Scottish Hospitals Inquiry
Witness Statement of
Ross Ballingall

This statement was produced by the process of sending the witness a questionnaire with an introduction followed by a series of questions and spaces for answers. The introduction, questions and answers are produced within the statement.

Personal Details and Professional Background

1. Name, qualifications, chronological professional history, specialism etc – please provide an up-to-date CV to assist with answering this question. Please provide details of your role working for Multiplex Construction Europe Limited previously, Brookfield Construction (UK) Limited until 21 February 2011 and thereafter Brookfield Multiplex Construction Europe Limited until 31 August 2016 (hereinafter referred to as 'Multiplex') during the time Multiplex was appointed as Contractor in respect of QEUH/RHC, providing details of when you started and left this role, your responsibilities.

A. John Ross Ballingall. BSc Honours in Civil Engineering (Strathclyde University), Chartered Engineer, Member of the Institution of Civil Engineers, Fellow of the Royal Institution of Chartered Surveyors. Following graduation in 1984 I spent 3 years working as a Graduate Consulting Engineer for Dinardo & Partners in Paisley. From 1987 to 1990 I spent 3 years working as an Estate Agent with Slater Hogg & Howison. In 1990 I joined Laing Construction as a Senior Engineer. In 1992 I was promoted to Regional Engineer for Scotland and in 1996 promoted to Regional Engineer for Scotland & Northern Ireland. In 1998 I was moved to Norwich to take on the role of Engineering Manager on the £250m New Norfolk & Norwich University Hospital PFI project. I was involved in this project from day 1 until completion. In addition to the Engineering role I was also made responsible in 1999 for the Management of the Design Process. In 2002 I was appointed Head of Design Services for Laing Construction. This was a Group role covering Design Management, Building Information Management and Graphics. Following the acquisition of Laing by the O'Rourke Group I was appointed Head of Technical Services for Laing O'Rourke

Southern. This gave me responsibility for all Civil/Structural Engineers and Design Managers. In 2004 I was appointed Project Director for Alfred McAlpine for the £80m Elective Care Centre PFI at Addenbrookes Hospital. In 2006 I was appointed Project Director by Multiplex for the £350m Peterborough Hospitals PFI. I was appointed a Director of Multiplex in October 2006. In July 2009 I led the Multiplex team that bid and won the QEUH Project and stayed as Project Director until my appointment as Managing Director for Multiplex on 1st January 2011. In June 2019 I became a Non Exec Director working 90 days a year for Multiplex covering Europe, Middle East and Canada. I retired on 19th June 2020. In my role as Project Director on QEUH I was responsible for leading the Multiplex Design and Build team and ensuring that we worked as one team with the QEUH team and their advisors. Whilst this was a long time ago and a lot of the detail has gone from my memory I will try as best I can to explain how things worked. I will start with the Bid period as this is where our design proposals were developed with the QEUH team. Following prequalification Multiplex were invited to participate in Competitive Dialogue on 1 May 2009. Multiplex and the other bidders were issued the same set of Employers Requirements that set out the QEUH teams exemplar design and project requirements.

To provide the best solution and proposals we could I put together a team of healthcare professionals most of whom we had worked with before on Peterborough Hospitals PFI. This team was made up of Nightingales as Lead Designer and Architect, Tribal as Health Planners, Zisman Bowyer and Partners as Mechanical and Electrical Consultant, WSP as Civil/Structural Engineers and Fire Consultants, Gillespies as Landscape Architects and Doig & Smith as Cost Consultants. From our supply chain I appointed Mercury Engineering as our Mechanical & Electrical Contractor, Dunne Civil Engineering as our Concrete frame contractor, Astins as our Internal partition contractor and Structal as our curtain walling contractor. In addition I had my own team of Construction Managers, Design Managers, M&E Managers, Commercial Managers, Legal team, Planning (Time) Managers. All of these parties, with the exception of the Dunne Group, had worked with Multiplex and me on Peterborough Hospitals PFI. My role was to manage the input of all these parties as we developed our design, construction and cost proposals with the QEUH team. The bid process involved a series of half day dialogue session. These sessions covered Design (5 separate sessions), Laboratories, Logistics and Commercial/Legal (all 3 separate sessions). These sessions took place over a 2 month period starting in May 2009. At

each session we tabled our proposals for these topics to the QEUH team and received their feedback on whether they liked it or not. Between sessions my team worked on addressing the QEUH team comments we had received at the previous sessions. My role in this was to ensure that my team knew what they had to do and had the resources to do it in the time frame. I led the Dialogue sessions providing an executive update on what we had been doing since the last session. It was then up to my team to go through the detail with the QEUH team. The QEUH team comprised the parties who had been responsible for developing the Exemplar design. It comprised Currie and Brown (Project Managers), HLM (Architects), Buchan Associates (Health Planners), Wallace Whittle (Mechanical & Electrical Consultant), URS (Civil/Structural Consultant) Susan Logan (Energy Consultant). Infection Control feedback was provided through the QEUH team. Members from these organisations attended the Dialogue Sessions as required to provide feedback. So there were a lot of parties involved in developing a significant amount of information for our bid. The intended Contract Form – NEC3, encourages collaboration between all parties and as the dialogue sessions continued the relationships between all parties became very strong. From the Multiplex side it was my responsibility to ensure that my team were working collaboratively both internally and with the QEUH team. Alongside the developing design I had teams working on many fronts – Laboratories construction methods and cost and programme, overall site logistics, construction methodology, construction programmes, costs for each stage and Contract negotiations. Following the last Dialogue session on July 2009 the bidders had until October to develop the documentation needed to support their bid. This was a significant amount of work in a short period of time, but my view was that the more we could give the QEUH team the better they would be able to understand and mark our submission. Our submission comprised everything the QEUH team asked for in their bid documentation. The list is extensive but worth going through as it demonstrates the detail that had been agreed through the Dialogue Groups.

The drawings provided were: 1:500 masterplan showing the entire campus and how it would work, 1:500 departmental relationship drawings showing department sizes, adjacencies and patient flows, 1:200 department layout plans, 1;200 Elevations, 1:200 exemplar sections through the buildings, 1:50 room layout drawings with Elevations for the rooms requested by the QEUH team, 3D images of some of the public spaces and parks, 1:500 landscaping drawings. This main suite of drawings was supported

by written documentation: Wayfinding Strategy, Finishes Schedule, Door & Ironmongery Schedule, Acoustic Strategy, Arts Strategy, Fire Engineering Design Strategy including drawings, Structural Engineering Design Strategy including drawings, Drainage Design Strategy, Main Incoming Utilities Design/Connection Strategy, Water Services Strategy, Heating Strategy, Ventilation and air treatment Design Strategy, Mains and Sub Power Distribution Strategy, Lighting Strategy, Lift Engineering Design Strategy, Medical Gases Design Strategy with schematic drawings, Pneumatic Tube System Design Strategy with schematic drawings, Plant Room Design Strategy, Control System including Building Management System schematic drawings, Sustainability Design Statement, BREEAM Scoring Schedule and Energy Strategy with approach to Renewables. As you can see a significant amount of documentation sitting alongside our bid submission. This was all submitted with our cost proposals and contract commentary. My role was making sure it all happened and was of a high quality. Following the submission of our bid there was a period of 2 or 3 months during which the QEUH team and their advisors assessed the 3 bids. There were questions and answers back and forth clarifying our submission. All bids were scored against the criteria set out in the tender documentation and In December 2009 Multiplex were awarded the Contract. Following appointment, I continued as Project Director and led the Multiplex team. We were appointed to carry out the construction of the Laboratories Building. This work started pretty much immediately on an already cleared area of the campus. We were also appointed to progress the detailed design of the Adult and Children's Hospitals. This work had a clearly defined set of deliverables all geared to allowing the QEUH team to develop their Full Business Case for approval by the Government.

Whilst I obviously had responsibility for overseeing the Laboratory Construction this was a lesser part of my role. My main focus was on the design progress and on the construction methodology for the main Adult and Children's Hospital. One of the first activities was to agree a stage 2 programme for User Groups and Reviewable Design Data. The Adult Hospital was split in 23 User Groups covering all the departments. The Children's Hospital was split into 22 User Groups. Through workshops with the QEUH team a programme was agreed allowing for either 2 or 3 User Group meetings for each department to review and finalise the 1:200 layout drawings. This was then followed by 3 User Group meeting for each department to review and sign off the 1:50 layout drawings, elevations and Room Data Sheets. This programme started in

December 2009 and ran through until October 2010. From the Multiplex side the User Group meetings were attended by Nightingale Architects, Tribal Health Planning, ZBP M&E Consultant, WSP Civil & Structural Consultant, Doig and Smith Cost Consultant, ACL Acoustic Consultant, WSP Fire Consultant and Multiple Design Management staff. THE QEUH team were represented by their own Project Managers, their advisors and the review teams from the User Departments. Not everybody had to be at every meeting. The programme for achieving sign off of the Health Planning was critical in allowing The QEUH team to go to Full Business Case and for Multiplex to develop the suite of construction information needed to start work on site as soon as Government approval was reached. My role in this was to make sure everything kept running smoothly, that resource was where it needed to be and to help clear any blocking points. I worked very closely with the QEUH team in doing this. In tandem with the User Group meetings there was a considerable amount of other design information required for the QEUH team full Business Case. This information was set out in Appendix K of the Contract and was split into 2 parts. The first part was the information the QEUH team needed to agree prior to Full Business Case and Part 2 was the rest of the information they wanted to agree. A process called Reviewable Design Data was put in place by Currie and Brown. This documented the level of sign off of each piece of information whether it be a drawing, a specification or other design information such as sample boards or material data. Again, my role in this was to make sure the process ran smoothly and clear any blockages. As the design progressed Multiplex continued to develop their construction methodology and programmes.

My Multiplex team at this time would have been circa 60 people covering construction management, engineering, design management, health and safety, commercial management, programme management etc. Having appointed our key Trade Contractors to work on the Project with Multiplex we were in a fortunate position of not having to procure too many trades ahead of Full Business Case. Some specialist packages such as Piling and Site accommodation were procured early to meet the programme requirements. The site accommodation was shared between the QEUH team and the Multiplex team ensuring that there was a very high level of collaboration on all fronts. Relationships were very strong throughout the entire Project team. High level blockages were dealt with at the weekly Project Management Group meetings. These were attended by senior management from each party and were very effective

in keeping the project on track. At the end of 2010 the team had achieved the goals required for Full Business Case. This was successful and Multiplex were then appointed to move onto Stage 3, the construction of the Adult and Children's Hospital.

On the 1st January 2011 I was appointed Managing Director of Multiplex Europe. I was replaced as Project Director by Mike Sharples who had successfully delivered the Peterborough Hospitals PFI project. I carried on attending the Project Management Group meeting for a few months until Mike was full in control. My involvement beyond that was to attend Monthly Project Reviews. These were pretty high level with my main focus being on progress, financials, staffing and any blockages I could assist with. I would also have a site walk looking at progress, quality and Health & Safety. I attended Monthly Project Reviews on all of our Projects. At the time of becoming Managing Director we had roughly 8 live projects. When I stepped down we had over 20 live Projects and an annual turnover of £1.2 billion

2. What previous experience or training, if any, did you have to working as Director of Construction? How, if at all, did this experience serve you for the role in respect of the QEUH/RHC?

A. My healthcare experience started on the £250m Norfolk and Norwich Hospital PFI project in 1998. I originally joined the Project as Engineering Manager but soon took over the role of Design Manager as well. This experience taught me very quickly the iterative nature of design in healthcare premises and the need to have very clear processes for its development and approval. I was later appointed Project Director by Alfred McAlpine for their £80m Elective Care Centre PFI at Addenbrookes Hospital then appointed as Project Director by Multiplex for the £350m Peterborough Hospitals PFI. All 3 projects were completed successfully on time. Whilst the QEUH/RHC is not a PFI the processes you go through to manage the design, procurement and construction are pretty much the same.

3. Please provide details of any other healthcare projects that you were involved in prior to the QEUH & RHC.

A. As above plus 2 peer reviews on the Fiona Stanley Hospital in Perth, Australia. I also advised on some bids for Hospital Projects in the Middle East and Canada.

4. **Please refer to page 3 of Bundle 43, Volume 3, Document No. 12, Page 493.** The Inquiry understands that Multiplex refers to itself as having 'Specialist Contractor and Design Team staff'. Please explain what having a 'Specialist Contractor and Design Team' means, what this entails, what necessary qualifications/experience the team holds, the relevance of this specialism relative to building healthcare premises.

A. The full statement reads "the key Brookfield, Specialist Contractor and Design Team staff who have worked so effectively with the Board's team etc" which puts a different emphasis on the statement. What Multiplex are saying here is that the key people in the Multiplex team, the specialist contractor teams and the design team will carry on from bid stage onto the Project. The Specialist Contractors (as opposed to the Main Contractor – Multiplex) are Mercury Engineering who were the Mechanical & Electrical Contractor. Dunne Group who were the Structures and Civils Contractor, Structal the Curtain Walling Contractor and Astins the Internal Partitions Contractor. All had input through the bid phase on design, buildability and costs. The key design team was Nightingales the Architect, Tribal the Health Planners, WSP the Civil/Structural Consultant and ZBP the Mechanical and Electrical Consultants. Again all had been involved through the bid stage and team continuity into the next stage was crucial.

a) Why, in your opinion, was the continuity of the Specialist Contractor and Design Team staff to the next stage of the bid process crucial?

A. Because they had all been an integral part of our bid team and were collectively responsible for our bid submission and ownership of the content. They had detailed knowledge of the dialogue discussions and agreements with the QEUH team in relation to the development of the exemplar design and that knowledge had to continue into the next phase.

5. On the Multiplex website it states:
'We [Multiplex] have a long track record of delivering world-class hospitals and aged care facilities that enhance wellbeing and safeguard the day-to-day running of existing operations…

Our teams are skilled in the detailed planning and robust scenario-testing required to ensure safety and surety of delivery in highly sensitive environments….

We are experts in delivering state-of-the-art medical facilities in collaboration with our specialist supply chain. Our UK portfolio includes the largest hospital campus in Europe, Scotland's largest children's hospital, and luxury later living accommodation in Chelsea, London.'

a) In delivering world-class hospitals, please explain the level of knowledge and understanding of healthcare regulations and guidance expected of Multiplex staff?

A. Multiplex staff would not necessarily have a deep knowledge of healthcare regulations and guidance. This knowledge would sit within our Design Team, who would ensure that the regulations and guidance are followed or clarified and that those decisions are captured in the suite of documents that become Construction Information. This would include drawings and specification as well as Room Data Sheets. If the Construction Information refers to compliance with a regulation or guidance relevant to the stage of work being carried out by the Multiplex Employee, then the Multiplex employee is expected to be/become familiar with those requirements.

b) Explain your personal knowledge, understanding and any relevant qualifications in healthcare regulations and guidance?

A. I am aware of Healthcare Regulations and Guidance but do not have a deep knowledge.

c) Please explain your understanding of the importance of compliance with healthcare regulations and guidance for infection prevention and control?

A. It is very important, and Infection Control sign off was a key part of the design process. Knowledge of the requirements sits within our Design team who developed their designs in conjunction with the QEUH team. The QEUH team provided Infection Control input and approval of the developing design.

d) Who from the QEUH team provided Infection Control input and at what stage?

A. I am sorry I cannot remember the lady's name, but she was an NHS employee and worked with the QEUH team. It was the responsibility of the QEUH team to get sign off from their Infection Control adviser.

e) Why was it important to follow guidance in respect of the QEUH project?

A. It was important to follow guidance along with all the other documents that collectively defined what the Client wanted. The Employers Requirements, derogation and the

various clarification logs also had to be followed.

Appointment as Contractor

6. The Inquiry understands that Multiplex was appointed as Contractor to undertake the works for the QEUH & RHC. The works under the Building Contract were to be carried out in stages: Stage 1 (Construct Laboratories), Stage 2 (Detailed design of hospital to FBC submission), Stage 3 (Construction), Stage 3A (Demolition surgical block and landscaping) **(Please refer to Bundle 17, Document No. 12, Page 613)**

a) Describe the appointment process leading up to the Multiplex's appointment as Contractor.

A. I think I pretty much answered this in question 1 but will repeat the relevant parts for clarity. Following prequalification Multiplex were invited to participate in Competitive Dialogue on 1 May 2009. Multiplex and the other bidders were issued the same set of Employers Requirements that set out the QEUH teams exemplar design and project requirements. The bid process involved a series of half day dialogue session. These sessions covered Design (5 separate sessions), Laboratories, Logistics and Commercial/Legal (all 3 separate sessions). These sessions took place over a 2 month period starting in May 2009. At each session we tabled our proposals for these topics to the QEUH team and received their feedback on whether they liked it or not. Between sessions my team worked on addressing the QEUH team comments we had received at the previous sessions. My role in this was to ensure that my team knew what they had to do and had the resources to do it in the time frame. I led the Dialogue sessions providing an executive update on what we had been doing since the last session. It was then up to my team to go through the detail with the QEUH team. The QEUH team comprised the parties who had been responsible for developing the Exemplar design. It comprised Currie and Brown (Project Managers), HLM (Architects), Buchan Associates (Health Planners), Wallace Whittle (Mechanical & Electrical Consultant), URS (Civil/Structural Consultant) Susan Logan (Energy Consultant). Infection Control feedback was provided through the QEUH team. Members from these organisations attended the Dialogue Sessions as required to provide feedback.

So, there were a lot of parties involved in developing a significant amount of

information for our bid. The intended Contract Form – NEC3, encourages collaboration between all parties and as the dialogue sessions continued the relationships between all parties became very strong. From the Multiplex side it was my responsibility to ensure that my team were working collaboratively both internally and with the QEUH team. Alongside the developing design I had teams working on many fronts – Laboratories construction methods and cost and programme, overall site logistics, construction methodology, construction programmes, costs for each stage and Contract negotiations. Following the last Dialogue session on July 2009 the bidders had until October to develop the documentation needed to support their bid. This was a significant amount of work in a short period of time, but my view was that the more we could give the QEUH team the better they would be able to understand and mark our submission. Our submission comprised everything the QEUH team asked for in their bid documentation. The list is extensive but worth going through as it demonstrates the detail that had been agreed through the Dialogue Groups.

The drawings provided were: 1:500 masterplan showing the entire campus and how it would work, 1:500 departmental relationship drawings showing department sizes, adjacencies and patient flows, 1:200 department layout plans, 1;200 Elevations, 1:200 exemplar sections through the buildings, 1:50 room layout drawings with Elevations for the rooms requested by the QEUH team, 3D images of some of the public spaces and parks, 1:500 landscaping drawings.

This main suite of drawings was supported by written documentation: Wayfinding Strategy, Finishes Schedule, Door & Ironmongery Schedule, Acoustic Strategy, Arts Strategy, Fire Engineering Design Strategy including drawings, Structural Engineering Design Strategy including drawings, Drainage Design Strategy, Main Incoming Utilities Design/Connection Strategy, Water Services Strategy, Heating Strategy, Ventilation and air treatment Design Strategy, Mains and Sub Power Distribution Strategy, Lighting Strategy, Lift Engineering

Design Strategy, Medical Gases Design Strategy with schematic drawings, Pneumatic Tube System Design Strategy with schematic drawings, Plant Room Design Strategy, Control System including Building Management System schematic drawings, Sustainability Design Statement, BREEAM Scoring Schedule and Energy Strategy with approach to Renewables. As you can see a significant amount of documentation

sitting alongside our bid submission. This was all submitted with our cost proposals and contract commentary. My role was making sure it all happened and was of a high quality. Following the submission of our bid there was a period of 2 or 3 months during which the QEUH team and their advisors assessed the 3 bids. There were questions and answers back and forth clarifying our submission. All bids were scored against the criteria set out in the tender documentation and in December 2009 Multiplex were awarded the Contract.

b) Describe your role and remit, in particular provide details regarding Multiplex's role, responsibility and authority in respect of the design and build of QEUH/RHC.

A. I was the Project Director from bid stage in 2009 to the end of 2010. My role was to lead the Multiplex team which included all of our Design Consultants and Trade Contractors. Multiplex and their team were fully responsible for the design and construction of the QEUH/RHC. Multiplex were provided with a set of Employers Requirements including the exemplar design. Multiplex developed this set of Employers Requirements into their own design which was progressively signed off by the QEUH team, through User Groups and the Reviewable Design Process, as what they wanted.

c) Who was responsible for ensuring that Multiplex complied with the terms of the contract with NHS GGC in respect of the QEUH/RHC project? What responsibility, if any, did Multiplex have for ensuring that the built hospital complied with relevant guidance such as SHTM and SHFN?

A. Multiplex were responsible for complying with the list of guidance, including SHTM's and SHFN's, laid out in the Employers Requirements. These included the various clarification logs which amended those requirements. As the design developed through the User Groups some of the requirements were amended by the QEUH team.

d) Describe how derogations from the Employers Requirements were signed off by NHS GGC. What role, if any, did you have in respect of this? Who was responsible for ensuring that the Board signed off on derogations?

A. Derogations were captured and signed off through the various clarification logs. I managed the process from Multiplex's side. It was managed by Mark Baird from Currie & Brown on behalf of the QEUH team and he was responsible for getting their

approval to any derogations. These various logs captured changes to the Employers Requirements.

e) Describe your working relationship with NHS GGC prior to appointment, had you worked with any members of the NHS GGC Project Team prior to appointment, if so whom and when?

A. The relationship with the NHS GGC team was very professional and engaging through the bid period. They were clearly looking for a team they could work collaboratively with. I had not worked with any members of the NHS GGC project team prior to appointment.

f) Describe your working relationship with NHS GGC during the terms of your appointment, including day-to-day dealings with the NHS GGC Project Team, details of who you worked with and in respect of what matters?

A. The working relationship was excellent between all parties. The entire Project team was based in a purpose-built project office allowing for very easy and quick communication amongst the team. I had day to day dealing with a wide number of the QEUH team both NHS and their professional advisers. My key point of contact was with Alan Seabourne, the QEUH Project Director. I also worked closely with Peter Moir from the NHS. As Project Director I was overseeing all aspects of the Project so my discussions with the QEUH team would have covered pretty much anything that needed my involvement. With Alan Seabourne the main topics would have been: progress to Full Business Case, progress of the design process, progress of the Laboratory Building construction, high level risks, Appendix K agreement and Costs/Contract including the various logs. With Peter Moir discussions would have been more about design progress and sign off, Planning Approval progress, Schedule of Accommodation, Appendix K and mock ups and samples.

g) Describe your working relationship with Currie & Brown prior to appointment, had you worked with any members of Currie & Brown who worked on QEUH/RHC prior to appointment, if so whom and when?

A. The relationship with Currie and Brown was very professional and engaging through the bid period. I had not worked with any members of the Currie & Brown team prior to appointment.

h) Describe your working relationship with Currie & Brown during the terms of your

appointment, including day-to-day dealings, and details of whom you worked with?

A. The working relationship with Currie and Brown was very good. Currie & Brown were a pretty seamless part of the QEUH team and had a role in most things. The main people I dealt with were Mark Baird, Douglas Ross and David Hall. Through 2010 most of my dealings with the Currie and Brown team would have been in relation to the Construction Contract for Stage 3. There was a lot of work done on capturing the Contractors Proposals and providing clarity to the agreements through various logs. The main logs were: the BIW log which detailed what of the NHSGGC Employers Requirements remained relevant and what had been replaced by Multiplex information, The RFI (Request for Information) log which tracked queries and responses, The M&E Log which captured agreements on M&E Matters and the Clarification Log which covered pretty much anything else. These logs were used to capture changes from the Employers Requirements. The other area of involvement with Currie & Brown was on the costings and agreement of the Target Price.

i) Describe Currie and Brown's role and responsibilities in respect of the project. Are you aware of any changes to their role during the project, if so, please explain.

A. Currie and Brown were the NSGH Boards Lead Consultant and led the Technical Advisory Team.

The consultancy services they provided were: Lead Consultant/Project Manager, Employers Agent, Architectural Design and Site Masterplanning, Healthcare Planning, Civil & Structural Engineering, Building Services Engineering and IT Infrastructure, Cost Consultancy/Quantity Surveying/Lifecycle costing, CDM Coordinator, Procurement and Construction Management advice, Landscape Architect, Risk and Value Management advice and Facilities Management advice (soft and hard FM. Currie And Brown were involved in the preparation of the Employers Requirements and ran the bid process for the QEUH team. They were then responsible for providing the above services to the QEUH team through the design and construction phase of the Hospital. They led the signoff process of the Multiplex design checking for compliance against the Employers Requirements. They also managed all payments to Multiplex. Throughout they were an integral part of the QEUH team.

I am not aware of any changes to their appointment through the course of the Project.

j) Describe your working relationship with Capita prior to appointment, had you worked

with any members of Capita who worked on QEUH/RHC prior to appointment, if so whom and when?

A. I had not worked with any members of the Capita team prior to appointment.

k) Describe your working relationship with Capita during the terms of your appointment, including day-to-day dealings, and details of whom you worked with?

A. I did not have a lot to do with Capita, who I think only joined the QEUH team towards the end of 2010.

l) Describe your understanding of Capita's role and responsibilities in the project.

A. Capita were the QEUH team Supervisor. Their primary role was to carry out testing and inspections to confirm that the works completed by Multiplex were compliant with the contract. Where issues were found, Capita would issue a defects note which Multiplex would resolve. They also monitored the programme, agreed payments and advised the QEUH team on the implications, cost and time, of any changes. I believe Capita issued the final completion certificate with agreed schedule of defects.

m) Who did you report to on a day-to-day basis?

A. The Board of Multiplex Europe.

n) In respect of other contracts and sub-contractors, explain which contractors and sub-contractors Multiplex had worked with prior to appointment, describe your day-to day working relationship with them, and details of whom you worked with?

A. The main subcontractors at the time of my involvement in the QEUH were Mercury Engineering – M&E Contractor, Dunne Group – Concrete Contractor, Astins - Drylining Contractor, Structal – Curtain Walling Contractor and Praters – Cladding Contractor. I had worked with all of these businesses on Peterborough Hospital with the exception of Dunne Group. Day to day working relationships were extremely good. I dealt with the Managing Directors of each business as well as their Project Directors where applicable. Mercury Engineering's Project Director was Ed McIntyre and MD Mick Kennedy. Dunne Group Chief Executive was Gordon Dunne supported by Kevin Graham. Astins Chief Executive was Dominic Tutt with Jim Flinn as Project Director. Structals Managing Director was Charles Lawton. Sorry I can't remember their Project Directors name. Praters MD was Richard Unwin supported by Andy Newman. The Multiplex design team comprised Nightingale Architects where Neil

Murphy was my main contact, ZBP (WW) as M&E consultant where Steve Pardy was my main contact and WSP as Civil/Structural Engineers where Peter Dunbar was my main contact. I had worked with them all before and relationships were very strong.

o) Describe Mercury's role and responsibilities in respect of the project.

A. Mercury was the Mechanical, Electrical and Public Health Engineering Contractor appointed by Multiplex. They were responsible for design (where specified), manufacture, supply, installation, commissioning and set to full operation of the Mechanical, Electrical and Public Health works.

Review of the 'Works Information'

7. What information was provided to Multiplex to assist with the planning and costing of the project to enable Multiplex to prepare the Contractor's Proposals?

A. The Invitation to participate in Commercial Dialogue was issued in 3 Volumes of information. Volume 1 titled "Project Scope and Commercial Documents" contained a narrative covering the following: Project Scope, Project Management, Programme, Procurement Strategy, Competitive Dialogue Strategy, Guidance to Bidders, Project Organisation and Bid Returns and Evaluation. This basically set out how the QEUH team wanted the bid stage to run. Volume 2 titled "Employers Requirements" set out the technical and clinical requirements. These included 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, Schedule of Accommodation and Equipment Lists. Volume 3 titled "Bid Return and Evaluation" detailed the range of deliverables required from bidders and the evaluation strategy and scoring approach that would be applied.

8. The Inquiry understands that NHS GGC provided a list of guidance documents (e.g. SHTM/SHPN) that the design had to comply with, please confirm what elements of the design contained in the Contractor's Proposals, did not comply with guidance, and why and how any non-compliances were highlighted during the tender process and ITPD process?

A. The NHS GGC did provide a list of guidance documents that the design had to

comply with. As part of Multiplex's submission we provided a commentary on what Guidance we would/would not follow. Throughout our Contractors Proposals there would have been elements that did not comply with Guidance either in whole or in part. These were clarified in the various Strategy Documents submitted. Prior to signing of the contract these "non- compliances" were captured in the various Logs included in the Contract. Any changes proposed by the Multiplex team to the exemplar design and requirements would have been discussed with the QEUH team and their advisors at the various Competitive Dialogue Sessions. At these sessions we got feedback on what was/was not acceptable and what the QEUH team liked/didn't like.

a) When you refer to "Strategy Documents" which documents are you referring to exactly?

A. There were numerous strategy documents included with our bid. These covered Wayfinding, Architectural Design, Acoustics, Art, Fire Engineering, Structural Engineering, Drainage design, Main Incoming Utilities design, Water Services, Heating design, Ventilation and Air Treatment design, Lighting, Lift Engineering, Medical Gases, Pneumatic Tube, Plantrooms, BMS and Maintenance & Plant Replacement.

b) Describe the sign off process for any changes to the exemplar design and requirements.

A. The development of the Exemplar design was controlled through the User group meetings and the reviewable design process. In the user group meetings, the QEUH Team would clarify to my team of designers/health planners/Engineers exactly what they wanted and how they wanted each department to work. These requirements were then worked up by my design team and captured on the design documentation for each room – 1:50 layouts, room data sheets and elevations. This information was reviewed at subsequent user group meeting then ultimately approved through the reviewable design data process.

c) Describe any changes to the exemplar design and requirements and your involvement.

A. Any changes would have been proposed by the Multiplex design team either as part of our bid submission or as part of the user group process. The Exemplar design was

very well defined, and the role of Multiplex was to add value to it rather than change it. One example would be the repositioning of the multi storey carpark to create space for a much larger children's play park. My involvement was to manage the various processes and make sure my team was delivering what it was expected to, when it was expected to such that the QEUH team could decide what it wanted.

9. What consideration was given to the impact of any non-compliances on patient safety/infection prevention? At what point, if any, was advice sought from Infection Prevention and Control Staff? If advice was sought, from whom was it sought and what was the advice given?

A. Infection Control was a consideration throughout the design. The QEUH team had an Infection Control expert who signed off the design as it went. Sorry I can't remember the Lady's name. She worked with the QEUH team.

a) What advice did the infection control expert in the QEUH team give on the impact of any non-compliances to patient safety/infection prevention?

A. The input of the QEUH Infection Control expert was managed by the QEUH team. Multiplex would only have been advised of any issues raised.

10. Did Multiplex propose any changes to the exemplar/reference design? If so, please provide details of the changes and why?

A. The exemplar design was very well advanced so the opportunities for Multiplex were to improve on the Exemplar where possible. Some examples are: the shape of the building changed to allow all rooms to have a view, the Masterplan changed to provide a Children's park where the carpark had been, roof play areas were added and the extent of the Basement was reduced. All proposed changes were discussed with the QEUH team and either accepted by them as being an improvement to the exemplar or rejected for not meeting their needs.

11. The Inquiry is aware of the agreed ventilation derogation recorded in the M&E Clarification Log.

(Please refer to Bundle 16, Document No. 23, Page 1662)

a) Describe Multiplex's role in respect of the proposals leading to the ventilation derogation.

A. As part of the Multiplex design submitted at bid stage Chilled beams were introduced

by ZBP in the wards. This reduced the required number of air changes from 6 per hour to 2.5 per hour. The use of chilled beams with the reduced requirement for air changes was seen as a more efficient design solution that saved energy.

b) Why did you/Multiplex consider that it was important for the "design solution" to save energy? Did you/Multiplex consider energy efficiency as the most important aspect of the ventilation system in the QEUH/RHC wards? If so, why? If not, why not?

A. The Energy target and Breeam excellent rating were QEUH team requirements not Multiplex requirements. Multiplex design addressed those requirements and was accepted by the QEUH team as their preferred solution. I did not consider energy efficiency as the most important aspect of the ventilation system although it was clearly important to the QEUH team. The ventilation system still had to meet the Employers Requirements.

c) What was the alterative design solution, if any, to the use of chilled beams?

A. Our bid was based on the use of chilled beams, so I do not believe there was an alternative. Clearly if the QEUH team had decided against the use of chilled beams the design would have changed.

d) 6 ACH is required by SHTM. Explain how a chilled beam 'reduces' that requirement. Is it still not required? Was there a risk assessment. What was IC input? What evidence was put forward of chilled beams operating over a period in rooms with ill patients?

A. Sorry I am not a design Engineer. The matter was discussed at length between my team (Steve Pardy of ZBP and Chris Lovejoy of Multiplex) and the QEUH teams technical advisers (Currie & Brown and Wallace Whittle). Infection Control input was controlled by the QEUH team.

e) You have explained that the Multiplex bid introduced chilled beams with the effect that ACH could be reduced from 6 ACH to 2.5 ACH. Do you accept that such a proposal was not consistent with the requirement for 6 ACH in a General Ward in SHTM 03-01 (Draft), Appendix 1, Table A1 and if yes why did Multiplex propose the construction of a hospital that was not consistent with SHTM 03-01 (Draft)? **(Please refer to Bundle 13, Volume 5, Document No.52, Page 2016)**

A. Yes, I accept that the proposal was not consistent with SHTM 03-01. The solution was developed by ZBP to provide an Energy efficient solution and reflected what the

QEUH team wanted to meet their various requirements.

f) What was the reason for the ventilation derogation?

A. The derogation was to capture the QEUH teams approval of the change from 6 air changes per hour to 2.5 air changes per hour along with the use of chilled beams.

g) Is the Inquiry correct in understanding your answer to 11.a) above that the reason for the derogation was to accommodate the use of Chilled Beams in the Wards?

A. Yes, along with the reduction in air change rate.

h) Who drafted the M&E Clarification Log and who was responsible for updating the Log? Following updates to the log, please provide details of who the log would have been distributed to?

A. I think Currie and Brown drafted the M&E Clarification log. On the Multiplex side it would have been distributed to Steve Pardy at ZBP and Ed McIntyre at Mercury Engineering. Multiplex's M&E Director Chris Lovejoy, Commercial Director Tim Bicknell and Legal Director Ben Keenan would also have been on the distribution. While the log was prepared by Currie & Brown it progressively captured comments from Multiplex and its team of advisors. Comments would be sent back to Currie & Brown who would tidy it all up and reissue.

i) What was the scope of the agreed ventilation derogation recorded in the M&E Clarification Log? In particular, was it restricted to general wards only? If so, (a) how is this interpretation evidenced within the documentation; and (b) where is the specification located for areas that required specialist ventilation and isolation rooms?

A. From memory it related to general wards. This would have been evidenced on the Room Data Sheets under the Environmental Conditions section. For areas that require specialist ventilation this would also have been captured on the Room Data Sheets for those areas. It is the Room Data Sheets that would have been signed off by the QEUH Team for each specialist area.

j) Where in the derogation does the restriction to general wards appear (in order to instruct the later processes). The 6ACH is long standing guidance and was in an SHTM to be complied with. Were you not concerned with its dismissal as 'unnecessary' or reliance on Building Standards (not specific to healthcare)?

A. It doesn't, my understanding is that it related to General Wards. I was not concerned with its dismissal as I was being advised by my Design team (Steve Pardy at ZBP) who agreed the solution with the QEUH teams technical advisors (Stuart McKecknie at Wallace Whittle). The QEUH team were happy to adopt the solution as their requirements.

k) At the time what concerns, if any, did you have regarding the derogation? Did you raise any concerns, if so with whom?

A. I had no concerns.

12. Refer to the ZBP Ventilation Strategy Paper dated on or around 15 December 2009? **(Please refer to Bundle 16, Document No. 21, Page 1657)**

a) What was your/Multiplex's involvement in this document being instructed?

A. Sorry I cannot remember whether the QEUH team requested the document or the Multiplex team offered it.

b) What was the intended purpose of this document?

A. The purpose was to explain the ward ventilation strategy and explain the reasoning behind the introduction of chilled beam with a reduced no of air changes. This was a pretty common design solution.

c) When did you first have sight of this document?

A. When it was produced.

d) Who was the document shared with?

A. The document was produced by ZBP with the input of Stewart McKechnie of Wallace Whittle the QEUH teams advisor. It was distributed within the QEUH team and discussed with them by Steve McKechnie prior to the team accepting the change.

e) How was Multiplex satisfied that the proposals set out in the above document were suitable for use in a healthcare setting?

A. The proposals were put together by the Multiplex Design Team at bid stage. My M&E Director, Chris Lovejoy, was involved in the discussions. My understanding is that it was a common design solution.

f) Just to confirm that you mean that the proposals were a “common design solution” in a healthcare care setting? If not, what did you mean by “common design solution”?

A. I understood it to be an increasingly common design solution in a healthcare setting.

g) To clarify, the proposal set out in the ZBP Ventilation Strategy Paper is a ‘common design solution’ in healthcare premise/ settings notwithstanding the non-compliance with SHTM 03-01 guidance in respect of ventilation?

A. Yes, that is my understanding and that is what was accepted by the QEUH team as meeting their requirements.

h) What concerns if any did you have on reading this document? If so, did you escalate these concerns and to whom?

A. I did not have any concerns.

i) What assurances, if any, were you given in respect of the proposal having regard to the non-compliance with guidance?

A. The solution complied with the requirements of our contract and took account of the Employers Requirements, derogations and the various logs as well as guidance. It was agreed between Steve Pardy of ZBP and Stuart McKechnie of Wallace Whittle and adopted by the QEUH team as an efficient way of meeting their requirements.

13. Are you aware of any risk assessments, whether in compliance with the standards in HAI Scribe or otherwise, that NHS GGC carried out in respect of the change in the ventilation strategy that appears to follow the ZBP Ventilation Strategy Paper dated 15 December 2009? **(Please refer to Bundle 16, Document No. 21, Page 1657)**

A. I am not aware of whether the QEUH team did or did not do any risk assessments in respect of the change. They did have their M&E Technical advisor involved in it before it was signed off.

14. Describe the advice sought, if any, or the involvement, if any, of GGC Infection Prevention and Control staff in respect of the change in the ventilation strategy that appears to follow the ZBP Ventilation Strategy Paper dated 15 December 2009?

A. Infection Control sign off was managed by the QEUH team. Sorry I can’t remember the lady’s name.

15. Who from the GGC Project Team and Board were aware of the ventilation derogation?

A. The following would have been involved: Alan Seabourne the Project Director, Stewart McKechnie the QEUH teams M&E advisor, Mark Baird at Currie and Brown and I assume Mairi MacLeod and Heather Griffin who were the Children's and Adult Hospital Project Manager respectively.

16. How was the ventilation derogation communicated to the wider Project Team?

A. It was captured in the design documents – drawings, specifications, room data sheets etc.

17. What impact did the requirement for a BREEAM excellent rating have on Multiplex's proposed design in particular in respect of ventilation?

A. I don't know the technical answer to that but it would have been a consideration in developing the design solutions.

a) How important a consideration was the requirement for a BREEAM excellent rating on Multiplex's proposed design in particular in respect of ventilation?

A. It was an important requirement of the QEUH team that influenced the design solution.

18. What impact did the energy usage target of no more than 80kg of CO2 per square metre have on Multiplex's proposed design?

A. Again I don't know the technical answer to that but it would have been a consideration in developing the design solutions.

19. The Inquiry is aware that Chilled Beam Units were proposed by Multiplex and accepted for use through the QEUH/RHC. What was the basis for Multiplex proposing to use Chilled Beam Units? Is the use of Chilled Beam Units appropriate throughout hospitals? At the time, what concerns, if any, did you have regarding the use of Chilled Beam Units?

A. I believe it was an efficient way of reducing the number of air changes required and reducing the energy required. I believe that chilled beams are used commonly in hospitals. I had no concerns.

a) To your knowledge are chilled beams appropriate throughout every ward in a hospital?

A. I am not technically qualified to answer that question. If they are not appropriate in specific wards this should have been picked up through the user group meetings and captured on the room data sheets.

b) You state that the function of chilled beams is to reduced ACH? If this is the case, why would these be recommended when this reduced the ACH required in terms of SHTM? What mitigation was put in place to address the reduced ACH?

A. To assist in meeting some of the other requirements of the QEUH team namely BREEAM excellent and the Energy target.

20. Would it have been possible to achieve the sustainability requirements (BREEAM excellent rating and 80kg of CO2 per square meter) if Chilled Beams were not selected for use in the QEUH/RHC?

A. Sorry I don't know the answer to that but would suspect it could not have been achieved.

Full Business Case

21. Under 'Services Systems' confirmation was required "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". The Inquiry is aware of several departures from SHTM 03-01 Guidance in relation to air change rates, pressure differentials and filtration requirements. There was also a variation to the primary extract arrangement for PPVL isolation rooms from that set out in SHPN 04 Supplement 01. Was Multiplex aware at the time, of these non-compliances? If so, please confirm how Multiplex communicated these non-compliances to the NHS GGC Project Team. If no action was taken by the NHS GGC Project Team what obligations, if any, did Multiplex have to report matters further and to whom?

A. Sorry I don't know the detail of this but Multiplex would have been aware at the time. The ventilation strategy for Isolation Rooms was described in our submission document

Ventilation Specification. Following bid stage any clarification required to the Isolation

Room Ventilation would have been captured in one of the various logs, probably the M&E Log. The NHS GGC team would also have been aware of and approved the clarifications.

22. Was the ventilation derogation noted in the M&E Clarification Log, recorded in the Full Business Case? Who was responsible for doing this? If you were aware that it had not been recorded in the Full Business Case, please explain what action, if any, you took.

A. I am not 100% sure but I think the various Logs were captured as part of the Full Business Case documentation.

a) Do you recall the abandonment of the general requirement of 6ACH being mentioned in the FBC given it was going to SG whose Guidance it was?

A. The Full Business Case was produced by the QEUH team and submitted by them. I am not aware whether air changes were covered in it or not.

Design and Construction and Role in the QEUH/RHC Project

23. The Inquiry understands that ward layouts and Room Data Sheets (RDS) were approved through the reviewable Design Data (RDD) process. Describe your role, if any, in the RDD process and the user groups.

A. My only role in the Reviewable Design Process was input into the development of Appendix K, which I think captured all the documentation the QEUH team wanted to see and approve. I also had to make sure that the programme of meeting and submissions was kept on track. Attendees from the Multiplex team would have been our design consultants and Design Managers.

24. How were members selected to be part of a user group?

A. From Multiplex side our designers and Managers attended the user groups that related to their areas of responsibility.

25. Confirm who attended the user groups meetings from Multiplex, the NHS GGC Project Team, IPC, Estates and Clinical teams for the following areas: Ward 4B – QEUH; Ward 4C – QEUH; Level 5 – QEUH; Critical Care – QEUH; Ward 2A & 2B – RHC; PICU RHC – RHC; All Isolation rooms.

A. Sorry I have no idea of who attended these meetings.

26. How often were user group meetings scheduled to review design proposals and agree the design with the user groups?

A. I think there were 3 rounds of meeting to review the 1:200 layouts then a further 3 meetings to review the 1:50 layouts and Room Data Sheets. The user group process took the whole of 2010 and probably continued beyond that.

27. How were designs and the RDS approved to proceed to construction?

A. Through the reviewable design data process. I think there were 3 levels of approval – A proceed to Construction, B Minor comments to take on board then proceed to construction and C not approved amend and resubmit.

28. How was the ventilation derogation communicated to users during the RDD process?

A. It would have been communicated through our M&E consultant ZBP and captured in the Environment section of the Room Data Sheets.

29. Please describe how the technical requirements (air change rates, pressure differentials and filter requirements) for each ward were managed and approved during the user group meetings and the RDD process, including your role and involvement.

A. These would have been discussed at User Group Meetings by our design team then captured in the Environment Section of the Room Data Sheets.

30. Were any requests made by the User Groups during the RDD process that were refused – please provide details.

A. Sorry I can't answer that.

31. **Please refer to Bundle 17, Document No.75, Page 2881.** Appendix 3 states: "Commissioning settings for all elements of the works, including microbiological testing proposals for operating theatres and specialist ventilation… Confirmation that the design team 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".

a) Describe the intended use and purpose of the following wards in QEUH/RHC: Ward 4B – QEUH; Ward 4C – QEUH; Level 5 – QEUH; Critical Care – QEUH; Ward 2A &

2B – RHC; PICU RHC – RHC; all Isolation rooms.

A. Sorry I was not involved at that level of detail.

b) With the benefit of hindsight, was the intended use and purpose of Wards not a relevant and material consideration when considering the ZBP Ventilation Strategy Paper?

A. No, not in my role. I managed the processes and had a team of designers and managers who dealt with the design detail. My design team met with the various user groups who set out their clinical requirements for each area of the hospital. Any requirements for specialist areas would have been captured on the room data sheets.

c) Who, if anyone, form Multiplex would have been aware of the intended use and purpose of Wards?

A. Our Architects (Nightingales), M&E Engineers (ZBP) and Multiplex's design managers would have been aware.

d) How, if at all, would it be possible to ensure that "the design team 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" if the intended use and purpose of the Wards was not known?

A. There was a user group process where my design team met with the QEUH team and discussed the clinical requirements for every area of the hospital including wards.

e) What were the specifications of these wards?

A. Sorry I was not involved at that level of detail.

f) What guidance was considered in the design of these wards, what processes were in place to ensure guidance compliance?

A. Sorry I was not involved at that level of detail, but I believe our submission had a section in it confirming what guidance we were adopting and what we were not adopting. As discussed earlier the Logs were used to capture clarifications then the Drawings, specifications and Room Data Sheets were signed off through the Reviewable Design Process.

g) Who from Multiplex would be in a position to answer this question?

A. Steve Pardy from ZBP and Emma White from Nightingales.

h) Were there any changes to the design during the design and build, if so, please describe any such changes, describe the impact, if any, on guidance compliance as set out in Appendix 3, and describe the sign off process for any such changes, your involvement and how any changes were communicated to the Board. Was external advice ever sought in respect of design changes?

A. The design of a hospital is a very iterative process so yes there would have been design changes as the detailed design was completed. These changes would be in the detail of the design and not in the design principals agreed. Changes may also have been requested by the QEUH team. Changes would have been managed through the Reviewable Design Process and the issue of Project Managers Instruction if instigated by the QEUH team.

32. Describe your involvement and understanding, if any, of the decision to remove carbon filters? What was the rationale behind this decision, who was involved and what advice, if any, was sought in reaching this decision?

A. Sorry I had no involvement in this decision or knowledge of it.

33. Were any specialist design workshops required? If so, please provide details.

A. I am sure there would have been but have no recollection of what they were.

34. Were Value Engineering meetings/workshops held during the design phase? Please provide details of any agreed value engineering elements.

A. Most Value Engineering would have been carried out at the bid stage and been captured in our design and submission. I don't recall specific workshops with the QEUH team.

a) **Please refer to Bundle 43, Volume 1, Document No.11, Page 35**. This document highlights the potential Value Engineering items in respect of the QEUH/ RHC. The Inquiry understands that this was document prepared by ZBP, who were the mechanical and electrical engineers appointed by Multiplex. At point 6 it states: *'Reduce primary fresh air from 4 to 2 ½ air changes (revert to bid proposal)'*. Please explain your understanding of this document. Was the initial bid proposal only to have

2.5 ACH?

A. This document captured VE Ideas at a point in time. The original bid was based on 2.5 air changes.

b) What risk assessments if any, were carried out in order to assure Multiplex that this bid proposal was suitable for a healthcare setting?
The Inquiry understands from this document that it was always the intention to have 2.5 ACH, is this correct? If so, who from NHS GGC at the bid stage would have been aware of this?

A. The proposal was put together by ZBP under the watch of my M&E Director Chris Lovejoy and was included as part of our bid. The QEUH team were aware of this proposal. Main people who would have known would have been Alan Seabourne and Peter Moir from the QEUH team and key members of the technical advisory team probably Mark Baird and Stuart McKechnie.

c) The document further notes that neither 4 nor 2.5 ACH were SHTM complaint. At what point, if any, was NHS GGC made aware of this? Who was advised?

A. I am not sure exactly when the QEUH team were advised of this but it is clearly recognized in the M&E Log where the derogation is captured. Again Alan Seabourne, Mark Baird and Stuart McKechnie were fully involved in the decision.

d) **Please refer to Bundle 43, Volume 1, Document No.32, Page 113**. Is the Inquiry correct in understanding that this document proposes the use of chilled beams in renal dialysis and a reduction in ACH from 10 to 2.5?

A. Yes that is correct. The rational behind this proposal is explained in the document.

e) What was the purpose of this proposal, who signed it off from NHS GGC? What risk assessments were carried out in respect of this proposal?
What is your understanding, if any, of the impact of this proposal?

A. Sorry I don’t know the answer to that. I don’t know whether the proposal was accepted or not but it would have gone to Alan Seabourne, Mark Baird and Stuar McKechnie.

Ward 4B and 4C

35. The Inquiry understands that Ward 4B in the QEUH was originally intended to provide accommodation for Renal and Haemato-oncology patients. The 2009 NHS Clinical Output Specification for the Haemato-oncology ward stated, “Please note the haemato-oncology ward area has a very specific 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 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 neutropenic patients as in the Beatson West of Scotland Cancer Centre.” **(Please refer to Bundle 16, Document No.15, Page 1595)**. However, following a Change Order Request in July 2013 by Jonathan Best **(Please refer to Bundle 16, Document No.29, Page 1699)** it was confirmed that the Bone Marrow Transplant (BMT) service would transfer to Ward 4B in the QEUH and the haematology patients that were originally planned to accommodate Ward 4B would move to Ward 4C.

a) Please confirm how this change was communicated to Multiplex and how this change was captured in the revised design and specification documentation, following the Change Order Request.

A. It would have been issued as a Change Order by the QEUH following a study on design feasibility, programme impact and cost. Once the Change Order had been issued it would have been sent to the relevant parties in our design team to incorporate the change into the design.

b) Please confirm if Multiplex highlighted any risks with the proposal to move the adult BMT Unit to the QEUH.

A. Sorry I was not there at this time so have no knowledge of this.

c) When did you stop working on the QEUH/RHC project?

A. At the end of 2010.

d) In 2013 please confirm if Multiplex highlighted any risks with the proposal to move the adult BMT Unit to the QEUH.

A. Sorry I have no knowledge of this.

e) Did Multiplex advise the GGC Project Team that the requirements set out in SHTM 03-01 relating to air change rates, pressure differentials and filtration requirements would

not be achievable in Ward 4B at the QEUH?

A. Sorry I was there at this time so have no knowledge of this.

f) Who approved the lower specification from the GGC Project Team and the Board for the adult BMT service?

A. Sorry I was not there at this time so have no knowledge of this.

g) Why were suspended ceilings installed in Ward 4B given that the original Clinical Output Specification (COS) referred to 'space sealed' – did Multiplex raise this as a non-compliance with the 'Works Information'?

A. Sorry I was not there at this time so have no knowledge of this.

h) The Inquiry understands that the original design specification for Ward 4B called for a 'sealed space' during your time on the project. Therefore did Multiplex raise the suspended ceilings as a non-compliance during your time on the project? If not, why not? If so, what action, if any, was taken to accommodate this?

A. I was not involved at this level of detail. However, ward 4B, like all others, would have been discussed through the user group meetings and the QEUH teams requirements clarified and captured. The ceiling type would have been captured on the Room Data Sheet and approved by the QEUH team.

i) Please confirm who approved the reflected ceiling plans for this area.

A. I was not there at this time but it would have been the QEUH Team.

j) As construction progressed on site, please confirm if suspended ceilings were highlighted as non- compliant with the COS (works information).

A. Sorry I was not there at this time so have no knowledge of this.

k) Why was no back up Air Handling Unit (AHU) provided for Ward 4B? Who approved this decision? And what strategy was agreed for PPM or equipment failure?

A. Sorry I was not there at this time so have no knowledge of this.

l) In respect of Ward 4C, what was the specification of this ward at the point of the Change Order? Did you understand that Ward 4C was to be used to house

immunocompromised patients? If so, what was the justification from departing from SHTM guidance in respect of ventilation, pressure and filtration requirements and who signed this off?

A. Sorry I was not there at this time so have no knowledge of this.

m) What was your understanding of the requisite air change rate required in accordance with SHTM guidance in respect of Ward 4B and 4C, and was this the air change rate achieved? If not, why not and who signed this off? What risk assessments were considered in respect of this decision?

A. Sorry I was not there at this time so have no knowledge of this.

Ward 2A/ 2B RHC

36. The Inquiry understands that Ward 2A/2B is the paediatric-oncology Unit and includes the Teenage Cancer Trust and the paediatric Bone Marrow Transplant (BMT) Unit - the department is known as the Schiehallion Unit.

a) Confirm your understanding regarding the intended use and purpose of the Ward 2A/2B, what guidance was considered in the design of these wards, what processes Multiplex put in place to ensure guidance compliance?

A. Sorry I was not involved at this level of detail.

b) With the benefit of hindsight, as Project Director for Multiplex ought this not to have been within your knowledge?

A. No, not at this level of detail. The clinical requirements for these wards would have been discussed between my design team and the QEUH team at the user group meetings. The QEUH requirements would then have been captured in the design documentation.

c) If you were not aware, who would have been?

A. Emma White from Nightingales and Steve Pardy from ZBP.

d) What changes, if any, were made to the design during construction? Please describe any such changes, describe the impact, if any, on guidance compliance, and describe

the sign off process for any such changes and your involvement. Was external advance ever sought in respect of design changes?

A. Sorry I was not there at this time so have no knowledge of this.

e) Who from Multiplex would have been involved at the time?

A. Mike Sharples was the Project Director until his untimely death. He was replaced by Alistair Fernie. Darren Pike was the M&E Director and Darren Smith the Senior Design Manager. Nightingales and ZBP would also have been involved in any changes.

f) Describe the IPC involvement in the design of Wards 2A and 2B, who was involved and who signed off the final design and when?

A. Sorry I was not there at this time so have no knowledge of this.

g) What concerns, if any, did you have regarding the final design specification of Wards 2A and 2B, and what action, if any, did you take in respect of these concerns?

A. N/A.

37. What was your understanding of the requisite air change rate required in accordance with SHTM guidance in respect of Ward 2A and 2B, and was this the air change rate achieved? If not, why not and who signed this off? What risk assessments were considered in respect of this decision?

A. Sorry I was not there at this time and was not involved at this level of detail.

<u>Isolation Rooms</u>

38. Describe how the number and location of the isolation rooms was agreed? Who approved the final number and locations in the QEUH and RHC?

A. I wasn't involved in the detail, but they would have been developed from the exemplar design through the User Groups and signed off by the NHS GGC team.

39. Who was responsible for producing the drawings and the specification for isolation rooms; who approved these from the NHS GGC Project Team?

A. It would have been a combination of Nightingales the Architects and ZBP the Mechanical & Electrical Engineers. They Drawings and Specifications would have been approved through the Reviewable Design Process.

40. What concerns, if any, did you have regarding isolation rooms and compliance with SHTM/HTM? What action, if any, did you take in respect of any such concerns?

A. No concerns.

a) What assurances did you/ Multiplex have in order to have no concerns in respect of isolation room and compliance with SHTM/HTM?

A. Multiplex had appointed a professional design team to work with the QEUH technical advisory team to develop our design against the QEUH teams requirements. This was developed through the user group meetings where the QEUH requirements for Isolation Rooms were captured.

41. The Inquiry has reviewed the RDS in excel format and notes that there is an entry under 'Design Notes' relating to Ward 2A isolation rooms, the entry states:
"WARNING NOTICE: This room is based on a theoretical design model; which has not been validated (see paragraph 1.8 of HBN 4 Supplement 1). Specialist advice should be sought on its design. The lamp repeat call from the bedroom is situated over the door outside the room."

a) Was this note entered on the RDS? If so, why and by whom?

A. Sorry I was not involved at this level of detail.

b) What specialist advice was sought relating to the design of these rooms

A. Sorry I was not involved at this level of detail.

c) What was the final agreed design for isolation rooms and who approved this?

A. Sorry I was not involved at this level of detail but it would have been approved through the Reviewable Design Process.

42. Why was the main extract placed in the patient's bedroom and not the ensuite as outlined in SHPN 04 Supplement 01? Why was this change requested, who requested this change and who approved this from the NHS GGC Project Team?

A. Sorry I was not involved at this level of detail.

Water and Taps

43. Describe your involvement, if any, in respect of the decision to use Horne taps.

A. None.

a) What concerns, if any, did you have regarding the use of Horne taps?

A. N/A

b) What risk assessments were carried out in respect of the use of Horne taps?

A. Sorry I was not there at this time so have no knowledge of this.

c) Who was involved in, and who signed off the use of Horne taps?

A. Sorry I was not there at this time so have no knowledge of this.

d) Did you attend the meeting regarding the use of Horne taps in 2014**?** If so, why was the decision made to proceed with Horne taps?

A. No

e) Did the use of Horne taps depend on thermal disinfection? If so why, if not, why not? What action, if any, was taken regarding this, and your involvement, if any?

A. Sorry I have no knowledge of this.

44. Are you aware of the water system having been filled prior to handover on 26 January 2015? If so, who filled the system, why was it filled and what concerns, if any, did you have. If you had concerns to whom did you escalate these concerns?

A. Sorry I wasn't aware of this.

Commissioning and Validation

45. In respect of commissioning and validation please confirm the following:
Describe your role in the lead up to commissioning. What action, if any, did you take to ensure that the wards within RHC and the QEUH met the guidance requirements of SHTM?

A. Sorry I was not there at this time so have no knowledge of this.

a) Describe what commissioning of the water and ventilation system took place prior to handover, and your involvement, if any.

A. Sorry I was not there at this time so have no knowledge of this.

b) Who was responsible for ensuring that commissioning of the water and ventilation system was carried out, and who signed off that it had been carried out?

A. That would be Mercury Engineering and signed off by Capita

46. Clause 6.8.2 of the Employer's Requirements requires the Contractor to provide a Final Commissioning Programme setting out details of all commissioning tasks, including the timing and sequence of events. This was also to include the relevant testing and commissioning elements of other parties, such as the Control of Infection Officer, the Supervisor and the Independent Commissioning Engineer. **(Please refer to Bundle 16, Document No. 13, Page 1357)**

a) Was the Final Commissioning Programme prepared? If so, by whom and who was it shared with? If not, why not?

A. Sorry I was not there at this time so have no knowledge of this. I would be very surprised if it had not been prepared.

47. Clause 6.8.4.2 of Employer's Requirements states that the Contractor was required to arrange, "all factory testing and shall furnish the Board, its Project Manager and its Supervisor with the opportunity to witness all factory testing and sign off marked items of Plants and Materials. The Board, its Technical Advisors and the Supervisor shall be given fourteen days notices of such testing." **(Please refer to Bundle 16, Document No.13, Page 1357)**

a) Was Capita given the opportunity to witness all factory testing and sign off on marked items of Plants and Materials?

A. Sorry I was not there at this time so have no knowledge of this.

b) If Capita was given the opportunity to witness all factory testing, please describe the process.

A. Sorry I was not there at this time so have no knowledge of this.

c) If Capita was not given the opportunity to witness all factory testing, why not? How did this impact, if at all, Capita's role as NEC3 Supervisor?

A. Sorry I was not there at this time so have no knowledge of this.

48. The Inquiry understands that NHS GGC decided to forgo the requirement to have an independent commissioning engineer. Who made this decision? What was the rationale was behind this decision? What was the impact, if any, of this decision? In hindsight, do you think that it was the correct decision?

A. Sorry I was not there at this time so have no knowledge of this.

49. **Please refer to Bundle 15, Document 7, Page 606**. SHTM 04-01, part E states that, "any pipes delivered unprotected or with open ends should be rejected". The Inquiry understands that Capita highlighted on a number of occasions that pipework was being left open during the construction work making them vulnerable to contamination. What was done to rectify this issue? Was such pipework subsequently rejected?

A. Sorry I was not there at this time so have no knowledge of this. I am confident that if this issue was raised by Capita the Multiplex team would have dealt with it as required.

50. Was the energy centre commissioned prior to NHS GGC taking occupation of QEUH? If so, describe what you know about the commissioning of the energy centre. Provide details of the intricacies in relation to its completion.

A. Sorry I was not there at this time so have no knowledge of this.

51. Describe your involvement, if any, in the decision for the energy centre to be retained by Multiplex following handover. What as the rationale/when was the energy centre handed over to NHS GGC, and what was your involvement, if any? Describe your knowledge and understanding, if any, of a payment being made by NHS GGC to Multiplex in respect of the energy centre following the same being handed over.

A. Sorry I have no recollection of this. I had no involvement.

52. Please describe what role Multiplex had, if any, in ensuring that validation was carried out? Was this required to be carried out prior to handover? If so, by whom? The Inquiry understands that validation was intended to be carried out by an independent

party. Did this happen? If not, why not?

A. Sorry I was not there at this time so have no knowledge of this.

Handover

53. Describe your role in the lead up to NHS GGC accepting handover.

A. Sorry I was not there at this time so was not involved.

a) At the point of handover, how satisfied were you that all areas of QEUH/RHC accepted by NHS GGC, were designed to the intended specification and suitable for the intended patient cohort, meeting all the relevant guidance requirements?

A. Sorry I was not there at this time but would have assumed that by NHS GGC accepting the QEUH/RHC Multiplex had given them what they asked for.

b) How were you assured that the wards met the requirements of the specific patient cohorts?

A. Sorry I was not there at this time but the requirements of the specific patient cohorts would have been captured at the User Group meetings and translated into the construction information.

c) Were any wards not handed over, or only partially handed over, please confirm. If so, why they were they held back? Was there any financial consequence to both Multiplex and NHS GGC of the ward(s) being held back? What works were carried out in order to allow this ward(s) to be handed over to the NHS GGC?

A. Sorry I was not there at this time so have no knowledge of this.

d) Describe the process for approving the defects listed on the Stage 3 Sectional Completion Certificate **(Please refer to Bundle 12, Document No. 3, Page 23)** Who saw the Stage 3 Section Completion Certificate before it was signed? Why was the Stage 3 Sectional Completion Certificate signed when there were a number of outstanding defects listed?

A. Sorry I was not there but defects would have been worked on by Multiplex's relevant trade contractor then offered for inspection and signed off by Capita. This would have been agreed with Alistair Fernie Multiplex's Project Director. It is normal to have a

defects list attached to a Completion Certificate.

e) Do you think that the Stage 3 Sectional Completion Certificate accurately listed all of the defects with the QEUH/RHC? If not, please describe the inaccuracies.

A. Sorry I was not there at this time so can't answer this.

54. Who oversaw contractual compliance? Who was responsible for ensuring that the paperwork was produced to confirm contractual compliance? What action, if any, did you take to ensure that paperwork was in place to ensure contractual compliance? Was validation of the ventilation system a contractual requirement? If so, who signed off on contractual compliance given the lack of validation?

A. Sorry I was not there at this time so can't answer this in detail. Multiplex's Managers were responsible for ensuring the quality of the construction. Each had to work to the Multiplex Quality Assurance Manual. Supporting paperwork should have been collected as part of the Quality Assurance checks. Capita would also have been looking for this. I can't comment on the Ventilation system.

a) If, given its existence in SHTM and the working relationship you have described there should have been in your view provision in the programme for validation by GGC and discussion between parties about it being carried out?

A. Yes Validation should have been done by the QEUH team post Multiplex completion of each area.

55. Explain what the Building Contract says about a retention period in which some money would be held back pending completion of the QEUH/RHC. In doing so, please explain if the retention period was enforced?

A. I am not sure what the Building Contract says about a retention period but it would be normal for a retention to be held and paid at the end of the defects period. I think in this case that was 2 years.

a) Describe your post-handover knowledge, if any, of all contractual retentions; b) post-handover additional payments made to Multiplex by NHSGGC; and c) any additional payment for achieving energy targets/ BREEAM

A. The only thing I am aware of is that there was an additional payment of £250,000 agreed for meeting the Energy target. I am not sure when or if this was paid.

56. Who was responsible for providing asset tagging. Why was there no asset tagging? Who decided to proceed without it?

A. Sorry I was not there at this time so have no knowledge of this.

a) Given your role, surely it would be within your remit to be aware of whether asset tagging was a Multiplex obligation?

A. Asset tagging would have been a Multiplex responsibility that would have been passed down to Mercury Engineering our MEP Contractor.

57. Did you consider it appropriate for the handover of QEUH/RHC to take place when the energy centre was not operational due to design issues? Did you appreciate at the time of handover that it would take almost a year before the energy centre was in a position to be brought online?

A. Sorry I was not there at this time so have no knowledge of this.

58. The Inquiry understands that no validation was carried out in respect of the ventilation system of QEUH/RHC prior to handover. When did you become aware of this? How did handover come to be accepted without the ventilation system being validated? Who was responsible for this and who signed off on this?

A. Sorry I was not there at this time so have no knowledge of this. The responsibility for carrying out the validation would have been Mercury Engineering the Mechanical & Electrical Contractor.

a) Are you not incorrect in saying validation was for Mercury in 58? If not, please confirm where this requirement for Mercury to carry out validation would be recorded?

A. Sorry Mercury were responsible for commissioning the systems and Multiplex's managers and the Capita team would have witnessed this commissioning as appropriate. Validation would have been an QEUH team responsibility.

59. Describe Multiplex's involvement in works carried out following handover. Describe the nature of these works, whether remedial or new works, the cost and responsibility of payment of these works, details of who instructed the works and when.

A. Sorry I was not there at this time and don't remember what extra works were carried out, if any.

60. Describe the build condition of the QEUH/RHC as at Final Defects Certificate (CI 43.3) Completion of Whole Works – Stage 3 Adults and Child's Hospital and Energy Centre dated 26th January 2017 **(Please refer to Bundle 12, Document No. 113, Page 848)**.

A. The Hospital was fully operational at this time. The final defects Certificate would be a list of defects that had been found since the completion of the Hospital in January 2015. Multiplex's team would continue to work with the QEUH team to clear these as quickly as possible.

DMA Canyon

61. Prior to handover, who was the Duty Holder in respect of the water system at QEUH/RHC?

A. Sorry I was not there at this time so have no knowledge of this.

62. What responsibility, if any, did Multiplex have in respect of carrying out L8 testing prior to handover? If Multiplex had such a responsibility, was the L8 testing carried out and by whom, and where would the records of the testing be sorted? Were these records made available to NHS GGC?

A. Sorry I was not there at this time so have no knowledge of this.

63. Who became Duty Holder when NHS GGC took handover of the QEUH/RHC site on 26 January 2015?

A. Sorry I was not there at this time so have no knowledge of this.

a) Given your role, can you please reconsider whether you can recall who would have become Duty Holder at the point of handover?

A. Sorry I don't know who it was but the responsibility would have passed to the QEUH team led by David Louden.

64. SHTM 03 01 remains an obligatory part of the contract except insofar as derogated from. Is it not your/ Multiplex's job to ensure that what you/ Multiplex deliver complies with it?

A. Yes it is Multiplex's job to deliver a scheme compliant with all of our contractual

obligations.

65. Do you have any further information that you consider relevant or interest to the Inquiry?

A. I have nothing else to add.

Declaration

66. I believe that the facts stated in this witness statement are true. I understand that proceedings for contempt of court may be brought against anyone who makes, or causes to be made, a false statement in a document verified by a statement of truth without an honest belief in its truth.

The witness was provided the following Scottish Hospital Inquiry documents for reference when they completed their questionnaire statement.

Appendix A

A50091098 - Scottish Hospitals Inquiry - Hearing Commencing 19 August 2024 - Bundle 12 - Estates Communications (External Version)

A47206723 - Scottish Hospitals Inquiry - Hearing Commencing 26 February 2024 - Bundle 13 - Miscellaneous - Volume 5 (External Version)

A47664054 - Scottish Hospitals Inquiry - Hearing Commencing 19 August 2024 - Bundle 15 - Water PPP (External Version)

A47851278 - Scottish Hospitals Inquiry - Hearing Commencing 19 August 2024 - Bundle 16 - Ventilation PPP (External Version)

A49342285 - Scottish Hospitals Inquiry - Hearing Commencing 19 August 2024 - Bundle 17 - Procurement History and Building Contract PPP (External Version)

A52399188 - Scottish Hospitals Inquiry - Hearing Commencing 13 May 2025 - Bundle 43 - Volume 1 - Procurement, Contract, Design and Construction, Miscellaneous Documents (External Version)

A52725667 - Scottish Hospitals Inquiry - Hearing Commencing 13 May 2025 - Bundle 43 - Volume 3 - Procurement, Contract, Design and Construction, Miscellaneous Documents (External Version)