Haematology 14
Dermatology 18
Nephrology 80
Geriatric Medicine 93
Surgery & Vascular (incl AAU) 164
Urology 39
Orthopaedics/rehab 139
ENT 31
ITU 20
SHDU 23
Clyde / Contingency 37
**Total Inpatient Beds 1,109**

**Children's Hospital**

**Specialty/Beds**
Inpatient (incl critical care areas) (*12 beds in maternity facility) 193*
CCU 20 Short-stay (observation ward) 20
Day Care/Day Surgery 27
**Total Inpatient Beds 240**

### 3.3 New Adult Hospital

This will provide A&E services and acute specialist in-patient care as well as medical day services and outpatient clinics serving the local population. Key components of the facility will include:

**In Patient Accommodation** - Surgical beds (general surgery, orthopaedics, urology, vascular, ENT and renal); Medical beds; Acute Assessment Unit –

118 beds, ICU/HDU/CCU – 79 beds, Acute Stroke – 26 Beds and Care of the Elderly 93 beds.

**Out Patient Accommodation** Full range of general outpatient clinics including, among others, diabetic unit, respiratory, orthopaedics and urology.

**Day Services** 22 medical day bed area; 30 station dialysis unit.

**Treatment & Diagnostic Services** Emergency Department, 20 operating theatres, imaging, and endoscopy.

**Clinical Support Services** Pharmacy dispensary, medical physics, medical illustration. Laboratory services linked to the hospital by underground route and pneumatic tube system, aseptic unit within the children's hospital. The pneumatic system to extend across the abutment with maternity and the link to neurosciences to provide for expansion of the system to these areas.

**Non Clinical Support Services Main** entrance, medical records, administration, chaplaincy, social work, staff changing, switchboard, estates, facilities, security, catering, portering, domestic, management and energy centre.

### 3.4 New Children's Hospital

This will provide A&E services and a comprehensive range of inpatient and day case specialist medical and surgical paediatric services on a local, regional and national basis. The new development will also have outpatient facilities. The care strategy is that all of Glasgow's Children's Services (up to the age of 16 and up to 18 years where appropriate) will be provided at the New Children's Hospital. Of the 240 beds planned, around 20% of the beds will be for day patients and the balance for inpatient requirements. Key components of the facility will include:

**Outpatient Accommodation** - full range of Children's outpatient clinics including audiology, general paediatrics, orthopaedics, ENT etc;
**Day Services** - circa 10 medical day beds; 4 dialysis stations and circa 25 day surgery beds;
**Treatment & Diagnostic** - accident and Emergency, minor injuries, Imaging, 9 theatres, rehabilitation;
**Clinical Support Services** Aseptic unit, pharmacy, medical physics, medical illustration;
**Non Clinical Support Services** Facilities, ancillary services, administration, spiritual services, medical records, staff change, staff dining.

### 3.5 Laboratory Facilities

The new facilities will be one of two major laboratory sites in Glasgow (the other at Glasgow Royal Infirmary). The services to be delivered from the new laboratory build include biochemistry, haematology, medical genetics, microbiology, mortuary and post mortem. The mortuary and post mortem facilities include the re-provision of the Glasgow City mortuary which also provides forensic services for the city of Glasgow.
The new building will be circa 25,000 sq.m., and will include a proportion of the Facilities Management accommodation noted below. Road infrastructure to support the operation of the laboratory function will require to be completed within the laboratory build phase to facilitate operation of the laboratory while the main hospitals are still being constructed.

### 3.6 Facilities Management Building and Energy Centre

The Board require the separation of facilities management (FM) traffic from patient and public traffic, and the facilities management services within the Laboratory Building will be linked to the main hospitals building via an underground tunnel system, this will provide for goods in and goods out as well as transfers to the laboratory and mortuary areas. A robotics (automatic material handling systems) solution for the movement of certain goods has been included within the project and will be developed in more detail over the next 12 months. Other elements of the FM facilities will be part of the main hospitals basement area. The approach to energy provision is that the new facility will provide energy on a site wide basis. The Energy Centre will be located adjacent to the Laboratory Building, but will be part of the hospitals build phase (Stage 3).

### 3.7 Retained Facilities

The remainder of the site will retain approximately 630 beds within the Institute of Neurological Sciences, Maternity, Spinal Injuries, Mental Health facilities and Langlands buildings. The Langlands facility provides older people's services, dermatology and services for the young physically disabled. The new hospital will abut the neo-natal/maternity building to provide a physical link as well as link to the neurosciences building at Level 1. On completion of the new facilities and once staff and services have moved out, the Board will convert some of the older buildings to office and educational use. This work is currently not part of this commission for Supervisor.

### 3.8 Planning

As is noted above, Outline Planning was obtained in April 2007, subject to forty-three conditions and conditional on a Section 75 Agreement being concluded in respect of transportation issues, and this was concluded with Glasgow City Council in July 2009.

The contractor will be responsible for securing detailed planning consent and sign off of the campus masterplan during 2010, this process has already commenced with early meetings between the Council, the Board and Brookfield in December 2009 and January 2010. The submission date for planning is May 2010.

### 3.9 Masterplanning – 2009 Campus Masterplan

The Board were required to update their Campus Plan (2006) as part of the submission for detailed planning consent for the new Laboratory Project in July 2009. The 2009 Masterplan has been prepared for information and the Contractor and his Design team will be required to develop a final plan to reflect their design proposals for the site. The contractor has appointed Ironside Farrar as Planning Adviser for this process.

### 3.10 Site Investigations and Existing Site

The Board commissioned a site investigation (SI) of areas of the existing campus and the main build site.

The resulting SI information is available if required by contacting the writer.

The Board will carry out certain enabling works in relation to the existing site to support and prepare for the construction period of the scheme. These include:

• demolition of the existing structures on the site (including the former residences, the catering/dining facilities and the conference facility);

• removal of foundations and roads within the site; and

• the diversion of the majority of the existing utilities from the site.

The Southern General is a live hospital site, and as such the Contractor and his team will face certain constraints in the delivery of the Project. Essential 'blue light' and other access routes will require to be kept clear and unobstructed by the Contractor at all times for the duration of the construction period, with interface protocols, communications plans and emergency/contingent planning to be discussed and agreed with the Board prior to start on site. The helipad will remain in operation until January 2011, when the tower cranes for the main build project will start to be erected. Prior to this a management protocol has been developed to take account of tower cranes located on the laboratory site and Car Park 1 site.

**3.11 Equipment and ICT**

The Contractor will supply and fit Group 1 equipment, Group 2 will be free issue by the Board and fitted by the Contractor, and the Board will supply (and fix where relevant) Group 3 and Group 4 equipment. The Contractor is required to provide all necessary fixings, supports and services connections and requirements to support all of the groups of equipment listed.

It should be noted that Information Management and Technology (IM&T) is out with the scope of this Project. The Board is procuring software and end-use hardware as part of a separate IM&T project. The contractor will install all computer infrastructure within the building such as node rooms, containment, boxes and cabling.

**3.12 Energy and Sustainability**

The Board have developed energy and sustainability strategies and targets in relation to the Project. These have been developed through consultation with the Carbon Trust, Waste Resources Action Programme (WRAP).

Energy and sustainability issues are very important to the Board at a project, The Board wish to achieve BREEAM Excellent ratings for all their new buildings.

**3.13 Community Engagement**

The Project Team and the Board's Community Engagement Managers have established the required community benefit considerations for incorporation in the procurement of the Project. These have been developed in line with the Scottish Government's Guidance on Community Benefits in Public Procurement. In particular the Board will seek to work in partnership to develop initiatives around the following:

• Targeted recruitment & training;

• Developing Small and Medium Enterprises (SMEs); and Developing Social Enterprises [Add description}

### 1.5 Project programme

The *Employer* includes a copy of the current or outline scheme programme relating to the period of the *services* at Appendix B to this Scope of Service.

## 2.0 SCOPE OF SERVICES

### 2.1 Introduction

2.1.1 The general scope of the *service* is provided for in the 'Schedule of Duties for *Supervisor*. See Appendix 'A'.

2.1.2 The duties for this scheme commence at:
(*Delete phases not required by '~~strike through text~~')

- FBC
- Stage 4 – construction and handover

### 2.2 Additional requirements

2.2.1 The Health Board identifies additional *services* required but not provided for in the Schedule of Duties for *Supervisor* generally or for a specific phase:

- Generally

  [ ..... ]

- Full Business Case (FBC)

  [ ..... ]

- Stage 4 – construction and handover

  [ ..... ]

- Main works Defects Date Periods

  [ ..... ]

- Consultancy close out

  [ ..... ]

**2.3 Places of work**

- Full Business Case (FBC)
  - The workplace is generally in the *Employer's* offices at:

NHS Greater Glasgow & Clyde
Project Office - Top Floor Site Office
Southern General Hospital Construction Site
Hardgate Road
Glasgow G51 4SX

  - The *Consultant* may perform agreed duties at his own offices with prior permission from the Project Director.

    or The *Consultant* is provided office accommodation at the *Employers* offices

- Stage 4 – construction and handover
  - The workplace is generally in the *Employer's* offices at:

NHS Greater Glasgow & Clyde
Project Office - Top Floor Site Office
Southern General Hospital Construction Site
Hardgate Road
Glasgow G51 4SX

  - The *Consultant* may perform agreed duties at his own offices with prior permission from the Project Director.

    or The *Consultant* is provided office accommodation at the *Employers* offices on the Site

- Main works Defect Period
  - The workplace is generally in the *Employer's* offices at:

    NHS Greater Glasgow & Clyde
    Project Office - Top Floor Site Office
    Southern General Hospital Construction Site
    Hardgate Road
    Glasgow G51 4SX

  - The *Consultant* may perform agreed duties at his own offices with prior permission from the Project Director.

- Consultancy close out

- The workplace is generally in the *Employer's* offices at:

  NHS Greater Glasgow & Clyde
  Project Office - Top Floor Site Office
  Southern General Hospital Construction Site
  Hardgate Road
  Glasgow G51 4SX

- The *Consultant* may perform agreed duties at his own offices with prior permission from the Project Director.

**2.4 Other constraints placed on the *Consultant***

2.4.1 Hours of work

The *Consultant* is required to provide attendance on the NHS Health Board during the *services* as follows (*Strike through phases not required)

Overtime in addition to the stated hours may only be reimbursed to the *Consultant* where prior permission has been obtained from the *Employer* and a compensation event notified and accepted.

The *Consultant* identifies and allows for Incidental overtime not resulting from instruction of the *Employer* or actions of the PSCP the Prices in the Form of Scheme Proposal.

- *FBC

| | |
|---|---|
| Monday to Friday | start 09.00amfinish 05.00pm |
| Saturday | start 00.00am finish 00.00pm |
| Sunday | start 00.00am finish 00.00pm |

- * Stage 4 – construction and handover

| | |
|---|---|
| Monday to Friday | start 09.00am finish 05.00pm |
| Saturday | start 00.00am finish 00.00pm |
| Sunday | start 00.00am finish 00.00pm |

- *Main works *Defects Period* – ad hoc hours for the *services*

2.4.2 Provision of equipment

In addition to facilities at the *Consultant's* offices, staff are to be provided with personal notebook computers for use at offices of the *Employer* and *Contractor.*

Computer software minimum requirement is:

- Microsoft Office
- Microsoft Project

2.4.3 Procedures and reporting

The *Consultant* complies with the requirements of the Project Director/*Project Manager* and as further detailed in this scope part 7.1

2.4.4 Relationships with the PSCP (*Contractor*)

The *Consultant* co-operates with the PSCP in the manner stated in the *works* scheme contract as well as in this contract to:

- Deliver the scheme completed on time, within the PSCP contract agreed total of the Prices and accepted compensation events to the required standard of build.
- Achieve the most cost effective construction and commercial solutions to scheme contract compensation events on behalf of the NHS Health Board.
- Manage the programme effects of change thus avoiding unnecessary delay in completion of the scheme contract.
- Ensure readily available means of communication by regular personal meetings and interaction with the PSCP's staff and consultants on a day by day basis.
- Ensure that all handover procedures are complied with and that that the *works* scheme is operational and secure in all its aspects at Completion.

2.4.5 Limit of *Consultant's* authority

The *Consultant* has no authority, except as may be delegated by the *Project Manager,* to enter into any agreement with the PSCP in respect of commercial discussions that may occur whilst undertaking the Duties of the *Supervisor.*

## 3.0 The Prices

3.1 Introduction

3.1.1 The *Consultant* provides the Prices and activity schedule (s) together with *forecast expenses* using the Excel workbook (Priced contract with activity schedule and *forecast expenses*) adopted by Frameworks Scotland.

3.1.2 The Prices for the activity schedule are derived from the framework tender percentage fee structure embodied in Frameworks Scotland. The activity schedule identifies the applicable stages of the contract, e.g. FBC and Stage 4 construction and handover Defects Date period and close out based on the Health Board stated affordability for the overall PSCP Option C management, design and construction contract; the framework registered fee structure percentage is applied for each applicable stage in the scheme. The *Consultant* identifies the monthly charge for the period of the stage as a derivative of the stage Price for payment. *Forecast expenses* are identified in the Scheme Excel workbook provided by Frameworks Scotland framework.

3.2 *Staff Rates*

3.2.1 *Staff rates* are included in the Supervisor's tender response document dated 4th March 2010 to the New South Glasgow Hospitals & Laboratory Project NEC3 Supervisor Proposal document dated February 2010.

3.2.2 *Staff Rates* include general risk. However operational risk should be reflected in the forecast of resources to be allocated and the hours to be worked in each stage.

3.3 *Expenses*

3.3.1 Expenses are included within the hourly rates.

3.4 The forecast Time Charge at appointment to the contract

3.4.1 The *Consultant's* Form of Proposal includes risk for administration of the *service* based on the requirements of this scope of services and the schedule of duties provided at Appendix 'A'.

3.4.2 Incidental overtime not authorised by the *Employer* is included in the accepted Prices

3.5 The Prices

3.5.1 The Prices proposed by the *Consultant* are to be calculated using *staff rates* and other applicable items from the Frameworks Scotland agreement...

3.5.2 The Prices are only amended where a compensation event is accepted

**4.0 Programme**

4.1 Introduction

4.1.1 In complying with the contract (PSC 31.2) the *Consultant,* incorporates details of any programme provided by the *Employer*: (See Appendix B as appropriate)

- An outline programme, a Gantt chart reflecting the anticipated periods for pre-construction planning and design work, e.g. IA, OBC, FBC and the Stage 4 construction and handover/Defects period plus 4 weeks.

4.2 First programme for acceptance

4.2.1 The programme is submitted to the *Employer* for acceptance based on

- The *Employer's* programme as may be amended for the agreed *starting date*.

4.3 Revisions of the programme

4.3.1 The *Consultant* provides revisions to the Accepted Programme at the intervals stated in Contract Data Part one and prior to gateway entry at each stage, taking account of any programme applying for the PSCP *works* contract.

## 5.0 *Consultant* resources – People

5.1 Effect of the PSCP's programme

5.1.1 If the *Consultant* identifies that the PSCP's programme impacts on the *Consultant's* programme in respect of time and or resource this should be brought to the attention of the *Employer* by an early warning notification in order that the effect can be minimised.

## 6.0 Commercial requirements

6.1 The following requirements apply individually to each stage

6.2 Cash flow and expenditure projections for the Prices and forecast *expenses,*

6.2.1 Cash flow and expenditure projections are prepared by the *Consultant* in graphic format to coincide with the Accepted Programme for each of the stages and submitted to the *Employer* for acceptance.

6.2.2 The cash flow and expenditure projections demonstrate the indicative and current amounts for each stage at each assessment interval.

6.3 Records of Time

6.3.1 The *Consultant* maintains:

- Copies of all records relating
  - to total Time (Daily allocation records for his staff)
- Records of all correspondence and meetings relevant to total Time Charge due to or paid to Subconsultants.

6.4 Assessment procedures

6.4.1 Particular requirements of the *Employer* for *Consultant's* assessments and subsequent invoicing are as follows:

(Enter the NHS Health Board's requirements if any, otherwise rely on the contract clause 50)

6.5 Early warning

6.5.1 The standard notification included in the Frameworks Scotland PSC Contract Administration Toolkit (CAT) pro forma pack is used for early warning notifications. Notifications are not to be transmitted verbally or by other communication.

6.5.2 The *Employer* requires the *Consultant* limits early warning to the procedures stated in PSC (16) and to close out each early warning without delay.

6.5.3 Early warning is not notified during progress or other meetings not specifically convened for the purpose of early warning.

6.5.4 Early warning/risk reduction meeting discussion is to be limited to the matter notified and not expanded into more general discussion. Where more than one matter is to be discussed each has its own agenda and individual record of the proposals considered and the decisions taken.

6.5.5 Early warning notifications /risk reduction meetings are not normally given / held for compensation events that have been notified in accordance with the contract.

6.6 Compensation events

6.6.1 Compensation events are instructed / notified using the standard notification included in the CAT pro forma pack.

6.6.2 A compensation event is not considered to be instructed / notified if any communication other than the standard notification is used.

6.6.3 The original of the compensation event notification is a 'live' document and is transmitted between the Parties as a record of submission, requirements and acceptance.

6.6.4 Compensation event quotations are to be detailed and supported by contemporary records / allocation sheets where the effect of the event is on 'the total Time Charge and *expenses* of the Time Charge for work already done'.

6.6.5 Compensation event quotations that do not have an impact on Sectional Dates for Completion or the Completion Date do not require revision of the programme to be submitted with the quotation unless instructed by the *Employer.*

6.6.6 For the avoidance of doubt, the principles of the contract apply to compensation events for all stages of the scheme.

The *Consultant* includes additional management resources in compensation event quotations only if the existing management structure and resources cannot contain the effect.

## 7.0 Scheme specific requirements

Note: Use this section to clarify any scheme specific requirement of the *services* that may not have been identified sections 1 to 6, for example:

7.1 Reporting

- Capita Standard report for the NEC3 Supervisor *service* to be submitted to the Project Director - Alan Seabourne.
- Other reports subsequently notified by NHS Greater Glasgow & Clyde

7.2 Compliance with the CDM co-ordinator's pre-construction information

7.2.1 The *Consultant* includes relevant documentation within the scheme specific documents, including those prepared in conjunction with the PSCP.

7.3 Liaison with User Groups

7.3.1 The *Consultant* liaises with User Groups as directed by the *Employer.*

7.3.2 The following User Groups and individuals will have an interest in the development of the main works contract:

- not applicable.

7.4 Facilities for the *Employer/Project* Manager

not applicable.

7.5 *Consultant* Quality Plan

7.5.1 The quality management system to be operated is to be compatible with the *Consultant* system identified during Frameworks Scotland selection process and developed to be *services* specific.

7.6 Handover at completion

7.6.1 The *Consultant* complies with the requirements of the *Employer* as developed during the Period of the Services.

7.6.2 Handover requirements and procedures are;

as per the main NEC3 contract agreement between NHS Greater Glasgow & Clyde and the main contractor Brookfield Multiplex Construction Ltd.

7.7 Liaison with other Consultants

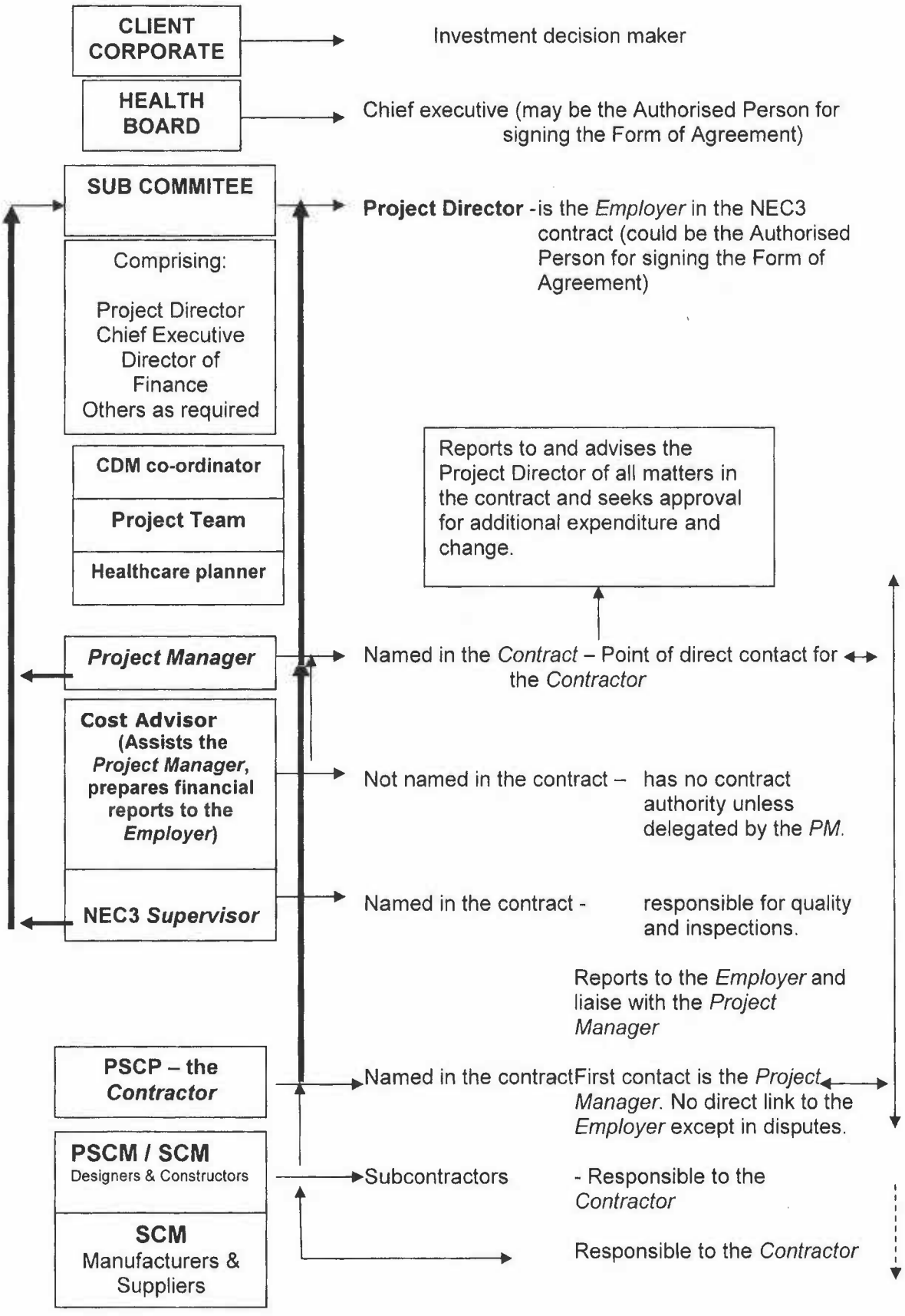
7.7.1 The Consultant liaises with other Consultants as directed by the Employer.

**APPENDIX A**

**Frameworks Scotland**

**Schedule of Duties for *Supervisor***

(For incorporation in the Scope of Service for appointment of the *Supervisor* under the NEC3 Professional Services Contract)


CLIENT CORPORATE
Investment decision maker
HEALTH BOARD
Chief executive (may be the Authorised Person for signing the Form of Agreement)
SUB COMMITEE
Project Director -is the Employer in the NEC3 contract (could be the Authorised Person for signing the Form of Agreement)
Comprising:
Project Director
Chief Executive
Director of Finance
Others as required
CDM co-ordinator
Project Team
Healthcare planner
Reports to and advises the Project Director of all matters in the contract and seeks approval for additional expenditure and change.
Project Manager
Named in the Contract – Point of direct contact for the Contractor
Cost Advisor (Assists the Project Manager, prepares financial reports to the Employer)
Not named in the contract – has no contract authority unless delegated by the PM.
NEC3 Supervisor
Named in the contract - responsible for quality and inspections.
Reports to the Employer and liaise with the Project Manager
PSCP – the Contractor
Named in the contract
First contact is the Project Manager. No direct link to the Employer except in disputes.
PSCM / SCM
Designers & Constructors
Subcontractors
- Responsible to the Contractor
SCM
Manufacturers & Suppliers
Responsible to the Contractor



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**Duties Generally**

The *Supervisor* reports to the Project Director; liaises with the *Project Manager* and the Cost Advisor.

**Post-contract pre-construction, i.e. prior to main works construction delivery and handover**

The *Supervisor* may be called upon to carryout any of the following:

1. Offer practical construction advice and process guidance to the project team and take part in the scheme Dart process.

2. Liaise with the *Contractor* and Designers to establish tests and inspections to be carried out in accordance with Works Information and the *Contractor's* Works Information for his design; as part of the scheme Quality Assurance and acceptance Procedures.

3. Monitor site investigation operations.

4. Monitor and liaise with Utilities carrying out pre-construction diversions and installation of new services.

5. Monitor and inspect and accept PSCP (*Contractor*) enabling and other pre-construction work.

6. Issue Defect notices to the *Contractor* as necessary.

7. Inform the *Project Manager* of all Defects and unacceptable construction practices by the PSCP and other members of the supply chain.

8. Notify the *Project Manager;*

   - When Defects have been corrected
   - Those Defects the *Contractor* has not rectified within the *defects correction period.*
   - Those Defects the *Contractor* is unable or unwilling to correct.
   - Tests and inspections performed and accepted
   - Those tests and inspections performed but results found to be unacceptable.

9. Keep records of tests, inspections and acceptances for inclusion in the Health and Safety File as may be required by the CDM co-ordinator.

**Post-contract construction, i.e. main works construction delivery and handover**

Tests and inspections

1. The *Supervisor* notifies the *Contractor* of his tests and inspections before it starts and afterwards notifies of its results. The *Supervisor* may watch any test done by the *Contractor*. (*Clause* 40.3)

2. The *Supervisor* does his tests and inspections without causing unnecessary delay to the work or a payment which is conditional on a test or inspection being successful. (Clause 40.5)

   Procedure Note:

   A payment which is conditional on a *Supervisor's* test or inspection becomes due at the later of the *defects date* and the end of the last *defect correction period* if;

   - The *Supervisor* has not done the test or inspection and
   - The delay to the test or inspection is not the *Contractor's* fault

1. The *Contractor* does not bring to Working Areas Plant and Materials which Works Information states are to tested or inspected prior to delivery until the *Supervisor* has notified the *Contractor* that they have passed the test or inspection. (Clause 41.1)

2. Until the *defects* date, the *Supervisor* may instruct the *Contractor* to search for a Defect. He gives his reason for the search with his instruction. Searching may include (Clause 42.1);

   - Uncovering, dismantling, re-covering and re-erecting work,
   - Providing facilities, materials and samples for tests and inspections done by the *Supervisor* and
   - Doing test and inspections which the Works Information does not require.

5. Until the *defects date*, the *Supervisor* notifies the *Contractor* of each Defect which he finds and the *Contractor* notifies the *Supervisor* of each Defect as soon as he finds it. Clause 42.2)

   Procedure Note:

   The *Contractor* corrects a Defect whether or not the *Supervisor* notifies him of it. (Clause 43.1)

6. The *Supervisor* issues the Defects Certificate at the later of the *defects date* and the end of the last *defect correction period.* (Clause 43.3)

   Procedure Note:

   Clause 11.2(6)
   The *Supervisor* issues the Defects Certificate – is either a list of Defects that the *Supervisor* has notified before the *defects date* which the

*Contractor* has not corrected or, if there are no such Defects, a statement that there are none

7. Uncorrected Defects (Clause 45)

Note; in order for the principles of this clause to be applied the *Supervisor* informs the *Project Manager* of the *Contractor's* failure to correct a notified Defect within its *defect correction period.*

8. Title (Clause 71.1)

The *Supervisor* marks Equipment, Plant and Materials which are outside the Working Areas if

This contract identifies them for payment and
The *Contractor* has prepared them for marking, as the Works Information requires

*Supervisor's* General obligations in the contract

Clause 13.3 The *Supervisor* replies to communications within the *period for reply*

Clause 13.6 The *Supervisor* Issues certificates to the *Project Manager* and the *Contractor*

Clause 14.1 Acceptance by the *Supervisor* of a communication from the *Contractor* does not change the *Contractor's* responsibility for design

Clause 14.2 The *Supervisor* may carry out delegation of actions after notifying the *Contractor*

Clause 14.4 The *Employer* may replace the *Supervisor* after he has notified the *Contractor* of the name of the replacement

Compensation events

Procedure Note:

The following actions/inactions of the *Supervisor* are compensation events
(The Supervisor does not issue a notification to the *Contractor* when one of the foregoing occurs. He notifies the *Project Manager*.)

60.1(6) The *Supervisor* does not reply to a communication from the *Contractor* within the period required by this contract

(8) The *Supervisor* changes a decision which he has previously communicated to the *Contractor*

(10) The *Supervisor* instructs the *Contractor* to search and no Defect is found unless the search is needed only because the *Contractor* gave insufficient notice of doing work obstructing a required test or inspection

(11) A test or inspection by the *Supervisor* causes unnecessary delay

*Contractor's* obligations to the *Supervisor* in this contract

27.2 The *Contractor* provides access to work being done and to Plant and materials being stored for this contract

27.3 The *Contractor* obeys an instruction which is in accordance with this contract and given by the *Supervisor'*

**Schedule of key duties of *Supervisor* acting as client adviser for Frameworks Scotland scheme contracts**

## APPENDIX B

## Project Programme

**Event and Milestone**

Publication of OJEU (incl MoI and PQQ) 10 February 2009
Closing date for responses to PQQ 20 March 2009
Evaluation of PQQ responses and shortlisting of bidders 08 April 2009
Issue of Invitation to Participate in Competitive Dialogue (ITPD) to bidders 01 May 2009
Tender Return 11 September 2009
Evaluation of Bids and Contract Award to Brookfield Construction. November 2009
Stage 1 (Design + Construction of New Laboratories) commences February 2010
Stage 2 (Detailed Design of Adult, Children's and Infrastructure to FBC Submission) commences January 2010
Stage 2 completion, FBC and approval to proceed with Stage 3 November 2010
Stage 3 (Engagement to carry out the construction of the Adult, Children's and Infrastructure) commences November 2010
Stage 1 Completion (Construction) - Laboratory Facilities March 2012
Operational Date – Laboratory Facilities June 2012
Stage 3 Completion (Construction) – Hospitals January 2015
Operational Date – Hospitals Summer 2015
Stage 3A (Demolition of Surgical Block and associated buildings, and completion of soft landscaping) commences Summer 2015
Stage 3A completion Summer 2016

## APPENDIX C

## Consultant and Contractor Endorsement for the Prevention of HAI for NHSScotland

## (HAI-SCRIBE and SHFN 30)

NHS
National Services Scotland

# Consultant and Contractor Endorsement for the Prevention of HAI for NHSScotland

## (HAI-SCRIBE and SHFN 30)

Health Facilities Scotland

December 2007



A49342285

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# 1. Introduction

1.1 Healthcare Associated Infection (HAI) stands out as a priority issue for NHSScotland. The need to ensure Contractors are aware of and, where appropriate, implement measures to prevent and control the spread of infection during all construction phases is of paramount importance.

1.2 Through the use of Scottish Health Facilities Note (SHFN) 30, version 3:'Infection Control in the Built Environment: Design and Planning', in conjunction with the Healthcare Associated Infection System for Controlling Risk In the Built Environment, version 2 (HAI-SCRIBE) and the HAI-SCRIBE Implementation Strategy, Health Facilities Scotland (HFS) has provided a process to assist in the prevention and control of infection, within the built healthcare environment.

1.3 The overall aim of this guidance is to ensure Consultants and Contractors utilise the proposed process.


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# 2. SHFN 30, HAI-SCRIBE and their implementation

2.1 Prevalence of Healthcare Associated Infection (HAI) is seen as having a negative impact both economically and medically within the Scottish Healthcare sector. It has been established that approximately 1 in 10 people contract infection as a result of care and treatment within healthcare facilities.

2.2 A report by Walker (2001), estimated that the cost of HAI in Scotland alone was £186 million per annum, with an estimated loss of 380,000 bed days. It has been stated that 20% of said infections are deemed to be preventable.

2.3 In an attempt to prevent and control HAI in the built healthcare environment, Health Facilities Scotland developed three pieces of guidance namely, SHFN 30, HAI SCRIBE and the HAI-SCRIBE Implementation Strategy.

2.4 SHFN 30 aims to provide information on the prevention and control of infection and on the prevention of cross-infection and cross contamination in healthcare facilities to those responsible for the planning, design and maintenance of such facilities. It is intended as a first point of reference for those involved in the planning design and maintenance of healthcare facilities and should be used in conjunction with HAI-SCRIBE.

2.5 HAI-SCRIBE was developed to fully ascertain and manage the risks associated with infection. It is necessary to have a procedure that allows for the assessment and review of potential infection control risks throughout all operations within the built environment. HAI-SCRIBE aims to reduce infection hazards through the use of a prevention and control of infection questionnaire using a number of scenarios within the built healthcare environment.

These scenarios are:

- the proposed site for development of a healthcare facility;
- the design and planning stage of the proposed healthcare facility;
- the construction and refurbishment stage of the healthcare facility;
- the ongoing maintenance of the healthcare facility.

2.6 The HAI-SCRIBE Implementation Strategy ensures that the implementation of HAI-SCRIBE should be the responsibility of a multi-disciplinary team who has the necessary skills in relation to the facility being designed, planned, constructed, refurbished or manufactured.

2.7 In order to fully incorporate SHFN 30, HAI-SCRIBE and the HAI-SCRIBE Implementation Strategy throughout NHSScotland, endorsement by all construction professionals is fundamental in allowing the procedure to work to its maximum potential.


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# 3. Information and responsibility

3.1 Development and maintenance of an environment which is conducive to the prevention and control of infection is important. Key to this is the communication of appropriate information and awareness raising, among those involved in the provision of building and facilities services to NHSScotland.

3.2 Those who provide building and facilities services to NHSScotland should be aware of the need to prevent and control the spread of infection within the built healthcare environment and that use of SHFN 30, HAI-SCRIBE and the HAI-SCRIBE Implementation Strategy can help achieve this.

3.3 To ensure full application of HAI-SCRIBE, SHFN 30 and the HAI-SCRIBE Implementation Strategy, these documents must be made readily available to those involved in NHSScotland design, planning, and construction, refurbishment and maintenance projects. However, in some instances it was found that the contractor/consultant awareness of these documents was not sufficient and in some cases a few were not aware that the actual documentation existed.

3.4 To help facilitate this, HFS has developed an Endorsement Certification proforma to ensure that Contractors/Consultants were aware of the issues surrounding the prevention and control of infections and were in receipt of guidance which would help them do so.

3.5 With this certification all those involved in the provision of building and facilities services can be made aware of HAI and the role that HAI-SCRIBE, HAI-SCRIBE Implementation Strategy and SHFN 30 have in preventing and controlling the spread of infection within the built healthcare environment.

3.6 NHS Boards are asked to ensure that the text within the Endorsement Certification, contained within Section 4, is included within the contract documentation issued to contractors and consultants to ensure 'buy-in' and cooperation from contractors and consultants in complying with the requirements of HAI SCRIBE and SHFN 30.


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# 4. Endorsement Certification

## Endorsement Certification

(I) Statement of Intent:

*Healthcare Associated Infection (HAI) is a complex issue involving the many different elements of patient care and provision. Due to its multi-factorial nature, there is a need to develop a holistic approach in combating the spread of infection within the built environment.*

*NHS National Services Scotland Health Facilities Scotland (NSS HFS), in conjunction with other organisations, has endeavoured to comprehensively tackle this situation through the creation of documents such as the 'Healthcare Associated Infection System for Controlling Risk of Infection In the Built Environment': version 2 (HAI-SCRIBE) and the 'Scottish Health Facilities Note 30: version 3' (SHFN 30) and the HAI-SCRIBE Implementation Strategy.*

*Non-application of these documents is extremely detrimental in preventing the spread of infection and to the healthcare sector in general. In certifying this endorsement you verify that you will endeavour to do all within your power to aid in this process and reduce the risk of infection within the built environment.*


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**Endorsement Certificate**

(II) Certification of the following documents;

***'Healthcare Associated Infection System for Controlling Risk In the Built Environment' (HAI-SCRIBE, version 2, 'HAI-SCRIBE Implementation Strategy' and 'Scottish Health Facilities Note 30': version 3.***

(III) Declaration;

We hereby certify that we agree to co-operate in the application of, on whole or where applicable to the aforementioned documentation and any amendment / revision forthwith enclosed or existing at the time of this declaration.

Name: .....

Signed: .....

Designation: .....

Company Name: .....

Witnessed by: .....

Signed: .....

Designation: .....

Company Name: .....


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**Parent Company Guarantee**

**This Guarantee** is made the 28th day of May 2013

**Between**

(1) Capita Symonds Holdings Limited whose registered office is situate at The Registry, 34 Beckenham Road, Beckenham, Kent, BR3 4TU (hereinafter called the "Guarantor") of the one part; and

(2) NHS Greater Glasgow & Clyde of J B Russell House, whose registered office is situate at Gartnavel Royal Hospital, 1055 Great Western Road Glasgow G12 0XH (hereinafter called the "Client") of the other;

**Whereas**

A. This Guarantee is supplemental to a contract dated on or about 28 May 2013 (hereinafter referred to as the "Contract") between the Client of the one part and Capita Symonds Limited (hereinafter called "the Consultant") of the other.

B. The Guarantor has agreed to guarantee the due performance of the Contract by the Consultant in the manner hereinafter appearing.

**Now It Is Hereby Agreed** as follows:

1. Terms defined in the Contract shall have the same meaning when used in this Guarantee.

2. In consideration of the Client entering into the Contract with the Consultant the Guarantor guarantees to the Client the due and punctual performance by the Consultant of its obligations pursuant to the Contract.

3. The Guarantor shall not be exonerated by time being given to the Consultant by the Client or by any concession or arrangement granted or made by the Client to or with the Consultant or by anything that the Client or the Consultant may do or omit to do.

4. The Guarantor hereby authorises the Consultant and the Client to make any addendum or variation to the Contract and subject to the Client giving notice to Guarantor of such addendum or variation within a reasonable period of time.

5. This Guarantee is a continuing guarantee and accordingly shall remain in operation until the obligations pursuant to the Contract are satisfied or the Guarantor shall give notice to the Client not less than 28 days written notice that it is terminating this Guarantee.

6. The Client shall not be entitled to enforce this Guarantee without first taking all and any available steps or proceedings against the Consultant.

7. The duty and or liability (whether in duration extent or nature) of the Guarantor is to be treated as being no greater than it would have been if the Guarantor had jointly been a party to the Appointment with the Consultant instead of this Guarantee and the Guarantor shall be entitled in defence of any action or proceedings by the Client under this Guarantee to rely on any limitation or exclusion in the Appointment and to raise the equivalent rights in defence of liability as the Consultant would have against the Client under the Appointment.

8. This Guarantee shall be governed by and construed in accordance with the laws of England. If any dispute or difference arises between the Guarantor and the Employer in connection with this Guarantee which cannot be resolved by mutual agreement, it shall be referred to the jurisdiction of the English Courts.

9. This Guarantee is not intended to confer on any person any right which such person would not have had but for the Contracts (Rights of Third Parties) Act 1999.

**In Witness** whereof the Guarantor has executed this Guarantee the day and year before written.

**Executed** by

**Capita Symonds Holdings Limited**

Acting by

Director [redacted]

Director / Secretary [redacted]

**From:** McCluskey, Fiona
**Sent:** 25 October 2010 13:00
**To:** Wrath, Frances
**Subject:** FW: Ventilation

**Importance:** High

**Tracking:**

| Recipient | Read |
|---|---|
| Wrath, Frances | Read: 25/10/2010 13:07 |

For information

Fiona McCluskey
Senior Nurse Advisor
New South Hospitals Project
Top Floor
Construction Offices
(off Hardgate Road)
Southern General Hospital
Glasgow G51 4SX
[redacted]

---

**From:** Hood, John
**Sent:** 25 October 2010 12:02
**To:** Hood, John; McCluskey, Fiona; Stewart, Jackie; Williams, Craig
**Cc:** Seabourne, Alan; McNamee, Sandra; Walsh, Tom
**Subject:** RE: Ventilation
**Importance:** High

Dear All,
Just had a useful conversation with Peter Hoffmann at the HPA. He is happy with the proposal that chilled beams are employed in this renal dialysis area. He explained that the suggested 6 ACH per hour is really for temperature control and not for any infection control issues (i.e. not dilution and removal as I mentioned below). He agrees that any more invasive procedures should take place in an appropriately ventilated treatment room.
He also suggested that the problem that you have in the existing areas in the ACADS might be helped by employing 'terminal diffusers that have less directional flow' .
Sorry for the delay and I hope this information is helpful.
Kindest regards
John Hood

-----Original Message-----
**From:** Hood, John
**Sent:** 21 October 2010 11:53
**To:** McCluskey, Fiona; Stewart, Jackie; Williams, Craig
**Cc:** Seabourne, Alan; McNamee, Sandra; Walsh, Tom
**Subject:** RE: Ventilation
**Importance:** High

Sorry not really happy with reduction of ventilation in a dialysis area to 2.5 air changes per hour. Air changes are about dilution and removal. The issue in other ACH units seems to be about **temperature control** - not airchanges per say. A normal ward area would be expected to have at least 6 airchanges per hour. I would

like to discuss the issues with my colleague and expert Peter Hoffmann from the HPA. Unfortunately he is leave at the moment and will not return until Monday 25 October, when I will try to contact him.
Kind regards
John Hood

-----Original Message-----
**From:** McCluskey, Fiona
**Sent:** 21 October 2010 10:05
**To:** Stewart, Jackie; Williams, Craig; Hood, John
**Cc:** Seabourne, Alan; McNamee, Sandra; Walsh, Tom
**Subject:** RE: Ventilation

Hi

Are you able to confirm the decision regarding the ventilation for the Renal Dialysis Outpatient area? This information is needed now as a matter of urgency for the Full Business Case.

Kind Regards

Fiona

Fiona McCluskey
Senior Nurse Advisor
New South Hospitals Project
Top Floor
Construction Offices
(off Hardgate Road)
Southern General Hospital
Glasgow G51 4SX
[redacted]

---

**From:** Stewart, Jackie
**Sent:** 15 October 2010 10:34
**To:** Williams, Craig; Hood, John
**Cc:** McCluskey, Fiona; Seabourne, Alan; McNamee, Sandra; Walsh, Tom
**Subject:** Ventilation

Hi,

I will be on A/L next week. Therefore could I please ask that you contact Fiona McCluskey with the decision regarding the ventilation for the area that renal out patients will be dialysed? This will prevent any delay as the information is needed as soon as possible.

Thanks,

Jackie.

Jacqueline Stewart
Consultant Nurse Infection Control
New South Glasgow Hospital & Labs Project
Site Offices - Top Floor
SGH Construction Site
Off Hardgate Road
Glasgow
G51 4SX
[redacted]

**IN THE COURT OF SESSION**

**SUMMONS**

in the cause

**GREATER GLASGOW HEALTH BOARD,** an area health board constituted under the National Health Service (Scotland) Act 1978, having its principal office at J B Russell House, Gartnavel Royal Hospital Campus, 1055 Great Western Road, Glasgow G12 0XH

**Pursuer**

against

**(FIRST) MULTIPLEX CONSTRUCTION EUROPE LIMITED**, a company incorporated under the Companies Acts (Company Number 03808946), having its registered office at 99 Bishopsgate, Second Floor, London EC2M 3XD;

**(SECOND) BPY HOLDINGS LP (a firm) (formerly known as BROOKFIELD EUROPE LP (a firm)**, a limited partnership formed under the Limited Partnerships Act 1907 (Company Number LP013183), having its registered office at Level 25, 1 Canada Square, Canary Wharf, London E14 5AA, and **BPY HOLDINGS GP LIMITED**, the general partner thereof as such general partner and as an individual, a company registered in Ontario, Canada (Registered Number 1775491), having its registered office at Brookfield Place, 181 Bay Street, Suite 300, Toronto, Ontario M5J 2T3;

**(THIRD) CURRIE & BROWN UK LIMITED**, a company incorporated under the Companies Acts (Company Number 01300409), having its registered office at 40 Holborn Viaduct, London EC1N 2PB; and

**(FOURTH) CAPITA PROPERTY AND INFRASTRUCTURE LIMITED**, a company incorporated under the Companies Acts (Company Number 02018542), having its registered office at 30 Berners Street, London W1T 3LR

**Defenders**

Elizabeth II, etc

**CONCLUSIONS**

1. For payment by the first, third and fourth defenders, jointly and severally, or severally, to the pursuer of the sum of SEVENTY TWO MILLION EIGHT HUNDRED THOUSAND POUNDS STERLING (£72,800,000) with interest thereon at the rate of 8 per cent per annum from the date of citation until payment.

2. For payment by the second defenders, jointly and severally, or severally, to the pursuer of the sum of SEVENTY TWO MILLION EIGHT HUNDRED THOUSAND POUNDS STERLING (£72,800,000) with interest thereon at the rate of 8 per cent per annum from the date of citation until payment.

3. For the expenses of the action.

**CONDESCENDENCE**

1. The pursuer is Greater Glasgow Health Board**,** an area health board constituted under the National Health Service (Scotland) Act 1978, having its principal office at J B Russell House, Gartnavel Royal Hospital Campus, 1055 Great Western Road, Glasgow G12 0XH. The pursuer's address was formerly at Dalian House, 350 St Vincent Street, Glasgow G3 8YZ. The first defender is Multiplex Construction Europe Limited, a company incorporated under the Companies Acts (Company Number 03808946), having its registered office at 99 Bishopsgate, Second Floor, London EC2M 3XD. The first defender was formerly known as Brookfield Construction (UK) Limited until 21 February 2011. Thereafter it was known as Brookfield Multiplex Construction Europe Limited until 31 August 2016. The first defender has had a principal place of business at 23 Hanover Square, London W1S 1JB. The second defender is BPY Holdings LP, a limited partnership formed under the Limited Partnerships Act 1907 (Company Number LP013183), having its registered office at Level 25, 1 Canada Square, Canary Wharf, London E14 5AA (the "**Limited Partnership**"), and BPY Holdings GP Limited, the general partner thereof as such general partner and as an individual, a company registered in Ontario, Canada (Registered Number 1775491), having its registered office at Brookfield Place, 181 Bay Street, Suite 300, Toronto, Ontario M5J 2T3 (the "**General Partner**"). The Limited Partnership was formerly known as Brookfield Europe LP until 2 May 2013. The Limited Partnership has had a place of business at 23 Hanover Square, London W1S 1JB. The General Partner was formerly known as Brookfield Europe GP Limited. The third defender is Currie & Brown UK Limited, a company incorporated under the Companies Acts (Company Number 01300409), having its registered office at 40 Holborn Viaduct, London EC1N 2PB. The third defender formerly had its registered office at Dashwood House, 69 Old Broad Street, London EC2M 1QS. The third defender has a place of business at Fourth Floor, 140 St Vincent Street, Glasgow G2 5NE. The fourth defender is Capita Property and Infrastructure Limited, a company incorporated under the Companies Acts (Company Number 02018542), having its registered office at 30 Berners Street, London W1T 3LR. The fourth defender was formerly known as Capita Symonds Limited from 4 May 2004 until 1 October 2013. The fourth defender formerly had addresses at 8th Floor, The Beacon, 176 St Vincent Street, Glasgow G2 5SG and at Skypark SP1, 8 Elliot Place, Glasgow G2 8EP. The fourth defender now has a place of business at 4th Floor, 7 West Nile Street, Glasgow G1 2PR. In terms of the contracts and the guarantee condescended upon below (with the exception of the contract between the pursuer and the third defender) the parties have prorogated the jurisdiction of the Scottish courts. The third defender has a place of domicile in Glasgow, Scotland. In any event, the

harmful events which are the subject matter of these proceedings occurred in Glasgow, Scotland. This court has jurisdiction. There are no proceedings pending before any other court involving the present cause of action and between the parties hereto. There is no agreement prorogating jurisdiction over the subject matter of the present cause of action to another court.

**Building Contract**

2. The pursuer and the first defender entered into an Agreement on 18 December 2009 (the "**Building Contract**"). In terms of the recital to, and Clause 1 of, the Building Contract the first defender was to "*Provide the Works*" for "*the New South Glasgow Hospital*" (the "**Hospital**"). The Hospital is now generally referred to as the Queen Elizabeth University Hospital. The Hospital is of a significant size and contains a number of important facilities. In particular the Hospital includes both an adult hospital (the "**Adult Hospital**") and a children's hospital. The children's hospital is specifically known as the Royal Hospital for Children, ("**RHC**"). Design and construction of the Hospital involved works totalling many hundreds of millions of pounds in value. The works were of significant scope and complexity. The Building Contract was a design and build contract in terms of which the first defender bore both design and build responsibilities (including commissioning responsibilities). The works under the Building Contract were to be carried out in various stages. Without prejudice to that generality, amongst those stages were Stages 2 and 3. Stage 2 related to design of the Hospital. Stage 3 related to design and construction of the Hospital. On 29 January 2015, subject to a schedule of incomplete works Stage 3 of the Hospital was certified as having been completed, under and in terms of the Building Contract, on 26 January 2015. The Building Contract is produced, referred to for its whole terms and held to be incorporated herein for the sake of brevity.

3. In terms of Clause 1 of the Building Contract, the works thereunder were to be performed in accordance with, among other things, "*the NEC Engineering and Construction Contract, Option C: Target contract with activity schedules June 2005 (as the same are amended in [sic] by the Contract Data)*" (each individual clause thereof is hereafter an "**NEC Clause**"). In terms of the Contract Data, Part One, the applicable Secondary Options of the NEC Engineering and Construction Contract (June 2005) were X2, X4, X5, X7, X13, X16, X18.5, Y(UK)2 and Z clauses.

4. In terms of NEC Clause 20, the first defender was obliged, among other things, as follows: "*The* Contractor *[the first defender] Provides the Works in accordance with the Works Information*". In the Contract Data Part One (forming part of the Building Contract in terms of Clause 6 of the Building Contract) the composition of the Works Information was defined as follows:

"*The Works Information comprises*

- *The Contract Documents: Part Five (Works Information);*
- *The Employers [sic] Requirements; and*
- *The Contractor's Proposals including the M&E Clarification Log*"

5. In terms of NEC Clause 21 (as amended by the Contract Data Part One) the first defender was obliged, among other things, as follows:

"*The Contractor [the first defender] designs the parts of the works which the Works Information states he is to design. The Contractor designs the parts of the works which the Works Information states he is to design using the degree of skill and care that would reasonably be expected of a competent professional design and build contractor experienced in carrying out projects of a similar nature, scope and complexity to those comprised in the works*".

**Delictual obligation of the first defender**

6. *Separatim*, the first defender owed the pursuer a duty at common law to exercise reasonable skill and care in performing its services as design and build contractor in relation to the Hospital.

**Parent company guarantee**

7. The second defenders and the pursuer entered into a parent company guarantee on 18 and 22 December 2009 (the "**Guarantee**"). In terms of Clause 2 of the Guarantee the parties agreed, among other things, that: (1) The first named second defender "*irrevocably and unconditionally*" guaranteed to the pursuer "*the due and punctual performance*" by the first defender of "*all the obligations, liabilities, warranties, duties and undertakings*" of the first defender to the pursuer "*arising pursuant to the Building Contract*"; and (2) The first named second defender would "*perform or cause to be performed*" "*all the obligations, liabilities, warranties, duties and undertakings*" of the first

defender to the pursuer "*arising pursuant to the Building Contract*". Clause 2 of the Guarantee also makes provision in respect of, among other things, payment by the first named second defender to the pursuer in respect of claims made by the pursuer. The Guarantee is produced, referred to for its whole terms and held to be incorporated herein for the sake of brevity.

**Lead consultant appointment**

8. The pursuer and the third defender entered into a Memorandum of Agreement on 6 April 2011 (the "**Lead Consultant Appointment**"). In terms of the recitals to, and Clause 1 of, the Lead Consultant Appointment the third defender was the pursuer's lead consultant in relation to the Hospital project and was obliged to lead the technical advisory team by performing the duties contained in the Memorandum of Agreement. The third defender acted as the pursuer's lead consultant, and led the technical advisory team, in relation to the Hospital project. The third defender had been performing the role of lead consultant, and had led the technical advisory team, for a considerable period of time prior to the formal entering into of the Lead Consultant Appointment. The Lead Consultant Appointment is produced, referred to for its whole terms and held to be incorporated herein for the sake of brevity.

9. In terms of Clause 1.1 of the Lead Consultant Appointment, the pursuer engaged the third defender to perform duties subject to the terms of the Lead Consultant Appointment. In terms of Clause 1.2 of the Lead Consultant Appointment, Parts A-G of the Appendix thereto constituted part of the Lead Consultant Appointment. Without prejudice to that generality: (1) Appendix Part A contained "*Conditions of Appointment*"; (2) Appendix Part B contained "*Scheme Particulars*"; and (3) Appendix Part C contained "*Consultant's Duties*".

10. Appendix Part A of the Lead Consultant Appointment imposed a number of obligations on the third defender. Without prejudice to that generality those obligations included the following:

> "*1.1* ***Duration of commission***
>
> *The appointment of the Consultant [the third defender] will commence from the date that the Consultant commenced carrying out the Duties and the commission, … as set out in Part C of the Appendix. …*

*1.6* ***Duty of care***

*The Consultant is to exercise reasonable skill, care and diligence in the discharge of the Duties. Submission of drawings, calculations, specification and other documentation produced by the Consultant for comment by the Board shall not relieve the Consultant of this responsibility. If in the performance of the Duties the Consultant has discretion exercisable as between the Board and any other body the Consultant shall exercise its discretion fairly.*".

**Delictual obligation of the third defender**

11. *Separatim*, the third defender owed the pursuer a duty at common law to exercise reasonable skill, care and diligence in performing its services as lead consultant in relation to the Hospital project and leading the technical advisory team.

**Project supervisor appointment**

12. In terms of: (i) Two letters from the pursuer to the fourth defender dated 21 May 2010 and 28 March 2011 respectively, which were agreed to by the fourth defender by its conduct or otherwise; and (ii) An Agreement between the pursuer and the fourth defender on 28 May 2013 (together the "**Project Supervisor Appointment**"), the pursuer and the fourth defender agreed the terms of the fourth defender's appointment as project supervisor for the Hospital project. The pursuer acted as project supervisor in relation to the Hospital project. In terms of the Project Supervisor Appointment, the scope of the fourth defender's work as project supervisor involved various duties and services, including (without prejudice to that generality) those as detailed in the pursuer's "High Level Information Pack – Supervisor Role" dated February 2010 (the "**HLIP**"). The Project Supervisor Appointment (including the HLIP) is produced, referred to for its whole terms and held to be incorporated herein for the sake of brevity.

13. In terms of the Project Supervisor Appointment, the fourth defender's services as project supervisor were to be performed in accordance with, among other things, the NEC3 Professional Services Contract, Option A ("**NEC3 PSC**"). In terms of NEC3 PSC Clause 20, the fourth defender was obliged, among other things, as follows:

"*The* Consultant's *[the fourth defender's] obligation is to use the skill and care normally used by professionals providing services similar to the services*".

**Delictual obligation of the fourth defender**

14. *Separatim*, the fourth defender owed the pursuer a duty at common law to exercise reasonable skill and care in performing its services as project supervisor.

**Issues and breaches**

15. There are a number of issues arising from defects in the Hospital. Such issues and defects include, but are not limited to, those condescended upon below. The first defender has breached the terms of the Building Contract in respect of the issues and defects. The third defender has breached the terms of the Lead Consultant Appointment in respect of the issues and defects. The fourth defender has breached the terms of the Project Supervisor Appointment in respect of the issues and defects. In particular, without prejudice to the foregoing generality, the first, third and fourth defenders have respectively breached the terms condescended upon in Arts. 2 to 5, 8 to 10 and 12 and 13 of Condescendence above. The first, third and fourth defenders have also breached their common law duties. The first, third and fourth defender's breaches have each caused the pursuer to suffer, or at least materially contributed to the pursuer suffering, the loss and damage condescended upon below. Without prejudice to the generality of the foregoing, the first, third and fourth defenders were in breach of contract, and in breach of their common law duties, by reason of the circumstances condescended upon below in relation to Issues 1 to 11 there condescended upon.

**Issue 1: Water system**

16. After handover of the Hospital by the first defender to the pursuer, systemic contamination of the domestic water system was identified. The pursuer has had to install an extensive chlorine dioxide dosing system to control the domestic water bacteria. Defects which have been identified in relation to the water system (the "**Water System Defects**") in the Hospital include (without being limited to) the following: (1) The use of mild steel pipework; (2) The use of copper pipework; (3) The use of flexi-pipes; (4) The use of pipework from manufacturers not included in the O&M Manuals and not relevantly approved; (5) Leaving pipework open during installation work (making it vulnerable to contamination); (6) Pipework and fittings corrosion; (7) Corrosion of domestic water meters; (8) Use of a disinfectant (Sanosil Super 25) which includes silver and hydrogen peroxide, without evidence of relevant advice to do so; (9) Small debris in a cold water storage tank, indicating a failure to clean and flush the cold water storage tanks; (10)

Pressure testing being carried out after a leachate flushing regime, rather than before; (11) Lack of commissioning information in O&M manuals; (12) Lack of a water risk assessment in the O&M manuals; (13) Storage volumes of the water system larger than required; (14) Inadequate provision for filling and top up of the water system; and (15) Incoming water main not being to Scottish Water requirements.

17. Without prejudice to the generality of the terms of Art. 15 of Condescendence, the Water System Defects have been caused, or at least materially contributed to, by: (i) the first defender's design, construction and commissioning works being inadequate and deficient; and (ii) without prejudice to that, the failure of the design, construction and commissioning to comply with at least the following:

(1) Employer's Requirements, Section 5.0 (General Design & Construction Requirements), Paragraph 5.1.1.2, required the Contractor (the first defender) to "*comply with the requirements of the documents listed in Table 2 – NHS Mandatory Documentation in Section 5.1.2*". Specific statements of compliance were stated as being necessary, with the bidder required to clarify its approach to compliance. Such NHS Mandatory Documentation in Table 2 included, amongst other things, various Scottish Health Technical Memoranda (each individually an "**SHTM**"), various Health Technical Memoranda (each individually an "**HTM**") and various Health Building Notes (each individually an "**HBN**").

(2) Employer's Requirements, Section 5.0 (General Design & Construction Requirements), Paragraph 5.1.1.3, required the Contractor to "*have regard to and take into consideration the requirements of the documents listed [in] Table 3 – NHS Guidance Documentation in section 5.1.3*". Specific statements of compliance were stated as being necessary, with the bidder required to clarify its approach to compliance. Such NHS Guidance Documentation in Table 3 included, amongst other things, various Scottish Health Technical Notes (each individually an "**SHTN**") and various Scottish Health Planning Notes (each individually an "**SHPN**").

(3) Employer's Requirements, Section 5.0 (General Design & Construction Requirements), Paragraph 5.1.4.1, in Section 5.1.4 (Additional Guidance), required the Contractor to comply with various "*standards and documents*", including (without prejudice to that generality): (i) "*b) The Technical Standards complying with the Building Standards (Scotland) Regulations 1990 as amended*"; (ii) "*d) Current British Standards, European Standards, and Codes of*

*Practice, as appropriate*" (each British Standard is individually a "**BS**").; (iii) "*m) Requirements of the utilities companies*"; and (iv) "*o) Local Bye-Law and Regulations*".

(4) Employer's Requirements, Section 5.0 (General Design & Construction Requirements), Paragraph 5.1.1.10, required the Contractor to *"provide Works that comply at all times with the requirements of Table 2, Table 3 and the Additional Guidance identified at Section 5.1.4*".

(5) Employer's Requirements, Section 6.0 (Construction Phase Requirements), Section 6.8 (Commissioning and Handover), Section 6.8.5 (Works inspection, testing and acceptance activities), Paragraph 6.8.5.26, required the Contractor to provide in draft various documents, including (without prejudice to the generality), O&M Manuals and Health & Safety Files "*containing, as a minimum, all testing and commissioning information so far as it is reasonably practicable*".

(6) Employer's Requirements, Section 7.0 (Architectural Requirements), Paragraph 7.9.6, in Section 7.9 (Finishes), required that:

*"Additional specific finishes requirements that must be met by the Contractor's Proposals are identified below; …*

*h) IPS solutions shall be required in all toilet areas and areas where wet/sink provision is required (e.g. utility rooms). The use of flexible hose connections is prohibited*".

(7) Employer's Requirements, Section 8.0 (Building Services Requirements), Paragraph 8.2.8.3, in Section 8.2.8 (Water Systems and Filtration), required that:

"*The Contractor shall design and install the domestic cold and hot water supply installations to fully comply with the requirements of:*

*a) (S)HTM04-01 [sic]*
*b) SHTM 2027*
*c) SHTM 02*
*d) SHTM 2040 "The control of legionella in healthcare premises - a code of practice"; and*
*d) Health Guidance Note "Safe Hot Water and Surface Temperatures*".

(8) Employer's Requirements, Section 8.0 (Building Services Requirements), Paragraph 8.2.8.4, in Section 8.2.8 (Water Systems and Filtration), required that:

"*Pipework shall be stainless steel with compatible accessories*".

(9) Employer's Requirements, Section 8.0 (Building Services Requirements), Paragraph 8.2.8.16, in Section 8.2.8 (Water Systems and Filtration), required the Contractor to

"*carry out a full risk assessment of the complete water systems of the legionella risks and ensure that the system design and equipment selection and installation is carried out to minimise risks*".

(10) Employer's Requirements, Section 8.0 (Building Services Requirements), Paragraph 8.2.28.5, in Section 8.2.28 (Testing and Commissioning of Mechanical Services), required the Contractor to provide "*comprehensive*" copy sets of O&M Manuals and other documents "*for all installed and commissioned equipment*".

(11) SHTM 04-01, Part A, (listed in Table 2 "*NHS Mandatory Documentation*" in the Employer's Requirements, Section 5.1.2), Paragraph 1.10, required that:

"*the design and installation of the hot and cold water services, new or extended, in any NHS premises should also comply with [among other things]:*

- *the Water Byelaws 2000 (Scotland), recommendations of the water suppliers in the Water Regulations Advisory Scheme's (WRAS) 'Water Regulations Guide', and any other requirements of the local water supply authority*".

(12) SHTM 04-01 Part A, Paragraph 7.3 required (among other things) that:

"*[Water] Storage should be designed to minimise residence time in the cistern and maximise turnover of water to avoid stagnation and deterioration of water quality*".

(13) SHTM 04-01, Part A, Paragraph 9.23 required that:

"*Where storage calorifiers are used [as is the case at the Hospital], the hot water storage capacity should be sufficient to meet the consumption for up to two hours; this must include the period of maximum draw-off. The installed hot water capacity should be sized for current needs and should not be designed with built-in capacity for future extensions*".

(14) SHTM 04-01, Part A, Paragraph 16.2 required, among other things, that:

"*The system should be regularly checked during installation to ensure that open pipes, valve ends, cylinder connections etc are sealed to prevent the ingress of dust/debris that could cause problems during commissioning and subsequent operation. …*".

**Issue 2: Standard isolation rooms ventilation**

18. Defects which have been identified in relation to standard isolation rooms ventilation (the "**Standard Isolation Rooms Ventilation Defects**") in the Hospital include (without being limited to) the following: (1) Isolation suite extract vents terminate behind louvres on façade and formed turrets above plant room; (2) Safe change filter housings installed internally to the building; (3) Non-standard extract ventilation between bedrooms and en suites; (4) No low level air transfer grilles within the en suite doors; (5) Excessive access hatches in ductwork; (6) No gas tight shut off damper or spectacle plate on extract systems prior to extract fans; (7) No audio and visual alarms outside entrances to gowning lobbies; (8) No common alarm panel at nurse station; (9) Supply and extract plant and duct access hatches not identified as a biohazard; (10) Supply and extract plant and duct access hatches not identified with the rooms they serve; and (11) Lobby dial pressure gauges inappropriate for monitoring the requisite pressure differential.

19. Without prejudice to the generality of the terms of Art. 15 of Condescendence, the Standard Isolation Rooms Defects have been caused, or at least materially contributed to, by: (i) the first defender's design, construction and commissioning works being inadequate and deficient; and (ii) without prejudice to that, the failure of the design, construction and commissioning to comply with at least the following:

(1) Employer's Requirements, Section 5.0 (General Design & Construction Requirements), Paragraph 5.1.1.3, required the Contractor to "*have regard to and*

*take into consideration the requirements of the documents listed in Table 3 – NHS Guidance Documentation in Section 5.1.3*". Specific statements of compliance were stated as being necessary, with the bidder required to clarify its approach to compliance. Such NHS Guidance Documentation in Table 3 included, amongst other things, various HBNs.

(2) Employer's Requirements, Section 5.0 (General Design & Construction Requirements), Paragraph 5.1.1.10, required the Contractor to *"provide Works that comply at all times with the requirements of Table 2, Table 3 and the Additional Guidance identified at Section 5.1.4*".

(3) Employer's Requirements, Section 8.2.14 (Ventilation of Isolation Rooms), required (among other things) that:

"*8.2.14.4 The Contractor shall provide air conditioning to Isolation Rooms to support:*

*a) Employer's Requirements;*

*b) Clinical Output Specification; and*

*c) NHS Infection Control standards*

*With strict positive / negative pressure differentials*".

(4) HBN 04-01, Supplement 1 (Isolation facilities for infectious patients in acute settings), (listed in Table 3 "*NHS Guidance Documentation*" in the Employer's Requirements, Section 5.1.3) set out, among other things, the ventilation philosophy required for an isolation suite and required (without prejudice to the generality) that:

"***Ventilation – general*** *…*

*4.6 … A flow sensor should be fitted to each system that will alarm on fan failure at a designated nurse station and the estates department. …*

***Extract ventilation***

*4.12 An extract terminal should be fitted at a high level in the en-suite room. An additional terminal may be fitted at low level adjacent to the bedhead in the bedroom.*

*4.13 A transfer grille should be fitted at low level in the door between the bedroom and en-suite room.*

*4.14 The extract duct should be fitted with a spectacle plate or gas-tight damper so that the system can be sealed to allow the isolation suite to be disinfected. …*

*4.15 … Access and cleaning hatches should only be fitted [in ductwork] where absolutely necessary. If fitted they should be of the sealed type and marked with a bio-hazard symbol. …*

*4.16 … If extract filters are fitted they should be in a 'safe change housing' outside the building on the suction side of the fan. …*

*4.19 The supply AHU and distribution ductwork must be clearly marked to identify the isolation suite that they serve. …*

*4.21 A pressure stabiliser of the balanced blade type, set to operate at 10 pascals, should be fitted above the door between the lobby and the bedroom. …*

*4.22 A direct reading gauge showing the pressure in the lobby with respect to the corridor should be mounted at eye level on the corridor wall adjacent to the lobby entry door. The gauge and lobby entry door must be clearly marked to identify the isolation suite to which they refer.*"

(5) Employer's Requirements, Appendix B: Clinical Output Specification: Generic Adult Wards (NSGACL Generic Wards NSG_iss1_rev), Paragraph 2.1 required one room per ward for isolation purposes and having an associated gowning lobby. The associated drawings for isolation suites (NSGACL-G1274_M (57)01-A3_iss1_rev (Isolation Suites, Plantroom Adjacent Ventilation Systems 2009) and NSGACL-G1724_M (57)02-A4_iss1_rev (Isolation Suite Ventilation System Plantroom Above 2009)) included a layout for a positively pressurised ventilation lobby (to prevent egress or ingress of contaminated air).

**Issue 3: Adult Hospital Ward 4B ventilation**

20. Defects which have been identified in relation to Adult Hospital Ward 4B ventilation (the "**Ward 4B Ventilation Defects**") in the Hospital include (without being limited to) a failure to achieve the following: (1) The requisite positive air pressure differential in patient rooms, relative to adjacent space; (2) The requisite air change rate in patient rooms; (3) The requisite positive air pressure differential between the general ward and the remainder of the hospital; and (4) The requisite classification of HEPA filtration of air.

21. Without prejudice to the generality of the terms of Art. 15 of Condescendence, the Ward 4B Ventilation Defects have been caused, or at least materially contributed to, by: (i) the first defender's design, construction and commissioning works being inadequate and deficient; and (ii) without prejudice to that, the failure of the design, construction and commissioning to comply with at least the following:

(1) Employer's Requirements, Section 5.0 (General Design & Construction Requirements), Paragraph 5.1.1.2, required the Contractor "*to comply with the requirements of the documents listed in Table 2 – NHS Mandatory Documentation in section 5.1.2*". Specific statements of compliance were stated as being necessary, with the bidder required to clarify its approach to compliance. Such NHS Mandatory Documentation in Table 2 included, amongst other things, various HTMs.

(2) HTM 03-01 (listed in Table 2 "*NHS Mandatory Documentation*" in the Employer's Requirements, Section 5.1.2), Appendix 2, required (among other things): (a) a positive air pressure differential in patient rooms, relative to adjacent space, of 10 Pa or above; (b) an air change rate in patient rooms of 10 per hour; and (c) a supply filter H12 in a neutropeanic patient ward.

(3) Clinical Output Specification (Appendix B in the Employer's Requirements), Adult Hospital, Haemato-Oncology, Section 1, required (among other things):

"*A high proportion of the patients receive chemotherapy and are immuno-compromised, making them vulnerable to infection…*

*Ventilation*

*Please note the haemato-oncology ward area has a very special function and a considerably higher than average requirement for additional engineering support / infrastructure. There should be no opening windows, no chilled beams. Space sealed and ventilated. Positive pressure to the rest of the hospital and all highly filtered air >90%, probably best HEPA with adequate number of positive pressure sealed HEPA filtered side rooms for neutropaenic patients as in the Beatson West of Scotland Cancer Centre"*.

(4) Project Manager's Instruction 424, required (among other things): (a) a positive air pressure differential in patient rooms, relative to adjacent space, of 5 to 10 Pa; (b) an air change rate in patient rooms of 10 to 12 per hour; and (b) a positive air pressure differential between the general ward and the remainder of the hospital of 2 to 3 Pa.

**Issue 4: RHC Ward 2A Ventilation**

22. Defects which have been identified in relation to RHC Hospital Ward 2A ventilation (the "**Ward 2A Ventilation Defects**") in the Hospital include (without being limited to) a failure to achieve the following: (1) The requisite positive air pressure differential in patient rooms, relative to adjacent space; (2) The requisite air change rate in patient rooms; (3) The requisite positive air pressure differential between the general ward and the remainder of the hospital; and (4) The requisite classification of HEPA filtration of air.

23. Without prejudice to the generality of the terms of Art. 15 of Condescendence, the Ward 2A Ventilation Defects have been caused, or at least materially contributed to, by: (i) the first defender's design, construction and commissioning works being inadequate and deficient; and (ii) without prejudice to that, the failure of the design, construction and commissioning to comply with at least the following:

(1) Employer's Requirements, Section 5.0 (General Design & Construction Requirements), Paragraph 5.1.1.2, required the Contractor "*to comply with the requirements of the documents listed in Table 2 – NHS Mandatory Documentation in section 5.1.2*". Specific statements of compliance were stated as being necessary, with the bidder required to clarify its approach to compliance. Such NHS Mandatory Documentation in Table 2 included, amongst other things, various HTMs.

(2) HTM 03-01 (listed in Table 2 "*NHS Mandatory Documentation*" in the Employer's Requirements, Section 5.1.2), Appendix 2, required (among other things): (a) a positive air pressure differential in patient rooms, relative to adjacent space, of 10 Pa or above; (b) an air change rate in patient rooms of 10 per hour and (c) a supply filter H12 in a neutropeanic patient ward.

(3) Clinical Output Specification (Appendix B in the Employer's Requirements), RHC, Haematology & Oncology, Sections 1 and 7 (in particular) specify that the ward would be "*high dependency*", should be at "*low positive pressure*", a "*risk of infection to patients*" and that the ward would serve, amongst others, bone marrow transplant patients.

**Issue 5: Plant and building services capacity**

24. Defects which have been identified in relation to plant and building services capacity in the Hospital (the "**Capacity Defects**") include (without being limited to) plant and building services (including, without prejudice to that generality, the air handling units (known as "**AHUs**")) having insufficient capacity, and in particular (without prejudice to that generality) having no spare capacity, reducing and inhibiting the pursuer's ability to facilitate future expansion or adaptation to the Hospital and its plant and building services..

25. Without prejudice to the generality of the terms of Art. 15 of Condescendence, the Capacity Defects have been caused, or at least materially contributed to, by: (i) the first defender's design, construction and commissioning works being inadequate and deficient; and (ii) without prejudice to that, the failure of the design, construction and commissioning to comply with at least the following:

Employer's Requirements, Section 8.0 (Building Services Requirements), Paragraph 8.1.25.1, in Section 8.1.25 (Service Capacity Reserve), required that:

"*In accordance with Good Industry Practice, all plant, plant spaces and building services systems shall be specifically designed and provided with defined reserve capacity allowances and future expansion capabilities for The Works …*".

**Issues 6: Toughened glazing**

26. Defects which have been identified in relation to toughened glazing in the Hospital (the "**Toughened Glazing Defects**") include (without being limited to) instances of fractured glazing. Those include eleven recorded instances up to June 2019. Of those, two have been verified to have been as a result of nickel sulphide inclusions (known as "**NSI**"). The Hospital did not include any means to mitigate the risk of fractured glass falling into trafficked areas. The pursuer has had to carry out extensive mitigation measures to mitigate that risk.

27. Without prejudice to the generality of the terms of Art. 15 of Condescendence, the Toughened Glass Defects have been caused, or at least materially contributed to, by: (i) the first defender's design, construction and commissioning works being inadequate and deficient; and (ii) without prejudice to that, the failure of the design, construction and commissioning to comply with at least the following:

(1) Employer's Requirements, Section 2.0 (Responsibilities of the Parties), Section 2.2 (Responsibilities of the Contractor), required that:

"*The Contractor shall be responsible for the following:*

*2.2.1 Providing Works that are fit for purpose; …*".

(2) Employer's Requirements, Section 5.0 (General Design & Construction Requirements), Section 5.3 (Life Expectancies & Lifecycle Requirements), Paragraph 5.3.2, required external windows to achieve a design life of at least 25 years.

(3) Employer's Requirements, Section 5.0 (General Design & Construction Requirements), Section 5.9 (Materials), Paragraph 5.9.4, required that:

"*The Contractor shall ensure that the whole quantity of each product and material required to complete the Works is of a consistent type, quality and overall appearance and is fit for its intended purpose. The Contractor shall ensure all products and materials are handled, stored, prepared and used or fixed strictly in accordance with the manufacturers' written instructions or recommendations and not to be damaged when incorporated into the Works*".

(4) Employer's Requirements, Section 7.0 (Architectural Requirements), Paragraph 7.6.5, in Section 7.6 (Windows) requiring that:

"*s) … The robustness of all glazing must be appropriate to the functionality, relative to safety and resistance to damage …*

*u) the Contractor will be expected to use toughened glass in all locations (windows, doors, balconies, balustrades etc) except areas which are vulnerable to vandals or intruders at ground floor locations. …*".

(5) The first defender's glazing specification (NA-SP-L40), specified the process for heat soaking thermally toughened glass to British Standard EN 14179.

(6) CIRIA Report C632 – Guidance on Glazing at Height, published in 2005, section 10.3 advises the use of risk assessments for glazing, requiring that the risk be as low as reasonably practicable.

**Issue 7: Doors**

28. Defects which have been identified in relation to doors, there being in excess of 7,000 doors, in the Hospital (the "**Door Defects**") include (without being limited to) the following: (1) Use of MDF, rather than solid wood or metal, in door frames; (2) Hinges detaching from door frames; (3) Length of screws used to fix hinges to doorsets too short; (4) Extensive impact damage; (5) Failure of door closers; (6) Delamination of door veneers; and (7) Issues with seals.

29. Without prejudice to the generality of the terms of Art. 15 of Condescendence, the Door Defects have been caused, or at least materially contributed to, by: (i) the first defender's design, construction and commissioning works being inadequate and deficient; and (ii) without prejudice to that, the failure of the design, construction and commissioning to comply with at least the following:

(1) Employer's Requirements, Section 2.0 (Responsibilities of the Parties), Section 2.2 (Responsibilities of the Contractor), required that:

"*The Contractor shall be responsible for the following:*

*2.2.1 Providing Works that are fit for purpose; …*".

(2) Employer's Requirements, Section 5.0 (General Design & Construction Requirements), Section 5.9 (Materials), Paragraph 5.9.4, required that:

"*The Contractor shall ensure that the whole quantity of each product and material required to complete the Works is of a consistent type, quality and overall appearance and is fit for its intended purpose. The Contractor shall ensure all products and materials are handled, stored, prepared and used or fixed strictly in accordance with the manufacturers' written instructions or recommendations and not to be damaged when incorporated into the Works*".

(3) Employer's Requirements, Section 5.0 (General Design & Construction Requirements), Paragraph 5.1.2, required the Contractor "*to comply with the requirements of the documents listed in Table 2 – NHS Mandatory Documentation in section 5.1.2*". Specific statements of compliance were stated as being necessary, with the bidder required to clarify its approach to compliance. Such NHS Mandatory Documentation in Table 2 included, amongst other things, various SHTMs.

(4) SHTM 58 (Internal doorsets) required that:

"*2.13 The grade of doorset should relate to functional requirements …*".

(5) SHTM 59 (Ironmongery) required that:

"2.30 *Hinges must be capable of supporting the door at temperatures of 800°C and higher. … screws should not be less than 38mm*".

(6) Employer's Requirements, Section 5.0 (General Design & Construction Requirements), Section 5.3 (Life Expectancies & Lifecycle Requirements), Paragraph 5.3.2, required internal doors to achieve a design life of at least 15 years.

(7) Employer's Requirements, Section 7.0 (Architectural Requirements), Section 7.5 (Doors), Paragraph 7.5.5, required that:

"*The following criteria require to be incorporated into the Contractor's proposals:*

*f) all door frames must be of solid or metal construction, and must be securely fixed in to the adjoining construction*".

**Issue 8: Heating system**

30. The Hospital includes a heating system which contains MTHW (i.e. Medium Temperature Hot Water) heating installations with associated Combined Heat and Power ("**CHP**") plant (the "**Heating System**"). Defects which have been identified in relation to the Heating System (the "**Heating System Defects**") include (without being limited to) the following: (1) The CHP system is operating inefficiently with significant rejection of heat and with projected energy savings not having been realised; (2) The absorption chiller (an integral part of the CHP) is not operational; and (3) A water temperature to facilitate proper operation of the CHP is not being achieved. The first defender has been undertaking continuing works on its own account, without success, in an attempt to address these defects.

31. Without prejudice to the generality of the terms of Art. 15 of Condescendence, the Heating System Defects have been caused, or at least materially contributed to, by: (i) the first defender's design, construction and commissioning works being inadequate and deficient; and (ii) without prejudice to that, the failure of the design, construction and commissioning to comply with at least the following:

(1) Employer's Requirements, Section 2.0 (Responsibilities of the Parties), Section 2.2 (Responsibilities of the Contractor), required that:

"*The Contractor shall be responsible for the following:*

*2.2.1 Providing Works that are fit for purpose; …*".

(2) Employer's Requirements, Section 5.0 (General Design & Construction Requirements), Paragraph 5.1.2, required the Contractor "*to comply with the requirements of the documents listed in Table 2 – NHS Mandatory Documentation in section 5.1.2*". Specific statements of compliance were stated as being necessary, with the bidder required to clarify its approach to compliance.

Such NHS Mandatory Documentation in Table 2 included, amongst other things, various SHTMs.

(3) SHTM EnCOde – making energy work in healthcare (listed in Table 2 "*NHS Mandatory Documentation*" in the Employer's Requirements, Section 5.1.2).

(4) Employer's Requirements, Appendix M, M&E.4, Section 3.9, (which included requirements for BREEAM Excellent rating).

(5) Employer's Requirements, Appendix M, M&E.4, Section 2.3, (which included design energy targets).

(6) Employer's Requirements, Appendix M, M&E.4, Section 2.4, (which included operational energy target).

**Issue 9: Atrium roof**

32. The Hospital includes a roof above the atrium in the Adult Hospital. That roof is constructed of a series of inflated cushions using an ETFE (i.e. ethylene tetrafluoroethylene) system (the "**ETFE Roof**"). Defects which have been identified in relation to the ETFE Roof (the "**ETFE Roof Defects**") include (without being limited to) the following: As part of the overall fire strategy, the ETFE Roof was fitted by the first defender with a hot wire system. The purpose in doing so was that in the event of fire the hot wire system would operate to burn off parts of the ETFE to allow ventilation of the atrium. When tested in October 2017, 18 sections of the ETFE roof unintentionally burned off. The hot wire system is accordingly not operational due to it unintentionally burning off ETFE roof sections during testing. A revised fire strategy has had to be implemented by the pursuer as a result. Moreover there is no evidence of CE markings in the ETFE roof and hot wire system.

33. Without prejudice to the generality of the terms of Art. 15 of Condescendence, the ETFE Roof Defects have been caused, or at least materially contributed to, by: (i) the first defender's design, construction and commissioning works being inadequate and deficient; and (ii) without prejudice to that, the failure of the design, construction and commissioning to comply with at least the following:

(1) Employer's Requirements, Section 2.0 (Responsibilities of the Parties), Section 2.2 (Responsibilities of the Contractor), required that:

"*The Contractor shall be responsible for the following:*

*2.2.1 Providing Works that are fit for purpose; …*".

(2) Employer's Requirements, Section 5.0 (General Design & Construction Requirements), Section 5.9 (Materials), Paragraph 5.9.4, required that:

"*The Contractor shall ensure that the whole quantity of each product and material required to complete the Works is of a consistent type, quality and overall appearance and is fit for its intended purpose. The Contractor shall ensure all products and materials are handled, stored, prepared and used or fixed strictly in accordance with the manufacturers' written instructions or recommendations and not to be damaged when incorporated into the Works*".

(3) Employer's Requirements, Section 6.0 (Construction Phase Requirements), Section 6.8 (Commissioning and Handover), Section 6.8.5 (Works inspection, testing and acceptance activities).

(4) Employer's Requirements, Section 8.0 (Building Services Requirements), Section 8.2 (Mechanical Systems), Section 8.2.19 (Fire Fighting Systems), Paragraph 8.2.19, required that:

"*8.2.19.1 The Contractor shall provide all fire fighting systems in line with a robust fire strategy for the project as outlined in Volume 2/1 Section 5.11. …*

*8.2.19.2 All elements of the fire fighting systems, such as but not limited to …*

*8.2.19.3 The above shall be fully incorporated into the building design at an early date to ensure that all service routes and plant requirements are integrated in the building envelope while maintaining safe, secure access for maintenance and regular system testing of all systems without disturbance to the Clinical operations*".

(5) Employer's Requirements, Section 9.0 (Civil & Structural Engineering Requirements), Section 9.1 (General Requirements), Paragraph 9.1.1, required that:

"*The Contractor shall ensure the design and construction of the civil and structural engineering elements of the buildings and external works meets the following criteria:*

*b) Be fully co-ordinated with the design of the building fabric, finishes, services, facades, internal walls, medical equipment and existing Site features, including buildings/structures*".

(6) NBS Specification H80-ETFE AFP System Rev 01 October 2010, specified that the hot wire system can be non-destructively tested and that all interfaces should be fully co-ordinated.

(7) EN 12101-10:2005 Smoke and Heat Control Systems, requiring CE markings compliance

**Issue 10: Internal fabric moisture ingress**

34. Defects which have been identified in relation to internal fabric moisture ingress (the "**Internal Fabric Moisture Ingress Defects**") in the Hospital include (without being limited to) the following in relation to en suite facilities: (1) Inappropriately high water absorption moisture readings in internal partition panels; (2) Sections of IPS laminate panels de-bonding; (3) Inappropriate detailing between walls and vinyl floor coverings; (4) Insufficient floor drainage falls; (5) Welds to vinyl floors deteriorating; (6) Vinyl floor coverings deteriorating; (7) Inappropriate welds and seals repairs; and (7) Use of partitioning material (such as, but not limited to, plasterboard) which is insufficiently resistant to water absorption and the growth of mould.

35. Without prejudice to the generality of the terms of Art. 15 of Condescendence, the Internal Fabric Moisture Defects have been caused, or at least materially contributed to, by: (i) the first defender's design, construction and commissioning works being inadequate and deficient; and (ii) without prejudice to that, the failure of the design, construction and commissioning to comply with at least the following:

(1) Employer's Requirements, Section 2.0 (Responsibilities of the Parties), Section 2.2 (Responsibilities of the Contractor), required that:

"*The Contractor shall be responsible for the following:*

*2.2.1 Providing Works that are fit for purpose; …*".

(2) Employer's Requirements, Section 5.0 (General Design & Construction Requirements), Paragraph 5.1.2, required the Contractor "*to comply with the requirements of the documents listed in Table 2 – NHS Mandatory Documentation in section 5.1.2*". Specific statements of compliance were stated as being necessary, with the bidder required to clarify its approach to compliance. Such NHS Mandatory Documentation in Table 2 included, amongst other things, various SHTMs.

(3) Employer's Requirements, Section 5.0 (General Design & Construction Requirements), Section 5.9 (Materials), Paragraph 5.9.4, required that:

"*The Contractor shall ensure that the whole quantity of each product and material required to complete the Works is of a consistent type, quality and overall appearance and is fit for its intended purpose. The Contractor shall ensure all products and materials are handled, stored, prepared and used or fixed strictly in accordance with the manufacturers' written instructions or recommendations and not to be damaged when incorporated into the Works*".

(4) Employer's Requirements, Section 7.0 (Architectural Requirements), Section 7.9 (Finishes), Paragraph 7.9.5, required that:

"*The following criteria require to be incorporated in the Contractor's proposals for all areas:*

*d) internal partitions shall also be as required by the nature and use of the accommodation and shall incorporate radiation protection requirements, sound reduction, fire resistance, humidity, biological attack and duty as identified by relevant HBN, SHTMs and appropriate British and European Harmonised Standard Specifications, Codes of Practice and ADB Room Data Sheets and as identified elsewhere in this document*".

(5) Employer's Requirements, Section 7.0 (Architectural Requirements), Section 7.9 (Finishes), Paragraph 7.9.10, required various criteria in relation to floors, flooring and floor finishes, coverings, materials, surfaces, profiles, joints, coves, gulleys, gratings, adhesives and the like to be incorporated in the Contractor's proposals (and thereby complied with).

(6) SHTM 56 (Partitions), Paragraph 3.16, required that:

"*Partitions should not comprise materials which promote or sustain the growth of fungi, micro-organisms or insects*".

**Issue 11: Pneumatic transport system ("PTS")**

36. The PTS is a network for transporting specimens within the Hospital. Defects which have been identified in relation to the PTS (the "**PTS Defects**") in the Hospital include (without being limited to) the following: (1) The PTS has been unable to cope with the requisite volume of specimens; and (2) The PTS has suffered an excessive number of failures in operation, including at least 65 failures in the period from November 2018 to February 2019 alone.

37. Without prejudice to the generality of the terms of Art. 15 of Condescendence, the PTS Defects have been caused, or at least materially contributed to, by: (i) the first defender's design, construction and commissioning works being inadequate and deficient; and (ii) without prejudice to that, the failure of the design, construction and commissioning to comply with at least the following:

(1) Employer's Requirements, Section 2.0 (Responsibilities of the Parties), Section 2.2 (Responsibilities of the Contractor), required that:

"*The Contractor shall be responsible for the following:*

*2.2.1 Providing Works that are fit for purpose; …*".

(2) Employer's Requirements, Section 5.0 (General Design & Construction Requirements), Section 5.9 (Materials), Paragraph 5.9.4, required that:

"*The Contractor shall ensure that the whole quantity of each product and material required to complete the Works is of a consistent type, quality and overall appearance and is fit for its intended purpose. The Contractor shall ensure all products and materials are handled, stored, prepared and used or fixed strictly in accordance with the manufacturers' written instructions or recommendations and not to be damaged when incorporated into the Works*".

(3) Employer's Requirements, Section 8.0 (Building Services Requirements), Section 8.2 (Mechanical Systems), Section 8.2.26 (Pneumatic Air Tube Delivery System), Paragraph 8.2.26.1, required that:

"*The Contractor shall provide a pneumatic air tube delivery system as required to the new Facilities to support the Clinical Requirements, as detailed in Appendix M&E7 of the Employers Requirements. The Contractor shall ensure that the pneumatic air transport system shall be designed and installed in accordance with SHTM 2009*".

(4) Employer's Requirements, Appendix M, M&E.7, paragraph 2.3 required that:

*"All components shall be durable, robust and designed for heavy system around the clock use to ensure a smooth, rapid and reliable transmission of every hospital material dispatched".*

**Loss and damage**

38. As a result of the breaches of contract, *et separatim* fault and negligence, of the first, third and fourth defenders, the pursuer has suffered loss and damage. Such loss and damage is reasonably estimated to include, but is not limited to, the following:

| Issue No. | Issue Name | Loss & Damage (£) |
|---|---|---|
| **1** | Water system | 26,500,000 |
| **2** | Standard isolation rooms ventilation | 5,400,000 |
| **3** | Adult Hospital Ward 4B ventilation | 2,100,000 |
| **4** | RHC Ward 2A ventilation | 4,800,000 |
| **5** | Plant and building services capacity | 2,000,000 |
| **6** | Toughened glazing | 5,700,000 |
| **7** | Doors | 10,900,000 |

| | | |
|---|---|---|
| **8** | Heating system | 7,000,000 |
| **9** | Atrium roof | 1,300,000 |
| **10** | Internal fabric moisture ingress | 6,700,000 |
| **11** | Pneumatic transport system ("PTS") | 400,000 |
| **Total** | | **72,800,000** |

39. The total of the foregoing amounts of loss and damage is: £72,800,000. That is the sum first concluded for.

40. As condescended upon above, the first defender has failed to perform the obligations incumbent on it under the Building Contract and, *separatim*, its common law duty, causing the pursuer loss and damage. The second defenders have co-extensively failed to perform or cause to be performed the same obligations, causing the pursuer the same amount of loss and damage as that condescended upon above. Such failures by the second defenders are breaches of the Guarantee. Without prejudice to that generality, they are breaches of the clauses of the Guarantee condescended upon above. Such breaches have caused the pursuer the loss and damage condescended upon above. The total loss and damage, as condescended upon above is: £72,800,000. That is the sum second concluded for. *Separatim*, properly construed, Clause 2 of the Guarantee obliges the second defenders to make payment of that sum as a debt due to the pursuer under and in terms of the Guarantee.

41. This action is necessary in the circumstances

**PLEAS IN LAW**

1. The pursuer having suffered loss and damage through the first, third and fourth defender's breach of contract *et separatim* fault and negligence, as condescended upon, the pursuer is entitled to damages therefor.

2. The sum first concluded for being a reasonable estimate of the loss and damage sustained by the pursuer, decree for payment thereof should be pronounced as first concluded for.

3. The pursuer having suffered loss and damage through the second defenders' breach of contract *et separatim* promise, as condescended upon, the pursuer is entitled to damages therefor.

4. The sum second concluded for being a reasonable estimate of the loss and damage sustained by the pursuer, decree for payment thereof should be pronounced as second concluded for.

5. *Separatim*, the sum second concluded for being a debt due by the second defenders to the pursuer under and in terms of the Guarantee as condescended upon, decree for payment thereof should be pronounced as second concluded for.

IN RESPECT WHEREOF

**IN THE COURT OF SESSION**

**SUMMONS**

in the cause

**GREATER GLASGOW HEALTH BOARD**
**Pursuer**

against

**(FIRST) MULTIPLEX CONSTRUCTION EUROPE LIMITED; and OTHERS**
**Defenders**

_____

2020

MacRoberts
Ref: JAM/NZC/NHS/9/2

SCOTTISH HOSPITALS INQUIRY

**Bundle of documents for Oral hearings commencing from 19 August 2024 in relation to the Queen Elizabeth University Hospital and the Royal Hospital for Children, Glasgow**

**Bundle 17 - Procurement History and Building Contract PPP**

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