SCOTTISH HOSPITALS INQUIRY

Hearing Commencing 26 February 2024

Witness Bundle

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Table of Contents

CUNDALL

Scottish Hospital Inquiry

RHCYP/DCN Critical Care Ventilation Systems Review

Scottish Hospitals Inquiry

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Principal author

Signed by: Stephen Maddocks

Executive summary

This report is a review of the design, commissioning and validation documents associated with the Ventilation Systems for Critical Care and Isolation rooms at the Royal Hospital for Children and Young People and the Department of Clinical Neurosciences in Edinburgh ("RHCYP/DCN"). The report considers the design at Financial Close, at the point Settlement Agreement No1 was entered into, and at the point of Settlement Agreement No 2 (which contains the final specification for the ventilation system). The review covers briefing information, published design guidance and commissioning and validation results.

The final design of the ventilation system for the Critical Care (rooms 1-B1-065, 075, 063, 037, 031, 021, 020, 019, 009 and Isolation Rooms 1-B1-016, 017, 026, 036) and Haematology and Oncology (rooms 3-C1.4-059, 057, 055, 046, 032, 018, 016, 013, 010, 074, 076, 078, 084 and 061 and Isolation Rooms 3-C1.4-040, 043, 049, 052. 072) at the RYCHP/DCN complies with published guidance and best practice. In particular, the design complies with the requirements of SHTM 03-01.

The ventilation system in the Critical Care and Isolation Rooms at the RYCHP/DCN was independently validated by IOM Limited ("IOM") in 2021. The 2021 Independent Validation reports by IOM have confirmed that ventilation system for critical care rooms and Isolation Rooms at the RHCYP/DCN, as per Settlement Agreement No 2, is operating so as to fully comply with published guidance (SHTM 03-01) and best practice.

The ventilation system in Critical Care and Isolation Rooms at the RHCYP/DCN has been designed, tested, commissioned and validated in compliance with published guidance (SHTM03-01) and best practice. The ventilation system has therefore been checked and demonstrated to be in accordance with the design requirements detailed in SHTM03-01. From an engineering perspective, the ventilation system in the Critical Care and Isolation Rooms in the RHCYP/DCN is adequate for its intended purpose. The Critical Care and Isolation Rooms provide a suitable environment for the delivery of safe, effective person-centred care.

I understand that the specific contractual requirements for the original design are controversial. I do not offer any opinion on that issue. However, I understand that certain passages in the original documents issued by NHSL required compliance with SHTM 03-01. NHSL also provided an Environmental Matrix (EM) to bidders. The guidance notes page on the original EM stated that the Critical Care Department required 10 ac/hour, yet room-by-room line entries on the matrix contained contradictory information, namely 4 ac/hour.

IHSL confirmed compliance with SHTM's in their Project Co Proposal specification but then issued a Room Data Sheets pack with the EM data for a lower ac/hr rate carried through. Anomalies in the EM were the subject of a derogation schedule to be developed as Part of the RDD process. The air change requirements were later clarified by email and agreed between Project Co and NHSL.

The original reasoning for including 4 ac/hr on the EM was not documented, or satisfactorily closed out, pre-Financial Close. The EM was agreed to be carried through as a Reviewable Design Data item which should **not** have happened due to the significant impact of clarifying an error in a fundamental piece of briefing documentation with the ramifications that have since come to light. I note that a sample of agreed Room Data Sheets were generated for the Financial Close using the Activity Data Base system, which also carried the 4 ac/hr error. THE ADB systems generates air change rate and other environmental criteria based on HTM requirements, but this can be edited/customised for local preferences, which appears to have happened in this case.

The validation testing of the original system undertaken by IOM Ltd, i.e. – post Settlement Agreement No 1, design identified a number of rooms where the 10 ac/hr rate (as per SHTM 03-01 and not the agreed design figure of 4) were not being met.

A number of manufacturing defects were noted with the AHU manufacture that have been corrected to an agreed (with NHSL) standard.

Separate Isolation room Ahu's could have been considered (with financial and planning impacts) for the level 3 isolation rooms but would have been a significant challenge for the Critical Care level 1 rooms due to proximity of rooms to risers. The strategy should have been agreed pre-Financial Close.

Key lessons

1. Follow the procedures detailed in NHS Scotland Key Stage Assurance Review process (see Section 6).
2. Set up a Ventilation Safety Group (and others listed in KSAR) to take decisions on the requirements for key engineering systems.
3. Keep one set of environmental briefing data to avoid discrepancies (note a matrix of engineering specific. requirements can be extracted from the ADB System to avoid a separate manually created matrix).
4. Agree clear environmental briefing data with operational and clinical staff prior to issuing documents to tender in case local practice is required to overwrite the SHTMs.
5. Have a clear and unambiguous set of technical requirements at Financial Close. Don't carry over key design issues beyond a contract signing data.
6. Independent design validation and Ventilation Safety Group sign off as adopted by the very latest SHTM 03-01 and the NHS Scotland KSAR process currently in place, will help mitigate issues in the future.
7. Discuss with the authorities that publish statutory documents such as Building Regulations that industry specific requirements i.e. SHTM's, CIBSE and other industry codes are cross-referenced into the appropriate regulations.as currently written into the Building Regulations England i.e. Approved Document F1 - Ventilation

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1.0
Introduction

1.0 Introduction

1.1 Scope of Report

1.1.1 I have been asked to comment, from the perspective of an engineer, on the adequacy of the ventilation system in Critical Care and Isolation Rooms in the RHCYP/DCN. I have been asked to comment on whether, from an engineering perspective, the ventilation system in these spaces provides a suitable environment for the delivery of safe, effective patient centred care. To address this, I will consider whether the ventilation system in critical care complies with published guidance and current best practice.

1.1.2 This report is limited to a review of the ventilation systems design, installation, commissioning and validation of systems in the Critical Care Departments on Levels 01 and Haematology/Oncology on Level 03 only with associated mechanical ventilation plant that supplies these areas at the RHCYP/DCN.

1.1.3 The review covers the design of the ventilation system for Critical Care and Isolation Rooms at the following stages of the RHCYP/DCN project:

1.1.3.1 Design Briefing documents review – Financial Close

1.1.3.2 Project Co Proposals- Financial Close offer - Settlement Agreement No 1

1.1.3.3 Post July 2019 Design - High Value Change - Settlement Agreement No 2

1.1.4 I shall then address various changes that have been made in the relation to procedures for the briefing and design of a new hospital. This shall include the creation of NHS Assure. I shall then outline some lessons that I consider can be learnt from the issues that arose on the Project.

1.2 Disclaimer

1.2.1 This report is based on review of documents supplied by the Scottish Hospitals Inquiry team with no supporting site reviews being undertaken. The review also reviews industry standards, codes and best practice design principles applicable to ventilation systems.

1.3 Glossary of Terms

Glossary	
ac/hr	air changes per hour (air change rate for ventilation)
CAMHS	Child and Adult Mental Health Service
DCN	Department of Clinical Neurosciences
DGHSC	Director General of Health and Social Care
DSSR	Engineering Consultants
EM	Environmental Matrix
FC	Financial Close
FM	Facilities Management

Glossary	
HAI-Scribe	Healthcare Associate Infection Systems for Controlling Risk in the Built Environment
HDU	High Dependency Unit
HFS	Health Facilities Scotland (part of National Services Scotland)
IHSL	IHS Lothian Limited the Project Company or private partner to NHSL to deliver the new hospital
IOM	Institute for Occupational Medicine, third party validators for ventilation
IPC	Infection Prevention and Control
IPCT	Infection Prevention and Control Team
IT	Independent Tester
ITU	Intensive Treatment Unit (also referred to as Intensive Care Unit)
NHSL	National Health Service Lothian
NNU	Neonatal Unit
MM	Mott MacDonald, NHSL's technical advisors
MPX	Brookfield Multiplex
PICU	Paediatric Intensive Care Unit
PG	Production Group (Clinical User Groups)
PG RDD	Production Group Review Procedure for Clinical User Groups
Project Co	Project Company (IHSL and its extended supply chain)
RDD	Reviewable Design Data
RDS	Room Data Sheets
RFI	Request for Information
RHCYP	Royal Hospital for Children and Young People (name given to the new children's hospital)
SA1	Settlement Agreement 1 (Project Agreement Supplementary Agreement 1)
SG	Scottish Government
SHBN	Scottish Health Building Notes
SHFN	Scottish Health Facility Notes
SHTM	Scottish Health Technical Memorandum
SHPN	Scottish Health Planning Notes
QEUH	Queen Elizabeth University Hospital

2.0

NHS Briefing Document Review

2.0 NHS Briefing Documents Review

2.1 Design Brief Documents

2.1.1 I understand that the status of various documents issued during the tender process is controversial. In particular, the status of the EM issued during the tender process. As an engineer, I do not offer any comment on that matter. In this section of the report, I have proceeded on the basis of the documents that the designers, TUV-SUD, consider were the relevant briefing documents.

2.1.2 It is noted in the TUV-SUD document, Critical Care Briefing Review April 2022, that the following documents were considered to be the briefing documents that they referenced/referred to in order to develop the Engineering Design.

a) B1 Critical Care Clinical Output based Specification September 2014
b) H&K Reference Design Briefing Environmental Matrix with guidance notes. Note Rev C of this document is dated September 2012
c) HBN 04-02 Critical Care Units
d) HBN 57 Critical Care (old doc))
e) SHPN 04 Supplement Isolation suites
f) HTM 2025 (old doc)
g) SHTM 03-01 Appendix 1: Table A1 February 2014
h) HBN 04 Supplement 1
i) Ward Layout Drawing
j) HBN 23 Hospital Accommodation for children and young people (not referenced)

2.1.3 I have been asked by the Inquiry Team to proceed on the assumption that, during the competitive tender process, the competing companies were provided with items (a) and (b) together with the Boards Construction Requirements (BCR). BCRs are used on most PFI projects. They provide a flexible framework for competing Project Companies to offer different solutions to meet the brief, but it is also typical to include the HTM's and HBN's (or equivalent Scottish versions) as a mandatory requirement within the BCR.

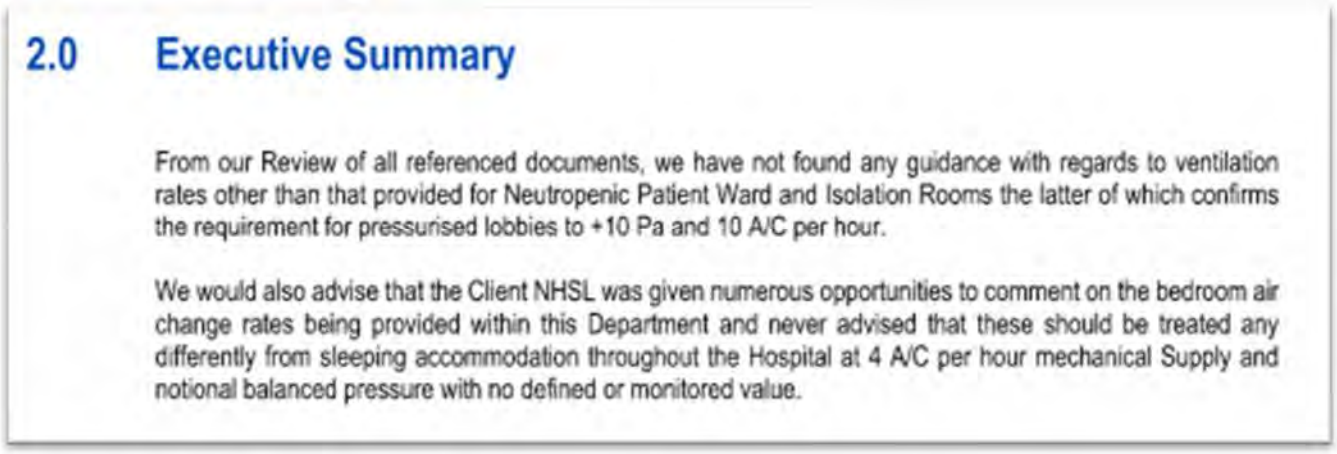
2.1.4 A Clinical Output Based specification (item (a) above) is difficult for an engineer to interpret. The clients detailed engineering/technical design requirements, especially in a suite of Technical Requirements, is generally referenced in the form of a requirement for compliance with published guidance (e.g SHBN'/SHTM's). An engineering/technical design proposal would generally demonstrate or confirm, that the offer was based on SHBN/SHTM requirements. However, that would be subject to any specific requirements stated by the client, derogations or other agreements.

2.1.5 I do not offer any view on the status of the EM. However, the production of a project specific EM would, in my opinion, be viewed by an engineer as a statement of the client's specific requirements unless the contrary intention was clearly stated. There would be no point in issuing such a document unless it contained a client specific project brief. There would be no point in a client issuing a "draft" EM that could not be relied on by the engineer.

2.1.6 I have been advised that the EM was a manually created spreadsheet, rather than being generated by an established data base system/product[1]. The engineer that produced it confirmed that it complied with published guidance. However, in evidence to the Inquiry, the engineer stated this was an error.

2.1.7 A suite of detailed Room Data Sheets, using a system such as Activity Data Base, would be developed once a single Preferred Bidder consortium had been selected. A selection of RDS for certain generic and key rooms were prepared in advance of financial close.

2.1.8 The executive summary of the above TUV-SUD document states.



2.0 Executive Summary

From our Review of all referenced documents, we have not found any guidance with regards to ventilation rates other than that provided for Neutropenic Patient Ward and Isolation Rooms the latter of which confirms the requirement for pressurised lobbies to +10 Pa and 10 A/C per hour.

We would also advise that the Client NHSL was given numerous opportunities to comment on the bedroom air change rates being provided within this Department and never advised that these should be treated any differently from sleeping accommodation throughout the Hospital at 4 A/C per hour mechanical Supply and notional balanced pressure with no defined or monitored value.

Figure 1-Extract TUV-SUD Document April 2022

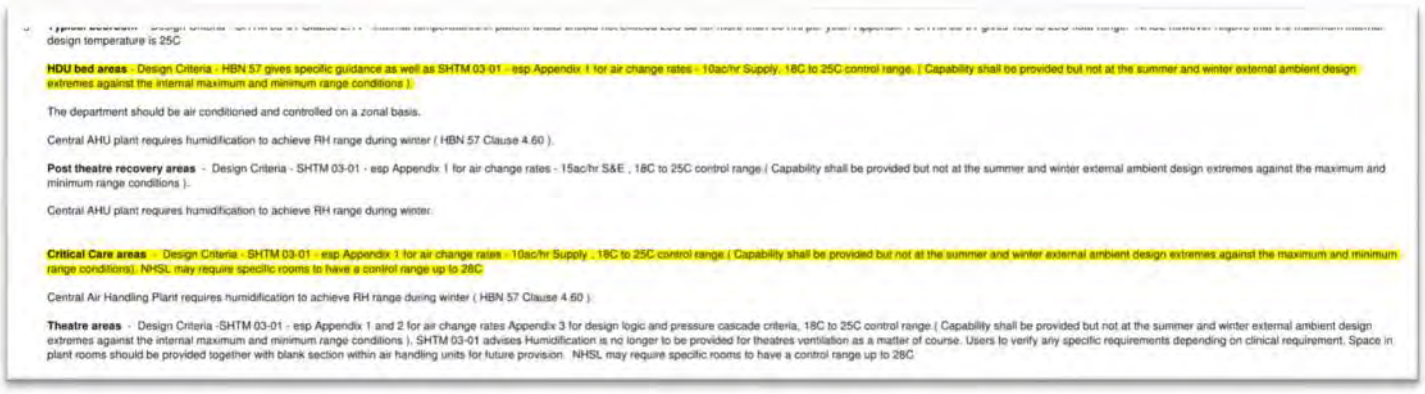
[1] The producers of the of the Activity Data Base software (Talon Solutions) have confirmed (16/11/2023 email correspondence) that their systems can generate a dedicated EM from the agreed RDs that would make design work easier for an engineer. It has not been checked if the earlier versions had that level of functionality.

2.1.9 The first paragraph of the above statement states that they have found no guidance with regards to ventilation rates other than that provided for Neutropenic Patient Ward and Isolation rooms, which is contrary to the following documents that are referenced in the briefing documents listed in 2.1.1

2.2 Environmental Matrix Review

2.2.1 H&K Reference Design Briefing Environmental Matrix (H&K-EM) was taken by TUV-SUD to be a key briefing requirement, note Rev C of this document is dated September 2012 and was generated when 3 consortia were bidding the scheme, and this formed the base design requirements that led to the eventual selection of IHSL/MPX as preferred bidder.

2.2.2 The Guidance Notes on page 2 of the matrix give clear direction for bedrooms noting for clarity that "*Critical Care areas - Design Criteria - SHTM 03-01 - esp Appendix 1 for air change rates - 10ac/hr Supply , 18C to 25C control range.(Capability shall be provided but not at the summer and winter external ambient design extremes against the maximum and minimum* range conditions). *NHSL may require specific rooms to have a control range up to 28C*". There is also an air change rate clarification for HDU beds.


design temperature is 25C

HDU bed areas - Design Criteria - HBN 57 gives specific guidance as well as SHTM 03-01 - esp Appendix 1 for air change rates - 10ac/hr Supply, 18C to 25C control range. (Capability shall be provided but not at the summer and winter external ambient design extremes against the internal maximum and minimum range conditions).

The department should be air conditioned and controlled on a zonal basis.

Central AHU plant requires humidification to achieve RH range during winter (HBN 57 Clause 4.60).

Post theatre recovery areas - Design Criteria - SHTM 03-01 - esp Appendix 1 for air change rates - 15ac/hr S&E , 18C to 25C control range (Capability shall be provided but not at the summer and winter external ambient design extremes against the maximum and minimum range conditions).

Central AHU plant requires humidification to achieve RH range during winter.

Critical Care areas - Design Criteria - SHTM 03-01 - esp Appendix 1 for air change rates - 10ac/hr Supply , 18C to 25C control range.(Capability shall be provided but not at the summer and winter external ambient design extremes against the maximum and minimum range conditions). NHSL may require specific rooms to have a control range up to 28C

Central Air Handling Plant requires humidification to achieve RH range during winter (HBN 57 Clause 4.60).

Theatre areas - Design Criteria -SHTM 03-01 - esp Appendix 1 and 2 for air change rates Appendix 3 for design logic and pressure cascade criteria, 18C to 25C control range (Capability shall be provided but not at the summer and winter external ambient design extremes against the internal maximum and minimum range conditions). SHTM 03-01 advises Humidification is no longer to be provided for theatres ventilation as a matter of course. Users to verify any specific requirements depending on clinical requirement. Space in plant rooms should be provided together with blank section within air handling units for future provision. NHSL may require specific rooms to have a control range up to 28C

Figure 2 - Environmental Matrix General Notes

2.2.3 The table below is an extract of details within the EM, on a room-by-room basis for all rooms however contain a different set of criteria for Dept B1 PICU/HDU beds as follows just focussing on the air change rate issue. However, the notes section states "see guidance notes".

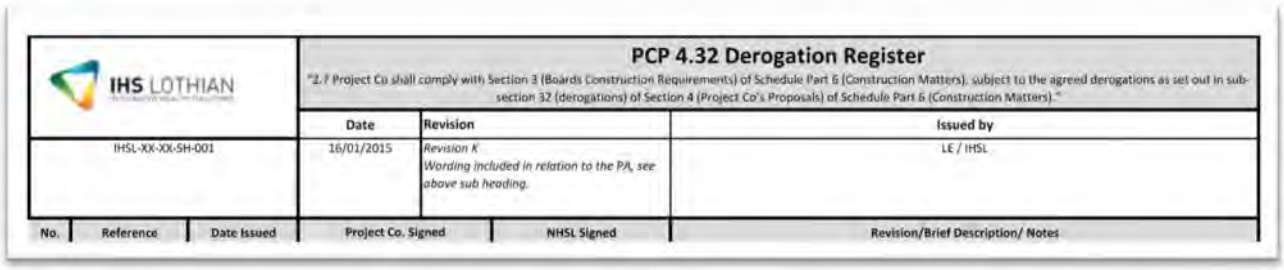
Dept Sub Group	Room Name	Cooling Type	Ventilation Type	Ventilation Supply ac/hr	Ventilation Extract ac/hr	Relative Pressure
PICU 8 Beds	Sigle Bed Isolation Cubicle	Comfort Cooled Fresh Air	HBN 4 Dependent	HBN 4 Dependent	HBN 4 Dependent	Balanced
PICU 8 Beds	Single Bed Cubicle	Comfort Cooled Fresh Air	Central Supply and Extract	4	0	Positive
PICU 8 Beds	Open plan bay (4 beds) also called Multi Bed Wards	Comfort Cooled Fresh Air	Central Supply and Extract	4	0	Positive

2.2.4 The same entries apply to Low Acuity and High Acuity Sub Departments. This air change parameter differs from the clear briefing data in the SHTM -03-01 and the general notes that are an introduction to the H&K-EM. It is unclear why this wasn't resolved when selecting preferred bidder or why it wasn't closed out sooner. The EM became a key part of IHSL's tender but this inherent ambiguity was not resolved by the time the contract was signed and financial close was achieved. Accordingly, in my view, there was a lack of clarity in the requirements for the ventilation system for Critical Care rooms. It is therefore not surprising that this resulted in a dispute at a later stage in the Project.

2.2.5 It is notable that finalising of the Environmental Matrix (EM), which is a fundamental briefing tool to the ventilation designer (apart from the overall Boards Construction Requirements), took a long time and ventilation ductwork was being moved on site without an apparent agreement to the EM. This lack of agreement, and sign-of, should have prevented any ductwork being designed.

2.2.6 The Inquiry has produced a Provisional Position Paper 8 (PP8) that provides a lot of narrative on many revisions of the Environmental Matrix and the debates between MPX and NHSL personnel (Estates and Clinicians) regarding interpretations of the SHTM's and EM about the correct design criteria, as the EM was listed as Reviewable Design Data. Putting the EM into the RDD process, post financial close was the start of the disputes resulting in the Settlement Agreement which should in my opinion have been resolved prior to contract award due to the design and commercial impact on the scheme of changes to such a key briefing document. The decision to include the EM as RDD meant that there was no finalised agreement on the parameters for the ventilation system at financial close.

2.2.7 A derogation schedule was produced by IHSL (part snap shot shown) below



IHS LOTHIAN

PCP 4.32 Derogation Register

"2.7 Project Co shall comply with Section 3 (Boards Construction Requirements) of Schedule Part 6 (Construction Matters), subject to the agreed derogations as set out in sub-section 32 (derogations) of Section 4 (Project Co's Proposals) of Schedule Part 6 (Construction Matters)."

	Date	Revision	Issued by
IHSL-XX-XX-SH-001	16/01/2015	Revision K *Wording included in relation to the PA, see above sub heading.*	LE / IHSL

No.	Reference	Date Issued	Project Co. Signed	NHSL Signed	Revision/Brief Description/ Notes

Figure 3- Part extract IHSL Derogation Schedule of 143 items

2.2.8 The derogations listed below related to the MEP Engineering Systems and derogation IHSL-MEP-015 is most critical as it clearly references the EM.

020	IHSL-MEP-002	05/09/2014	13/11/2014	14/11/2014	02 25% Cabling Capacity
021	IHSL-MEP-003	05/09/2014	13/11/2014	14/11/2014	03 Clinical Equipment Alarms-Rewording Accepted
023	IHSL-MEP-005	05/09/2014	13/11/2014	14/11/2014	01 DRAFT Routes through common services
027	IHSL-MEP-009	05/09/2014	13/11/2014	14/11/2014	01 Luminaire Colour/Temperature
028	IHSL-MEP-010	05/09/2014	13/11/2014	14/11/2014	01 Sprinkler Protection
029	IHSL-MEP-011	05/09/2014	13/11/2014	14/11/2014	03 Fibre Optic Cables
033	IHSL-MEP-015	05/09/2014	13/11/2014	14/11/2014	03 Environmental Matrix REWORDED 12.11.14
034	IHSL-MEP-016	05/09/2014	13/11/2014	14/11/2014	02 Sustainability

Figure 4 - MEP Related Derogations

2.2.9 The detail of IHSL-MEP-015 notes that the EM is to be further developed with the board, post Financial Close through the RDD process.

IHS LOTHIAN
RHSC + DCN Edinburgh

Derogation Request

Date	Notes MER	Reference
05/09/2014	*03 Environmental Matrix REWORDED 12.11.14*	IHSL-MEP-015

BCR Clause

8 Mechanical & Electrical Engineering Requirements

Project Co shall provide the Works to comply with the Environmental Matrix

Relevant Regulation - HBN, SHTM, Building Regulations etc

Not Applicable

Requirement

8 Mechanical & Electrical Engineering Requirements

Project Co shall provide the Works to comply with the Environmental Matrix

Derogation

Anomalies within the environmental matrix have been reviewed and proposals incorporated within the room data sheets (refer to schedule for proposed variations).

Proposal

Anomalies within the environmental matrix have been reviewed and proposals incorporated within the room data sheets (refer to schedule for proposed variations).This shall be further developed in conjunction with the board on the basis of the schedule of comments contained in Section 5 (RDD) Part IV.

Reference Docts - Sketches, drawings, reference material extracts etc

Room Data Sheets

Figure 5 - Derogation referencing the EM being developed during RDD

2.2.10 A derogation (or clarification) would be a change (or clarification) from the briefing documents or agreed design codes or standards with a reasoning why the change is proposed. They would often be agreed by all parties and summarised in a register such as the one noted above.

2.3 SHTM 03-01 Status Design Criteria

2.3.1 SHTM 03-01 is referenced in the documents as a part of the brief and is cross referenced in the BCRs**.** SHTM 03-01 Appendix 1 Refers to Critical Care Areas at 10A/C per hour with +10 Pa and has a specific note re Isolation Rooms but only in relation to the pressure being different i.e. negative to surrounding areas to the main Critical Care Area which is positive (3rd column) . Whereas Isolation Rooms also on the table are referred to HBN 04-01, see note above.

2.3.2 In my opinion the reference to Critical Care Areas [2]would generally be interpreted by an engineer as referring to the spaces within any space with in a complete Critical Care Department including single and multi-bed ward bedrooms, with the exception of specific rooms such as listed in Appendix 1 of SHTM 03-01 which are typically encountered across many other departments in a hospital which are in a Critical Care Unit. Common spaces such as Toilets, Bathrooms, Staff Base, Dirty Utility, Clean Utility, Offices, Linen Bays, Waiting Ares and Seminar rooms, where the environment, particularly ac/hr, is different to the bed areas where Critical Care nursing is administered.

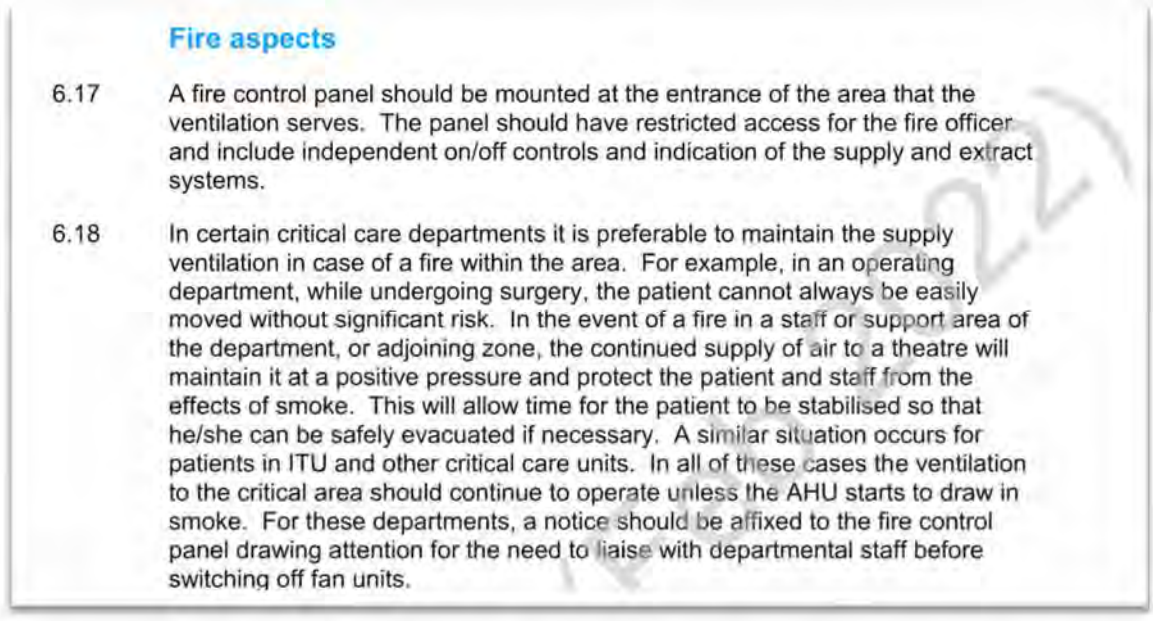
Health Facilities Scotland — SHTM 03-01: Part A – Design and Validation — NHS National Services Scotland

Appendix 1: Recommended air-change rates

Application	Ventilation	ac/Hour	Pressure (Pascals)	Supply Filter	Noise (NR)	Temp (°C)	Comments For further information see Section 6
General ward	S / N	6	-	G4	30	18-28	
Communal ward toilet	E	10	-ve	-	40	-	
Single room	S / E / N	6	0 or –ve	G4	30	18-28	
Single room WC	E	3	-ve	-	40	-	
Clean utility	S	6	+ve	G4	40	18-28	
Dirty utility	E	6	-ve	-	40	-	
Ward Isolation room	-	-	-	-	-	-	See SHPN 4; Supplement 1
Infectious disease Iso room	E	10	-5	G4	30	18-28	Extract filtration may be required
Neutropenic patient ward	S	10	+10	H12	30	18-28	
Critical Care Areas	S	10	+10	F7	30	*18-25*	Isolation room may be –ve press

Figure 6 - SHTM 03-01-Part A Feb 2014 Appendix 1 Part extract

2.3.3 In my opinion, the entry for Critical Care Areas with air change rate and positive pressure requirements are clear with only a reference to isolation rooms in the comments column being negative pressure see above but the column cross refers to section 6 which covers Automatic Controls and refers to how the ventilation plant shall operate in a fire alarm situation to maintain pressure regimes and states. This does not refer to a different air change rate.



Fire aspects

6.17 A fire control panel should be mounted at the entrance of the area that the ventilation serves. The panel should have restricted access for the fire officer and include independent on/off controls and indication of the supply and extract systems.

6.18 In certain critical care departments it is preferable to maintain the supply ventilation in case of a fire within the area. For example, in an operating department, while undergoing surgery, the patient cannot always be easily moved without significant risk. In the event of a fire in a staff or support area of the department, or adjoining zone, 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. This will allow time for the patient to be stabilised so that he/she can be safely evacuated if necessary. A similar situation occurs for patients in ITU and other critical care units. In all of these cases the ventilation to the critical area should continue to operate unless the AHU starts to draw in smoke. For these departments, a notice should be affixed to the fire control panel drawing attention for the need to liaise with departmental staff before switching off fan units.

Figure 7 - SHTM 03-01-2014 Part A -part Extract section 6

[2] Comprehensive Critical Care Department of Heath 2000 stipulates 3 levels of care. Level 1—Ward based care where the patient does not require organ support (for example, they may need an IV, or oxygen by face mask). Level 2—High dependency unit (HDU) .Level 3—Intensive care.

2.3.4 It is worth noting that HTM 2025 was revised to become the first edition of HTM03-01-Part A in 2007 and the table that lists recommended Air Changes didn't change from 2007 to the SHTM 03-01 2014 requirements, part extract below hence this had been an established design criteria for a number of years.

Appendix 2 – Recommended air-change rates

Application	Ventilation	AC/hr	Pressure (Pascals)	Supply filter	Noise (NR)	Temp (°C)	Comments (for further information see Chapter 6)
General ward	S/N	6	–	G4	30	18–28	
Communal ward toilet	E	6	–ve	–	40	–	
Single room	S/E/N	6	0 or –ve	G4	30	18–28	
Single room WC	E	3	–ve	–	40	–	
Clean utility	S	6	+ve	G4	40	18–28	
Dirty utility	E	6	–ve	–	40	–	
Ward isolation room	–	–	–	–	–	–	See Health Building Note 04-01 (Supplement 1)
Infectious diseases isolation room	E	10	–5	G4	30	18–28	Extract filtration may be required
Neutropeanic patient ward	S	10	+10	H12	30	18–28	
Critical care areas	S	10	+10	F7	30	*18–25*	Isolation room may be –ve pressure

Figure 8- HTM03-01-Part A 2007 Part Extract Appendix 2 Recommended air-change rates

2.4 Conclusion

2.4.1 In my opinion, a requirement to comply with SHTM 03-01 would communicate to an engineer that 10 air changes per hour and +10 pascals of pressure would be required for all critical care spaces. However, these requirements were not reflected in the room-specific entries in the EM (either the version issued to tenderers, or the version included in the Project Agreement as RDD). The EM provided an ambiguous lower figure. The fact that the EM was included as RDD left that issue unresolved at financial close, holding it over for resolution within the contractual RDD procedures. In my opinion, the specific parameters for the ventilation system should have been clarified and confirmed much earlier in the project and certainly before Financial Close.

3.0

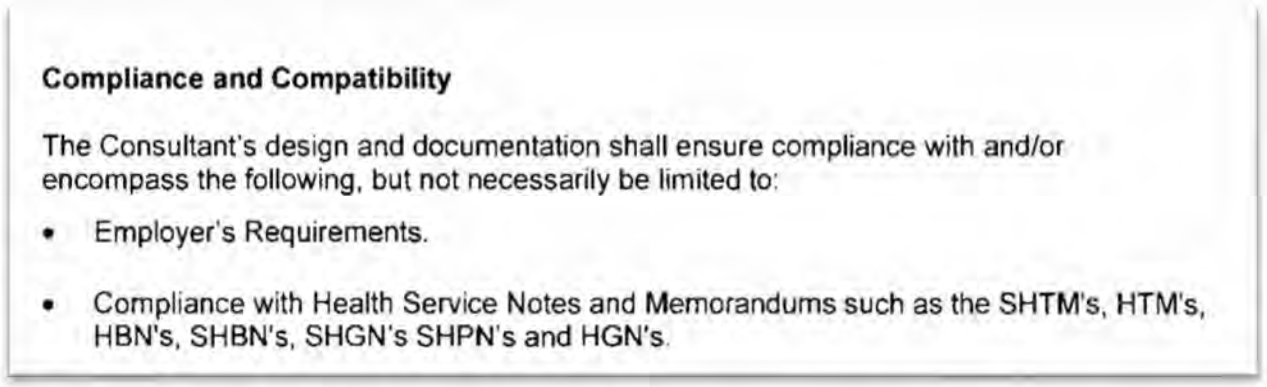
Project Co Proposals

3.0 Project Co Proposals

3.1 Designers and Sub Contractor Appointment review

3.1.1 Multiplex engaged TUV-SUD Wallace Whittle as Consulting Building Services Engineers for Design and Construction stage support of the project, under a bespoke agreement prepared by Brookfield Multiplex and signed by TUV-SUD Wallace Whittle dated February 2015.

3.1.2 Within the appointment there is a requirement in the Scope of Services section that compliance with SHTM's is required. However as noted in Section 2, a project specific EM was produced which contains some entries that are at odds with published documentation. There was ambiguity in relation to the design requirements. If best practice had been followed, a formal derogation would have been in place recording that NHSL required a system that performed to a lower standard than SHTM 03-01.



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.

Figure 9 - Part extract Brookfield Multiplex – TUV-SUD Wallace Whittle Appointment

3.2 Design Development and response to the Brief.

3.2.1 To put some context to the scale of the rooms under review in this report, those single and multi-bed, rooms in the critical care department which were subject to Settlement Agreement No 1 are listed in the table below (this is based on my reviews of a number of documents and marked on a plan of the entire first floor).

Department	Room Name	Room Number
B1 PICU/HDU/ NNU	Single-bed cubicle	1-B1-019
	Single-bed cubicle	1-B1-020
	Single-bed cubicle	1-B1-021
	Single-bed cubicle	1-B1-037
	Single cot cubicle (with ensuite)	1-B1-075
	Open Plan Bay (4 beds)	1-B1-009
	Open Plan Bay (4 beds)	1-B1-031
	Open Plan Bay (4 beds)	1-B1-063
	Open Plan Bay (3 cots)	1-B1-065

Figure 10 - First Floor Ventilation Strategy

3.2.2 TUV-SUD issued ventilation strategy drawings, first floor example above ref WW-SZ-01-PL-524-001, for agreement dated 19 November 2013 (whilst in the competitive bid stage alongside 2 other bidders) that indicates a strategy for how they were proposing/offering to ventilate the hospital. The drawing produced is not untypical of a strategy drawing at the early-stage development of a project that would demonstrate the thought process for agreement with the client body before developing the design much further, see Figure 11 it does not provide a list of air changes but demonstrates a design intent (to someone engaged to undertake a technical review of a Contractors Proposal on behalf of the Client) , that mechanical ventilation is confirmed for the areas in question. I have annotated the drawing with red boxes indicating the extent of the rooms covered by the 4 ac/hr/10ac/hr ambiguity. It is necessary to zoom into the drawings to read the exact room number as at a readable scale the drawing would have been printed off at 1189mm by 841mm so is quite large to reproduce.

Figure 11 -Close up of B1 PICU/HDU/NNU

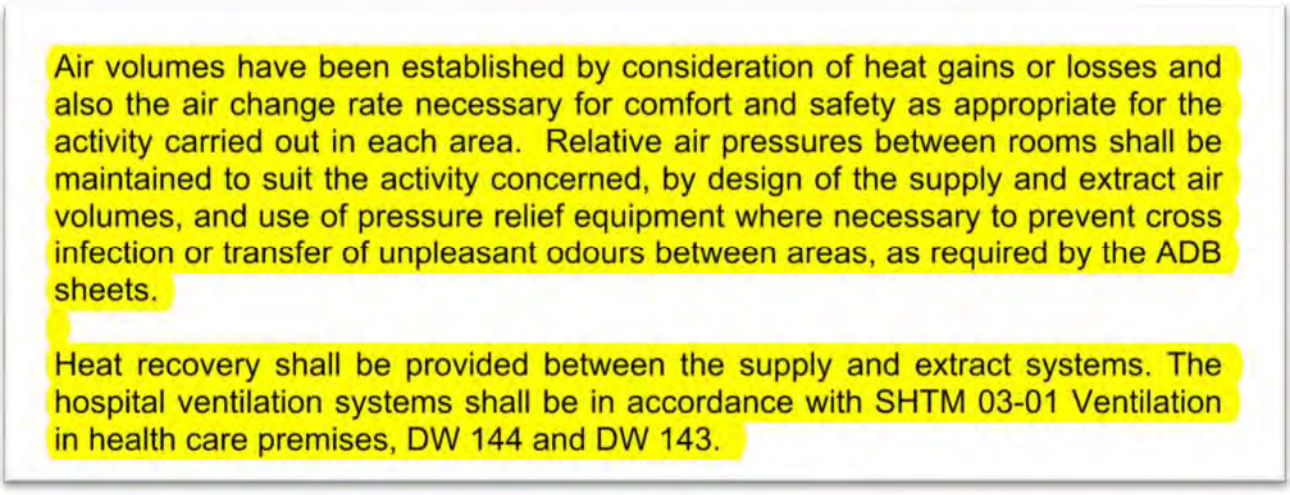
3.2.3 The coloured hatching shown on the drawings indicates the exact nature of the planned strategy and is shown in the drawing legend repeated as follows.

Figure 12-Ventilation legend

3.2.4 The rooms identified below and allocated to the Department Code B1 - Critical Care/HDU/Neonatal Surgery are ventilated as follows (interpreted by myself, using the legend allocated to the drawing)

Department	Room Name	Room Number	Ventilation Strategy
B1 PICU/HDU/ NNU	Single-bed cubicle	1-B1-019	Central Supply Air (i.e positive pressure)
	Single-bed cubicle	1-B1-020	Central Supply Air (i.e positive pressure)
	Single-bed cubicle	1-B1-021	Central Supply Air (i.e positive pressure)
	Single-bed cubicle	1-B1-037	Central Supply and Extract
	Single cot cubicle (with ensuite)	1-B1-075	Central Supply Air (i.e positive pressure)
	Open Plan Bay (4 beds)	1-B1-009	Central Supply and Extract
	Open Plan Bay (4 beds)	1-B1-031	Central Supply and Extract
	Open Plan Bay (4 beds)	1-B1-063	Central Supply and Extract
	Open Plan Bay (4 beds)	1-B1-065	Central Supply and Extract

3.2.5 The details in Project Co's proposals including their submitted specification[3], and drawings, demonstrate to someone (NHSL or appointed advisors) reviewing the proposals, a compliant solution was being offered, but without details.



Air volumes have been 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 shall 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.

Heat recovery shall be provided between the supply and extract systems. The hospital ventilation systems shall be in accordance with SHTM 03-01 Ventilation in health care premises, DW 144 and DW 143.

Figure 13 - Part extract Section U10, page 61 of 752 Project Co's Proposals see foot note 1

[3] Section 4.23 Specification Building Services July 2014 3rd Revision dated August 2014 produced by IHSL

3.2.6 IHSL issued, in addition to a Performance Specification and drawings, a 572-page document[4] containing Room Data Sheets that utilised the NHS Activity Data Base as part of Project Co's proposals. The Room Data Sheets created at Financial Close (comprising typically 4 pages of detailed requirements titled Room Description, Room Environmental Data, Room Design Character and Schedule of Components by Room) consisted of details for 29 Generic Rooms and 96 Key Rooms throughout the hospital. Creating a full set of RDSs for the entire hospital would have been challenging pre-Financial Close and it would have been accepted practice for the Client and Project Co to agree what rooms were to be produced as being representative for the project. Below are the rooms relevant to Critical Care Department for which RDSs were supplied in the project agreement at financial close. In my experience and interpretation of SHTM 03-01 the AC/HR rates stated in these RDSs for the 4-bed low acuity, 3 bed cot bay, 4 bed high acuity and single bed cubicles/rooms are contradictory. Furthermore, a note has been added stating that natural ventilation is acceptable which in my experience is not acceptable in a Critical Care area.

Key Rooms

Code	Description	Room Number
B1609-01	4 beds Low Acuity	1-B1-031
G0510-01	Gowning Lobby: Isolation Room	1-B1-033
B1401-01	Single-bed cubicle: Isolation	1-B1-036
B1401	Single-bed cubicle	1-B1-037
B1609-02	4 beds High Acuity	1-B1-063
B1407-01	Open Plan Bay 3 cots: Neonatal	1-B1-065
B1421	Single cot cubicle: neonatal	1-B1-075

Figure 14 - extract from IHSL Document Room data Sheets for Generic and key Rooms for Financial Close see footnote 4.

[4] IHSL Document Room Data Sheets for Generic and Key Rooms at Financial Close, Doc ref HLM-SZ-SL-RD-40-001 Rev 01, Dated 18.09.14

3.2.7 ADB has a set list of parameters derived from HTM and HBN requirements, but adjustments can be made using the software (it is based on a Microsoft database format rather than a row/column spreadsheet format such as Microsoft Excel). If there were differences within say SHTM's/SHBN's or project specific requirements, then in the case of Critical Care Departments, manual adjustments were made to reflect what Project Co felt was the agreed brief requirements, along with a note that Natural ventilation was appropriate see extracts below of some spaces.

ADB	Room Environmental Data	B1401

Project:	11072	RHSC & DCN
Department:	01	Key Rooms (Financial Close)
Room:	B1401	Single-bed cubicle
Room Number:	1-B1-037	**Revision Date:** 18/09/2014

AIR	Requirements	Notes
Winter Temperature (DegC):		Permissible space temperature range (dry bulb) (degC) : 18-25
Summer Temperature (DegC):		
Mechanical Ventilation (Supply ac/hr):	4.0	Ventilation Type: Natural & Central Supply Air
Mechanical Ventilation (Extract ac/hr):		via ensuite
Pressure Relative to Adjoining Space:	Positive	
Filtration (%DSE and % Arrestance):	/	G4 - Minimum
Humidity (%RH):		

General Notes: Heating Type: Radiant Panels with TRV Remote Head Adj. Cooling: Comfort Cooled Fresh Air

Figure 15 - Single Bed (None Isolation) Cubicle 4.0 ac/hr natural and mechanical ventilation

ADB	Room Environmental Data	B1401-01

Project:	11072	RHSC & DCN
Department:	01	Key Rooms (Financial Close)
Room:	B1401-01	Single-bed cubicle: Isolation
Room Number:	1-B1-036	**Revision Date:** 18/09/2014

AIR	Requirements	Notes
Winter Temperature (DegC):		Permissible space temperature range (dry bulb) (degC) : 21-25
Summer Temperature (DegC):		
Mechanical Ventilation (Supply ac/hr):	10.0	Supply via lobby
Mechanical Ventilation (Extract ac/hr):		
Pressure Relative to Adjoining Space:	Balanced	
Filtration (%DSE and % Arrestance):	/	F7 - minimum
Humidity (%RH):		

General Notes: Heating type: Adjacent space transfer air with BMS Adjustable Sensor. Cooling: Comfort Cooled Fresh Air

Figure 16 - Single Bed Isolation cubicle 10 Air Changes Mechanical

ADB	Room Environmental Data	B1609-01

Project:	11072	RHSC & DCN		
Department:	01	Key Rooms (Financial Close)		
Room:	B1609-01	4 beds Low Acuity		
Room Number:	1-B1-031		Revision Date:	18/09/2014

AIR	Requirements	Notes
Winter Temperature (DegC):		Permissible space temperature range (dry bulb) (degC) : 18 - 25
Summer Temperature (DegC):		
Mechanical Ventilation (Supply ac/hr):	4.0	Ventilation Type: Natural & Central Supply Air
Mechanical Ventilation (Extract ac/hr):		
Pressure Relative to Adjoining Space:	Positive	
Filtration (%DSE and % Arrestance):	/	G4 - minimum
Humidity (%RH):		

Figure 17 - 4 Bed Bay 4ac/hr ventilation natural and mechanical.

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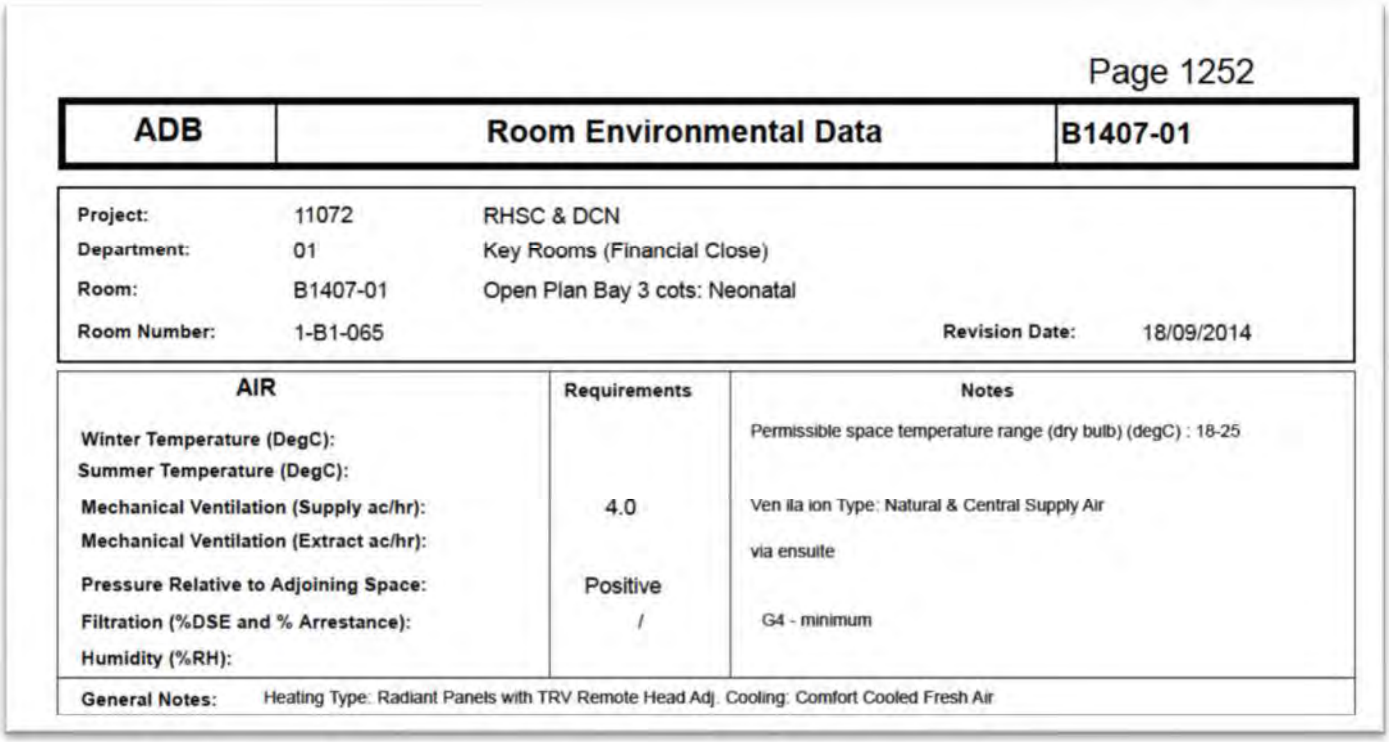
ADB	Room Environmental Data	B1609-02

Project:	11072	RHSC & DCN		
Department:	01	Key Rooms (Financial Close)		
Room:	B1609-02	4 beds High Acuity		
Room Number:	1-B1-063		Revision Date:	18/09/2014

AIR	Requirements	Notes
Winter Temperature (DegC):		Permissible space temperature range (dry bulb) (degC) : 18 - 25
Summer Temperature (DegC):		
Mechanical Ventilation (Supply ac/hr):	4.0	Ven ila ion Type: Natural & Central Supply Air
Mechanical Ventilation (Extract ac/hr):		
Pressure Relative to Adjoining Space:	Positive	
Filtration (%DSE and % Arrestance):	/	G4 minimum
Humidity (%RH):		
General Notes:	Heating Type: Radiant Panels with TRV Remote Head Adj. Cooling: Comfort Cooled Fresh Air	

Figure 18 - 4 beds high acuity 4 ac/hr ventilation natural and mechanical



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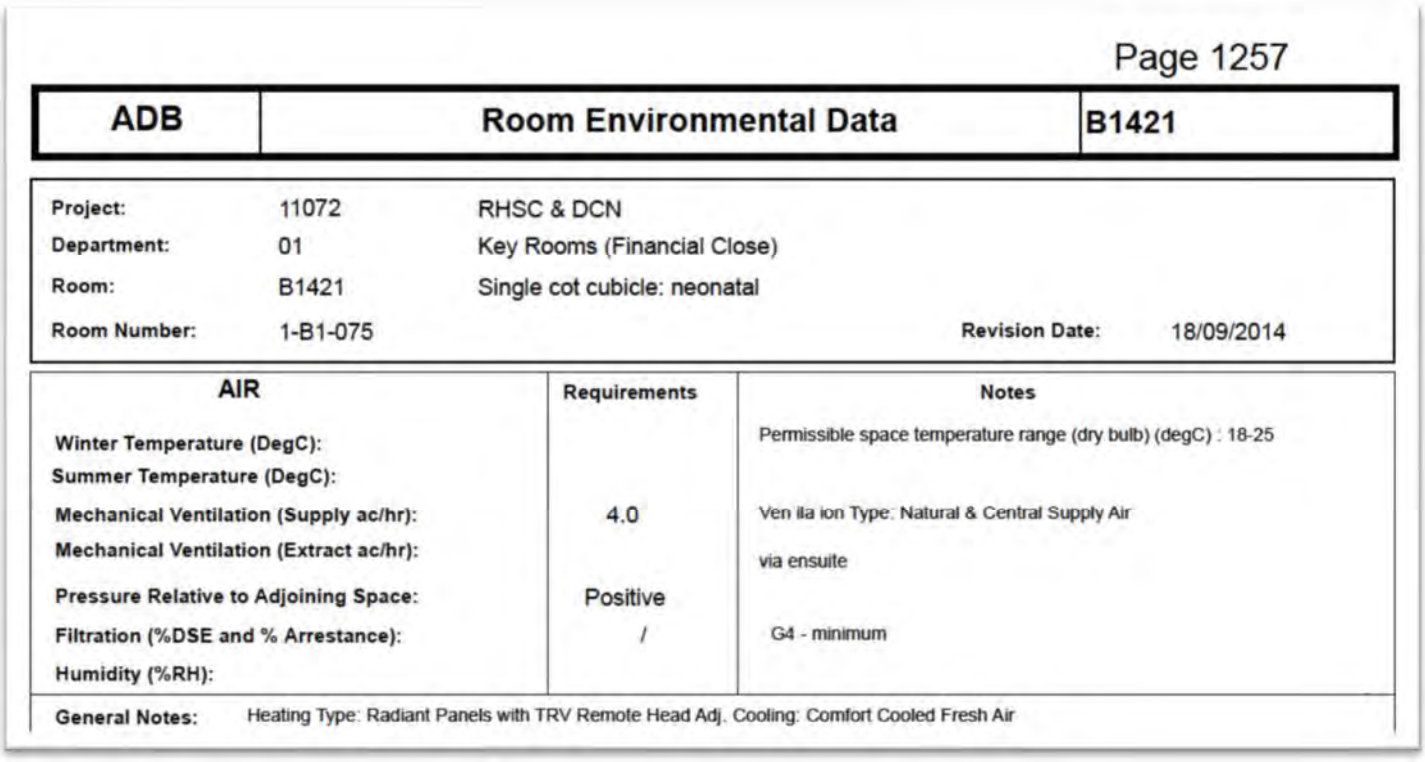
ADB	Room Environmental Data	B1407-01

Project:	11072	RHSC & DCN
Department:	01	Key Rooms (Financial Close)
Room:	B1407-01	Open Plan Bay 3 cots: Neonatal
Room Number:	1-B1-065	Revision Date: 18/09/2014

AIR	Requirements	Notes
Winter Temperature (DegC):		Permissible space temperature range (dry bulb) (degC) : 18-25
Summer Temperature (DegC):		
Mechanical Ventilation (Supply ac/hr):	4.0	Ven ila ion Type: Natural & Central Supply Air
Mechanical Ventilation (Extract ac/hr):		via ensuite
Pressure Relative to Adjoining Space:	Positive	
Filtration (%DSE and % Arrestance):	/	G4 - minimum
Humidity (%RH):		

General Notes: Heating Type: Radiant Panels with TRV Remote Head Adj. Cooling: Comfort Cooled Fresh Air

Figure 19 - 3 cot bay Neonatal 4ac/hr ventilation natural and mechanical.



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ADB	Room Environmental Data	B1421

Project:	11072	RHSC & DCN
Department:	01	Key Rooms (Financial Close)
Room:	B1421	Single cot cubicle: neonatal
Room Number:	1-B1-075	Revision Date: 18/09/2014

AIR	Requirements	Notes
Winter Temperature (DegC):		Permissible space temperature range (dry bulb) (degC) : 18-25
Summer Temperature (DegC):		
Mechanical Ventilation (Supply ac/hr):	4.0	Ven ila ion Type: Natural & Central Supply Air
Mechanical Ventilation (Extract ac/hr):		via ensuite
Pressure Relative to Adjoining Space:	Positive	
Filtration (%DSE and % Arrestance):	/	G4 - minimum
Humidity (%RH):		

General Notes: Heating Type: Radiant Panels with TRV Remote Head Adj. Cooling: Comfort Cooled Fresh Air

Figure 20 - Single cot cubicle Neonatal 4ac/hr ventilation natural and mechanical

3.2.8 Project Co's room data sheets clearly follow the values included in the body of the EM. I understand that there was no adverse comment by NHSL or its advisors on the content of these room data sheets. Based on the above extracts it is understandable, from an engineering perspective, why Project Co and their advisors were of the understanding that their solution was based (and agreed) on the lesser standards of 4ac/hr as it is clearly stated so in the rooms under review.

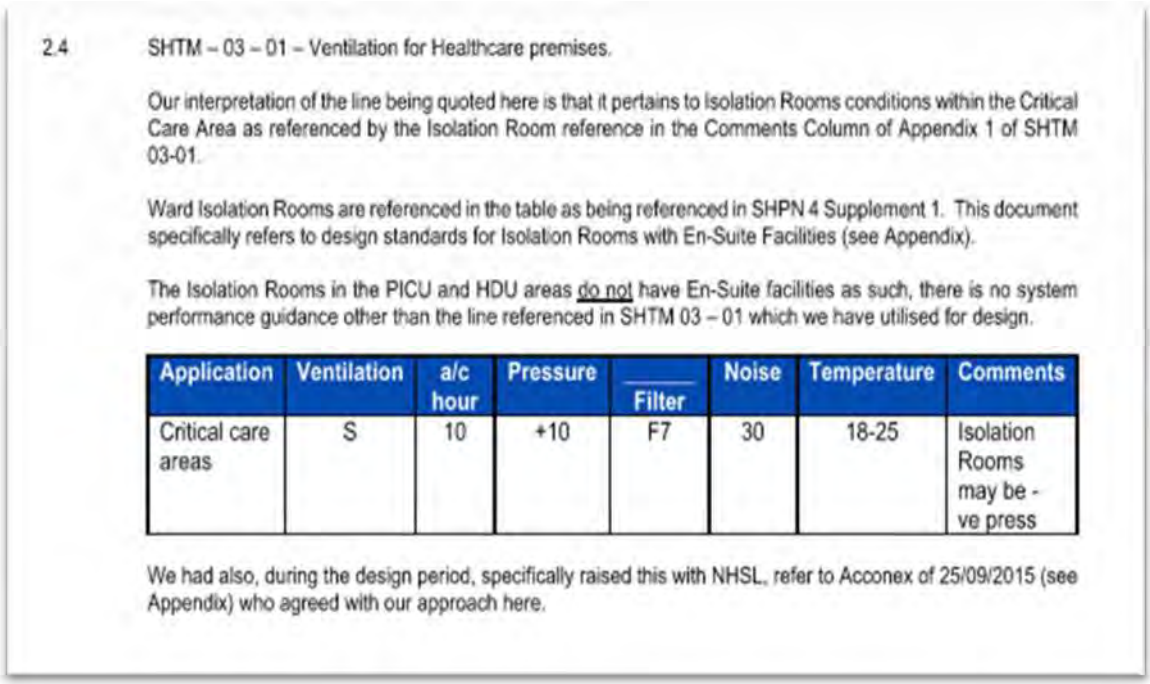
3.2.9 There were obviously some concerns relating to the environmental matrix and the placing of the EM as an item to fall under the Reviewable Design Data. This should not have been permitted as this was delaying resolution of the final agreed parameters for the ventilation system.

3.2.10 In my experience, Financial Close and contract programme are significantly impacted by time pressures as the PFI funders want a return on their investment as quickly as possible so the period from FC (release of funds) and operational date (repayment by means of "rental" by NHSL) is a key factor in any PFI project. Therefore, agreeing key parameters at financial close, and resolving issues as early as possible, is of critical importance to the success of a project.

3.2.11 In my opinion, based on my experience, RDD should have been reserved for elements that would not have had a significant impact on building the project. Typically, a provisional sum or budget cost could have been made for a range of options on say furniture allowance or paint colour, something that wasn't fundamental to the construction building of the hospital. All parties would need to be in agreement to the scope and impact of potential changes that may happen through the RDD sign-off process, so the full impact can be assessed.

3.3 Post Financial Close Design Development

3.3.1 It is clear from the TUV-SUD document Review of Ventilation Provisions for (B1) PICU and HDU Departments July 2019 and the chronology of events listed in PPP8, there was significant discussion relating to NHSL's requirements after Financial Close.



2.4 SHTM – 03 – 01 – Ventilation for Healthcare premises.

Our interpretation of the line being quoted here is that it pertains to Isolation Rooms conditions within the Critical Care Area as referenced by the Isolation Room reference in the Comments Column of Appendix 1 of SHTM 03-01.

Ward Isolation Rooms are referenced in the table as being referenced in SHPN 4 Supplement 1. This document specifically refers to design standards for Isolation Rooms with En-Suite Facilities (see Appendix).

The Isolation Rooms in the PICU and HDU areas do not have En-Suite facilities as such, there is no system performance guidance other than the line referenced in SHTM 03 – 01 which we have utilised for design.

Application	Ventilation	a/c hour	Pressure	Filter	Noise	Temperature	Comments
Critical care areas	S	10	+10	F7	30	18-25	Isolation Rooms may be -ve press

We had also, during the design period, specifically raised this with NHSL, refer to Acconex of 25/09/2015 (see Appendix) who agreed with our approach here.

Figure 21- Part Extract TUV-SUD Document

3.3.2 SHTM-03-01 in my opinion, clearly states Critical Care Areas, as requiring 10 air changes as acknowledged in the TUV-SUD Ventilation review document. However, TUV SUD, as is apparent from the note in the Comments column (see section 2.3) only applied these parameters to Isolation Rooms. They have interpreted SHTM 03-01 in one particular way and they record that NHSL were aware of their interpretation of this specific issue. TUV-SUD have supplied copies of emails lodged on the Aconex Document Management system in September 2015, that they state support their position although details of what process agreed and signed off this position unclear.

3.3.3 TUV-SUD also make reference to the air change rate as being 4 air changes in an email 12 April 2018, which is confirmed in an email between representatives of NHSL and IHSL dated 18 April 2018 as being the client's brief. This is verified by a document entitled Bedroom Ventilation Update meeting dated 24 February 2017 attended by the Client (and advisors) and Project Co (and its designers). It is not known why such a difference between air changes rates from published SHTM to EM occurred or was accepted.

3.4 Design Commentary process

3.4.1 The design review and sign-off process is detailed in PPP8, and in accordance with normal design review processes on many construction projects (conventional and PFI procurement routes) we would anticipate that design packages by way of drawings/(plans/schematics) and reports were submitted and drawings given Status A, B or C as it is far easier to clearly identify the acceptance or otherwise of an interpretation of text than by email chain. To shed light on how the agreement to the lower AC/HR contained in the Financial Close RDS was accepted, other than the clarification emailing in April 2018, the Settlement Agreement No 1 signed 22 February 2019, Schedule 1 Part 1 Technical Schedule items 4 and 7, identifies ventilation as still being in dispute. However, under Item 7 a list of drawings granted Status B are provided. Status B is understood (from a review of PPP8) to have meant - *Proceed subject to amendment as noted; Project Co to make amendments as noted and continue next level of design or to implement the works without re-submitting documents*. I have not seen the nature of the comments made.

3.4.2 The design commentary process would often involve the Client's technical advisors checking the Project Co submission and passing comment, each submission would not ordinarily be reviewed by the Client engineers or Infection Prevention and Control (IPC) team as it would be assumed the brief had been agreed by these parties prior to any design being commenced. Therefore, if the Clients advisors were of the view that 4 ac/hr was proposed in the original EM then this had been agreed with Client Engineers and IPC. It is not known if the Client Team or IPC had agreed the 4 ac/hr. Any such reduction should have been supported by either previously agreed locally agreed practice or scientific evidence. Some NHS Trusts have different design solutions, but this requires to be agreed and documented. For example, in Northern Ireland, they design isolation rooms differently to the HTM/HBN but issue a design specification endorsed by NHS Engineers, IPC team and Microbiologists to any party involved in designing and constructing Isolation rooms. I have not seen any similar documentation in relation to the RHCYP/DCN which suggests that there was a deliberate intention to depart from the requirements set out in SHTM 03-01 for rooms in Critical Care.

3.4.3 The 2022 Edition of SHTM 03-01 requires any future ventilation system design or changes from those set out in the guidance to be agreed the Ventilation Safety Group that typically comprises Engineers/IPC's/Clinicians/Authorising Engineers/Authorised Persons. The sign off and approval process is very specific and clear. These new procedures may mitigate the risk of such ambiguities arising in future projects.

4.0

Settlement Agreement No 1 - Initial Installed Ventilation System Review

4.0 Initial Installed System Design Review

4.1 Introduction

4.1.1 I understand that after financial close NHSL and IHSL entered into a settlement agreement (Settlement Agreement 1). This set out that 4 ac/h were required for certain Critical Care Rooms. From an engineering perspective, in my opinion, this was a mistake. It meant that the system had ventilation parameters for Critical Care Rooms that did not comply with SHTM 03-01. I am not aware of any risk assessment, or any assessment by IPC professionals, which justified these ventilation parameters. In future, any such decision would be taken with involvement from the Ventilation Safety Group. Therefore, this should mitigate against the risk of similar issues happening on a future project.

4.1.2 This section covers a review of ductwork systems associated with one of the rooms under consideration to demonstrate the design process and how impactful a change in ac/hr rate has been, to also explain the approach to designing a ventilation ductwork system and answer the question could the ductwork systems as installed accommodate a higher air change rate?

4.2 Critical Care Rooms Installed Design Review – Functionality and Capacity.

4.2.1 The design process for a ventilation system, follows a sequential process.

1) Agree design criteria for air requirements in a space, (either a defined air change rate or air volume to mitigate heat losses/gains),
2) Determine air flow regimes required to maintain negative, positive or balanced condition in spaces, (and any pressure differentials)
3) Measure room volume - if air change rate is agreed parameter. Key task is to verify proposed ceiling height with Architect,
4) Assess and plan how ductwork is to be distributed to the rooms in questions,
5) Calculate air volumes for all spaces using agreed parameter and assess air flow rates between spaces of differing pressures,
6) Add up air volumes,
7) Calculate duct sizes using agreed parameters, note duct size will have a maximum depth to fit within ceiling voids, (see below)

4.2.2 Determining a duct size has 3 defined criteria:

1) Air volume,
2) Design velocity - The noise level generated by airflow in ductwork is very sensitive to the velocity. The duct velocities should therefore be kept as low as possible,
3) Agree maximum pressure drop per metre of ductwork – required to ensure fan power efficiencies meet Building Regulation Energy Efficiency standards typically 1.0 pascal/metre max

4.2.3 Ductwork systems in hospital applications are generally low pressure and low velocity systems due to criteria 2 and 3 listed above. Generally accepted design practice uses design velocities as follows.

Table 2.16 Recommended maximum duct velocities for low-pressure ductwork systems where noise generation is the controlling factor

Typical applications	Typical noise rating (NR)*	Velocity / m·s^{-1}		
		Main ducts	Branch	Run-outs
Domestic buildings (bedrooms)	25	3.0	2.5	<2.0
Theatres, concert halls	20–25	4.0	2.5	<2.0
Auditoria, lecture halls, cinemas	25–30	4.0	3.5	<2.0
Bedrooms (non-domestic buildings)	20–30	5.0	4.5	2.5
Private offices, libraries	30–35	6.0	5.5	3.0
General offices, restaurants, banks	35–40	7.5	6.0	3.5
Department stores, supermarkets, shops, cafeterias	40–45	9.0	7.0	4.5
Industrial buildings	45–55	10.0	8.0	5.0

* See CIBSE Guide A (2015a), Table 1.16

Figure 22 - Table 2.16 from CIBSE Guide B2 Ventilation and Ductwork 2016. Highlighted row would be used in a healthcare environment.

4.2.4 The above has been standard industry practice, whilst published in 2016 similar design principles have been in use for many years and **it is not** common practice, to oversize ducts for future increase in air to be delivered through a ventilation duct network, unless specifically advised in a client brief. Maximum allowances would be typically 5-10% which is chosen to cover future duct leakage due to failing joint gaskets.

4.2.5 Example of duct serving room 1-B1-037 Critical Care Single Bed Cubicle

4.2.5.1 The room below is a single bedroom under review of approximate size 4.55m by 5.73m. In the absence of an architects ceiling strategy engineers would ordinarily assume (for initial sizing) typical bedrooms in a Critical Care Ward would have 3.0m high ceilings (see Figure 14 below). Normal bedrooms in other departments would have a ceiling height of 2.7m (see Figure 15 below) The room height is critical as it determines the room volume which is to be changed per hour by the ventilation system, the higher the ceiling the greater the actual air delivered volume to achieve the ac/hr design rate. The supply air is delivered into the space by the 250ØSD (250mm diameter) supply duct serving supply grille reference 01-418 SG-030.

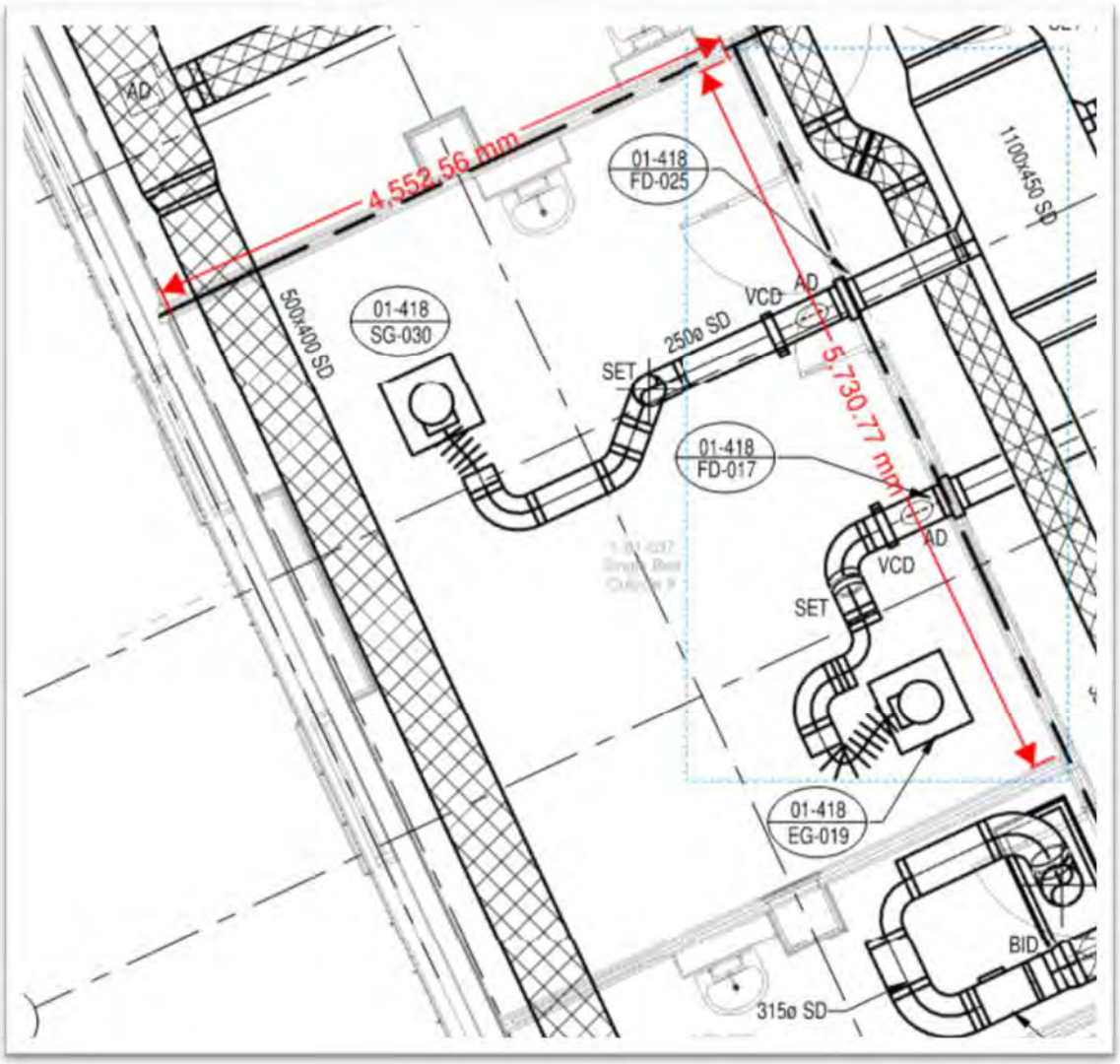
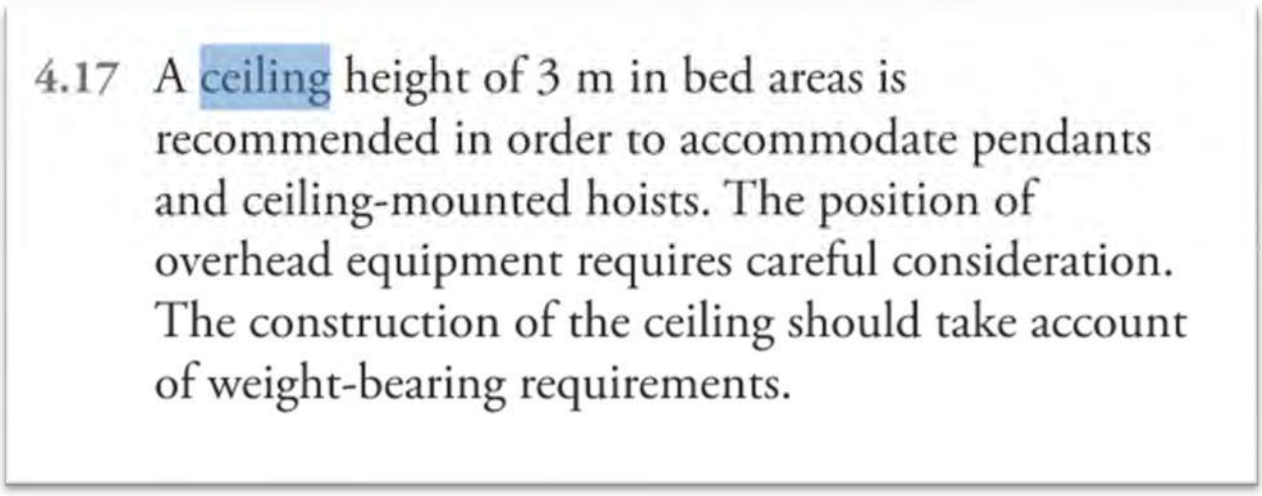
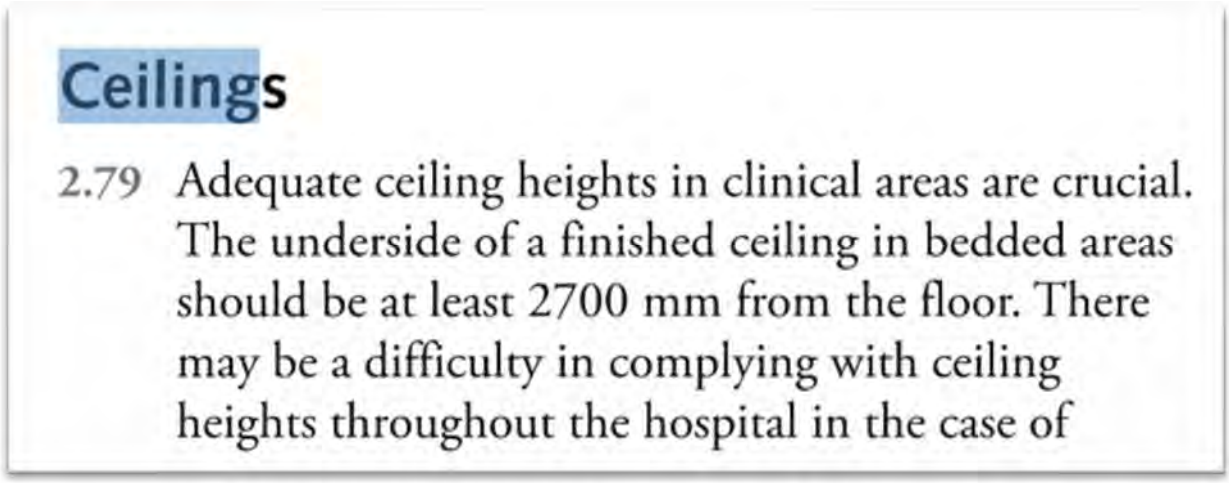


Figure 23 - Part Extract Level 01 Critical Care Area.



4.17 A ceiling height of 3 m in bed areas is recommended in order to accommodate pendants and ceiling-mounted hoists. The position of overhead equipment requires careful consideration. The construction of the ceiling should take account of weight-bearing requirements.

Figure 24 - Part extract HBN-04-02 Critical Care Units Pub -2013



Ceilings

2.79 Adequate ceiling heights in clinical areas are crucial. The underside of a finished ceiling in bedded areas should be at least 2700 mm from the floor. There may be a difficulty in complying with ceiling heights throughout the hospital in the case of

Figure 25 - Part extract HBN 04-01 Adult In-Patient facilities Pub 2009

4.2.5.2 Air Volume calculations at different air changes and resulting velocity in the 250mm diameter supply air duct indicated by the term 250Ø SD in figure 18 above have been made as follows. This was more straightforward than calculating the resulting velocities for a full suite of rooms.

Room Ref	Length	Width	Height	Room Volume	Chosen Air Change Rate	Resulting Air Volume m3/hr	Resulting Air Volume m3/sec	Resulting Air Volume litres/sec	Resulting duct velocity m/sec
1-B1-037	5.73	4.55	3.0	78.2	**4**	312.8	0.0869	87	1.75
1-B1-037	5.73	4.55	3.0	78.2	**6**	469.2	0.130	130	2.6
1-B1-037	5.73	4.55	3.0	78.2	**10**	782.0	0.217	217	4.2

4.2.5.3 If the ceiling height noted above was changed to 2.7m then the room volume becomes 70.4m3, 4 ac/hr would result in a delivery volume of 0.078m3/sec (78litres/sec) further indicating that the ceiling height is a crucial factor in sizing a ventilation system.

4.2.5.4 Based on the above table, at 4 ac/hr the supply duct serving the grille is correctly sized and could accommodate up to 6 ac/hr per hour but 10 ac/hr would not meet acceptable air velocity criteria and would likely result in noise generation within the duct, a 340mm diameter duct would be required to accommodate the higher air change rate using the sizing nomogram in Appendix B.

4.2.5.5 Using this simple example demonstrates that the design as originally proposed was only based on 4 ac/hr. A more detailed study was undertaken under Settlement Agreement 2 to establish what duct networks required amendment to ensure design velocities were maintained within acceptable limits.

4.3 Commissioning and Validation

4.3.1 There is a clear difference between Commissioning and Validation of an engineering system, the following definitions are taken directly from SHTM03-01 Part A 2014.

4.3.2 Commissioning - Commissioning is the process of advancing a system from physical completion to an operating condition. It will normally be carried out by specialist commissioning contractors working in conjunction with equipment suppliers. Commissioning will normally be the responsibility of the main or mechanical services contractor.

4.3.3 Validation - A process of proving that the system is fit for purpose and achieves the operating performance originally specified. It will normally be a condition of contract that “The system will be acceptable to the client if at the time of validation, it is considered fit for purpose and will only require routine maintenance in order to remain so for its projected life.”

4.3.4 Commissioning is often sub-divided into sections e.g., air handling unit, automatic controls, airside balance, building fabric and fittings. Each section may be commissioned by its specialist installer, and they are often accepted in isolation. Validation differs from commissioning in that its purpose is to look at the complete installation from air intake to extract discharge and assess its fitness for purpose as a whole. This involves examining the fabric of the building being served by the system and inspecting the ventilation equipment fitted as well as measuring the actual ventilation performance.

4.3.5 The commissioning therefore was undertaken by the mechanical contractor’s specialist commissioning company – H&V Commissioning Services Ltd (up to July 2019) to the design flow rate figures (indicated on the design drawings and schedules determined from the design brief ac/hr) with no requirement of the commissioning company to verify the systems performance against the SHTM 03-01 design rates of 10ac/hr. These volume flow rate measurements/tests would be carried out towards the end of the building process when a ventilation system ductwork distribution was complete. Often the initial balancing (as it is termed) and checking exercises are undertaken before ceilings are complete so the regulation devices (volume control dampers) are fixed such that the air volumes on the drawings are correctly delivered to the spaces. It is not normally a requirement for the commissioning company to record the ac/hr rate. H&V Commissioning Services will have issued system-by-system reports of their commissioning procedures and results only one relating to the Operating Theatres suite has been seen.

4.4 Installed Validation review and functionality.

4.4.1 IOM issued an independent validation report of the ventilation systems dated October 2019 ref P2739.[5] Their brief was a review of the Air Handling Unit (AHU) construction, and the air flow rates in the installed systems. Note that Mercury Engineering had received a Practical Completion (PC) certificate dated 22 February 2019. There is an Appendix of defects (not seen by Cundall) but the cover notes in the PC Certificate did not draw any attention to areas of concern relating to the Ventilation and Air Handling systems.

4.4.2 Using room 1-B1-037 as our design example, IOM noted in their report that the supply air change rate was only 3.4 ac/hr and **they were advised of a brief derogation** from 10 ac/hr down to 4 ac/hr but as was the case for other 4 bed rooms in the HDU they did not meet the 4 ac/hr so the derogation that was agreed based on IOM's testing the original system, did not meet the amended brief.

High Dependency areas.

Testing of the high dependency areas identified that the air change rates and pressure cascades did not meet the requirements. In early discussion with the Health Boards Technical Advisors (Mott MacDonald) we were advised that there was derogation in place which reduced the requirements from 10 ac/hr to 4.

The test information was summarised in an initial briefing to the Health Board during w/com 2nd July.

It later transpired that there was some confusion on the detail of the derogation and the Construction supply chain and the Health Board began working on both an interim solution to improve the situation and a longer term permanent solution.

The final results for the high dependency areas were as follows.

Area/Room	Room No	Supply Ac/hr rate	Extract Ac/hr rate	Pressure Differential	Comment
HDU 4 bed bay	1-B1-009	3.4	1.3	8 pa	requires 10 ac/hr supply and 10 pa
HDU 4 bed bay	1-B1-031	3.1	1.3	0.5 and 3.2 pa(2 doors)	requires 10 ac/hr supply and 10 pa
HDU 4 bed bay	1-B1-063	3.2	1.9	+1.5 pa	requires 10 ac/hr supply and 10 pa
HDU single bed cubicle	1-B1-037	3.4	1.5	+ 6.3 pa	requires 10 ac/hr supply, design pressure tba

Figure 26 - Part extract IOM Validation Report 4th October 2019

[5] IOM Limited Witnessing of theatre re-balancing and validation summary report Date of Witnessing 20 July 2019 Additional measurements 3 October 2019

4.4.3 IOM also issued separate Ventilation Validation reports for many areas, 52 reports in total, that provided evidence of individual room validation testing with comparisons against the ac/hr criteria in SHTM 03-01. Two Critical Care rooms in particular Rooms B1.031 – 4 bed bay and 1.B1.037 Single Bed Cubicle were tested on 22 June 2019 and 20 June 2019 respectively and final reports issued on 5th November 2019. Neither room was recorded as meeting the SHTM 03-01 10 ac/hr criteria. The individual room test reports make no reference to the original design criteria ONLY the SHTM03-01 criteria.

4.5 AHU Manufacture review.

4.5.1 There are a series of logs/trackers etc that identify manufacturing issues that demonstrated the AHU's were not constructed in accordance with SHTM-03-01. Mercury Engineering as engineering Sub Contractor and procurer of the AHU's undertook remedial works to improve the quality of the AHU's.

4.5.2 A 37-page AHU Remedial Schedule has been produced and each page list issues with every ahu and checked and signed off as being SHTM03-01 compliant in March/April 2020, refer to extract below. This only relates to the construction issues identified in the validation reports and not the air volume performance data.

AHU	ISSUES IDENTIFIED AT FIRST INSPECTION	Date RE-Inspected	Corrected (Y/N)
02-01	Fresh air inlet plenum debris	24.03.20	Y
	Pre-filters & F7 final filters some panels wrong orientation top row		Y
	Pre-filter sliders & spaces missing on floor		Y
	Exposed cables at fans		Y
	Motorised damper not closing fully		Y
	Return filter door clashing with cable tray		Y
	Inaccessible channels for cleaning at metalwork		Y
	AHU not labelled to SHTM standard		Y
	Mud on inside face side of ductwork after final supply VCD non access door		Y
	Muddy footprint on inside top face of ductwork after final supply VC		Y

Date re-inspected - 24.03.20

Satisfactory Y/N - Y

The signatories below confirm that the AHU meets the definition contained in section 8 of SHTM 03-01 as follows:
"The system will be acceptable to the client if at the time of validation it is considered fit for purpose and will only require routine maintenance in order to remain so for its projected life."

Organisation	Name	Signature	Date
NHSL - Commissioning Manager - Hard FM	R HENDERSON		6/5/20
NHSL - Infection Control Lead			
NHSL - Infection Control Consultant Microbiologist			
Technical Advisor - Mott MacDonald			
AE NHSL - Turner PES	JM [illegible]		
AE Independant Validation - IOM	PAUL JAMES		6/5/20
HFS			

Figure 27 - AHU Remedial schedule part extract.

4.6 Level 3 Isolation Room Ahu provision.

4.6.1 The level 1 and 3 isolation rooms were initially served from air handling units that also served other rooms. It is noted that HBN 04-Supplement 01[6] stated the following.

2.37 Ideally each isolation suite should have its own dedicated supply and extract system. If two or more suites share a ventilation system, there will be an inevitable increase in the complexity of the system and a corresponding reduction in reliability and serviceability. Routine maintenance or breakdown of the ventilation system will result in failure of all suites that it serves; therefore, ideally each such isolation suite should have its own dedicated AHU.

2.38 In a high-rise building, a common supply and extract system may be the only feasible solution. In this case, run and standby fans would be required for the extract, and a duplicate supply unit may be considered necessary. The common supply and extract systems will need to be controlled to ensure a constant volume in each isolation suite branch regardless of the number in use.

2.39 Ductwork should be kept as direct and simple as possible.

Figure 28 - Part Extract HBN-04-01-2013

[6] Health Building Note 04-01 Supplement 1-Isoaltion facilities for infectious patients in acute settings 2013

4.6.2 The reference to high rise is only strictly defined in the purpose of Fire Safety legislation and is defined as 18 metres from external ground to finished floor level of occupied floor ie level 0 to 3 which is actually 13.35m. The issue should really be considered as the **complexity** of running ductwork from the plant space to the risers and then to the rooms under consideration. The term ideally is not definitive, and some Trusts would accept (**by agreement)** a combined AHU(s) proposal as noted in 2.38 in Figure 28.

4.6.3 The rooms instructed under HVCN-0107 on level 1 are significantly more challenging to serve than those on level 3 due their location and proximity to risers. The rooms on the top floor could have been fed directly from plant on the roof (noting co-ordination issues would exist with plantrooms and helipad) but the strategy could have been dealt with early in the original design process. Individual extracts were incorporated in the design and taken to roof level, so it is not known why individual handling units were not designed in the original scheme.? It is not known if planning permission had any restrictions imposed that may have prevented these key plant items being incorporated onto the roof or if they could have been accommodated in the plantrooms.

4.7 Conclusion

4.7.1 As at early July 2019, the ventilation system for Critical Care Rooms at the RHCYP/DCN did not comply with the requirements of SHTM 03-01.

4.7.2 Sample calculations have shown that the original design, could have met the 4ac/hr design criteria (as set out in Settlement Agreement 1) but the IOM initial validation demonstrated that the installation did not meet the ac/hr rate for Critical Care as listed SHTM 03-01. It was also below the specified ac/hr, in the 4 rooms shown in Figure 16. This could be due to the design air flow rate being calculated on an incorrect ceiling height (room height assumed as being 2.7m not 3.0m) or incorrect capacity in the system. Architectural ceiling heights are not yet available to verify what the installed room height was.

4.7.3 It is not clear why separate isolation room air handling units were not considered particularly for level 3 isolation rooms. Combining rooms onto common systems is allowed with standby provision (which it is understood were provided) but it is ultimately a commercial/risk management issue that should be agreed with the operational and clinical staff.

5.0

Settlement Agreement 2 - Post 2019 High Value Change Impact

5.0 Post 2019 High Value Change Impact

5.1 Instructions issued.

5.1.1 The high value change order HVC 107 issued by NHSL to IHSL as part of Settlement Agreement No 2, and implemented by Imtech and Hoare Lea, provides very clear unambiguous direction to design, manufacture, supply, construct, test, commission and complete amendments to the ventilation systems to deliver 10 ac/hr at +10Pa as per SHTM 03-01 Appendix 1 Table A1 to the following rooms:

Room Number	Room Type
1-B1-065	*Neo Natal 3 cot area* including 1-B1-022 – *Corridor*, 1-B1-069 – *Staff Base*, 1-B1- 066 – *Clean Utility* and 1- B1-071 – *Resus Bay* which are all open to 1-B1-065.This area does not contain an en-suite.
1-B1-075	*Single cot cubicle neo natal* including *1-B1-074 en-suite*
1-B1-063	*Open plan bay 4 bed* This area does not contain an en-suite.
1-B1-037	*Single bed cubicle* This area does not contain an en-suite.
1-B1-031	*Open plan bay 4 bed* This area does not contain an en-suite.
1-B1-021	*Single bed cubicle* This area does not contain an en-suite.
1-B1-020	*Single bed cubicle* This area does not contain an en-suite.
1-B1-019	*Single bed cubicle* This area does not contain an en-suite.
1-B1-009	*Open plan bay 4 bed* This area does not contain an en-suite.

Figure 29 - Part Extract High Value Change Order 107.

5.1.2 HVC 107 also instructs the following changes to provide full compliance with SHTM 03-01

- Isolations rooms in Paediatric Critical Care - changes to provide PPVL, HEPA with dedicated Air Handling Units the ventilation system to isolation rooms 1-B1-016, 017, 026 and 1-B1-036
- Single and Multi-bedrooms in Haematology and Oncology changes to the ventilation systems to deliver 10air changes/hour at +10Pa and provide HEPA filters to rooms 3-C1.4-059, 057, 055, 046, 032, 018, 016, 013, 010, 074, 076, 078, 084 and 061
- Isolation rooms in Haematology and Oncology changes to provide PPVL, HEPA with dedicated Air Handling Units for rooms 3-C1.4-040, 043, 049, 052. 072

5.1.3 In my opinion, from an engineering perspective, the specifications set out above for the rooms in critical care and the isolation rooms should have been the specification for those rooms at financial close unless there was a specific clinical or IPC justification for a different set of parameters.

5.1.4 Re-Design Commentary process

5.1.4.1 We have been supplied with the comprehensive documents by Hoare Lea (via Imtech) which includes minutes of meetings, design process reports taking the client through confirmation of briefing to Concept Design, through Detailed Design and into Technical Design.

5.1.4.2 Stage reports including power point presentations have been issued clearly indicating the proposed plan of work.

5.1.5 Impacts of proposed changes

5.1.5.1 The impact of the change has caused significant impact on many systems e.g., ductwork, fire dampers and controls, controls heating and cooling pipe networks, power, lighting, fire alarms and controls that would never have been envisaged with the original design. Parts of the hospital would have to be declared as no-go areas for staff and patients whilst the remedial work was carried out on levels 1 and 3 and it is envisaged that disruption would be incurred on some of the primary systems such as heating and chilled water networks, electric power and control systems, which whilst this could be programmed could have impacted on clinical functionality in other areas not directly affected by the works.

5.1.5.2 Designs are often required to include margins for improvements later on during a system lifetime or a requirement to build in expandability but nothing of the scale of the re-design could have been envisaged by the original designers.

5.1.6 Isolation Room Air Handling Unit Changes

5.1.6.1 The re-design does enhance the air handling unit provision for isolation rooms taking them from being served by common systems to providing them with their own air handling unit.

5.1.6.2 The original design allocation of AHU's was an interpretation of SHTM's but would not have been uncommon assumption of the original designer especially considering location of the level 1 rooms in question being so far away from risers and plantrooms. It would have been a very difficult challenge to incorporate this strategy into the original building architecture.

5.1.7 Validation review

5.1.7.1 IOM produced an independent validation report in January/February 2021 ref P4884-1 that has retested the system utilising the same principles of measurements checks as carried out in 2019 but as amended under the change order and concluded that at the time of validation the systems are acceptable.

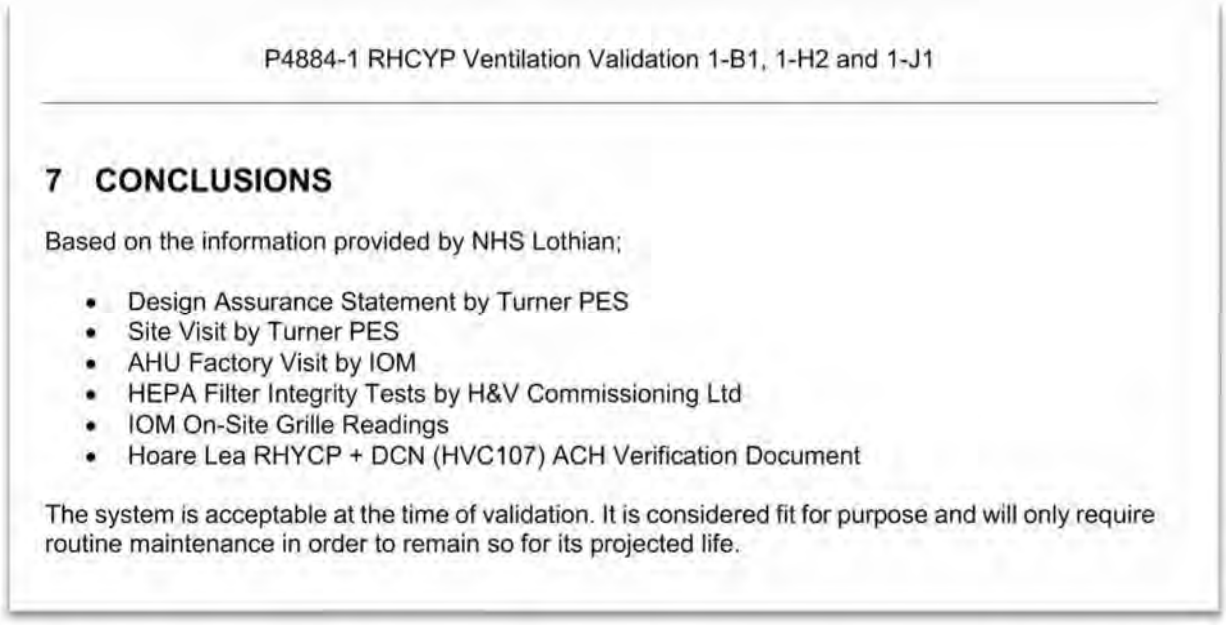
5.2 Conclusion

5.2.1 The amendments carried out under HVC107 have adhered to the processes and sign off procedures identified in SHTM 03-01 and independent validation testing has confirmed the amendments are in compliance with SHTM 03-01 as verified by IOM.

5.2.2 Therefore, the final design of the ventilation system for the Critical Care and Isolation Rooms at the RYCHP/DCN complies with published guidance and best practice. In particular, the design complies with the requirements of SHTM 03-01.

5.2.3 The 2021 Independent Validation reports by IOM have confirmed that ventilation system for critical care rooms and Isolation Rooms at the RHCYP/DCN, as per Settlement Agreement No 2, is operating so as to fully comply with published guidance (SHTM 03-01) and best practice.

5.2.4 The ventilation system in Critical Care and Isolation Rooms at the RHCYP/DCN has been designed, tested, commissioned and validated in compliance with published guidance (SHTM03-01) and best practice. The ventilation system has therefore been independently checked by IOM and demonstrated to be in accordance with the design requirements detailed in SHTM03-01, as noted in Figure 30 below. From an engineering perspective, the ventilation system in the Critical Care and Isolation Rooms in the RHCYP/DCN is adequate for its intended purpose. The Critical Care and Isolation Rooms provide a suitable environment for the delivery of safe, effective person-centred care.



P4884-1 RHCYP Ventilation Validation 1-B1, 1-H2 and 1-J1

7 CONCLUSIONS

Based on the information provided by NHS Lothian;

- Design Assurance Statement by Turner PES
- Site Visit by Turner PES
- AHU Factory Visit by IOM
- HEPA Filter Integrity Tests by H&V Commissioning Ltd
- IOM On-Site Grille Readings
- Hoare Lea RHYCP + DCN (HVC107) ACH Verification Document

The system is acceptable at the time of validation. It is considered fit for purpose and will only require routine maintenance in order to remain so for its projected life.

Figure 30- Conclusion from IOM report

6.0

Lessons Learnt

6.0 Lessons Learnt

6.1 NHS Scotland Assure

6.1.1 NHS Scotland has introduced its own Key Stage Assurance Review (KSARs) with workbooks issued for key stages of a Capital Projects design and procurement process namely Outline Business Case, Full Business Case, Construction and Handover stages.

6.1.2 The reviews cover Project Governance, Water and Plumbing systems, Ventilation Systems, Electrical Systems Medical Gas Systems, Fire Engineering and Infection Control in the Built Environment issues.

6.1.3 KSARs are a process ensuring facilities and the teams using them are able to deliver the standards required to provide the best and safest outcomes for patients, staff and visitors in the built environment.

6.1.4 KSARs deliver an independent peer review. Staff outside the project are engaged to use their experience and expertise to examine the progress and likelihood of successful delivery, with a particular emphasis on the safety of the patients, staff and visitors using the facility.

6.1.5 The reviews require many pieces of evidence and design statements to be in place against key stage checklists but lists Evidence of an Environmental Matrix being present, this **should not be** an independent matrix but one generated through the Activity Data base system which is a mandatory in NHS Scotland to avoid future contradictions or ambiguity between source data. New versions should be created to ensure up to date recommendations are incorporated to avoid cut and paste errors occurring. Only one set of documents should be created.

6.1.6 Any designs aspects that cannot be agreed prior to a commercial agreement deadline must be fully evaluated and the risk and consequence of not making decisions for whatever reasons must be fully evaluated.

6.2 Ventilation Safety Group

6.2.1 The creation of Ventilation Safety Group (and other Safety Group covering other key engineering infrastructure in hospitals) is a welcome improvement to current SHTM's. Each group will comprise Clinical, Estates, Infection Prevention and Control and FM team members. The group shall review competence of designers, future adaptability of schemes, variations and derogations from standards, commissioning proposals, governance arrangement and maintenance proposals. Historically design engineers have not been given the opportunities to sit with the operational staff to understand the day-to-day challenges faced and likewise operational staff have not had the opportunity to inform designers of operational constraints particularly when considering existing hospitals.

6.2.2 The creation of multi stakeholder Safety Groups provides an opportunity before significant time and expenditure is committed for complex engineering systems to be thoroughly reviewed and agreed.to mitigate risks of future projects.

6.2.3 Clarity of a brief to designers is essential to avoid misunderstanding whether this is captured as a specific SHTM compliance requirement or local variations to SHTM. Ensuring the SHTM's are included as part of statutory approval process and are therefore complied with by default will also assist future schemes.

7.0
Conclusions

7.0 Conclusions

7.1.1 The final designed and installed ventilation systems within the hospital Critical Care and Isolation Room areas referenced in this report have been independently tested, confirmed and verified as being compliant with guidance, good practice and most importantly SHTM-03-01. From an engineering perspective, the ventilation system in the Critical Care and Isolation Rooms in the RHCYP/DCN is adequate for its intended purpose. The Critical Care and Isolation Rooms provide a suitable environment for the delivery of safe, effective person-centred care.

7.1.2 In my opinion, on a project like the RHCYP/DCN, by the stage of financial close there should be no scope for confusion or ambiguity in relation to the required parameters of the ventilation system for critical care and isolation rooms. The requirements should be fixed and should not be held over as RDD. Including the EM as RDD had scope to cause significant confusion and ambiguity.

7.1.3 A full suite of room data sheets at financial close was not produced. However, RDS for key rooms were produced which included single and multi-bed rooms in critical care. These clearly specified 4 ac/h rather than 10 ac/h. In my opinion, the air changes per hour stated in the RDS for Critical Care rooms did not comply with the requirements of SHTM 03-01. This discrepancy should have been identified and closely examined before any contract was signed.

7.1.4 I am not clear why NHSL agreed to the specification for Critical Care rooms set out in Settlement Agreement 1. In my opinion, the specification does not comply with SHTM 03-01. I am not aware of whether there was any clinical, IPC or technical input in advance of the agreement being reached. Absent any such input, and a specific clinical justification that had been adequately risk assessed, from an engineering perspective, the ventilation design for Critical Care rooms did not conform to published guidance (namely SHTM 03-01), and good practice. From an engineering perspective, in my opinion, the ventilation system in the Critical Care Rooms did not provide a correct environment.

7.1.5 The lack of recorded involvement of Infection Prevention and Control teams does not surprise me. At the time of the RHCYP/DCN project, it was not unusual - certainly during the design and commissioning stages of projects – for there to be no significant IPC input. This was generally due to prevailing practices and lack of available resource and expertise. This has been addressed with the creation of the ventilation safety groups (in the most recent version of SHTM 03-01) and more importantly for NHS Scotland the Key Stage Assurance Reviews which have been implemented. Therefore, this issue has been largely addressed by changes after the RHCYP/DCN project.

7.1.6 Engineering Systems Safety groups and the KSAR reviews involving multiple stakeholders should hopefully prevent situations like the one experienced at this hospital from happening in the future.

Appendices

Appendices

Appendix A - Biography – Stephen Maddocks

a) I am a chartered building services engineer with over 40 years industry experience having started as an apprentice in the industry in 1981 based in a Building Services Design Consultancy (DSSR).

b) Academically I undertook a technician's certificate on day release whilst undertaking my Apprenticeship as I had left school at 16. I then undertook a Polytechnic Diploma at Newcastle Upon Tyne Polytechnic. In 1988, I started a one day a week degree course at University of Central Lancashire which allowed me to gain my charted status. All three of my key academic qualifications were specifically in Building Services Engineering.

c) I became a member of the Chartered Institute of Building Service Engineers (MCIBSE) in January 1995, a Chartered Engineer (C.Eng.) in April 1996 and a Fellow of the Institute of Healthcare Engineering and Estate Management (FIHEEM) in December 2005.

d) As noted above I started as an apprentice in the industry with DSSR who specialised in the design of Mechanical and Electrical (Building Services) services particularly in Hospitals and Healthcare projects. My first recollection of Hospital Design was collation and managing the documents for what was known as the Department of Health (England) (DoH-E) Exemplar Nucleus Hospital design pack. DSSR were engaged in writing the Building Services aspects of the exemplar design. I was also involved in learning the detailed design of hospital ventilation systems, manually calculating the pressure resistances through systems as we had no computer systems then.

e) I moved on to another consultancy (Hoare Lea) after nine years again specialising in hospitals, examples include major developments at Blackpool Victoria Hospital, Royal Lancaster Infirmary and Hope Hospital (Salford). In 1992 I joined the NHS as a Capital Projects Officer at Trafford General Hospital where I was responsible for new and refurbishment of the building services capital developments looking at building services aspects specifically. Schemes included replacement of an existing operating theatre suite with a new Ultra Clean Operating Theatre to increase Orthopaedic Surgery operations, Clinic refurbishments, Day Surgery unit and management of the replacement of the electrical infrastructure whilst keeping the hospital operational. I stayed at Trafford General for two years before re-joining my previous consultancy picking up on further healthcare work at many sites including Wigan Royal Albert Edward Infirmary, Royal Manchester Children's Hospital, Blackburn Queen Park Hospital, Evelina Children Hospital, Bishop Auckland Hospital, Wharfedale Hospital, North Wales Cancer Treatment Centre, to name a few staying there until 2002. Schemes were both Trust financed, and Private Finance Initiative (PFI) developer led schemes.

f) In 2002 I joined a multidisciplinary design consultancy (BDP) as Associate Director to lead on healthcare for the northwest Building Services team and I was responsible for leading the engineering design team for PFI schemes at Burnley General Hospital and Hexham General Hospital. I stayed there until 2006 when I joined the PFI division of a major contractor/developer (Lend Lease). This position only lasted just short of two years due to the company pulling out of the whole PFI market.

g) In 2008 I joined Cundall as a Partner and Health Sector leader. I have worked on a number of healthcare projects including delivering the Ulster Hospital redevelopment. This was a capital funded project in Northern Ireland with a value of approximately £200 million. The hospital was approximately 60,000 square metres. It was completed in 2 phases and delivered over 500 beds and supports full District General Hospital accommodations including Aseptic Pharmacy, MRI Suites, A&E, Restaurant and kitchen, Mortuary etc. I also assist with early design advice on projects across the globe.

h) I have been invited to give lectures at the University of Sheffield on the master's degree in architectural engineering on the principles of ventilation and air conditioning. I have mentored Architectural Students at Manchester Metropolitan University on the low energy design principles of their final year designs.

i) I've also been called in as a technical expert to look at a range of engineering issues including energy consumption in hospital, life expectancy of steam boiler systems, and nurse call systems.

j) I currently sit on the CIBSE Healthcare Committee and am one of a team of industry authors writing a Healthcare Design Guide to pass knowledge and lessons learnt to fellow designers due to the specialised nature of healthcare design

Appendix B - Duct sizing nomogram

Sizing nomogram reproduced from CIBSE Guide C – Reference Data 2007

Colour	Purpose
Green	Air volume at 4 Air changes per hour
Blue	Air volume at 6 Air changes per hour
Amber	Air volume at 10 Air changes per hour
Red	Resulting duct size 250mm diam (0.25m)

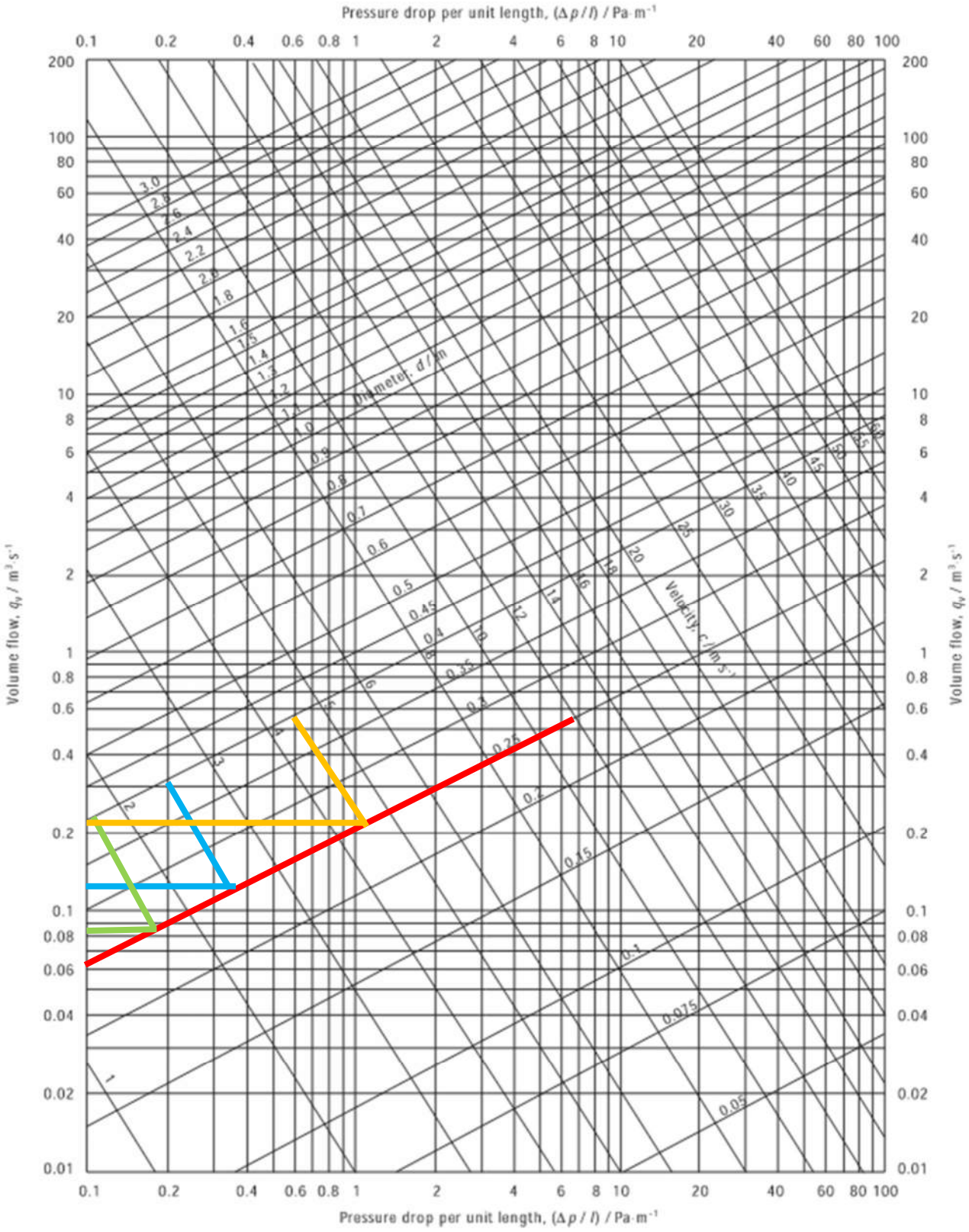


Figure 4.2 Pressure drop for air in galvanised circular ducts (ρ = 1.2 kg·m^{-3}; T = 293 K)

Cundall Johnston & Partners LLP
Fourways House 57 Hilton St Manchester M1 2EJ
Tel:+44 (0)161 244 5660
Asia Australia Europe MENA UK and Ireland
www.cundall.com

Scottish Hospitals Inquiry
Witness Statement of
Alan Morrison

Introduction

1. I am Alan Morrison. I am a civil servant employed by the Scottish Government as the Deputy Director of Health Infrastructure and Sustainability, a Scottish Government Health and Social Care Directorate.

2. The purpose of this witness statement is to address the questions raised by the Inquiry in relation to the Scottish Ministers' involvement with the establishment of NHS Scotland Assure, the role of NHS Scotland Assure and whether lessons have been learned following the delay of the opening of the Royal Hospital for Children Young People / Department for Clinical Neuroscience ("RHCYP/DCN").

3. The Inquiry already has evidence within the witness statements provided previously by myself and Mike Baxter (dated 11th and 20th April 2022, 14th February 2023, and 4th April 2023) and in Mike Baxter's oral evidence to the Inquiry on 16th May 2022 as to the Scottish Government's (and the Scottish Government's Health and Social Care Directorates' ("SGHD")) role and responsibilities in relation to the design and delivery of large healthcare projects, including the RHCYP/DCN.

Professional Background and Qualifications

4. I am a civil servant employed by the Scottish Government. My background is in accountancy, and I have a professional accountancy qualification from the Chartered Institute of Public Finance and Accountancy which I obtained in 1998.

5. I have been employed by the Scottish Government since April 2003. During that time, I have worked in the Health Finance Directorate in a number of different

roles as a qualified finance professional. Between January 2015 and March 2020, I was the Capital Accounting and Policy Manager for Health Infrastructure.

6. I am currently the Deputy Director of Health Infrastructure and Sustainability for the Scottish Government and have held this role since March 2020. While my job title changed between January 2015 and the present day, the duties have remained broadly the same, the main duties of which are:

- Developing and delivering the Capital Investment Strategy for the Health Portfolio, ensuring that it aligns with the infrastructure priorities of the wider Scottish Government, including delivering sustainable economic growth and delivering a lower carbon economy.
- Managing the portfolio's capital budget of £0.5 billion, ensuring that a breakeven position is delivered each year, that the expenditure supports the portfolio's strategic priorities and that value for money is delivered.
- Chairing (from December 2015) the Scottish Government Health and Social Care ("SGHSC") Capital Investment Group ("CIG") which oversees the review and scrutiny of all business cases submitted to SGHD, as well as being the lead official for the national infrastructure board.
- Interpreting HM Treasury and Scottish Government capital accounting and budgeting guidance and subsequent provision of advice to NHS Scotland finance professionals through working groups and written guidance.
- Leading the development of strategic advice to Ministers on the options and opportunities for prioritising, financing, and delivering infrastructure investment, including how it can help enable service reform and support clinical priorities.
- Managing and developing the capital accounting and policy framework for NHS Scotland that ensures compliance with HM Treasury and Scottish Government accounting, budgeting, and legislative requirements. This includes effective management of the capital investment programme and of property transactions, as well as performance management.
- Managing assurance processes in respect of major capital programmes of work by health boards: as well as engagement with internal stakeholders, one of my key responsibilities in this regard is to develop and maintain links

with a range of external stakeholders including other national groups, applying specialist knowledge and skills to review, analyse and manage risks.

7. As regards the setting up of NHS Scotland Assure, I sat on the NHS Scotland Assure Design Reference Group. A copy of the Reference Group's terms of reference are produced at **(A46528256 - NHS Scotland Assure Service Design Reference Group Terms of Reference – 5 July 2021 – Bundle 13, Volume 4 - Page 203)**. The terms of reference explain, amongst other things, the purpose, function and remit of the Reference Group. I was a member of the Reference Group, as a co-sponsor (along with a Deputy Director from the Chief Nursing Officer Directorate) on behalf of the Scottish Government. However, I did not really influence the plans beyond commenting upon and helping to shape their proposals.

The Background Surrounding the Establishment of NHS Scotland Assure

Early Discussions Surrounding the Creation of What Later Became NHS Scotland Assure

8. The Scottish Government were first notified about the issues with non-compliant ventilation in the critical care unit at the RHCYP/DCN on 2 July 2019. At that time, the Scottish Government was also aware of issues at the Queen Elizabeth University Hospital ("QEUH") where patterns of infection had been associated with the built environment. It was concerning to the Scottish Government that two newly constructed healthcare projects had defects in the built environment. This concern caused the Scottish Government to review the effectiveness of the build assurance process that was then in place for healthcare projects. Ultimately, this review led to the creation of NHS Scotland Assure.

9. I have been referred to an email chain attaching a note from the Cabinet Secretary to the First Minister concerning the RHCYP/DCN project dated 5th July 2019 **(A41448002 - RE_Update to First Minister – Bundle 13, Volume 4**

- Page 216). The draft note itself can be found at **(A44264335 - Edinburgh Children's Hospital – Note from Cab Sec to FM dated 5 July 2019 – Bundle 13, Volume 3 - Page 1144**). Within that note at page 1147 of the Bundle, it discusses the *"Role of HFS in all future builds for NHS Facilities".* It states *"My officials have today received a proposal from NSS which is currently being reviewed. There will be resource/capacity implications to consider for this and the other Sick Kids' reviews, given existing commitments to QEUH review, etc."* This appears to confirm that there was a discussion around 5 July 2019 with NHS NSS on the future role of Health Facilities Scotland ("HFS"). I recall that, at that time, the Cabinet Secretary, Jeane Freeman, was aware that she was accountable to the Scottish Parliament for delivery of healthcare in Scotland, including the built environment. Consequently, she wanted to be clear that there was a robust assurance process underlying the construction of healthcare projects.

10. I note the email dated 19th July 2019 to the First Minister on behalf of the Cabinet Secretary, Jeane Freeman, **(A41232311 – Health Finance and Infrastructure – Edinburgh Children's Hospital – First Minister - 19 July 2019 – Bundle 13, Volume 4 – Page 225)** attaching the note dated 19th July 2019 **(Bundle 13, Volume 4 - Page 226)**. I can see that I am not copied into the email, but I believe, looking at the format of the note, that it is one that I drafted. I note that at number 14 of the note it states *"Running in parallel, NSS will also provide assurance that current and recently completed major NHS capital projects comply with national standards. This work will take a risk-based approach and will inform development of the potential expansion of the current function and services provided by Health Facilities Scotland; including providing assurance going forward that NHS buildings meet extant standards."* At this point the detail as to how NHS NSS would deliver the "assurance" noted was not known, albeit the ultimate objective was clear (**Bundle 13, Volume 4 – Page 227**).

11. I have been referred to **(A41225838 – Email from Rowena Roche to Barbara Crowe attaching an action list that Health Resilience were maintaining as part of the initial response arrangements around the delay to the RHCYP**

migration – 22 July 2019 – Bundle 7, Volume 2 (of 3) - Page 9) which is an email chain dated between 18th and 22nd July 2019. I am copied into both emails in the chain. Attached to the email to Rowena Roche, which I am cc'd into, is an 'Action List' **(A41225838 – NHS Lothian – Edinburgh Children's Hospital – Action List Closure – Bundle 7, Volume 2 (of 3) - Page 11)**. At number 18 it states, *"Provide acknowledgement to NSS to proceed to the next stage of development of the Centre for Expertise on Infection Control".* By this time, we were taking what can be broadly characterised as a 'two-pronged' approach. One prong posed the question "what are we doing immediately to get the hospital open?" The other posed the question "what do we need to do to make sure that it doesn't happen again?"

12. By this time, the Scottish Government was speaking to NHS NSS on a regular basis regarding the development of the Centre of Expertise, as it was known then (now NHS Scotland Assure). I was not involved in the majority of those conversations. I think that Christine McLaughlin (Chief Finance Officer NHS Scotland and Director of Health Finance, Corporate Governance and Value) led on these discussions on behalf of the Government. I am not sure who was leading the initial discussions at NHS NSS' end.

13. I have been referred to the Cabinet Secretary's statement to the Scottish Parliament of 11 September 2019 **(A41229927 – DH Statement 190911 – Bundle 7, Volume 3 (of 3) - Page 544).** The statement regarded the ongoing developments surrounding the RHCYP/DCN project. At page 556 the Cabinet Secretary states *"There have been many major infrastructure projects delivered by NHS boards in Scotland – on time, on budget and in compliance. However, we cannot have a repetition of the problems we see today – that's not right for the public purse and it's not good enough for patients or staff…. In line with the Programme for Government, we will move swiftly to establish a new national body for reducing and effectively managing risks in the healthcare built environment. The new body will have oversight for the design, planning, construction and maintenance of major NHS infrastructure developments – not least in order to ensure effective infection prevention and control."*

The 2019-20 Programme for Government

14. In September 2019, the Scottish Government published the Programme for Government ("PFG") **(A46528785 - Scottish Government Programme for Scotland 2019-20 – 3 September 2019' – Bundle 13, Volume 4 - Page 229)**, which included the following at page 17 of the document (**Bundle 13, Volume 4, Page 247**): *"To ensure patient safety we will create a new national body to strengthen infection prevention and control, including in the built environment. The body will have oversight for the design, construction and maintenance of major infrastructure developments within the NHS and also play a crucial policy and guidance role regarding incidents and outbreaks across health and social care."*

15. The aim of the commitment was to ensure that NHS buildings are, as far as is possible, compliant with the best available guidance in all aspects of safety; and that healthcare facilities are designed and built to be safe at the point of initiation of services; and maintained on an ongoing basis as such. The vision for the next five years was set out on page 11 of the Target Operating Model ("TOM") as follows: *"To be an internationally recognised centre of expertise for reducing infection and other risks in the healthcare-built environment and ensuring they are fit for purpose, cost effective and capable of delivering sustainable services over the long term."* **(A32341688 - Target Operating Model document for the Centre of Excellence – Bundle 9 - Page 14)**.

16. Following publication of the PFG, NHS NSS established a dedicated team to develop the detail as to how the proposal could be delivered, and to report thereon to the Scottish Government.

The Target Operating Model ("TOM") / Quality in the Healthcare Built Environment

17. NHS NSS's commission from the Scottish Government was to support the creation of Quality in the Healthcare Built Environment ("QHBE"). QHBE later became known as NHS Scotland Assure. The service was designed to improve the management of risk in the built environment across Scotland,

providing greater confidence to stakeholders. The model was enabled by establishing robust relationships across the system, having joint accountability alongside health boards and, in due course, providing a structured forum that will enable construction professionals and clinical colleagues to work in an integrated manner to ensure that the healthcare-built environment is safe, fit for purpose, cost effective and capable of delivering sustainable services over the long term. TOM was published on 26 February 2020 **(A32341688 - Target Operating Model document for the Centre of Excellence – Bundle 9 - Page 4)**.

18. In March 2020, the Cabinet Secretary, Jeanne Freeman, met with Jacqui Reilly (Director of Nursing at NSS and senior responsible officer for the NHS Scotland Assure Project), and her development team, to discuss their initial views for the NHS Scotland Assure project. At the time, the Cabinet Secretary's principal concern with the existing model was that she wanted it to be clear that Health Boards would be unable to proceed through key stages of project delivery without sign off from QHBE.

19. Consequently, the TOM was modified so that a project could not proceed without explicit sign off from QHBE at key stages. Despite the additional level of assurance brought about by the QHBE sign off process it must be recognised there was no intention to move the accountability for delivery of healthcare projects away from the local NHS board. Local boards, as opposed to the Scottish Government or NSS, retain responsibility for the delivery of healthcare projects. The TOM **(A32341688 - Target Operating Model document for the Centre of Excellence – Bundle 9 - Page 23)**, the sets out the expected benefits of this investment as:

- *Increased patient safety by reducing the risk of healthcare associated infections and other avoidable harms such as burns, electrocution, ligature injury, and medical gas intoxication.*
- *Reduced costs in relation to building retrofit costs, delays to opening new hospitals and additional length of stay in hospital settings due to healthcare associated infections.*

- *Increased public confidence through the creation of a national body of expertise which will be a trusted independent voice. This will enhance confidence in how healthcare environments are built, refurbished and maintained, to minimise the risk to the public in relation to the wider built environment risk, but also in relation to how the risk of infection is managed across the healthcare environment.*
- *Sustainability by ensuring more flexibility, adaptability and 'futureproofing' of infrastructure, and also finding innovative solutions to energy efficient hospital design.*
- *Strengthened clinical outcome-focused relationships in the built environment through creating a whole system approach in healthcare; relationships will be strengthened nationally and locally.*
- *International leadership with increased connections with expertise across other countries.*

20. The benefits of this approach were demonstrated during the construction of NHS Louisa Jordan (April 2020), which was completed quickly, but in a way that ensured that the hospital complied with all relevant guidance.

NHS Scotland Assure's Role

21. NHS Scotland Assure's role is to seek to ensure compliance with all relevant guidance and to help health boards demonstrate this at key review stages of a facility's design and build process. NHS Scotland Assure focusses on new builds and major refurbishments within the healthcare estate. NHS Scotland Assure also considers projects that are identified as complex due to the needs of patients using the facilities.

22. NHS Scotland Assure's engagement does not change accountability for the projects: health boards remain accountable for their delivery and NHS Scotland Assure will be accountable for the services it provides that support delivery of the health board's projects.

23. NHS Scotland Assure works closely with health boards to identify where a Key

Stage Assurance Review ("KSAR") may be required for projects under their delegated authority, utilising a triage system to assess risk and complexity of projects. The KSAR focuses on key topics covered by SHTM guidance, specifically – infection control, water, ventilation, electrical, plumbing, medical gases installations and fire. The aim is to ensure that projects are designed, installed and functioning from initial commissioning of a new facility and throughout its lifetime (as far as is possible). Health boards are required to have appropriate governance in place at all stages of the construction procurement journey. Each health board will be fully responsible for the delivery of all projects, and its own internal process and resources for carrying out internal reviews and audits of its activities. The KSAR is seen as a complementary independent review, and not as a replacement for the responsibilities of the health board. I discuss KSAR and how they are linked to the Scottish Government's business case review process later in this statement.

The Relationship / Function Between NHS Scotland Assure and the Scottish Government Health Directorate (SGHD).

24. NHS Scotland Assure work closely with the Scottish Government and meet regularly to discuss progress with key projects. The performance of all NHS Boards is reviewed by SGHD at annual reviews. Annual reviews provide an opportunity for members of NHS Scotland Assure to highlight the achievements of the year whilst discussing issues with members of the SGHD. The agenda of the annual reviews are set by the SGHD and are based on national standards and local performance targets.

25. In addition to the annual reviews, there is a general monthly catch up, which involves Julie Critchley (Director of NHS Scotland Assure), her key technical staff, plus me and a couple of people from my team (normally Alan Gray and Paul Mortimer). The monthly meetings allow NHS Scotland Assure to keep the Scottish Government up to date on their work. The meetings also provide a forum for discussion on business cases that are in development and projects that are past the business case review process and are now in construction

(the SGHD business case review process is described in my statement of 11 April 2020 (**A37810661 – Witness Statement of Alan Morrison dated 11 April 2022 – Bundle 13, Volume 4, Page 396 to 402**)). Those meetings predominantly focus on the business cases that are due to be coming to the CIG in the near future. The meetings will also touch on other issues.

26. At the time of providing this statement, there have been issues with projects in construction surrounding The Baird Family Hospital and The ANCHOR cancer centre in Aberdeen. NHS Scotland Assure, who are able to bring their experience from other capital build projects, are a key part of resolving the challenges that have presented at these hospitals.

27. We also meet with NHS Scotland Assure on an ad hoc basis about specific projects if they are particularly challenging. It is usually the same people who attend (give or take inevitable diary / leave restrictions). A collaborative approach is taken. Interactions tend to be about working together to move an issue forward, rather than thinking about who reports to whom or where accountability lies.

28. There are also informal lines of communication between the CIG, National Infrastructure Board ("NIB"), Strategic Facilities Group ("SFG") and NHS Scotland Assure. I speak with members of NHS Scotland Assure whenever necessary and invite the same open communication from them through those arenas.

The Scottish Capital Investment Group ("CIG") and How it Interrelates with NHS Scotland Assure

29. NHS Scotland Assure works with the health board during the preparation and presentation of its business case. NHS Scotland Assure review business case proposals to ensure compliance with relevant technical standards and guidance. After 1st June 2021, all health board projects that require review and approval from the CIG, need to engage with NHS Scotland Assure to undertake KSAR. This was set out in our letter of 27th May 2021 **(A43494369 – Letter dated 27 May 2021 from Richard McCallum, Director of Health Finance and**

Governance to NHS Board Chief Executives and others – Bundle 9 - Page 70). Approval from CIG requires the KSAR to have been satisfactorily completed as well as for the CIG to be content with the business case. The KSARs have been designed to provide assurance to the Scottish Government that guidance, such as SHTMs, has been followed. The Scottish Government may also commission NHS Scotland Assure to undertake reviews on other healthcare-built environment projects where considered appropriate. For example, works are underway at the QEUH to replace internal cladding. NHS Scotland Assure are supporting NHSGGC with this work and providing the Government with assurance in relation thereto.

30. The Inquiry has also heard evidence about KSAR undertaken by the Scottish Futures Trust ("SFT"). The KSAR undertaken by SFT is a separate process to that undertaken by NHS Scotland Assure. In any event, SFT only provide advice on revenue funded projects (public private partnerships) and there have been no revenue funded business cases considered by CIG since the creation of the NHS Scotland Assure KSAR.

31. I chair the CIG. There is wide representation on the group from across the Scottish Government alongside other organisations. NHS Scotland Assure and SFT are two external bodies that feed into the collective. NHS Scotland Assure KSAR is the starting point for any discussion on any business case. The first question we ask is, effectively, "What is the KSAR status?". In practice, all business cases have gone through the KSAR before their business case reaches CIG. In other words, if the KSAR has not been signed off, we are very unlikely to be reviewing the business case.

32. In practice, NHS Scotland Assure does a lot of work through the KSAR process before the business case reaches CIG. Prior to the business case reaching CIG the relevant KSAR will be discussed at our monthly meeting with NHS Scotland Assure. This allows any issues to be flagged early in the process so that when the business case is ultimately presented any "loose ends" of the KSAR process that were outstanding at the monthly meeting are "tied off". Prior to the creation of NHS Scotland Assure we had similar meetings with NSS to

discuss the NHS Scotland Design Assessment Process ("NDAP") process. I describe NDAP in my statement of 11 April 2022 (**A37810661 – Witness Statement of Alan Morrison - In response to a Rule 8 Request dated 3 March 2022 - 11 April 2022– Bundle 13, Volume 4, Page 1329**). The KSAR process undertaken by NHS Scotland Assure supplements the NDAP process.

33. When it comes to the actual discussion at CIG on the merits of the business case all participants present, whether that be NHS Scotland Assure, the Chief Nursing Officer, the Scottish Futures Trust, the Health Finance Directorate or other members from across SGHD, are offered the opportunity to provide their assessment on the business case. Everybody is encouraged to talk about the whole business case. I speak to Health Finance issues when the finance elements are discussed. NHS Scotland Assure will comment on technical assurance or areas concerning aspects of project management. Their voice is particularly important in that respect.

34. The final decision whether CIG is supportive of a business case going to the next stage is a collective one. It tends to be quite clear whether a business case is going to be approved or not. If we are supportive of the business case, I then draft a letter for the Director General saying that CIG recommend that the business case be approved. It is then for the Director General to decide whether to accept the recommendation and approve the business case; in my experience the Director General always accepts the recommendation from CIG. Where a business case is deemed not to be approvable it is my role, as the current Chair of CIG, to explain to the senior responsible officer for the project where we think it needs improvement. Depending on what the issues are, the members of CIG would subsequently help resolve them. We would work with the owners of the business case to work through the weaknesses that we saw. Once those weaknesses are resolved, the business case would come back, and we go through the same review process again.

35. Everything needs to be aligned before we make the decision to recommend approval of the business case. It is possible that NHS Scotland Assure can say that they are content with the proposal, but the business case does not proceed

after reaching CIG. That is particularly so when there are questions surrounding whether the project is affordable or not. Those questions can override any sign-off from NHS Scotland Assure.

36. CIG is not a rubber-stamping governance body. During the first three or four years of my chairmanship of CIG about half the business cases were not approved. There were varied reasons why we did not approve business cases, including affordability, the service model not being sufficiently developed and failure to demonstrate that the building could meet net zero environmental targets.

37. I brought Paul Mortimer (Head of NHS Strategic Capital Investment) into my team specifically to work with NHS boards on their business cases. He reports directly to me. He is on secondment from NSS. He has a background in strategic business case development. Paul has made an enormous difference since coming in. His role is to get upstream and have a conversation with the NHS board six months before their business case is due to be submitted to the CIG. It is unpleasant to have to tell somebody who has spent two years of their life working on a business case that their business case is not good enough. I think that, because we have taken that extra step, the number of business cases that are not being approved is reducing. However, I also think that is also partly because we are reviewing fewer business cases because of a reduction in available funding for healthcare projects.

38. I have been asked whether the involvement of NHS Scotland Assure in CIG has had an impact in terms of the number of business cases being submitted. NHS Scotland Assure, through the KSARs, have created an additional process for health boards. This may mean that it takes boards longer to develop and submit their business cases than previously. However, I don't think the creation of NHS Scotland Assure has led to a reduction in the number of business cases being presented to CIG.

National Infrastructure Board ("NIB") and its Interrelationship with NHS Scotland Assure

39. The Terms of Reference for NIB can be found at (**A46527805** - **National Infrastructure Board – Terms of Reference – February 2018 – Bundle 13, Volume 4 - Page 415)**. The terms of reference explain, amongst other things, the purpose, function, membership and remit of NIB. Those terms provide:

> *The purpose of the Board is to provide strategic leadership and expertise in driving forward a National Strategy for infrastructure change, as well as providing national oversight on the continued safe and effective operation of the retained estate.*
>
> *It will develop a National Infrastructure Strategy in support of emerging national clinical service plans and emerging regional plans to form a nationally prioritised programme of infrastructure change. It will also provide oversight, influence and challenge on how this is implemented across Regional Boards, NHS Boards and Integrated Joint Boards through their strategic service plans, Local Delivery Plans, Property and Asset Management Strategies, and individual business case submissions.*
>
> *It will be the national authoritative body for mandating action by NHS Boards on strategic infrastructure, asset management and facilities service related statutory compliance, technical, performance, and governance matters.*

40. The NIB was established about five years ago. It's relatively new in governance terms. NIB was the idea of Christine McLaughlin (then Director of Health Finance). She thought that it would be appropriate to have a governance group that was focused entirely on health infrastructure issues. What is discussed at NIB is infrastructure, in the widest sense of the word. It is not simply about buildings. It is about the equipment, the digital environment, primary care, and e-health. It was set up to have a focus on the risks and opportunities that exist with our infrastructure.

41. NIB was originally co-chaired by Christine McLaughlin and Alan Gray (the then Director of Finance at NHS Grampian). Alan Gray retired from his post at NHS

Grampian and now works within the Scottish Government as an Infrastructure Planning Lead. Alan Gray now co-chairs NIB with Richard McCallum (current Director of Finance). However, in practice, Alan Gray takes the lead on matters discussed at NIB.

42. What we try to do at NIB is think about our long-term asset management strategy. We think about where our priorities should be and where we should focus our limited resource in terms of new builds, refurbishment, and digital equipment. It could be said that NIB collectively provides a layer of governance and scrutiny around some of the issues that all its members are individually managing.

43. NIB is similar in structure to CIG. It has a reasonably wide representation, including:

- Director of Health Finance at Scottish Government
- NHS Chief Executives – Territorial Boards
- NHS Chief Executives – National Boards
- The Director of NHS Scotland Assure
- Representation from NHS Directors of Finance
- Representation from the Strategic Facilities Group ("SFG")
- Representation from the Strategic Planning Forum
- Chair of the NHS Capital Investment Group
- Chief Executive of Scottish Futures Trust
- Deputy Director of Infrastructure at Scottish Government
- Chair of NHS eHealth Leads

44. NIB follows a similar process to CIG in terms of making decisions collectively. The reason why we want that wide variety of skills and experiences in the group is so that we can get a wider perspective on what we should be doing. For example, it allows us when making decisions, to prioritise digital over equipment or acute over primary care. It allows us to make informed choices and enables us to easily have informed discussions with representatives who can provide relevant information.

45. Julie Critchley (Director of NHS Scotland Assure) is also a member of NIB. NHS Scotland Assure is a key part of our infrastructure programme. Julie Critchley is treated no differently to the NHS Chief Executives or the NHS Directors of Finance in the group. Her views all go into the melting-pot when discussions take place. She provides a different and important perspective. As a group, we use her, and NHS Scotland Assure's, expertise in relation to technical matters. By way of example, one of the things that we are conscious of is managing risk in the NHS estate. Julie Critchley, supported by her technical colleagues in engineering and infection control, will highlight where the risks are. She will input what we can do to mitigate and manage those risks. She provides that input over and above the other people present in the group.

46. The NHS Chief Executives have a very broad understanding of things. They are very aware of infection control risk, the backlog of maintenance and so on. Likewise, the Directors of Finance have a broad understanding. They are involved in managing the estate so have all sorts of other knowledge related thereto. They all see what the challenges are and can contribute.

47. HFS and NHS Scotland Assure have had an interchangeable role within the group. The technical function that either HFS or NHS Scotland Assure have provided have always been part of the NIB. NIB has only been in existence for around five years, so NHS Scotland Assure has had an involvement with NIB for most that time. Because of that it is difficult for me to say what impact it has had on the group. Prior to NHS Scotland Assure's existence, there was a presence in the form of HFS. Tom Steele (then Director of HFS) was a founding member of the original NIB. When he moved to NHS Greater Glasgow and Clyde to become their Estates Director, he was replaced by Gordon James at HFS. He, in turn, was replaced by Julie Critchley when NHS Scotland Assure was established.

The Strategic Facilities Group (SFG) and how it Interrelates with NHS Scotland Assure

48. The SFG is a meeting of NHS Directors of Estates and Facilities, along with NHS Scotland Assure and Scottish Government representatives. The Director of NHS Scotland Assure chairs the meeting. The terms of reference for SFG can be found at **(A44601013 – NSFG-2023-01-04 National Strategic Facilities Group TOR Pack number 7 – Bundle 13, Volume 3 - Page 722)**. SFG is, in essence, the Director of Estates and Facilities' forum to discuss relevant issues. It is chaired by Julie Critchley. NHS Scotland Assure manage and lead the group. They set the agenda, chair the group, and do all the administration. It's up to them to decide what is on the agenda and what should be discussed.

49. There are four sub-groups of SFG – the Soft Facilities Management Group ("SFMAG"), the Scottish Engineering Technology Advisory Group ("SETAG"), the Scottish Property Advisory Group ("SPAG") and the NHSS Environmental Advisory Group ("NESG"). The four groups identify the main risks and the Director of Estates, NHS Scotland Assure and I discuss what they are doing to mitigate them. During the meeting I provide an update on some of the wider issues. The financial and capital position is clearly of interest to the group. I highlight anything that I think is of relevance that they might be interested in.

50. I have been asked by the Inquiry if SETAG would be the, or at least a forum at which a need to revise / improve / modernise guidance applicable to building services (such as SHTM 03 01 on ventilation) might be discussed / proposed / suggested? Yes. SETAG would lead on such issues.

The Structure of NHS Scotland Assure as Understood From the Scottish Government's Perspective.

51. NHS Scotland Assure was formally established on 1st June 2021 (though an Interim Review Service had been running since early 2020). NHS Scotland Assure is a division of NHS NSS. NHS NSS is the "Common Services Agency" created under section 10 of the National Health Service (Scotland) Act 1978. It is not part of the Scottish Government and is independent thereof. It is, however, accountable to the Scottish Government. NHS NSS provides a range of services to the NHS in Scotland. NHS NSS are best placed to explain the

administrative arrangement underlying its various divisions, including NHS Scotland Assure.

52. When NHS Scotland Assure was launched, it was described by the Scottish Government as bringing together experts *"A new national service has been established to improve the quality and management of healthcare construction and refurbishment projects across NHS Scotland. NHS Scotland Assure brings together experts to improve quality and support the design, construction and maintenance of major healthcare developments. This world first interdisciplinary team will include microbiologists, infection prevention and control nurses, architects, planners, and engineers. Commissioned by the Scottish Government and established by NHS National Services Scotland, the service will work with Health Boards to ensure healthcare buildings are designed with infection prevention and Control practice in mind, protecting patients and improving safety."* **(A46527816 – Scottish Government News – NHS Scotland Assure – 1 June 2021 – Bundle 13, Volume 4 - Page 420).**

53. Internal reporting arrangements (between NHS NSS and the bodies it serves) are a matter for NHS NSS to decide and the Scottish Government are not involved in this area. In the past, NHS Scotland Assure has formed part of the Strategy, Performance and Service Transformation directorate within NHS NSS, however, I understand that the Director of NHS Scotland Assure currently reports direct to the Chief Executive of NHS NSS, Mary Morgan.

54. I am not the person best placed to describe in detail the structure and remit of NHS Scotland Assure, however, I am aware that it is set out in **(A43406095 - NHS Scotland Assure Organisational – Bundle 9 - Page 78)**. Julie Critchley is likely be able to provide a more thorough overview. By way of broad comment, the document above details the outline of organisations that now sit within NHS Scotland Assure. In broad terms, the professional areas included in NHS Scotland Assure are NHS Scotland Assure Senior Management Team, Property and Capital Planning, Sustainability, Facilities Services, Research and Engineering, NHS Scotland Assure Programme Team, Antimicrobial Resistance and Healthcare Associated Infection ("ARHAI") and Fleet. I was

not involved in the decision to incorporate ARHAI and HFS within the structure and cannot comment on the rationale behind that. Engineering support was provided as part of HFS which preceded NHS Scotland Assure. This service was more of an advisory service than an assurance service.

55. NHS Scotland Assure will not

- *"address or seek to change legal responsibilities of NHS Boards or primary legislation.*
- *create a Central Building Division as NHS Boards need to remain accountable for their projects and current estate. Doing this would mean that accountability would move from boards to a central function, and this would need legal changes.*
- *address non-NHS Healthcare environments e.g., private dental practices.*
- *develop an inspection function"* (**A47071914 – About NHS Assure – Bundle 13, Volume 4 - Page 424**)

Whether NHS Scotland Assure Has Any Enforcement Powers; What Happens if NHS Scotland Assure and a Health Board Disagree During a KSAR; and the Scottish Government's Role Where Disagreements Remain Unresolved

56. There has been no substantial disagreement between a health board and NHS Scotland Assure to date, as far as I am aware. That is not to say that the health boards always agree with NHS Scotland Assure, however, where there have been disagreements NHS Scotland Assure and the health board have always managed to work together to resolve any differences. This is the expectation of health boards that is set out within my letter dated 6 February 2023 **(A45691872 - Letter dated 6 February 2023 from Alan Morrison, Deputy Director of Health Infrastructure, Investment and PPE to NHS Board Chief Executives and others – Bundle 9 - Page 75)**.

57. There is not a formal process for disagreements to be escalated to the Scottish Government. There is a possibility that if a health board says "No, we're just not doing it" then we would need to react. That said, I have had no pushback

to my letter.

58. In practice, the Scottish Government would not expect any situation to reach the stage where there was such a profound disagreement between NHS Scotland Assure and a local NHS board that it could not be resolved; but if that situation did arise, the Scottish Government would weigh all of the available evidence before taking a view on the most appropriate way to proceed, noting that strong reliance would be placed upon the evidence presented by NHS Scotland Assure if the disagreement related to matters within its expertise. I am comfortable that the system allows sufficient flexibility to address occasions where there is disagreement between the parties without the need for a more formalised escalation process.

NHS Scotland Assure's Access to Legal and Procurement Expertise

59. NHS Scotland Assure does not directly employ procurement experts or lawyers to provide input and assistance on briefing documents. The Central Legal Office ("CLO") are a division of NHS NSS and provide legal services to health boards and all NHS bodies. Specialist legal services that they offer to NHS bodies includes: (i) advice on regulatory compliance, including choice of procurement procedure; (ii) drafting tender documentation and negotiating contracts; (iii) guidance during the procurement process and (iv) advice on procurement and post-contract award issues (**A47072325 – CLO Commercial Contracts – Bundle 13, Volume 4 - Page 425**). We liaise with the CLO on some of the issues that we manage around property and there is a representative from the CLO on SPAG, adding to oversight on property matters. That is one of the groups that feeds into the SFG. NHS National Procurement Services, NHS Scotland's national procurement service, are also available to provide expert advice and support to NHS bodies on procurement matters.

60. I have been asked whether NHS Scotland Assure should have additional professionals such as procurement professionals and lawyers to review the standards specified in contracts. In response to this, I would observe that NHS Scotland Assure is an NHS body and my understanding is that, in the normal

way for NHS bodies, if legal advice was required then advice would be sought from the CLO, which is a separate division in NHS NSS. Any procurement advice should be sought from NHS National Procurement. Of course, health boards are not solely reliant upon NHS NSS to provide them with legal and procurement services when delivering health care projects and will more often than not appoint external specialist independent advisors to assist with complex projects (as was the case with NHSL in relation to the RHCYP/DCN project. The availability and appointment of professional advisers is part of the governance arranges considered by CIG in the business case review process.

NHS Scotland Assure's Involvement During the Procurement Stage

61. I have been referred to page 56 of the TOM **(A32341688 - Target Operating Model document for the Centre of Excellence – Bundle 9 - Page 59)** which states alongside a section on "Procurement" *"Current procurement processes are not fit for purpose…Boards do not have ability to check what contractors are delivering…Responsibilities and liabilities need to be reviewed…Boards do not have the legal right to have control over the day-to-day activities of the build."* I have been asked whether there is any difference in the way in which large-scale projects are now procured following the introduction of NHS Scotland Assure. I am not best placed to comment on this as procurement is not my specialist area.

62. The KSAR takes place before the final business case is approved. If a health board has tendered for design and construction and design phase was concluded, the KSAR pre-final business case would have involved NHS Scotland Assure's review of the contractual documentation, so far as is within their expertise (noting my comments above). If the design had not been finalised, they would probably say "The design is not finalised; we are not providing the KSAR approval."

63. It has been put to me that, in the broadest terms, the issues on the RHCYP/DCN project potentially arose from a lack of clarity in the contractual specification for the technical aspects of the ventilation system. I have been asked to comment on whether NHS Scotland Assure, in their review of contract

documents as part of the KSAR, would be looking at technical specifications (for example, for the ventilation system) as technical experts rather than as lawyers. I have been specifically asked to address whether there is any gap in NHS Scotland Assure's procedures and systems. NHS NSS are probably best placed to answer these questions, however, the KSAR relates to technical compliance with guidance. That is the remit of NHS Scotland Assure. If a contract contained a misspecification, such that the design of a healthcare facility was non-compliant with technical guidance, I would expect NHS Scotland Assure to identify this as part of the KSAR. Accordingly, and in so far as the questions are directed at ensuring technical compliance with guidance, then I do not see there being a gap in NHS Scotland Assure's processes. NHS Scotland Assure would not check for things that lawyers would check for like "does the commercial deal work?" or "is there a failure to follow the procurement process appropriately?" – that is not their role.

64. I am asked what my present view is on whether there might be changes in the future about the way health projects are procured. Whilst I cannot predict the future, I do not currently anticipate any immediate change in how projects are procured. Likewise, I do not have any current information to suggest that NHS Scotland Assure's role will be subject to significant change either. I think it is essential that local NHS Boards retain overall accountability and responsibility for the delivery of capital projects, and it is important that NHS Scotland Assure continues to support them through that process.

Resourcing and NHS Scotland Assure

65. The key difference, when it comes comparing what resources were available at the time of the RHCYP/DCN being developed from an assurance perspective to what is present now, is that NHS Scotland Assure is much bigger than HFS (the division of NHS NSS that is most closely related to NHS Scotland Assure). Resourcing a workforce is, in some ways, the defining challenge of the NHS at the moment. There is no magic solution because there is a shortage of staff in specialist areas, alongside the financial challenges.

66. To have an expansion of any service, the first thing an NHS board will confirm is whether the budget will be coming from the Scottish Government to support it. I think the Scottish Government provided NHS NSS with funds in the region of £6 million to develop what became NHS Scotland Assure. The budget then varied on an annual basis depending on their vacancies and recruitment. Unfortunately, no matter how much funding we provide, it doesn't alter the fact that there is currently a shortage of engineers and infection control specialists. If you speak to anyone within the NHS, workforce is the biggest challenge at all levels. I would suggest that Julie Critchley would be able to provide an appraisal of recruitment for all parts of NHS Scotland Assure.

67. What I can say, as Chair of the CIG, is that I have not found that availability of NHS Scotland Assure resource has caused the delay of submission of business cases to the CIG. Nor am I of the view that, in each business case submitted to the CIG following the introduction of the KSAR process, lack of resource has resulted in the KSAR being undertaken by NHS Scotland Assure to be anything other than thorough and professional.

Engineering

68. NHS NSS would, again, be best placed to comment on whether they have sufficient engineering resource to perform their functions. I am aware, through discussions with NHS NSS, that they would like more. However, I am not aware of a lack of resource causing NHS NSS not to do anything that they ought to be doing. NHS NSS, and in particular NHS Scotland Assure, are skilled at managing risk. Accordingly, they will manage their workload in a risk based and proportionate way.

Infection Control Specialists

69. NHS NSS would be best placed to comment on whether they have sufficient infection control specialist resource to perform their functions.

70. I have been told that the Inquiry has heard evidence to suggest that the creation

of NHS Scotland Assure has further compounded issues surrounding resourcing when it comes to infection control specialists. The availability of workforce is an issue for all parts of the NHS. As far as I am aware, infection control is no different. The creation of a body that requires infection prevention control specialists is, from a common sense perspective, going to result in the spreading of resource more thinly. In my view, however, that is not an argument against creating a specialist body to perform the functions of NHS Scotland Assure. Instead, it should incentivise and drive the need to increase the pool of available specialists and to work collectively across organisations.

Final Thoughts

71. I would not say engineers or infection control specialists are unique when considering the challenges surrounding recruitment within the NHS. I believe that NHS Scotland Assure are probably at the higher end of the STEM spectrum in terms of getting people from the backgrounds they need. However, that is simply my anecdotal observation and NHS NSS might be better placed to comment. In my view, NHS Scotland Assure have done well in recruiting more engineers.

NHS Scotland Assure and the Production/ Revision of Guidance.

72. I have been informed that the Inquiry understands that there was an issue in relation to the RHCYP/DCN project as to whether commission and validation should be undertaken against a contractual standard or against standards of public guidance. I have been asked what the current process surrounding reviewing guidance is and how NHS Scotland Assure overcomes such issues moving forward. NHS Scotland Assure work closely with the NHS boards. I am not sure I can comment on technical matters such as the ones posed in the question. This question would be better directed to NHS NSS. It would be NHS Scotland Assure's role to highlight issues as are raised in this question to the Scottish Government.

73. I have limited insight into how NHS Scotland Assure manage the process of

updating guidance, how that's structured or what resources they have. Again, NHS NSS would be best placed to advise the Inquiry on such matters.

The Grant Thornton Report and its Recommendations

74. I am referred to the Grant Thornton Report dated July 2020 **(A32512442 – Grant Thornton Report – NHS Lothian Internal Audit Report – Report for the Audit and Risk Committee 31 July 2020 and the NHS Lothian Board, 12 August 2020 – Bundle 10 - Page 4)**. I have been asked to comment on the recommendations set out from that page onwards and the associated 'Management Responses'.

75. This was an internal report prepared for NHS Lothian and it was not shared more widely across NHS Scotland; there was no expectation that other health boards would need to comply with the recommendations.

76. Similarly, whether the recommendations were implemented or not, would be for NHS Lothian to manage. The report was shared with the Scottish Government in advance of publication and NHSL made clear that they would accept and action all recommendations and the Scottish Government expected all recommendations to be actioned.

77. I am not best placed to comment upon whether the recommendations were taken forward more widely within the NHS. Local reports prepared for one health board, would not normally be expected to be actioned by other boards, unless the Scottish Government put out a communication to that effect (which we did not do for this report).

What Involvement NHS Scotland Assure Would Have Had, Had They Been in Existence When The RHCYP/DCN Project Took Place.

78. If NHS Scotland Assure had existed when the RHCYP/DCN project took place, then the KSAR process would have been followed, as currently happens with all major NHS Scotland construction projects. It will be for the Chair of the

Inquiry to determine whether any issues of ambiguity would be identified and resolved earlier in the process now that NHS Scotland Assure is in place. I do not wish, nor would it be appropriate for me, to presuppose the findings of the Inquiry Chair. In general terms, however, NHS Scotland Assure's role assists with identifying and resolving such issues at an early stage in the process.

79. If there was an issue as to whether commissioning and validation should be done against a contractual standard or against the standards of published guidance, then NHS Scotland Assure would look to align the contractual standard with the published guidance, unless there was an agreed derogation.

Whether the Issues That Gave Rise to the Problems with the RHCYP/DCN Have Now Been Addressed Through the Creation of NHS Scotland Assure.

80. I have been asked whether I think that issues, such as those that prevented the RHCYP/DCN opening as planned, would be eliminated now that NHS Scotland Assure is in place. Eliminated is a strong word. It implies that we will never have an issue ever again. I think the risk of such things happening again has certainly been reduced.

81. I consider NHS Scotland Assure to be an appropriate, proportionate, and sufficient resource to address the problems that arose on the RHCYP/DCN project (and the QEUH). However, it is important to be mindful that the mere existence of NHS Scotland Assure does not guarantee that every NHS Scotland construction project will avoid problems. Building a major piece of health infrastructure is a complicated and demanding undertaking and, even with a qualified assurance body like NHS Scotland Assure, problems and challenges will inevitably arise. The purpose of NHS Scotland Assure is to minimise problems and risk as much as possible, by introducing a comprehensive assurance review at each stage in the process, but also to provide NHS Boards with a supportive body that can assist them in dealing with a range of challenges that they are likely to face.

Concluding Remarks

82. The KSAR process focuses on ensuring that infection prevention and control are key considerations by evaluating issues of water and drainage, ventilation, electrical, medical gases and fire. A report is produced at the end of each KSAR process, which is shared with the health board. The health board then reviews the findings and provide feedback. Following this an action plan is drafted, which is then submitted to the Scottish Government together with the report. The KSAR report, action plan and any lessons learned are then shared with NHS Scotland Assure. Throughout the KSAR process, all reports are sent to me and to Alan Gray (Chair of the NIB). KSARs are now an integral part of the governance process and so I spend a lot of time considering issues raised in them, particularly when there are challenges that must be resolved before a project can progress.

83. At present, there are not any exceptions to the KSAR process in large-scale health build projects. However, if any NHS Board or NHS Scotland Assure considered that a KSAR was not necessary then it would be considered and discussed on a case-by-case basis. There have been no circumstances where a KSAR was considered not to be necessary since the KSAR process was introduced.

84. The NHS Scotland Assure process will take time to bed in and, already, we are learning lessons from projects going through that process. In my view, there is a balance between how much government invests in new infrastructure and how much is invested in existing facilities in a challenging financial environment. As investment in new infrastructure reduces (as may be the case over the medium term), I expect the focus to be on maintaining existing estate.

Declaration

85. I believe that the facts stated in this witness statement are true, that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Alan Morrison

Introduction

1. My name is Alan Morrison. I am a civil servant employed by the Scottish Government as the Deputy Director of Health Infrastructure and Sustainability, a Scottish Government Health and Social Care Directorate.

2. The Inquiry already has evidence within the witness statements provided previously by myself and Mike Baxter (dated 11th and 20th April 2022, 14th February 2023, and 4th April 2023) and in Mike Baxter's oral evidence to the Inquiry on 16th May 2022 as to the Scottish Government's (and the Scottish Government's Health and Social Care Directorates' (SGHD) role and responsibilities in relation to the design and delivery of large healthcare projects, including The Royal Hospital for Children & Young People / Department of Clinical Neurosciences (RHCYP/DCN). This statement supplements the evidence that is already before the Inquiry and addresses the following:

    a. My professional background and qualifications.
    b. My role in Scottish Government between July 2019 and March 2021.
    c. National Services Scotland (NSS) Assurance Reports and KPMG findings.
    d. Reporting Lines in relation to the RHCYP/DCN.
    e. The Oversight Board.
    f. Supplementary Agreement 1.
    g. Escalation of the RHCYP/DCN project.
    h. Problematic/Challenging Areas.
    i. Commercial Challenges in Negotiations.
    j. COVID/Brexit.

k. The Royal Hospital for Sick Children (RHSC) at Sciennes and The Department of Clinical Neurosciences (DCN) at the Western General Hospital.
l. Communications with the Cabinet Secretary; and
m. Some reflections on the RHCYP/DCN project.

Professional Background and Qualifications

3. I am a civil servant employed by the Scottish Government. My background is in accountancy, and I have a professional accountancy qualification from the Chartered Institute of Public Finance and Accountancy which I obtained in 1998.

4. I have been employed by the Scottish Government since April 2003. During that time, I have worked in the Health Finance Directorate in a number of different roles as a qualified finance professional. Between January 2015 and March 2020, I was the Capital Accounting and Policy Manager for Health Infrastructure.

5. I am currently the Deputy Director of Health Infrastructure and Sustainability for the Scottish Government and have held this role since March 2020. While my job title changed between January 2015 and the present day, the duties have remained broadly the same, the main duties of which are:

- Developing and delivering the Capital Investment Strategy for the Health Portfolio, ensuring that it aligns with the infrastructure priorities of the wider Scottish Government, including delivering sustainable economic growth and delivering a lower carbon economy.
- Managing the portfolio's capital budget of £0.5 billion, ensuring that a breakeven position is delivered each year, that the expenditure supports the portfolio's strategic priorities and that value for money is delivered.
- Chairing (from December 2015) the Scottish Government Health and Social Care (SGHSC) Capital Investment Group (CIG) which oversees the

review and scrutiny of all business cases submitted to the Scottish Government Health Directorate (SGHD), as well as being the lead official for the national infrastructure board.

- Interpreting HM Treasury and Scottish Government capital accounting and budgeting guidance and subsequent provision of advice to NHS Scotland finance professionals through working groups and written guidance.
- Leading the development of strategic advice to Ministers on the options and opportunities for prioritising, financing, and delivering infrastructure investment, including how it can help enable service reform and support clinical priorities.
- Managing and developing the capital accounting and policy framework for NHS Scotland that ensures compliance with HM Treasury and Scottish Government accounting, budgeting, and legislative requirements. This includes effective management of the capital investment programme and of property transactions, as well as performance management.
- Managing assurance processes in respect of major capital programmes of work by health boards: as well as engagement with internal stakeholders, one of my key responsibilities in this regard is to develop and maintain links with a range of external stakeholders including other national groups, applying specialist knowledge and skills to review, analyse and manage risks.

Role in Scottish Government between July 2019 and March 2021

6. I have been asked by the Inquiry about my role between July 2019 (when the decision was taken to delay opening of the RHCYP/DCN) and March 2021 (when the hospital opened in full).

7. I was the Scottish Government lead for healthcare infrastructure and the first point of contact for any issues arising in relation thereto. I also managed the NHS health portfolio for the Scottish Government. This meant that I had involvement with all healthcare projects (including maintenance of the existing

estate) that benefited from Scottish Government investment as well as managing the government budget that supported such projects.

8. Between July 2019 and March 2021, I worked almost exclusively on the RHCYP/DCN project.

NSS Assurance Reports and KPMG Findings

9. I have been asked by the Inquiry about my involvement in instructing the assurance reports from NHS National Services Scotland (NSS): whether this was something that they would not ordinarily do and whether there would be any resourcing issues associated around that and referred to the following document **(A41232683 - NHS Lothian – Edinburgh Childrens Hospital – Action List 9 July 2019 – Bundle 13, Volume 3 - Page 45)**.

10. By way of context, nearly all significant decisions in relation to the delayed opening of the RHCYP/DCN were taken by the Cabinet Secretary, Jeane Freeman. She very much owned the issue from the day that she was notified that there was a problem with ventilation in the critical care unit at the RHCYP. The Cabinet Secretary would determine what she wanted to happen and then it would be the responsibility of me and others in government to carry these instructions out. The NSS Assurance Reports were commissioned on the instruction of the Cabinet Secretary.

11. In respect of the Assurance Report, I spoke to Health Facilities Scotland (HFS) and told them there was to be a review of the hospital. I asked how they would go about this and what they needed to allow them to carry this out. HFS then worked up their own proposal.

12. I have been asked by the Inquiry to review an email sent by me on 5 July 2019 regarding the assurance work that had begun and the timescale for completion **(A41231996 - Email from Suzanne Hart to Shirley Rogers et al providing a transcript from Jeane Freeman to Good Morning Scotland 6**

– Bundle 7, Volume 1 (of 3) - Page 84). In particular, I have been asked about the following text:

> *"I am expecting a proposal later today which I will circulate when it is available. Just so that it does not come as a surprise, myself and Jo spoke to HFS/HPS yesterday about timescales and they were indicating that a comprehensive review of the new site could take as long as four months to complete. They recognise that that is probably longer than we were hoping for, so they may provide options which involve a quicker turnaround, but slightly less assurance."*

13. As I explained earlier, HFS had been asked to undertake a technical assurance review of the RHCYP/DCN site. I had been in initial discussion with HFS in relation thereto and was reporting back the outcome of those discussions to Shirley Rogers (NHS Scotland Chief of People) and Professor John Connaghan (NHS Scotland Chief Performance Officer). The email was updating Shirley and John as to HFS anticipated timescale for review.

14. In due course, NSS produced its reports quicker than the four months noted in this email. That is not because they were asked to undertake any less thorough an assurance process than had been discussed with them.

15. In my opinion, the NSS reports speak for themselves as regards the comprehensive nature of the review that was undertaken. While the Scottish Government had provided NSS with the instruction to prepare the reports we were, for the most part, reliant on NSS to identify what they needed to provide assurance that the building was a safe healthcare environment.

16. In the same email, at paragraph 9 line 2, I commented:

> *"I think it would be disingenuous to suggest that all new builds now involve HFS, if for no other reason that HFS don't have that*

many engineers that they can deploy, so I think it's better to say that they will involve HFS."

17. I have been asked by the Inquiry to expand on this point and what were the limitations on HFS' resources. I was reporting back on my initial discussions with HFS re their potential future role in providing "technical assurance" for new healthcare projects. I was making it clear to John and Shirley that HFS were not, at that time, able to be actively involved in all new healthcare projects by reason of their capacity to undertake such work.

18. At that point, HFS did not undertake the type of technical assurance work that was being postulated. This is the work that NHS Scotland Assure now does. I have provided the Inquiry with a separate statement detailing the creation of NHS Scotland Assure and its role in new healthcare projects.

19. I have been asked by the Inquiry to explain the role of Health Resilience. Health Resilience are a division of Scottish Government Health and Social Care that are involved in planning how we make sure that services continue to be delivered against a number of risks. For the RHCYP/DCN that was power outages, floods, and pandemics. They were thinking about contingency plans and business continuity, and they had a role in at least thinking about what we needed to do and had good experience about dealing with unexpected events that had not been planned for.

20. I have been asked by the Inquiry if I accepted KPMG's findings that they were painting a positive picture of governance in the period up to the identification of the critical care ventilation issue **(A41226194 - 2019-20 – Health Finance and Infrastructure – Edinburgh Sick Kids – KPMG Report – 16 August 2019 - Bundle 7, Volume 3 (of 3) - Page 111) and (A41228407 - Briefing to Cab Sec – Sick Kids Hospital – 23 August 2019 - Bundle 7, Volume 3 (of 3) - Page 184).** I did not really see it as my role to accept them or not. KPMG had undertaken a detailed review of what had happened and prepared the associated report. This went to the Cabinet Secretary for her information,

awareness and sign-off. As far as I can recall there was no substantial disagreement with KPMG's findings or recommendations.

21. In response to an email **(A41231824 - Email from Alan Morrison to the Cabinet Secretary providing an further urgent briefing dated 10 September 2019 - Bundle 7, Volume 3 (of 3) - Page 533)**, I have been asked by the Inquiry if I am able to breakdown further the costs associated with the work done between July 2019, when the decision was taken by the Cabinet Secretary, and the completed opening of the hospital in March 2021. The report submitted to the Oversight Board dated 25 February 2021 contains a breakdown of these costs **(A44611639 - Summary of Estimated Delay Costs dated 25 February 2021 – Bundle 13, Volume 4 - Page 426)**. The costs associated with the delay were in the region of £17 million and the table containing the relevant breakdown is copied below.

Summary of Costs Associated with Delay Costs associated with new hospital	Estimated Cost £k
High Value Change 107 - ventilation works	8,554
Medium Value Change 127 - CAHMS	451
IHSL Advisor Fees	1,269
Total: Costs associated with New Hospital	**10,274**
Costs of maintaining existing sites	
Dual running of existing sites: RHSC/DCN staff	254
Dual running of existing sites: RHSC/DCN equipment/supplies	245
Additional maintenance / property costs at current RHSC and DCN facilities (energy, rates, building maintenance)	1,661
Additional capital investments in current RHSC	539
Additional capital investments in current DCN	110
Total: Costs of maintaining existing sites	**2,808**
Project Team costs (Director of Finance)	
Project Team costs	3,127
Reviews & SA2	620
Total: Project team costs	**3,747**
Contingency	
Contingency	-
Total Spend/ Estimated Additional Costs	**16,830**

Reporting Lines

22. I have been asked by the Inquiry what reporting lines were in place for the issues within the hospital. We (Scottish Government) all reported to the Cabinet Secretary, Jeane Freeman, who, at the outset, was virtually meeting with us on a daily basis. I also reported to the Director General, Malcolm Wright (Chief Medical Officer), Dr Catherine Calderwood (Chief Nursing Officer), Professor Fiona McQueen, and Christine McLaughlin (Finance Director.

Oversight Board

23. Following the decision to halt the planned move to the new Hospital facilities on 9 July, the Oversight Board was established to provide independent advice to ministers on the readiness of the facility to open and on the migration of services to the new facility **(A41232145 - NHS Lothian RHCYP Oversight Board Terms of Reference – July 2019 - Bundle 7, Volume 2 (of 3) - Page 352).**

24. In order to provide co-ordinated advice to ministers, the Oversight Board sought assurance from NHS Lothian that, according to its due diligence and governance, the facility was ready to open; and from NHS NSS that its agreed diligence was successfully completed.

25. The Oversight Board provided advice in relation to:
    - Advice on phased occupation.
    - Advice on the proposed solution for ventilation in critical care areas and on any other areas that require rectification works.
    - Advice on facility and operational readiness to migrate.
    - Gaining information and giving advice to NHS Lothian about commercial arrangements with IHS Lothian Limited (IHSL) for completion of works.
    - The approach to Non-Profit Distributing (NPD) contract management.

- Identification of areas that could be done differently in future.

26. The Board membership consisted of the following persons:
    - Christine McLaughlin, Chief Finance Officer, Scottish Government
    - Catherine Calderwood, Chief Medical Officer, Scottish Government
    - Professor Fiona McQueen, Chief Nursing Officer, Scottish Government
    - Susan Goldsmith, Director of Finance, NHS Lothian
    - Tracey Gillies, Executive Medical Director, NHS Lothian
    - Professor Alex McMahon, Nurse Director, NHS Lothian
    - Peter Reekie, Chief Executive, Scottish Futures Trust
    - Colin Sinclair, Chief Executive, NHS National Services Scotland (shortly after replaced by Jim Miller)
    - Alex Joyce, representative from NHS Lothian Joint Staff Side (deputy Gordon Archibald)

27. Also attending the Board to provide advice and assurance on matters including ventilation, mechanical matters, infection control, clinical impact and implications of decisions taken, communication and contractual challenges and negotiations, were:
    - Mary Morgan, Senior Programme Director.
    - Brian Currie, Project Director, NHS Lothian (contractual challenges and negotiations).
    - Judith Mackay, Director of Communications, NHS Lothian (communications).
    - Professor Jacqui Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work (Infection Control).
    - Gordon James, Health Facilities Scotland, NHS National Services Scotland (ventilation and mechanical matters); and
    - IHSL would be in attendance on as ‘as required’ basis.

28. I would also be in attendance to action any of the actual matters that needed to be done. Jim Miller also attended the early stages of the Oversight Board when we were preparing the assurance reports. Jim was technically very good and was reported into directly by Gordon James.

29. The Oversight Board provided a forum where an update on progress was reported to the Board and ultimately to Ministers. There were a number of concurrent issues running and we were generally given a relatively high-level overview on what work was being undertaken. We would sit as a board and discuss any problems or issues arising. We would then work through them and once an acceptable solution had been found, we would report back to the Cabinet Secretary who would consider our recommendations before making any decisions requiring her input.

30. The papers to be considered at meetings of the Oversight Board were circulated in advance of the meetings. These papers included the Senior Programme Director, Mary Morgan's, report. This report covered the number of issues outstanding; numbers dealt with; and a RAG (Red, Amber, Green) status against each of the risks identified in the report. We would tend to focus on the areas Mary Morgan highlighted as problematic or challenging, for example, see the Senior Programme Director's Report within the papers for the meeting of 9 April 2020 **(A41710883 – Oversight Board Papers – 9 April 2020 – Bundle 13, Volume 4 - Page 430).**

Supplementary Agreement 1

31. I have been asked by the Inquiry regarding my understanding of the Supplementary Agreement 1. NHSL and IHSL were in dispute in relation to a number of matters which had resulted in the delayed delivery of the RHCYP/DCN project (initially scheduled for completion in July 2017). In order to advance the project towards completion, and to avoid litigation, NHSL and IHSL reached a settlement agreement. The terms of that agreement form Supplementary Agreement 1, dated 22 February 2019.

32. The Scottish Government was aware of the agreement but did not have any role in the technical assessment of what was proposed. The Scottish Government's interests in the agreement related to matters of finance and delivery of healthcare services. Accordingly, we were interested how much the agreement would cost and how the agreement would impact the timeline for delivery of the hospital. This is consistent with the respective responsibilities of health boards and government for delivery of healthcare projects: primary responsibility lies with the health board not government.

33. The Scottish Government did not seek assurance from NHSL that the supplementary agreement would result in delivery of a hospital that complied with technical compliance with relevant healthcare guidance. At this point in time, the Scottish Government believed that NHSL had already agreed the design and construction of such a facility.

34. The Scottish Government had been briefed by NHSL on what the key issues were and what was being discussed between the parties, but it was more for background and context rather than for any technical sign-off on what was proposed between NHSL and IHSL. The key interest for us was the cost and the impact on the timeline.

35. A timeline and summary of relevant briefings sent to the Cabinet Secretary in relation to Supplementary Agreement 1 is found in Annex E of a briefing prepared for the Cabinet Secretary in advance of her meeting with staff side representatives on 9 October 2019 **(A46527556 – Briefing to Cabinet Secretary ahead of NHSL Staff Side Meeting – 9 October 2019 – Bundle 13, Volume 4 - Page 465)**. The relevant section of that briefing is copied below.

Timeline of briefings

14 March 2018 – Briefing to Cabinet Secretary highlighting there were problems with the ventilation: NHS Lothian considering court action at that point.

21 March 2018 – Briefing to Cabinet Secretary noting that court action would need to be approved by CS before it starts.

25 April 2018 – Email to Cabinet Secretary and First Minister informing both that court action is no longer being taken forward and that a loan of £10 million is being considered to allow the ventilation to be fixed.

27 July 2018 – Briefing to Cabinet Secretary noting that a loan would fail on state aid grounds, so instead a settlement agreement is now the agreed way forward.

[24] July 2018 – Paper from NHS Lothian's Finance and Resources Committee on the proposed commercial agreement between NHS Lothian and IHSL. This outlines why it is needed, what it does and what the risks are. This provides the necessary assurance for Christine McLaughlin to approve the payment.

20 September 2018 – Briefing to Cabinet Secretary detailing additional technical problems, most notably with the drainage. Highlights that 31 October handover will not be achieved.

7 November 2018 – Email to Cabinet Secretary confirming that the revised handover date of 31 October was not achieved and that a new date was still not known.

13 February 2019 – Briefing to Cabinet Secretary informing her that the Settlement Agreement was signed on 6 February 2019 and it would allow project completion to be confirmed. Three significant technical matters remain (drainage, void detectors and heat sensors) but they would be addressed post-completion and at the same time the Board undertakes its commissioning. Risks of contractor and Board working at the same time were highlighted.

The Scottish Government agreed to pay NHSL an additional £11.6m in respect of the settlement agreement.

36. NHS Scotland Assure did not exist at the time Supplementary Agreement 1 was negotiated. Were a similar situation to arise in a current development, that required the commissioning of significant works, NHS Scotland Assure would be asked to review the parties' proposals and provide the Scottish Government with technical assurance in relation thereto.

Escalation to Level 4

37. I have been asked by the Inquiry if my role had been impacted by the escalation of the RHCYP/DCN project to level 4 and whether the Scottish Government were taking more control on matters.

38. My role was not significantly impacted by formal escalation of the project to level 4. I would have had significant involvement in the project regardless of whether NHS Lothian were escalated to level 3 or 4 of the NHS Scotland Performance Escalation framework.

39. In relation to Scottish Government control, I would say that, in some respects, escalation resulted in greater government control. Escalation to level 4 resulted in Mary Morgan being appointed as Senior Programme Director. Mary was appointed to that role by the Scottish Government and had, to some extent, a controlling influence as to how the project progressed to completion.

40. However, at the point of escalation, every significant decision needed to come through, not just the Scottish Government, but the Cabinet Secretary. In that respect, the level of Scottish Governmental control was already significant prior to escalation.

41. In practice, and from my perspective, I am not sure the Scottish Government's involvement in significant decisions made a substantial difference to outcomes because there were not many occasions where NHS Lothian disagreed with any of the decisions that were being taken.

Problematic/Challenging Areas

42. I have been asked by the Inquiry if there were areas that I found most problematic or challenging.

43. What I found difficult was the technical nature of the challenges the NHS Lothian team were facing. The NSS reports set the scene, then there was further discussion just to work through and understand exactly where the risks were and what the next steps would be to address those risks.

44. There are almost the two aspects of those risk based decisions: there are technical issues around engineering and there is consideration of what will this mean for infection control/patient and staff experience. In this respect, the balance of skill and experience of the members of the Oversight Board was a considerable asset. For example, Jacqui Reilly and Professor Fiona McQueen had a similar background and spoke the language of patient care and infection control practice. Complemented by the more technical skill of Colin Sinclair and Jim Millar of NSS. At no stage did I think that we were missing skills in any particular area. Mary Morgan's appointment, and the focus she brought to the project, was of great benefit. As was Mary's prior experience of delivering an NPD project.

45. Due to the fact that I managed the budget, or at least I needed to build any costs into the budget plan, I had been communicating regularly with three people within NHS Lothian. They were Susan Goldsmith (Finance Director); Iain Graham (Director of Capital Planning) and Nick Bradbury (Capital Lead for NHS Lothian). I was always asking them how the project was going and what they were hearing in the background. They could fill me in on where we

were at with the Supplemental Agreement and what the funders were saying/when we could expect the agreement to be signed. These relationships were helpful to understand what was going on and what issues we were facing.

46. I have been asked by the Inquiry if NHSL struggled to get a contractor who was willing to take on the work with the ventilation issues. I recall that there were challenges. I was not too involved in the mechanics of identifying who was going to carry out the work. Mary Morgan, as Senior Programme Director, would be better placed to address this question.

47. In due course, Imtech were appointed to undertake the remedial ventilation works. Once they were appointed and commenced the work, it felt like everything was progressing as it should. However, at that point COVID struck and everything was, to some extent, thrown up in the air. I discuss the impact of COVID and Brexit later in this statement.

Commercial Challenge in Negotiating Change

48. Negotiating changes to the commercial agreements between IHSL and NHSL was not straightforward. Had the project been capital funded I think the process of negotiating the remedial works to the hospital would have been more straightforward. However, Mary Morgan, who had prior experience of the NPD model, was a significant asset in bringing focus and direction to the necessary commercial negotiations.

49. Under the NPD model a Special-Purpose Vehicle (SPV) is created to deliver the project on behalf of the health board. The SPV owns the building and, in essence, leases it back to the health board. The SPV, in this case IHSL, is funded by private investors who have an interest in ensuring that their investment in the project is protected. This means that the health board and the SPV (including its funders) need to reach an agreement as to any changes that are made to the building or commercial agreements. Had the building been capital funded and thus, “owned” by NHSL, it would have, in my

view, been easier to make changes to the building's design and specification. I say this because NHSL would not have required to seek the agreement, and balance the commercial interests, of the SPV. For example, I recall that there were considerable complexities related to the provision of commercial warranties for remedial works, who those warranties were owed to (NHSL or IHSL) and how those warranties impacted warranties already granted under the project agreement.

50. That is not to say, however, that the NPD model resulted in remedial changes to the hospital not being made, rather, that it seemed to take longer to get to the end result than might have been the case under a capital funding model. At the time, I do not recall that anyone stood back and thought that this would be easier if it was a capital funded build. This was the situation and we managed it.

Covid / Brexit

51. I have been asked by the Inquiry how the project dealt with the COVID pandemic. All healthcare construction projects were considered priority projects. This meant that work on those projects was allowed to continue throughout lockdown. Work practices had to be modified to protect those on site. The principal modification was socially distanced working (where possible) which resulted in less workers being concentrated in one part of the hospital at any one time. This inevitably resulted in delays because the nature of construction is that it requires a large workforce to be working in one area. For example, even something as straightforward as hanging a door requires two people. If two people are hanging a door in a room that means that others can't work around those two in a socially distanced way to carry out other tasks in the same area. Likewise, ventilation involves working in constrained spaces. The more constrained a workspace the less workers could be present at any one time.

52. The supply chain was interrupted by COVID. I recall that obtaining construction supplies was an issue at the RHCYP/DCN project and, more

generally, across out network of NHS projects throughout Scotland. The lead time for sourcing materials, such as the air handling units for the critical care unit at the RHCYP increased from weeks to months.

53. I have been asked by the Inquiry if Brexit also played a part in any delays. Yes, I think that it did. It is hard to isolate delay that was caused by Brexit as opposed to COVID, however, the trade barriers, arrangements, or both, between the EU and the UK that were created by Brexit made sourcing materials from EU member states more complicated and, thus, took longer.

54. While COVID and Brexit undoubtedly delayed delivery of the project it is important, in my view, to be mindful that the RHCYP/DCN will be in use for multiple generations. At the time, there is considerable pressure to deliver a project as soon as possible, particularly where, as in the case with the RHCYP/DCN project, the existing facilities where patients are receiving treatment are sub-optimal. However, delays on large construction projects are, in my experience, almost inevitable and are something that requires to be managed in the best possible way. Mary Morgan is immensely capable, very demanding, very driven and, from my position as attendee at the Oversight Board, I could see that the project was progressing as quickly as it could under her stewardship.

RHSC Sciennes and DCN at Western General Hospital

55. I have been asked by the Inquiry if I was aware of any of the healthcare budget being allocated to the old hospital at Sciennes and the existing Western General site, just to keep them going. When the Cabinet Secretary made the decision to delay the move to the new building ensuring that the existing treatment sites were properly maintained, through the provision of appropriate funding, was a high priority for the Scottish Government. We told NHS Lothian that if there was anything needed in the old hospitals, they were to come to us and we would prioritise it. The additional spend at these sites is

set out at paragraph 21 above. Additional capital expenditure was in the region of £650,000.

56. The problem faced at the existing sites was the considerable lead time required for maintenance and improvements to healthcare buildings. For example, if you are to make remedial changes to a part of the hospital, such as a ward, you may have to plan for the closure of that part of the hospital. That means that the clinical and facilities staff have to work closely to ensure an acceptable level of continuity of service while works are ongoing. Such works are disruptive and if clinicians and facilities colleagues believe they are moving to a new facility in three months' time they will, quite properly, choose not to undertake some works that they might otherwise have scheduled. This meant that maintenance at the existing sites had been "run down" in the lead up to the proposed move in July 2019.

57. I have been asked by the Inquiry if HFS were involved in checking over anything that needed to be done at the existing sites and, if so, how was it being fed back that changes, or amendments were required. It would have been the local estates function of NHS Lothian that would undertake that exercise. HFS' role was to provide support to NHS Boards. They were, as far as I am aware, available so that an Estates Director could pick up the phone for advice in relation to technical issues. Whether that happened with the old RHSC at Sciennes, I don't know.

58. I have been asked by the Inquiry if I was conscious of there being any concerns about the lack of air change rates at the RHSC at Sciennes being a concern for patient safety. There is a general understanding that we manage risk in our healthcare estate. We do not operate on a no-risk basis. We know that our estate is large, it is varied and a lot of it is quite old. While I am aware that the air change rates in parts of the hospital at Sciennes did not meet the standards contained in relevant guidance I was also aware that that was risk that the clinicians were capable of managing successfully.

59. Concerns about infection arising from ventilation would be directed to the Chief Nursing Officer's Directorate (CNOD) in the first instance. I work closely with the team at CNOD because if there is an infection as a result of poor ventilation, the question would be is it a ventilation issue or is it an infection issue? Rather than being caught on semantics, we would try to work together.

Cabinet Secretary Communications

60. I have been asked by the Inquiry if, apart from providing briefings from the Overview Board meetings, did I have any other contacts with the Cabinet Secretary to discuss matters. On 4 July 2019 I was one of the advisers who met with the Cabinet Secretary in person to discuss the delayed move to the new hospital. I understand that other witnesses have provided the Inquiry with evidence relevant to this meeting.

61. Thereafter, I would then meet with the Cabinet Secretary fairly regularly, along with Malcolm Wright (Director General) and Professor Fiona McQueen. I think for obvious reasons, I saw the Cabinet Secretary more than I would normally expect to see her over that period, and occasionally she would have a specific question relevant to Health Finance.

62. Along with Malcolm, Fiona, and Christine McLaughlin, we would update her regularly. I would always try and keep briefings quite short and concise, give her the main points and then there might be a follow up conversation seeking clarification. These meetings happened more frequently in the first few months that followed 4 July 2019. However, once things were settled down and work was progressing, the Cabinet Secretary could see that there was a programme of work being delivered and naturally, this resulted in less questions coming from her. I believe that the Cabinet Secretary was briefed after every meeting of the Oversight Board.

63. I have been asked if there was a meeting with the Cabinet Secretary and representatives from Health Facilities Scotland/Health Protection Scotland

(HFS/HPS) to discuss air change rates **(A34403124 - Briefing to Cabinet Secretary dated 25 July 2019 - Bundle 13, Volume 4 - Page 483)**. I am not aware if this meeting took place, or any follow up that arose therefrom. NSS or the Cabinet Secretary may be better placed to answer this question. Discussing and updating technical guidance is not part of my remit in Health Finance.

64. I have been asked by the Inquiry if reviewing NHSL board papers was general practice for the Cabinet Secretary. I am unable to answer that question. That question may be better directed at the Cabinet Secretary.

Reflections

65. I have been asked by the Inquiry if I feel that the current building, as it now stands, is safe and provides effective care for patients.

66. I am satisfied that the new hospital is one of the safest healthcare buildings in the country, perhaps, in Europe. By delaying the move the Cabinet Secretary was making sure the built-care environment was safe for the patients and staff to move into. That goal has, in my view, been achieved.

67. Delivering safe healthcare environments involves continuous learning and development. The lessons learned from the Edinburgh and Glasgow projects are being applied to our current projects. We have the Baird and Anchor in Aberdeen as our one major acute investment project that we are going for at the moment. We know that the intelligence gathered from the experiences in Glasgow and Edinburgh are feeding into the thoughts and the design and operation of the two new facilities in Aberdeen.

68. We are learning from what we are seeing in terms of infection risk. For example, we are learning more about the consequences of moving to the presumption of single occupancy rooms.

69. All new facilities have a presumption of single room provision. This means that each room has its own bathroom facilities. This is great from a patient dignity point of view but means there is more bathroom furniture (sinks, taps, showers, toilets). The more sinks there are the less frequently each one will be used. This increases the risk of stagnant water build up in taps etc and thus, the risk of infection. One of the things that colleagues at NHS Grampian are clearly communicating with their colleagues in Glasgow and Edinburgh, is, “Well, do we need a sink in this place?” Some of this may seem mundane but the consequences of not learning these lessons can be severe.

70. We have a better understanding of fire safety now than when we started the RHCYP/DCN project. The intelligence that goes into the design of a new hospital reflects all the learning from past projects (including maintenance of existing buildings).

71. The patient environment is much better at the RHCYP than at the RHSC at Sciennes. For example, the accommodation for families is much better: there is a 24 bedroom unit for families to stay at the RHCYP. This is in stark contrast to the lack of bespoke facilities for families to stay overnight at the old RHSC.

72. I am a finance professional not a clinician or technical expert, but I am confident that the new hospital will be providing a safe and very thoughtful and patient-centred healthcare to the children and families that have to use it.

73. I have been asked by the Inquiry if I feel that anything could have been done better or differently. It would have been much better if the misspecification of air change rates in the critical care unit at the RHCYP could have been identified earlier so that the facilities were not designed and constructed to deliver air change rates that did not comply with the appropriate guidance. However, I would not have changed what the Scottish Government did, or how it, or I, or both acted once we were made aware of the issue.

74. Managing healthcare budget and thus, the maintenance of existing facilities, or building new facilities, or both, is not straightforward. There are two clear challenges. The first is financial and everyone understands that because upgrading facilities is expensive. The second is that our hospitals are busy. Occupancy rates vary across the site, but it is not uncommon to see facilities with an occupancy rate of 90 plus per cent. The question is, if you are going to upgrade a ward or a theatre, where do the patients go that would be in that ward normally? Or if you take theatres offline to improve the ventilation, what happens in that patient capacity?

75. If a ventilation system at an existing site is not compliant with existing guidance, that would not in itself make me think, that we need to rip it out and put in a new one. I would question what the risk was, whether there was any sign of infection or adverse impact from a non-compliant ventilation system and manage risk appropriately (either by maintaining the status quo or installing a replacement/upgrade).

76. The change in the last four years, again whether it's COVID, Brexit, or Ukraine, has resulted in the cost of a new hospital increasing on an exponential basis and, if you replace a hospital, it is very, very expensive.

77. We need to manage risk and that can be really difficult to get that message over because it can be, "So what are you saying, are you accepting that patients are at risk in some facilities?" Whilst that is not the case, infection does happen in hospital. We have to consider how to minimise that at the macro level and to ensure that we are treating as many people safely as we can. It is a real challenge to maintain our Estates.

Declaration

78. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry
Witness Statement of
Alexander McMahon

INTRODUCTION

1. My name is Professor Alexander McMahon.

2. I am a registered mental health and general nurse (qualified in 1986 and 1989 respectively). I am registered with the Nursing and Midwifery Council (NMC), which is the professional regulator for nurses and midwives. After qualifying as a nurse, I worked within the health service for a number of years and gained experience across the wider public and private sector. I worked for the Royal College of Nursing, the world's largest trade union/professional body for nursing, between 1994 and 2000 where I was the Head of Policy for Scotland. I then worked for AstraZeneca, one of the world's largest pharmaceutical companies, between 2000 and 2004 where I was the head of government and industry affairs for Scotland and Northern Ireland. In this job my nursing skills were not a requirement. I also worked for the Scottish Government (centre of change and innovation) previously between 2004-2008 and used my nursing skills and experience in the work I did for them during that period.

3. I joined NHS Lothian as Deputy Director of Strategic Planning and Modernisation in September 2008 and was then appointed as Interim Director in October 2009. From 2012 onwards, I was the Director of Strategic Planning, Performance and Information. In 2016 I was appointed the Executive Director for Nursing, Midwifery and Allied Health Professionals in NHS Lothian. In addition to this role, I also had wider management responsibilities, including management responsibility, for the infection prevention and control (IPC) function. That became part of my remit during 2019.

4. I have been an honorary Professor at the University of Stirling since 2008 and at Queen Margaret University since 2017, both relating to nursing.

5. From October 2021 onwards I have been the Chief Nursing Officer (CNO) for Scotland. That post sits within Scottish Government and involves advising Ministers, and others, on all matters relating to not just nursing but professional and policy matters relating to midwifery, allied healthcare professionals (AHPs) and health care scientists. My Directorate covers a wider range of disciplines. Because of that I am also a Director in addition to my role of being CNO.

Involvement in the RHCYP/DCN Prior to the Decision to Delay its Opening

6. I have been asked when I became involved in the Royal Hospital for Children and Young People / Department of Clinical Neuroscience (RHCYP/ DCN) Project (the 'Project'). My direct involvement started around May / June 2019 in my capacity as the Executive Lead for IPC when issues relating to the completion of the Healthcare Associated Infection Systems for Controlling Risk in the Built Environment process (HAI Scribe) were raised. IPC became part of my responsibility from March 2019. Previously, I would have been aware of the background of the Project due to my position as a Director of the NHS Lothian (NHSL) Board. However, I did not have any direct role in the Project until 2019. I was aware there was a HAI Scribe Lead Nurse who was part of the project team delivering the Project.

7. In 2019 issues were raised to me through the head of the IPC service (which at that time was Fiona Cameron) that the completion of the HAI Scribe process was not complete. There was concern about achieving the remaining work for the hospital which meant the HAI Scribe process could not be completed on time as the official opening date was getting much closer. Therefore, we had concerns that the process for completing the HAI Scribe process would not be completed on time.

8. As per Scottish Health Facilities Note 30 Part B **(A33662208 – 416 SHFN 30 Part B v3 Oct 2014 – Bundle 13, Volume 3 – Page 464)**, HAI Scribe is an assessment which helps to identify, manage and record built environment infection control risks. SHFN 30 details all the stages of the HAI Scribe process with Stage 4 is the final HAI Scribe assessment before the opening of a hospital

and it is done when all the building work has completed a contractor clean has been done. Lindsay Guthrie and Donald Inverarity who are part of the NHSL's IPC Team are better placed in explaining the detail of the HAI Scribe process as being experts in their field.

9. This issue was flagged in May 2019, but it was not until the end of June that significant concerns started to be flagged concerning the outstanding work required. I was not part of the Project and did not have any awareness of any issues between NHSL and the Project Company delivering the hospital (Integrated Health Services Lothian Limited (IHSL)) until it was escalated to me at the end of June, again through the Head of IPC. Tracey Gillies (Medical Director), Susan Goldsmith (the then Director of Finance) and I agreed to meet with the project team to review what actions were required and understand their significance. A key meeting was held on the 28 June 2019 **(A36078221 – Document detailing water and ventilation issues in RHCYP and DCN – 1 July 2019 - Bundle 6 – Page 278)**. During that meeting issues were raised surrounding the concerns for ventilation in theatres and critical care elements of the Project. There was a concern that the checks conducted by the Institute of Occupational Medicine (IOM) did not meet the required guidance and they had not yet been able to validate the ventilation systems. The issues surrounding the wrong level of air changes in the critical care unit were then confirmed by IOM on the 1 July 2019. I was not part of the decision to instruct IOM to conduct the validation.

The Decision to Delay the Opening of the RHCYP/DCN

10. NHSL were not part of the final decision to delay the opening of the hospital. The decision to delay the opening of the hospital was taken by Scottish Government and Ms Jeanne Freeman (the then Cabinet Secretary). We, in NHSL, were informed of that decision on the 4 July 2019. I was on bereavement leave that week so was not part of the discussions but I am aware that NHSL prepared options for Scottish Government, see paragraph 11 below. Tim Davison who was the then Chief Executive of NHSL would in my view be best

placed to provide more detail on the options put forward and interactions with Scottish Government during the course of that week.

The Issues that Delayed the Opening

11. Beyond the issue of critical care ventilation, there were no other issues, at the time of the decision to delay the opening of the hospital on 4 July 2019, that prevented other functions / services from moving into the hospital. In fact, NHSL offered options on how other functions / services could have been moved safely (as stated above). This can be seen in the email from NHSL's Chief Executive to the Scottish Government dated 3 July 2019 **(A41649829 – Email to the Director General for Health and Social Care from Alan Morrison dated 3 July 2019 – Bundle 13, Volume 3 – Page 693)**. Work had been done in and around 2 and 3 July 2019 that offered the Scottish Government and Ms Jeanne Freeman a possible way forward. I have been asked if I agreed with the decision not to move services in to the new hospital; based on the information available and the view of clinicians and others at the time, it was the right decision in relation to the ventilation issues that had been identified within the critical care function. However, other elements could potentially have been worked around with appropriate advice.

12. I have been asked how the ventilation issues were identified. I was not part of the project ream and was not part of the decision to appoint IOM. The issues with the air changes required in critical care, and a few of the ward bays, were identified in the IOM Report dated 25 June 2019.

13. After the decision to delay the opening of the hospital was made, an Oversight Board was established by the Scottish Government. The Oversight Board was initially chaired by Christine McLaughlin, Director of Finance, Scottish Government and then it passed to Professor Fiona McQueen (the then CNO). Post the establishment of the Oversight Board, the process for identifying and signing off issues was undertaken the Oversight Board.

The Executive Steering Group and the Oversight Board

14. On 8 July 2019, NHSL convened an Incident Management Team. The convening of an Incident Management Team was initially a ‘problem assessment group’ and rapidly became an ‘incident management team’ although it was neither a public health incident or and IPC incident. The team evolved into the Executive Steering Group (ESG). The ESG was established on 2 September 2019. The membership of ESG changed from time to time but consisted of the following individuals:

- Susan Goldsmith, Director of Finance
- Tim Davison, Chief Executive
- Tracey Gillies, Medical Director
- Alex McMahon, Nurse Director (Chair)
- Jacquie Campbell, Chief Operating Officer
- Janis Butler, Director of HR and OD
- Judith Mackay, Director of Communications
- Iain Graham, Director of Capital Planning and Projects
- Brian Currie, Project Director
- George Curley, Director of Facilities
- Donald Inverarity, Lead Consultant Microbiologist
- Lindsay Guthrie, Lead Infection and Prevention Control Nurse
- Sorrel Cosens, Programme Manager’ and
- Jim Crombie (Depute Chief Executive)

Mary Morgan (Senior Programme Director) also attended the ESG meetings and Health Facilities Scotland/Health Protection Scotland (HFS/HPS) provided advice along with NHSL’s legal advisers.

15. The Oversight Board was set up by the Scottish Government (see paragraphs 18 – 20 below for more detail). The ESG was set up to work in parallel with the Oversight Board to ensure that the senior management of NHS Lothian were focusing on operational actions and decisions that needed to be followed up on were taken back to the Oversight Board. This was to help both the Oversight

Board and ESG be informed on progress and an assurance that the work, which was required to be done, had indeed been done or was underway. The ESG's role was to consider all aspects of the work to be done to safely open the new hospital. The ESG did not report directly to the Cabinet Secretary. That was the role of the Oversight Board. Mary Morgan, the Senior Programme Director, would compile a report for the Oversight Board on the progress of the rectification and remedial works and the status of the commissioning and validation processes. This was used by the Oversight Board as the basis of the recommendations made to the Cabinet Secretary.

16. ESG meetings were held weekly on a Monday afternoon. I chaired the ESG from 21 October 2019 onwards. The ESG's last meeting was held on 8 March 2021. The ESG reported back to the Oversight Board on progress being made. The DCN/RCHYP Project Governance schematic dated 17 October 2019 **(A44624750 – Project Governance and Meetings Oct 2019 – Bundle 13, Volume 3 – Page 696)** shows the role ESG had and the relationship it had with the Oversight Board and other groups and committees involved within NHSL.

17. Although I had oversight of the IPC function, I had no responsibility for the operational management of the acute system. As a group there was a collective process and individuals on the group had a requirement to make sure we had the right information to make the best decisions that we could. My role as chair was to 'chair' the discussions and agree the actions at the end of each meeting.

18. During this time, I was also a member of the Oversight Board. My role on the Oversight Board was as the Executive Nurse Director, with a lead for IPC. Other members of the Oversight Board (based on the approved Terms of Reference) were: Christine McLaughlin (Chief Finance Officer, Scottish Government), Catherine Calderwood (Chief Medical Officer, Scottish Government), Prof Fiona McQueen (Chief Nursing Officer, Scottish Government), Susan Goldsmith (Director of Finance, NHS Lothian), Tracey Gillies (Executive Medical Director, NHS Lothian), myself as Nurse Director, NHS Lothian, Peter Reekie (Chief Executive, Scottish Futures Trust), Colin Sinclair (Chief

Executive, NHS National Services Scotland), Alex Joyce (representative from NHS Lothian Joint Staff Side (deputy Gordon Archibald)) and also the following people which attended to provide advice and assurance when required: Mary Morgan (Senior Programme Director), Brian Currie (Project Director, NHS Lothian), Judith Mackay (Director of Communications, NHS Lothian), Prof Jacqui Reilly (Health Protection Scotland, NHS National Services Scotland), Gordon James (Health Facilities Scotland, NHS National Services Scotland), IHSL would be in attendance on as 'as required' basis.

19. The Oversight Board's approved scope of work was to provide advice to the Cabinet Secretary in relation to:

- Advice on phased occupation.
- Advice on the proposed solution for ventilation in critical care areas and on any other areas that require rectification works.
- Advice on facility and operational readiness to migrate.
- Gain information and give advice to NHSL about commercial arrangements with IHSL for completion of works.
- The approach to Non-profit distributing (NPD) contract management; and
- Identification of areas that could be done differently in future.

20. I also reported to the Oversight Board, when required, in my capacity as Chair of the ESG. Decisions and recommendation by the Oversight Board were made on a collective basis and based on the evidence provided and the Senior Programme Director's report. Decisions were not just made by the Oversight Board but by advisors and through evidence generated by Antimicrobial Resistance & Healthcare Associated Infection (ARHAI), HFS, NHS Scotland Assure and NSS as members of the Oversight Board. Professor Fiona McQueen (who was the Chair of the Oversight Board) would then make recommendations to the Cabinet Secretary. The Cabinet Secretary would, in turn, make the final decisions. Once it was agreed to progress on any actions, communications were agreed to ensure that staff and the NHSL Board and, as required, the general public were kept informed. Any communications had to be

agreed with the Scottish Government. On occasion they would be drafted by the Scottish Government on NHSL's behalf.

21. The ESG set up three wider groups looking at Fire, Ventilation and Water on a pan-Lothian basis. These groups were set up as there was a gap in our assurance and governance processes in relation to each at a corporate 'NHS Lothian' level. Establishing these groups helped in relation to providing scrutiny and assurance through corporately had our healthcare governance committee and then to the NHSL Board that these were in place and where actions were required we would state what these were and how they would help mitigate any risks. I chaired the Water Group. As an Executive Director of NHSL Board, there were other NHSL Board governance committees that I was involved in where elements of this work were discussed e.g. at the NHSL Board and Private Board meetings, at meetings of the Finance and Resources, at the meetings of the Healthcare Governance Committees and so on. I was further involved on an operational basis through the IPC which reported to the Healthcare Governance Committee. Each committee had a clear terms of reference and as an Executive Director it is the case that you would be a member of the NHSL Board and in turn sit on a number of NHSL Board's committees which reflected your professional role e.g. I would sit on the Healthcare Governance Committee as part of its remit in clinical and care governance. In fulfilling this role, it was one of an Executive Director of the NHSL Board. Therefore, fulfilling a corporate function which is separate to an operational role.

The Phased Migration

22. The Oversight Board, along with the Scottish Government and the Cabinet Secretary, made the decision to phase services in to the new hospital. The decisions were based on the Oversight Board assurance process. That involved input from HFS and NHS Scotland Assure as key advisers and Mary Morgan, the Senior Programme Director. The assurance would have been based on the then current available guidance at that time (Health Technical Memorandum (HTM), Scottish Health Technical Memoranda (SHTM) etc), and expert opinion from both NHSL colleagues and NHS Scotland Assure. The

Oversight Board had core members but it also commissioned others to progress pieces of work on its behalf. It would have been informed by HFS and the HAI Scribe process and recommendations from colleagues about what actions were required to be taken to move patients and staff into the hospital safely.

23. I have been asked if it was a deliberate decision to migrate services to the DCN before the RHCYP/DCN. The answer to this is yes. As the DCN was not affected by the issues surrounding ventilation air changes, services could be moved there more safely. There was also the contextual issue, which was that the environment in the 'old DCN' was not fit for purpose and presented its own risks. All decisions to move any service into the new hospital were taken together by the Oversight Board, the Scottish Government and, by extension, the Cabinet Secretary. NHS Lothian alone never made a unilateral decision.

24. The decision to move the DCN services in two phases was made by the Oversight Board. That decision was based on the safety of patients and staff. The clinical view on moving patients was key. The Medical Director (Tracey Gillies) and IPC colleagues managed the process.

25. The Oversight Board adopted the same approach surrounding when services could be moved to RHCYP (including out-patient services, The Centre for Addiction and Mental Health's (CAMH) and in-patient services) as they had with the DCN. That, again, resulted in a phased programme of moving service when it was deemed safe to do so which was based on view from managerial and clinical colleagues and the Senior Programme Director's report to the Oversight Board for a decision.

The Royal Hospital for Sick Children at Sciennes

26. During the period of delay in opening RHYCP/DCN, services continued to be delivered from the 'old DCN' at the Western General and the Royal Hospital for Sick Children at Sciennes. Existing arrangements continued via NHSL's Acute Management Group. Any additional work at the old hospitals related to practical implications linked to the delay in moving to the new facilities. I cannot recall

any significant structural changes being made to either hospital. Any issues of concern continued to be raised via the Acute Management Group and all regular environmental checks continued. The clinical and managerial team did everything to ensure that patients and staff were kept safe. All factors were considered as part of this decision, including ventilation, but as fair as I can remember this was not one of the significant issues within the old hospitals. NHSL continued to engage with parent and patient groups to keep them informed along with staff throughout the delay.

Reflection

27. I have been asked to reflect whether the actions taken to remedy the defects during the delay in the hospital were adequate and effective. They were adequate and effective as there was scrutiny, assurance and oversight in place via the ESG and Oversight Board. There was input from experts such as NHS Scotland Assure, NHS ARHAI and NHSL's Infection Prevention and Control Team (IPCT) in the specific areas which ensured that the facilities met the required standards and provide a safe environment for patients. The HAI Scribe process is an important tool in project management both in relation to any new build and the refurbishment of existing buildings. It results in any issues with the built hospital environment being flagged earlier in the process.

28. I have been asked to reflect on how such issues could be avoided on future projects. I believe one issue was that the programme of works required the HAI Scribe process to work in parallel with finalising the works and the programming got out of sync. The HAI Scribe process should be the final part of the process which should then provide the assurance required for final clearance that the hospital was ready and safe to be occupied.

Declaration

29. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Darren Forbes

Witness Details

1. **Name**: Darren Forbes.

Professional Background

2. I am a Senior Project Manager at what was Imtech Engineering Services Central Limited, since renamed to Dalkia Engineering Limited ("Imtech"). I have c.20 years of experience in the construction industry. I make this statement on behalf of Imtech from my own knowledge and from information provided to me by others working at Imtech. I am a Building Services engineer and qualified with a Higher National Diploma in Building Services Engineering in 2006 from Liverpool Community College whilst working for Haden Young Ltd (part of the Balfour Beatty group).

3. Following my time with the Balfour Beatty group, I have been employed at Imtech since November 2018.

4. As a Senior Project Manager, I possess experience in engineering and contracting, with previous success in delivering and managing complex projects from construction through to steady state operations (time between construction completion and operational usage).

Role in the Project

5. In my role on the Royal Hospital Children & Young People and Department of Clinical Neurosciences, Little France, Edinburgh ("RHCYP & DCN") project (the "Project"), I acted as the on-site Senior Project Manager for Imtech, which was contracted to address the NHS's HVC 107 (ventilation works). My responsibilities included liaising with various parties, including the NHS and IHS Lothian, as well as both sets of advisors (Mott MacDonald who were technical advisors to the NHS and Faithful & Gould who were the Project Managers on behalf of George Street Asset Management). Additionally, I managed the day to day running of the project and attended weekly Technical Meetings with NHS and its advisors, and Hoare Lea and held throughout the Project, along with the meetings for the Monthly Project Review. I was also involved in the Health & Safety Reviews/Audits carried out on our on-site activities, and I was based with my colleague Dominic Gallagher, who was the project director in the George Street Asset Management (as I understand it this was a special purpose vehicle for management of the Project) offices and on site.

Background/Context of Imtech's Appointment

6. The Regional Director at Imtech, Dave Keenan (who left the company in/around August 2022) was phoned by Matt Templeton, Director at Dalmore Capital (Owners/Investors of the RHCYP & DCN) to see if Imtech could provide "enhancements to the system". I understand that Dave Keenan and Matt Templeton had previously worked together on another project in the UK. I understand the first call on this new project was in/around October 2019. I also understand that the call was made in the context that Imtech had been through a competitive tendering process in order to be appointed to the Scottish Health Framework, which included pre-agreed rates and prices. I understand that these were applied to Imtech's work on the Project.

7. Dave Keenan then met with Matt Templeton at the Offices of Dalmore Capital in Edinburgh (Matt Templeton is also a Director of IHS Lothian (Integrated Health Solutions, Lothian) a Special Purpose Vehicle for RHCYP & DCN, under Scottish NPD PPP (Non-profit distributing public private partnerships). This initial meeting was followed up by a further meeting with Matt Templeton and Dave Keenan and Emma Fradgley (Business Development at Imtech Scotland, who left the company in/around June 2021). At both meetings Dave Keenan confirmed Imtech's interest in carrying out these "enhancements to the system". Whilst I did not attend these meetings, Dave Keenan made me aware of them.

8. My understanding is that Imtech was brought on board following issues having been identified in the project as at Q4 2019. It is my understanding that Imtech was part of the solution regarding the points identified and, as a result of its works, that Imtech delivered in compliance with its contractual arrangements.

Brief and Instruction

9. Following on from the meetings referred to above, IHS Lothian subsequently confirmed its instruction to Imtech to design, manufacture, supply, construct, test, commission ventilation systems that would achieve 10 air changes per hour @ +10pascals positive to the neighbouring space, in rooms with Critical Care and Haematology & Oncology. Imtech started on several letters of intent and then IHS Lothian Limited issued to Imtech an initial engagement letter dated 20 December 2019 (which is exhibit DF1 of this statement) **(A35055578 – Subcontract Initial Engagement Agreement Letter dated 20 December 2019 - Bundle 13, Volume 4 – Page 926)** which states the ventilation works as, "*the design, construction, completion and commissioning, of ventilation works to the paediatric critical care ventilation system and the haematology/oncology ventilation system pursuant to the Board's technical requirements detailed in the change notice HVC 107, and as further described in other Documents*".

10. Subsequently, IHS Lothian and Imtech entered into a contract dated 5 August 2020 (the "Ventilation Works Contract"), which states the works within the contract data part one as "*Design, construction and installation, testing, commissioning and completion of new ventilation system and associated works to serve Paediatric Critical Care and Haematology and Oncology areas on the 1st and 3rd floors respectively as further described in the scope"* (exhibit DF2) **(A35680505 – SA4 Works – SA4 Works Contract (Envelope 2) - Signed and Delivered 05.02.21 - Bundle 13, Volume 4 – Page 834).** Both the engagement letter and the Ventilation Works Contract contained NHS Lothian document HVC 107.

11. The brief for what Imtech were to do was as detailed in HVC 107 and Imtech was instructed via IHS Lothian as explained above. The HVC 107 document was initially a change document issued by NHS Lothian to IHS Lothian (signed by Brian Currie of NHS Lothian). This document detailed the high value change requirements which included reference to a ventilation system or systems, which delivered 10 air changes per hour at +10pascals positive to the neighbouring space and was incorporated into the Ventilation Works Contract and subcontract initial engagement letter between IHS Lothian and Imtech (signed by Matt Templeton of IHS Lothian) **(A35055578 – Subcontract Initial Engagement Agreement Letter dated 20 December 2019 - Bundle 13, Volume 4 – Page 926)**.

12. The entity involved in providing the brief to Imtech was IHS Lothian and the individual was Matt Templeton. Imtech had no contact or involvement at this stage with the technical advisors (Mott MacDonald and Faithful & Gould) who were involved in the creation of the project brief as detailed in HVC 107.

13. In addition, and separate to the above Ventilation Works Contract, Imtech was subsequently asked to carry out various other enhancement works. As part of this, there were a number of requests for additional work for the NHS to "future proof" the hospital by enhancing the fire system etc. and these were carried out in parallel to the HVC 107 works.

These additional works were carried out under a separate contract dated 2 February 2021 titled “Agreement for MVC Works, based on the NEC 4 ECC Option E and Additional Conditions of Contract (Option Z) (see at exhibit DF3) **(A35680505 - SA4 works – SA4 Works Contract (Envelope 2) – Signed and Delivered 05.02.21 - Bundle 13, Volume 4 – Page 834)** for the following summarised scope:

LVC 133, Feasibility Study, HCID Suite within Emergency Department of RHCYP & DCN

- The purpose of this was to conduct a feasibility study for the establishment, within the Emergency Department of RHCYP & DCN, of an area for safe treatment of patients with a suspected or confirmed High Consequence Infectious Disease (HCID) including a safe donning and doffing room, a patient bed/treatment room and an en-suite bathroom all with interconnecting doors.

MVC 112, Design, Installation and Commissioning – Enhancements to Fire Safety DCN Only

- Install Combined Smoke & Fire Dampers at existing vent terminal in corridors.
- Install Combined Smoke & Fire Dampers in ductwork traversing room to room boundaries.
- Upgrade all doors to Fire Doors to corridors serving sleeping accommodation, in accordance with SHTM 81 and the Building Standards Technical Handbook: non-domestic, including the installation of intumescent strip and cold smoke seals and full certification by an approved installer.
- Install mechanical self-closing device to doors and half leaf doors to corridor within sleeping accommodation areas.
- Install electromechanical, free swing and linked to fire alarm system, self-closing device to doors and half leaf doors to corridor within sleeping accommodation.

- Upgrade existing walls between rooms and corridors, and room to room to “short duration” as per Non-Domestic Technical Handbook.
- Update Fire Strategy.

MVC 126, Installation & Commissioning – Fire Enhancements (FE) – RHCYP Only

- Install Combined Smoke & Fire Dampers at existing vent terminal in corridors.
- Install Combined Smoke & Fire Dampers in ductwork traversing room to room boundaries.
- Upgrade all doors to corridors serving sleeping accommodation.
- Install mechanical self-closing device to doors and half leaf doors to corridors within sleeping accommodation areas.
- Install electromechanical free swing and linked to fire alarm system self-closing device to doors and half leaf doors to corridors within sleeping accommodation areas.
- Upgrade existing walls between rooms and corridors and room to room “Short Duration” as per Non-Domestic Technical Handbook.
- Update Fire Strategy.

MVC 127, Alterations to CAMHS

- Upgrade all doors to corridors serving sleeping accommodation.
- Installation test & commissioning of Safehinge Doors to all bedrooms.

MVC 131, Fire Enhancement to CAMHS

- Install Combined Smoke & Fire Dampers at existing vent terminal in corridors.
- Install Combined Smoke & Fire Dampers in ductwork traversing room to room boundaries.
- Upgrade all doors to corridors serving sleeping accommodation.
- Install mechanical self-closing device to doors and half leaf doors to corridors within sleeping accommodation areas.

- Install electromechanical free swing and linked to fire alarm system self-closing device to doors and half leaf doors to corridors within sleeping accommodation areas.
- Upgrade existing walls between rooms and corridors and room to room “Short Duration” as per Non-Domestic Technical Handbook.
- Update Fire Strategy.

MVC 157, Emergency Department Alterations for High Consequence Infectious Disease (HCID Works)

- Alter ventilation to create balanced or slightly negative pressure cascade in various rooms.
- Alter ventilation to create positive pressure cascade in various rooms.
- Create rooms from various existing treatment bays.
- Alterations to facilitate safe patient pathways.

MVC 164, Fire Enhancements – Critical Care & Lochranza

- Install Combined Smoke & Fire Dampers at existing vent terminal in corridors.
- Install Combined Smoke & Fire Dampers in ductwork traversing room to room boundaries.
- Upgrade all doors to corridors serving sleeping accommodation.
- Install mechanical self-closing device to doors and half leaf doors to corridors within sleeping accommodation areas.
- Install electromechanical free swing and linked to fire alarm system self-closing device to doors and half leaf doors to corridors within sleeping accommodation areas.
- Upgrade existing walls between rooms and corridors and room to room “Short Duration” as per Non-Domestic Technical Handbook.
- Update Fire Strategy.

Works Undertaken

14. The works associated with HVC 107 have been instructed via a functional specification from the NHS which at its core is HVC 107. The construction element of HVC 107 called for the "*design, manufacture, supply, construct, test, commission and complete".*

15. To satisfy this functional specification a number of activities had to be undertaken:

Early Works/Surveys of existing systems / building

- in terms of early works, the first thing we undertook was a survey of the existing building. We tend not to rely on as-built drawings nor upon existing systems/building structure.
- Imtech's designers, Hoare Lea, toured the building verifying both plant installed and physical aspects of the building, e.g. making sure a duct run from one location to another could be incorporated, including available space. The survey work carried out by Hoare Lea included:
  - 3D photographic survey of the building interior.
  - Above ceiling inspections to verify physical aspects of the space.
  - Verification of existing systems in all areas, including plant rooms and above ceiling spaces.
- All of the above information was then used to create our downtakings drawings.

Technical Meetings

- These started in January 2020, sometimes weekly. Sometimes upon request we may have had two meetings in one week if NHS Lothian wanted to discuss matters separately.
- The meetings were not attended only by Hoare Lea and Imtech but also NHS Lothian and its advisors.

- Minutes were issued to all attendees, including NHS Lothian (Minutes include full list of attendees). These minutes are stored on Imtech's server.
- The activities of the design and construction teams were discussed, recorded and agreed at the Technical Meetings.
- All of the above minutes were included in Hoare Lea's Stage 4 Design Report, Rev 7, previously submitted to the Inquiry (Exhibited at DF4) **(A37631721 – REP-2727164-08-SV-20200313-Stage 4 Report-Rev07 - Bundle 13, Volume 4 – Page 944).**

Physical Works

The physical works created to satisfy the functional specification included:

a) Down Takings.
b) Replacement of two General Air Handling Units (AHU's) and associated Services.
c) Addition of 9 New AHU's including associated services for Isolation rooms.
d) Upgrade and addition of Ductwork.
e) Upgrade and addition of Low Temperature Hot Water (LTHW) and Chilled Water (CHW).
f) Additional Building management System (BMS) Controls.
g) All associated Builders work.

Changes

16. The RHYCP & DCN was due to open in July/August 2019, following completion of construction and commissioning of the hospital's numerous systems. Various news outlets reported that Jeane Freeman, former Health Secretary, cancelled the opening in July 2019 due to a number of faults discovered.

17. There were a lot of comments from the Press around the Project. We decided to ignore it to stay focused on the task at hand. Imtech only took into account the contractual documentation and instructions from the NHS/IHSL which, at its core, was HVC 107.

18. Imtech were not aware of the Institute of Occupational Medicine (IOM) reports and were not issued any reports from them. Once Imtech had carried out the commissioning of the systems it was responsible for, the NHS then employed IOM to carry out verification works.

Final Specification of the Ventilation System

19. With regards to the final specification of the ventilation system for RHYCP & DCN, this was contained within the Hoare Lea's Stage 4, Rev 7 Report dated 21 December 2020 (exhibited at DF4) **(A37631721 – REP-2727164-08-SV-20200313-Stage 4 Report-Rev07 - Bundle 13, Volume 4 – Page 944).**

20. In summary, the decision to replace the AHUs was made by Hoare Lea, with NHS's Lothian involvement and was accepted during the technical meetings.

Compliance of the System Installed with SHTM 03-01

21. The systems installed by Imtech pursuant to the Ventilation Works Contract were verified and signed off by both Arcadis (Independent Testers as per document SA2 (V 107) 10th March 2021) (exhibit DF5) and IOM, on behalf of NHS Lothian (certificate was not provided to Imtech) **(A32469196 – (b) Project Agreement Supplemental Agreement (No 2) 5 August 2020 - Bundle 13, Volume 4 – Page 1000)**. A Faithful and Gould completion certificate (exhibit DF6) was signed on 27 February 2021 **(A35680401 – RHCYP – HVC 107 – Completion Certificate Bundle 13, Volume 4 – Page 999).**

22. There were two minor derogations required for the HVC107 works namely:

- Air Handling Units, doors – this related to not being able to achieve "hinged access doors" for AHU because the doors would not open due to existing services fouling the swing of the door. It was therefore agreed by all parties that a derogation of installing lift-off access panels was acceptable.

- Lighting levels – this related to the lux lighting level within a consulting room. In order to provide the required level of lighting, an upgrade would need to be carried out and it was agreed by way of derogation that this was not needed.

23. Finally, the design meetings included technical representation from all stakeholders, who continuously challenged & reviewed design proposals to ensure compliance and that the brief was met. This is demonstrated in the Minutes contained in Hoare Lea Report, Stage 4 Report, Rev 7 (exhibit DF4) **(A37631721 – REP-2727164-08-SV-20200313-Stage 4 Report-Rev07 - Bundle 13, Volume 4 – Page 944).**

Commissioning, Testing and Validation

24. Testing and commissioning pursuant to the Ventilation Works Contract was carried out by Imtech subcontractors (H&V Commissioning), with all reports issued to the client – NHS Lothian. During this process, Arcadis (NHS Lothian's Independent Tester) also witnessed the commissioning and verified this by providing a sign off document for the project (exhibit DF5) **(A32469196 – (b) Project Agreement Supplemental Agreement (No 2) 5 August 2020 - Bundle 13, Volume 4 – Page 1000)**.

25. Imtech employed Phoenix Commissioning Services Ltd as Commissioning Manager, to programme manage all testing and commissioning of systems. Imtech employed H&V Commissioning to carry out the actual commissioning works for the following systems (November 2020 to March 2021):

- Flush and Chemically dose Low Temperature Hot Water & Chilled Water Systems
- Balance Low Temperature Hot Water & Chilled Water Systems
- HEPA Filter testing
- HVC 107 Ventilation Balance
- Set up Pressure Regime

26. There were also numerous commissioning activities carried out by a number of companies, the key ones being:

- AHU Factory Test (carried out by Daiken, the supplier, and witnessed by NHS Lothian and Imtech representatives) – July 2020.
- Ductwork Cleaning was carried out by Duct Clean Scotland – October 2020 to December 2020.
- Ductwork Testing was carried out by Ductform Ventilation – October 2020 to January 2021.
- Fire Alarm, Data, Access Control & CCTV was carried out by Boston Networks who were an incumbent contractor - January 2021.
- All existing medical Equipment was removed and replaced by Incumbent Contractor i.e. Draeger, Static (Feb 2021 / Jan 2021).
- Medical Gas were removed, reinstated, tested & Commissioned by HPI (Incumbent Contractor) and verified by Hulley & Kirkwood ahead of NHS Pharmaceutical checks – November 2020 to February 2021.
- BMS installation test & Commissioning by Schneider Controls Ltd (Incumbent Contractor) January 2021.
- Electrical Installation testing by Imtech Engineering – Nov 2020 - Jan 2021.

27. Arcadis worked on behalf of NHS Lothian as Independent Testers and signed off on the following systems as witnessed / compliant:

- AHU Factory Tests.
- Ductwork Cleaning.
- Ductwork Pressure Tests.
- AHU Site Tests.
- Low Temperature Hot Water Pumps.
- Chilled Water Pumps.
- Ventilation Flowrates.
- Low Temperature Hot Water Flowrates.
- Chilled Water Flowrates.
- Trace Heating.

- Sidestream Filters.
- Pressurisation Units.
- Nurse Call.
- BMS.
- Medical Gases.
- Draeger Equipment.
- Chilled Water Flushing.
- Low Temperature Hot Water Flushing.
- Pressure Cascades.
- Smoke & Fire Dampers.
- Lighting Levels.
- Electrical Completion.
- Access Control.
- CCTV.
- Fire Alarms.
- HEPA Filter Testing.

28. IOM worked on behalf of NHS Lothian to verify ventilation flow rates, and they did verify the flow rates.

Declaration

29. I believe that the facts stated in this witness statement are true to the best of my knowledge, information, and belief. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Professor Fiona McQueen

Introduction

1. My name is Fiona McQueen. I am now semi-retired. I was formerly the Chief Nursing Officer (CNO) for Scotland.

2. This statement addresses:

    a. My professional qualifications and background
    b. Escalation of NHS Lothian (NHSL) and Appointment of the Oversight Board
    c. Appointment as Chair of the Oversight Board
    d. Role as Chair of the Oversight Board
    e. Supplementary Agreement 2 (SA2)
    f. Phased Migration
    g. Covid/Brexit
    h. Full Migration
    i. Communications with Cabinet Secretary
    j. Some reflections on my involvement with the Royal Hospital for Children and Young Persons/ Department of Clinical Neurosciences (RHCYP/DCN project).

Professional Qualifications and background

3. I am a registered nurse with a Diploma in Management Studies, a Masters Degree in Business Administration and a Degree in Nursing Studies.

4. I am semi-retired. I am a member of the Scottish Police Authority and I am also the Chair of the Ayrshire College Board. A copy of my CV is produced at

(A47200263 – Fiona McQueen – Curriculum Vitae – Bundle 13 – Volume 4 – Page 1333)

5. Between November 2014 and April 2021, I was the CNO for Scotland. As CNO I was responsible for overseeing the work of the Chief Nursing Directorate; a Scottish Government Healthcare Directorate responsible for achieving the best health and care outcomes for people by working on patient, public and health professions policy, and support ministers and the NHS in delivering a safe, effective and person-centred health and social care system.

6. The CNO Directorate has a wide remit including responsibility for:

    a. student nurse and midwife intake
    b. leading on nursing, midwifery, allied health professions and health-care science
    c. modernising and improving NMAHP (Nursing, midwifery and allied health professionals) and HCS (healthcare support) services and standards of practice
    d. leading on all aspects of healthcare-associated infection policy and antimicrobial resistance and
    e. leading on health professionals and workforce regulation.

    The CNO Directorate is responsible for providing Minsiters with policy advice in relation to all of the aforementioned ‘policy’ areas.

Escalation of NHSL and Appointment of the Oversight Board

7. I first became involved with the Royal Hospital for Children and Young People/Department of Clinical Neurosciences (RHCYP/DCN) project following my return to work after a period of absence between June 2019 and August 2019. By that time, an Oversight Board had been established and the CNO was a member of the Board. I explain the function of the Oversight Board in more detail below.

8. The Scottish Government is responsible for the NHS in Scotland. Healthcare is delivered at a local level by the Scottish health boards. Those boards are subject to performance monitoring by the Scottish Government. The Scottish Government's NHS Scotland: support and intervention framework (the Escalation Framework) is one of the key elements of the performance monitoring processes.

9. The Escalation Framework provides a model for provision of Scottish Government support. The higher the level of escalation the greater the level of support the health board is given. The current framework can be found at **(A46674602 - NHS Scotland: support and intervention framework - as updated to 27 November 2023 – Bundle13 – Volume 3 – Page 687)**

10. On 10 July 2019 NHSL were escalated to Level 3 of the Escalation Framework. This was communicated to NHSL in a letter from Malcolm Wright, the then Director General for Social Care and Chief Executive of NHS Scotland, dated 12 July 2019 **(A41263551 - Letter to Tim Davison, copying in Brian Houston, from Malcolm Wright – 12 July 2019 - Bundle 7 - Volume 1 - Page 339)**. I was not involved in this decision to escalate as I was absent from work at the time the decision was made. However, as is apparent from Malcolm's letter, escalation to level 3 related to NHSL's performance across a number of areas of healthcare delivery.

11. In consequence of NHSL's escalation, an Oversight Board and Oversight Group was established. The Oversight Board related to delivery of the RHCYP/DCN project. The Oversight Group, chaired by Professor John Connaghan, focused on improving performance across a number of different health care deliverables.

12. The Oversight Board's terms of reference can be found at Inquiry document **(A41232145 – NHS Lothian RHCYP Oversight Board_ToR – Bundle 7 - Volume 2 - Page 354.)** Those terms of reference define the scope of the Oversight Board's work as:

"The Oversight Board will provide advice in relation to:

• Advice on phased occupation

• Advice on the proposed solution for ventilation in critical care areas and on any other areas that require rectification works

• Advice on facility and operational readiness to migrate

• Gain information and give advice to NHS Lothian about commercial arrangements with IHSL for completion of works

• The approach to NPD contract management

• Identification of areas that could be done differently in future."

13. The original members of the oversight board were:

- Christine McLaughlin, Chief Finance Officer, Scottish Government
- Catherine Calderwood, Chief Medical Officer, Scottish Government
- Prof Fiona McQueen, Chief Nursing Officer, Scottish Government
- Susan Goldsmith, Director of Finance, NHS Lothian
- Tracey Gillies, Executive Medical Director, NHS Lothian
- Prof Alex McMahon, Nurse Director, NHS Lothian
- Peter Reekie, Chief Executive, Scottish Futures Trust
- Colin Sinclair, Chief Executive, NHS National Services Scotland
- Alex Joyce, representative from NHS Lothian Joint Staff Side (deputy Gordon Archibald)

14. Attending the Board to provide advice and assurance was:

- Mary Morgan, Senior Programme Director
- Brian Currie, Project Director, NHS Lothian
- Judith Mackay, Director of Communications, NHS Lothian
- Prof Jacqui Reilly, HAI executive lead for NHS National Services Scotland and

- SRO for centre of excellence work
- Gordon James, Health Facilities Scotland, NHS National Services Scotland
- IHSL would be in attendance on an ‘as required’ basis

15. The first meeting of the Oversight Board took place on 8 August 2019 and was chaired by Christine McLaughlin. The Oversight Board met weekly between 22 August 2019 and 31 October 2019. This was the period of most intense activity on the project. Thereafter, and as the project advanced towards completion, the oversight board met fortnightly. The final meeting of the Oversight Board was 8 April 2021 following opening of the RHCYP/DCN in full on 23 March 2021.

16. On 13 September 2019 NHSL were escalated to level 4 on the Escalation Framework in respect of the RHCYP/DCN Project. This escalation was communicated to NHSL by letter from Malcolm Wright of the same date **(A44267042 - Letter – MW – B Houston and T Davison – NHS Lothian Level 4 Escalation – Sept 2019 Bundle 13 - Volume 3 - Page 702).** Escalation to level 4 resulted in the appointment of Mary Morgan as Senior Programme Director. Mary Morgan is now the Chief Executive of NHS NSS. In September 2019 Mary Morgan was Director of Strategy, Performance and Service Transformation at NHS NSS. Mary reported to the Oversight Board. I was not involved in the decision to escalate NHSL to level 4.

17. Mary Morgan reported to the Oversight Board via her Senior Programme Director’s Report. Mary would also attend the meetings of the Oversight Board, and advise on anything she was concerned about. In between meetings, Mary would pick up the phone to brief me on any concerns she had. The Oversight Board had a plan and timescales for when things should be completed by. The timescales would alter and this was dependent on whether there were any outbreaks of COVID and whether we could negotiate challenges.

18. Mary would brief the Oversight Board on progress of the project. She was very professional, robust, and dependable. At the Oversight Board we would

request evidence for any updates we were provided with. Mary would provide evidence by reference to, for example, reports from NHS NSS or NHSL. She would provide a rationale between the red, amber, green stages of her reports. She was a key member of staff who oversaw the delivery of what needed to be done. The Oversight Board had a plan and timescales for when things should be completed by. The timescales would alter depending on the challenges faced by the project, for example, by an outbreak of COVID amongst the workforce. Mary would keep the Oversight Board briefed on such 'operational' matters.

Appointment as Chair of the Oversight Board

19. Diane Murray had been deputising as Chief Nursing Officer in my absence. Accordingly, Diane had attended the first meeting of the Oversight Board. On my return to work Diane briefed me on the work and operation of the Oversight Board. I then attended meetings of the Oversight Board as a member between 22 August 2019 and 10 September 2019. On 10 October 2019 I attended my first meeting of the Oversight Board as its Chair. I remained Chair until the Oversight Board's final meeting.

20. I have been asked by the Inquiry at what point I was made aware that I would be Chair of the Oversight Board. On my return to work Christine McLaughlin advised me that it had been thought appropriate that I would take over as Chair and I was happy to do so. At the time, Christine was the Chief Finance Officer for NHS Scotland, and Director of Health Finance, Corporate Governance. Christine's directorate is involved with overseeing NHS Scotland capital programmes, including delivery of the RHCYP/DCN project. It therefore seemed sensible for a more neutral person to sit as Chair. This would then give Christine the freedom to contribute to the Oversight Board as a member rather than having to take a slightly more impartial position as Chair.

Role as Chair of the Oversight Board

21. I have been asked what I saw the role as Chair of the Oversight Board to be. The role of the Chair is to oversee delivery of the work of the Oversight Board as set out in its terms of reference (see discussion at paragraph 11 above). I considered that, at a high level, performance of this role involved balancing patient safety and the economic implications of delivering the RHCYP/DCN project.

22. In relation to patient safety, it was important to have regard to both the patients then in the old facilities and the safety of the patients moving into the new facility.

23. I was also cognisant that the RHCYP/DCN project was a publicly funded project. Practical completion had been reached and the unitary charge was being paid to IHSL for a building that was not providing the healthcare services it was designed for.

24. I was concerned, in my role as Chair, with public confidence in the project. Public confidence, in terms of wanting to move into a state of the art building as efficiently and as economically as was possible, but also public confidence that the facility was safe for the delivery of patient care. I was also cognisant of the Oversight Board's function of providing assurance to Ministers and the accountability of those Ministers to Parliament.

25. I was also aware that the project was being delivered under the NPD financial model. This meant that there were commercial nuances to be considered when decision making. For example, the requirement for IHSL's funders to ratify agreements made in relation to Supplemental Agreement 2 (SA2) **(A32469196 – Project Agreement Supplementary Agreement (No. 2) – 5 August 2020 - Bundle 3 - Page 1204)**. (The supplemental agreement addressing, amongst other things, the remedial works to the ventilation system in the critical care unit). As Chair, the role was about keeping that balance, moving forward as

quickly as possible and making sure that all of the details and interests that needed to be taken into account were taken into account.

26. I have been asked by the Inquiry about the decision making processes of the Oversight Board. In particular, I have been asked if, as Chair, decision making was my responsibility or if the Oversight Board adopted a more balanced process. The members of the Oversight Board worked collaboratively to make decisions. It would not be correct to consider my role as Chair to be akin to a form presidential decision making.

27. The composition of the Oversight Board was such that the different members (and attendees) brought with them different skillsets and expertise. Different members had different areas of expertise, but the strength of the board was its collective knowledge and skill. For example, Tracey Gillies (Executive Medical Director for NHSL) provided advice on patient safety (alongside those members and attendees from NHS NSS). Alex McMahon (then NHSL Executive Nurse) and Tracey Gillies provided advice on service delivery and staffing, such as recruitment and retention. Susan Goldsmith (NHSL Director of Finance) would provide advice in relation to commercial arrangements and negotiations, as well as Peter Reekie of Scottish Futures Trust. I would always look to draw on relevant expertise on the Oversight Board and make on-balance, collaborative decisions. If we could not get an on-balance decision in the time available during the meetings, I would ask the relevant people to engage in further discussions and revert with a reasoned decision. I expressed that such discussions should have patient safety at their core. On occasion, relevant persons would hold ‘workshops’ involving, for example NHSL infection prevention control and NHS NSS. At these workshops the attendees would investigate concerns with a view to gathering evidence and coming to a decision on a relevant contentious matter.

28. I have been asked by the Inquiry if the NHS NSS report was the guide for the Oversight Board in terms of what needed to be looked into and what had to be taken forward. Yes, I would say it formed part of the plan, or it at least gave us the architecture for what we needed to take forward. As Chair, I took the high-

level view that once the issues raised in ventilation in the critical care unit and the matters raised in the NHS NSS report had been addressed then the hospital should be safe to open to patients.

29. At the initial meetings of the Oversight Board the only significant issue that was known to require remediation at the time was the ventilation in the critical care unit at RHCYP. My understanding was that there were other problems but they would have been considered to be routine snagging. Following receipt of the NHS NSS review in relation to water, ventilation, drainage, plumbing, fire, electrical and medical gasses, the Oversight Board was aware of additional remedial works that were required beyond the ventilation systems.

Supplemental Agreement 2 (SA2)

30. I have been asked by the Inquiry about whether I considered there were challenges negotiating and agreeing Supplementary Agreement 2 (SA2).

31. SA2 involved negotiating the delivery of the remedial works in relation to, principally, the ventilation system at the critical care unit of the RHCYP. The works were complex as was the contractual nexus within which they require to be delivered.

32. There were a number of different parties involved in the negotiation of SA2 and each party had a different commercial interest which brought an element of complexity. NHSL had the responsibility for moving the project forward so that the new facilities could be opened. Integrated Health Solutions Limited (IHSL), as Project Co under the NPD contract were responsible for delivering a viable healthcare facility. IHSL, however, had responsibilities to its funders who each had their own commercial stake in the project. There were also the contractors: Multiplex who were responsible for construction and Bouygues who were responsible for providing facilities services once practical completion had been reached.

33. I recall that, as Chair of the Oversight Board, I was frustrated that negotiation of SA2 was not more straightforward. I knew that I wanted the project to be delivered as safely and economically as was possible. However, the responsibility for negotiating how that was delivered rested with others and could not simply be directed by the Oversight Board. That being the case, the focus of the Oversight Board was to ensure that those who were responsible for delivering SA2 (NHSL and IHSL) were as focussed as they possibly could be.

34. I have been asked by the Inquiry if the Oversight Board found it difficult to find a supplier to undertake the remedial works to the ventilation systems at the RHCYP. The responsibility for identifying and instructing remedial works rested with NHSL and IHSL not the Oversight Board. Mary Morgan would be better placed to explain this part of delivery of the project.

Phased Migration

35. I have been asked by the Inquiry about the decision to open the RHCYP/DCN by way of phased migration.

36. I thought it was appropriate to take a proportionate decision when deciding to open the new facilities. In essence, this involved balancing the need to open the hospital as quickly as was possible against the problems associated with doing so alongside ongoing works. The remedial works would have disrupted the delivery of patient care but, equally, until the new hospital opened, patients continued to receive care in outdated facilities. Ultimately, we had to determine whether or not there was increased risk to patient safety in having the construction workforce within clinical areas in order to form a view as to whether it would be safer to move the patients after the work was completed or not.

37. There was perhaps a greater need to migrate the Department of Clinical Neurosciences (DCN) from the Western General Hospital than there was to move The Royal Hospital for Sick Children (Sick Kids Hospital) from its site at Sciennes. I say this because the disparity between what was being offered at

the old and new facilities was greater at the DCN than it was at the Sick Kids Hospital. While steps were taken to improve the DCN at the Western General by, for example, installing new imaging equipment, it was recognised by all that the sooner services were migrated to the new building the better.

38. I have been asked by the Inquiry what featured in the decision making as regards phased migration. A number of factors featured in the decision-making process: patient and building safety, patient experience, staff availability, availability of medical resources and equipment and patient transport (amongst others). The Oversight Board was guided by its members when making decisions to phase migration to the new site. As is clear from the minutes, the Oversight Board received particular assistance from the 'phased migration' reports prepared by NHSL. See for example, **(A46527566 - DCN Phase 2 Migration: Review of the 6 Week Commissioning Period – 4 June 2020 – Bundle 13 - Volume 4 - Page 693)** and **(A46527584 - Partial Move of RHCYP OPD, Therapies and Admin to RHCYP+DCN Building Early July 2020 – 4 June 2020 Bundle 13 - Volume 4 - Page 696)**. The Oversight Board also received advice from NHS NSS on appropriateness (and therefore safety) of the works done and relied on their advice and interpretation of reports to determine a 'go' or 'no go' decision.

39. I have been asked by the Inquiry if I was involved in assessments related to delivery of healthcare services at the Sick Kids Hospital in Sciennes.

40. On 10 October 2019 I visited the Sick Kids Hospital and the DCN with the Cabinet Secretary. I understand that the Cabinet Secretary had previously visited the facilities while I was absent. My visit allowed me to observe the services being delivered in the hospitals first hand.

41. The Cabinet Secretary asked Healthcare Improvement Scotland into DCN and the Sick Kids Hospital to carry out an inspection to provide assurance of patient safety with regard to infection prevention and control at both sites. Healthcare Improvement Scotland carried out unannounced visits at the DCN and Sick Kids Hospital during 22 and 24 October 2019. These visits were discussed at the Oversight Board meeting of 24 October 2019. **(A33888205 – 6.2 0045**

RHCYP DCN IMT-ESG Minutes 2019-2021 – 24 October 2019, Bundle 13, Volume 4, Page 742). I was provided with the embargoed report from Healthcare Improvement Scotland on 10 January 2020. The report was then published on the Healthcare Improvement Scotland website at 10am on 15 January 2020. During this attendance clinicians had an opportunity to have their voice heard as regards improvements that could be made to the existing facilities pending migration to the new hospital. At Sciennes, the clinicians asked for extra room within the Emergency Department. The extra room was provided by removing an internal pillar and relocating outpatient appointments. I understand that this made a big difference to the staff. At the DCN, the main change was the provision of new imaging equipment that replaced older unreliable equipment.

COVID & Brexit

42. I have been asked by the Inquiry what impact COVID had on the project and what challenges, if any, it brought.

43. In my view, both COVID and Brexit limited the supply of goods available to the RHCYP/DCN project. This supply chain disruption impacted the speed at which remedial works could be undertaken. Put simply, if materials were not available construction could not continue.

44. The project's workforce was also impacted by COVID. Delivery of the project was considered to be of strategic importance so work did not stop during lockdowns, however, working methods and processes had to be adapted so as to incorporate social distancing which limited the number of workers who could be in particular parts of the site at any given time. There were also outbreaks of COVID amongst the workforce that impacted resource when those working on the project were self-isolating.

45. COVID also diverted clinical and technical resource from the project. For example, those at NHSL and NHS NSS with responsibilities for infection

prevention control were focussed on responding to the challenges presented by COVID and not on delivery of the project.

Full Migration

46. The RHCYP/DCN was fully opened on 23 March 2021. I have been asked by the Inquiry if I considered that, by this point, the hospital was a safe environment and whether I had any concerns over patient safety and care at that time.

47. The provision of healthcare is not risk free. No matter how safe and effective you make your building, once you put patients and staff into it, there is an interaction with the building that means proportionate risk-based approaches need to be taken at all times. Nonetheless, I was content on the basis of the evidence presented to the Oversight Board (including consideration of that evidence by persons with technical expertise at NHS NSS), that patients and staff could safely migrate to the new building.

Communication with Cabinet Secretary

48. I have been asked by the Inquiry if I had direct contact with the Cabinet Secretary in order to discuss progress of the project or whether she was happy to be kept in the loop via the Oversight Board and the different mechanisms with her civil servants.

49. Ms Freeman was very attentive to her brief, and, if anything, she liked more information rather than less. If, as a civil servant, you had a decision about whether or not to brief your minister about something, I would say you would make the decision to brief Ms Freeman. Ms Freeman was very interested in the work of the Oversight Board and I believe she was briefed after most meetings through her private office. Ms Freeman was also keen to keep Parliament and MSPs updated.

50. It would usually be Alan Morrison, Calum Henderson or their colleagues that would prepare the briefings that were given to the Cabinet Secretary following on from the Oversight Board meetings.

51. At the outset, there were weekly meetings with the Cabinet Secretary in the Scottish Parliament with Health and Social Care officials which gave an opportunity to keep her up to date on the work of the Oversight Board. In addition, I would find it helpful to alert Ms Freeman on an ad hoc basis to the fact that there was information she needed to know and then a written note would be sent to her. Any such note was usually sent after the Oversight Board meeting but not always.

52. I have been asked by the Inquiry if I received a request from the Cabinet Secretary to review and update the technical data regarding the ventilation given there were concerns that it could be interpreted differently by persons using it. I do not recall receiving such a request. Updating guidance is a matter principally for NHS NSS not the CNO Directorate.

Reflections

53. I have been asked by the Inquiry if I feel that everything went as well as it could have done from the point that I became involved. On reflection, I consider there could have been a sharper focus from NHSL to move forwards and to find solutions. It is easy with hindsight to say this because they were, of course, accountable for what had happened. There was an element of thoughtfulness from NHSL in that they had made a mistake already and therefore considered how they were going to make sure they could get the best possible solution out of this. When the new Chief Executive and Chair were appointed, processes improved and pace increased.

54. We did not have a representative of the public or patients on the Oversight Board, but perhaps a more formal route to hear from a patient's perspective would have been helpful. However, we did have input from the NHSL's Nurse Director and Medical Director so that we could have a sense of what was

happening with service delivery. On balance, I think it went as well as it could. Given that one can always improve, I think around the Oversight Board's table there was a commitment from everyone there that we agreed what needed to be done and we wanted to have it done as quickly and as soon as possible. There was also a fair balance of technical and medical people working together which, for a project like this, was essential.

55. I have been asked by the Inquiry if I felt that it was beneficial to have more Scottish Government involvement in the project rather than being kept at arm's length. I consider the traction that the Oversight Board put on NHSL and the appointment of Mary Morgan, both instituted by the Scottish Government's escalation of NHSL, was necessary. I believe delivery of the project would have taken longer if there had not been additional involvement from the Government.

56. I have been asked by the Inquiry if we have now got a better building than what was initially designed. My answer would be yes. It is so clearly better in terms of the ventilation within critical care and haemato-oncology and we have also seen improvements in and around prevention of water contamination and fire damper safety.

57. I have been asked by the Inquiry if there was anything that I would have done differently. IHSL's funders could have walked away from the project and there was always a balance to be struck as to how to move IHSL forward and how to limit this risk. In my view, NHSL could have been a bit more focused on trying to move the commercials on. However, they were navigating across a number of areas, and I recognise that was a delicate balance in this respect. External factors to the project also had a negative impact; Brexit and Covid added delay and complexity.

Declaration

58. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry
Witness Statement
Janice MacKenzie

Witness details

1. My name is Janice Margaret MacKenzie.

2. I am now retired from my role as Project Clinical Director with Lothian Health Board (NHS Lothian or NHSL). I previously provided a written statement to the Scottish Hospitals Inquiry (the Inquiry) for the purposes of the May 2022 Hearing and the April 2023 relating to the Royal Hospital for Children and Young People (RHCYP) and Department of Clinical Neurosciences (DCN) in Edinburgh. The first statement outlines my roles with NHS Lothian, qualifications, and work history.

3. The Inquiry has asked me to provide a third written statement in advance of the Hearings to take place in February 2024, the focus of which is on the delay in the RHCYP and DCN opening as planned in July 2019. I was the Project Clinical Director at that time, and was part of the Project Team lead by Brian Currie, who was the Project Director. I then retired in October 2019, though for three months prior I was on a phased retirement gradually reducing my hours every month from full-time (5 days a week) to 2 days a week.

4. This statement has been provided in response to specific written questions provided by the Scottish Hospitals Inquiry on 22 November 2023.

Clinical Management Team

5. Part of my role as the Project Clinical Director was to engage with the Children's Clinical Management Team (CMT). Some of the core members of the CMT changed during the Project. CMT core members were:

- Fiona Mitchell (Director of Operations / General Manager for Children's services)
- Edward Doyle (Associate Medical Director Women & Children)
- Linda Cowie & Peter Campbell (Associate Director of Nursing Children Services)
- Allister Short & Mike Massaro-Mallinson (Service Manager)

6. The core members of the CMT normally met weekly and a wider CMT group including additional members met monthly. The wider group included the core members along with:

- Peter Campbell (Depute Associate Director of Nursing Children Services)
- Sharon Russell (Clinical Nurse Manager for surgery)
- Laura Reilly (Clinical Nurse Manager for Critical Care)
- Gillian McFadyen (Clinical Lead for Critical Care)
- Other clinical nurse managers within acute and community children's services
- Other clinical leads within acute and community children's services.

7. The role and function of the CMT was the day to day operational, strategic and management of the delivery of Children's Services in the community, St John's Hospital and at the Royal Hospital for Sick Children (RHSC) at Sciennes at the time. The CMT were actively involved in decisions about the planning and delivery of services to be provided in the new hospital by the Project. There was a standing item on their monthly agenda and often either I,

or the Clinical Commissioning Manager, Dorothy Hanley, would provide a Project update at these meetings either in person or a written update.

8. If there were specific clinical, departmental, or operational issues arising on the Project, I, and other members of the Project Team would seek input on an ad hoc basis from either the core CMT, the broader CMT, or individual service leads. This was often done informally by way of telephone conversation or face to face discussion.

9. The CMT were asked to provide input on the risks and compromises related to ventilation pressures for multi-bedded bays because it was for the CMT to decide how it wanted to manage the delivery of services to the patients in the new hospital. The decision around the ability to cohort patients in multi-bedded rooms (which required balanced or negative pressure as opposed to positive pressure based on the advice of the Infection Prevention Control (IPC) and our technical advisors, Mott MacDonald (MM) was a hospital wide strategy that was determined by the CMT and it was not solely about critical care. It was for the CMT, including senior clinical leads for each department which had multi-bedded rooms, to advise me and the clinical commissioning managers how they wished to deliver their service, and we then fed that back to the Project Team, in particular to MM, who liaised with IHSL on our behalf in relation to all technical issues.

10. The critical care leads were consulted on the pressure regime in multi-bedded rooms. I specifically recall discussions with the critical care leads in relation to the cohorting of patients and it was considered desirable to be able to cohort patients in the critical care unit where possible (see below for more details). The Risk Assessment for multi-bedded rooms (discussed below) could not have been prepared without consultation with key members of the CMT and the particular clinical leads for each area being involved, which included critical care leads, so its existence is evidence of consultation with the relevant clinicians and IPC.

The Multi-bedded Risk Assessment

11. I am the author of the Record of General Risk Assessment dated 5 July 2017 and reviewed in January 2018 (The Multi-bedded Risk Assessment) **(A40981178 – Record of General Risk Assessment_ combinedrev300118 – Bundle 6 – Page 14)**. I co-ordinated the risk assessment in my role as Project Clinical Director and, as above, the risk assessment was discussed with the CMT and IPC whose view was that not having the ability to cohort patients would be unacceptable from a patient safety and operational perspective.

12. The reason for The Multi-Bedded Risk Assessment was that, from a clinical and operational perspective, we needed to consider how we would be able to cohort children with the same infection, for example respiratory syncythial virus (RSV). RSV is also known as bronchiolitis and is a very common childhood respiratory illness, especially in young children. It was considered important to have the ability where appropriate to cohort children with the same infection because it allows for constant clinical observation when required. When children are cohorted together in a multi-bedded bay, there would be a minimum of one nurse in that room with the patients. If these children were in single rooms, close observation can be more challenging and if their condition was unstable then they may require one to one nursing care. With children, their condition can deteriorate very rapidly, so clinicians need to closely observe their patients.

    With younger children in particular, babies and toddlers, they are not able to communicate that they don't feel well so clinicians very much rely on monitoring and observation of the child's condition to determine their clinical status. So, where clinically appropriate, e.g. if patients have the same infection, then cohorting those patients is the best utilisation of the available nursing resource and provides closer clinical observation and monitoring of the patients, which is ultimately safer for the patients.

13. The decision to have balanced pressure in the multi-bed rooms was based on advice from Health Facilities Scotland (HFS), MM as our technical advisors, and the NHS Lothian (NHSL) Hard Facilities Management Commissioning Manager. In summary, what type of pressure is needed is the difference between requiring source isolation (this previously was known as barrier nursing) or protective isolation. Protective isolation aims to protect an immune-compromised patient at risk of acquiring micro-organisms from the environment and this is achieved in a room with positive pressure. In protective isolation you want to prevent the infection spreading from the room and that requires positive pressure. Where patients have the same airborne infection, they can be cohorted in the same room, and the understanding at the time was that multi-bedded rooms required balanced pressure for that purpose. I understand now that, in relation to critical care the ventilation requirements were different, and SHTM 03-01 required positive pressure. However, I was not aware of that at the time and nor did anyone in IHSL, Multiplex (MPX), TUV SUD, MM, or in the Project Team ever highlight or discuss that with me at the time. If this had been highlighted at the time of The Multi-bedded Risk Assessment then I believe a different course of action would have been taken in relation to critical care ventilation requirements along the lines of the action which was subsequently taken in July 2019 (as set out at paragraphs 22 – 25 below).

Multi-bed Rooms in Critical Care

14. At the time of The Multi-bedded Risk Assessment, the ability to be able to cohort patients within the critical care unit was identified, and the multi-bedded rooms were treated the same as those in the other wards. The CMT and clinical leads identified it was essential to be able to cohort in B1-063 (low acuity HDU) and B1-065 (surgical neonates), and desirable to cohort in B1-009 (critical care); and unnecessary in B1-031 (high acuity). Therefore, these three areas were identified as requiring balanced pressure.

15. The reasoning behind this is that patients in low acuity High Dependency Unit (HDU) and surgical neonates usually have lower clinical demands than

patients in critical care or high acuity. They may have RSV and be on oxygen but are unlikely to be ventilated. It would be appropriate for these patients to be cohorted in a multi-bedded room to allow for close observation and make best use of the available nursing resource.

16. Patients in Critical Care and High Acuity are usually ventilated and will have a minimum of 1:1 nursing care. As I recall, however, the clinical team wanted the flexibility of being able to cohort patients if required in critical care (B1-009) for practical reasons.

TUV SUD Ventilation Proposal

17. I have been asked to review the TUV SUD ventilation proposal **(A45500123 – General Ward – Ventilation Amendment Proposal to Achieve Room Balance, Issue 7 (Final, SA1 item 13) – Bundle 10, Page 179)** which I signed off on 26 July 2018 as part of the Reviewable Design Data (RDD) process. It tended to be either me or Brian Currie (Project Director) who signed off on final documents in relation to RDD. Normally I would sign off the RDD design drawings and documents and Brian Currie would sign off the technical drawings and documents. However, there were times when either of us would sign any of the RDD documents, for example, when one of us was on annual leave.
All technical drawings and documents were initially reviewed by MM on behalf of NHSL, often with comments going back and forth between MM and IHSL, before there was agreement reached for sign off. The TUV SUD ventilation proposal would have come to me to sign off on the basis it had been reviewed by MM and any issues highlighted. As far as I was aware MM didn't ever pass technical drawings and documents for either me or Brian Currie to sign off if it hadn't already been reviewed by them.

18. It appears that the purpose of the TUV SUD ventilation proposal was to record their amendment proposals to achieve balanced pressure in the multi-bed rooms. As above, we had undertaken a multi-bedded room risk assessment in which we were seeking to achieve balanced pressure and this proposal was

setting out how IHSL would achieve that. I note that rows related to the multi-bedded areas in critical care and the proposed solution includes retaining the supply ventilation at 4 air changes per hour (ACH). As above, at the time, I was not aware that critical care required 10 ACH and positive pressure and I don't recall anyone in TUV SUD, IHSL, MPX or MM ever flagging that to me.

19. It is correct that the TUV SUD ventilation proposal was part of the decision-making process which led to the multi-bed rooms in critical care having 4 ACH and a balanced pressure regime, only for that to be reversed in High Value Change 107 (which required critical care to have 10 ACH and +10Pa pressure). As I've explained, NHSL had identified the need for balanced pressure in identified multi-bedded rooms (including in critical care) for clinical reasons; TUV SUD proposed a means of achieving that for these areas; and at the time NHSL agreed to that proposal. As indicated previously, I was not aware that critical care required 10 ACH and positive pressure and I don't recall anyone in TUV SUD, IHSL, MPX or MM ever flagging that to me.

20. It is important to bear in mind that NHSL's approval under the RDD process was confined to issues of operational functionality, and it was for other parties, namely IHSL, to flag any derogations from guidance to NHSL's Board (the Board), which as far as I am aware, they did not do in relation to critical care multi-bed rooms (or single rooms in critical care, as discussed below).

As a result, I and those undertaking the risk assessment, were not aware of and did not consider that the balanced pressure arrangement we asked for in critical care rooms was itself contrary to the recommendations in SHTM 03-01. As I have stated in my previous statements, I am not an engineer and it was not my role to know what is required in terms of the technical guidance for every department. That is the role of the engineers and our technical advisors. I would have expected to have been advised either by IHSL directly or via MM where there were any proposed derogations to technical guidance and specifically what clinical areas the derogation applied to in order to assess the impact of this and be able to discuss this with the clinical leads and IPC and take an informed view. I appreciate that the NHSL risk

assessments were predicated on NHSL having noted that the proposed ventilation arrangements for these rooms was contrary to SHTM 03-01 in relation to the pressure regime. That predication would likely have been on the advice of MM.

High Value Change 107 (HVC 107)

21. It is correct that the solution ultimately agreed for the multi-bedded rooms in critical care in HVC 107 (i.e., the remedial works) involved a positive pressure arrangement. This required significant clinical consideration given the change in approach from the multi-bedded risk assessment in which we had sought balanced pressure with the specific purpose of being able to cohort children with similar infections.

22. Shortly after the discovery that the ventilation in critical care did not comply with SHTM 03-01, there were meetings on 10 and 11 July 2019 to discuss the proposals for improving the critical care ventilation to ensure that it was compliant with SHTM 03-01 with 10 ACH and 10 Pa positive pressure in the single rooms and 4 bedded bays. We also reviewed the ventilation requirements in the 4 bedded bays to allow cohorting of patients with the same infections.

23. In summary, the Infection Precention and Control Team (IPCT) view as at July 2019 was that you could either cohort patients with the same air-borne infection in the 4 bedded areas that were at 10 ACH and 10Pa positive pressure or in a 4 bedded room with balanced or slightly negative pressure. It was generally agreed that neither approach increased the risk of infection spread but that it would be preferable to comply with guidance.

24. There is a full note of the meeting and I have copied the key sections into my statement as follows.

The 10th July attendees were:

- Julie Freeman (Consultant Critical Care)
- Laura Reilly (Critical Care Clinical Nurse Manager)
- Pat Smith (Critical Care Charge Nurse)
- Janice MacKenzie (Project Clinical Director)
- Ronnie Henderson (Project Hard FM Commissioning Manager)
- Donald Inverarity (Consultant Microbiologist)
- Carol Calder (Infection Prevention and Control Nurse)

The 11th July Attendees were:

- Julie Freeman (Consultant Critical Care)
- Laura Reilly (Critical Care Clinical Nurse Manager)
- Pat Smith (Critical Care Charge Nurse)
- Janice MacKenzie (Project Clinical Director)
- Ronnie Henderson (Project Hard FM Commissioning Manager)
- Donald Inverarity (Consultant Microbiologist)
- Carol Calder (Infection Prevention and Control Nurse)
- William Evans (Infection Prevention and Control Nurse)
- Pota Kalima (Consultant Microbiologist)
- Catherine McDougall (Medical Consultant)

25. We noted the following in relation to compliance with SHTM 03- 01:

- Currently the 4 bedded rooms and single rooms have 4 air changes and this needs to increase to 10 air changes to ensure compliance with SHTM.
- It was acknowledged that the SHTM was more focused on adult critical care where the patient profile is different and the need to cohort patients was extremely rare.
- It was noted that previously a decision had been made to derogate from the SHTM with respect to pressures for the 4 bedded areas to allow patients to be cohorted with the same air-borne infection (e.g.

RSV) and following consultation with the clinical team and IPCT at the time the decision was made that these areas should be at balanced or slightly negative pressure. The SHTM states that both the 4 bedded areas and single rooms should have 10 ACH and 10Pa positive pressure.

- It was confirmed that the Isolation Rooms were compliant with SHTM 03-01.
- IPCT view was that you could cohort patients with the same air-borne infection in the 4 bedded areas that were at 10 ACH and 10Pa positive pressure and that there is no reason that this would result in an increased risk of spread of infection. A design of balanced or slightly negative pressure approaches the issue of spread of infection from a cohort from a different direction but it was agreed that neither approach increases the risk of infection spread but that the SHTM 03-01 compliant design has additional benefit for neutropenic patients who could be in single rooms at 10Pa positive pressure.
- It was acknowledged that the design of the Unit also provided additional control measures to prevent spread of infection and the barriers to transmission included:-
- Bed space size
- Distance between single room doors, isolation room doors and 4 bedded bay doors as the range of droplet spread is generally considered to be between 1-3 metres
- Patients on ventilators are less of a risk of generating aerosols from coughing
- Direction of air flow in corridor space directs any air borne contaminants towards an air extract vent and away from other patient rooms. Extract ventilation may need to be improved in corridor area to take account of increased pressure
- Turnover of air dilutes any airborne organisms in patient rooms and corridors.
- It was noted that if a patient with an infection was in a 4 bedded bay or single room or a neutropenic patient in a single room the windows

should not be opened and increased room cleaning would likely be required

- Confirmed that Isolation Rooms should be used for patients with infections transmitted by aerosols e.g. measles, chicken pox, TB
- Single rooms and cohort areas would be suitable for droplet infections e.g., RSV, Influenza
- Confirmed that the single cubicle in neonatal Unit will have 10Pa and 10 ACH and as it has an en-suite it will need a transfer grille on the en-suite door
- Confirmed the entire neonatal area was at 10Pa and 10 ACH with respect to the corridor.
- Because the single cubicle is within the neonatal unit it was confirmed that the single cubicle is at a balanced pressure or slightly negative with respect to the open neonatal bed bay.
- Confirmed that any ‘dirty’ rooms e.g., Dirty Utility, toilets have extract and any ‘clean’ rooms e.g., clean utility have supply and extract
- We discussed the Positive Pressure Ventilation Lobby (PPVL) isolation rooms in relation to ventilation in the Queen Elizabeth University Hospital (QEUH), specifically in relation to Multi-Drug Resistant TB, however Donald Inverarity (Consultant Microbiologist) was very cautious about making any comparisons as the context was different (paediatric critical care versus adult infectious diseases isolation ward). It was suggested that this was something that could be discussed further with HFS.
- We discussed a number of different patient groups and scenarios in relation to the use of the Isolation rooms, Single Rooms and 4 bedded bays and in light of these discussions and the points above all agreed that the SHTM 03-01 was a safe design for ventilation within the Paediatric Critical Care Unit in conjunction with the design of the unit and good practice in relation to infection control measures which all worked together as a package to achieve best outcome for patients.

We also briefly discussed:-

- Cystic Fibrosis patients and the areas that they would be treated in and whether CF patients with different infections would be treated in the same ward in RHCYP. Currently they are treated in different wards as the existing hospital, RHSC, does not have Isolation Rooms. It was confirmed that Dalhousie ward (Medical Inpatients) has 4 PPVL Isolation rooms. It was felt by IPCT that provided appropriate measures were in place about the placement of patients within the ward then cystic fibrosis (CF) patients with different infections could be treated in the same ward. Also, Castle Mey (Acute Receiving Unit) has 1 PPVL isolation room. It was noted that currently Dalhousie Ward is classed as an Augmented Care Area, but Castle Mey is not.

  This led to a discussion about other areas in the hospital where CF patients could be treated, this includes surgical wards, outpatient department (OPD), Cardio Respiratory OPD and Dirleton (Medical Day Care) and therefore whether these areas should also be classed as Augmented Care as far as water sampling is concerned. It was felt that the risk was greater in Inpatient areas. Further discussion to be had with IPCT acknowledging that the water testing regime may need a bit of tweaking when hospital occupied.

Email chain with MM on 19th June 2019

(A34822744 – Email from Colin Macrae (Mott MacDonald) to Graeme Greer attaching a tracker spreadsheet showing where bed bays do not achieve balance pressure - 19 June 2019 – Bundle 6 – Page 170)
(A34822744 – Tracker – Bundle 6 – Page 171)
(A40982525 – Email from Brian Currie (NHS Lothian) to Wallace Weir et al dealing urgent compliance concerns on AHUs – 20 June 2019 – Bundle 6 – Pages 174-198)

26. In this email exchange, Graeme Greer of MM is noting that IOM had started to do their validation testing and asks the question: *"Do the Board want to inform*

IOM now or wait for the report and clarify the settlement agreement amendments". I was aware that there were different requirements in SA1 than there were in SHTM 03-01 so this was not a surprise, but I could not immediately recall the details. I respond at 22:36 that evening to say that I was unsure *"what the SA said and the different requirements to the SHTM."* Given the hour, I assume I was working from home and did not have access to SA1 to check the exact wording.

Settlement Agreement 1 (SA1)

27. I was not involved in the commercial negotiations for SA1 but I was involved, to a limited extent, in providing clinical input where required into the technical schedule for SA1, which evolved over a period of around 12 months.

28. By way of background, on 20 and 21 February 2018, there was a RHSC + DCN Principals meeting at the Sheraton in Edinburgh. This entailed two days of negotiations between NHSL and MPX, facilitated by IHSL, in an effort to avoid court action by NHSL against IHSL in relation to the multi-bed dispute re pressure regime.

29. As I recall, negotiations continued between IHSL and NHSL beyond February 2018 which ultimately resulted in SA1 (**A32469163 - Settlement Agreement and Supplemental Agreement relating to the Project Arrangement for the provision of RHSC and DCN between Lothian HB and IHS Lothian Ltd - 22 February 2019 - Bundle 4, Page 11)**, including the technical schedule. In relation to my specific input in to the SA1 technical schedule as regards ventilation, my main focus at the time was to achieve balanced pressure in the multi-bedded rooms as per the multi-bed risk assessment to allow us to cohort patients. Individual clinicians were not directly involved in the technical schedule to SA1 because, as outlined above, the necessary discussions with the CMT about the pressure issue, which resulted in the risk assessment re multi-bedded rooms, had already taken place.

30. We had also already consulted with IPC and clinicians in relation to changes in haemato-oncology in February 2017, and these were also reflected in the SA1 technical schedule at item 4.

31. I also recall there was a separate discussion around a derogation from 6 ACH mechanical to 4 ACH mechanical and 2 ACH natural for single rooms. This was TUV SUD's mixed mode ventilation strategy. I do not recall a specific risk assessment in relation to the change to 4 ACH for single bedrooms, but I do recall this was discussed within the Project Team and MM and also with the IPC nurse at the time, Janette Richards.

    I don't recall the specific details of the discussion I had with her but do remember there was some discussion about the benefits from a patient perspective about being able to open the window in their room to assist with patient comfort. In relation to the SA1 technical schedule, any discussion around the derogation to single bedrooms from 6 ACH to 4 ACH was never in the context of single bedrooms in critical care.

32. There were many other issues beyond ventilation which I had input on in relation to the project that were then reflected in the SA1 technical schedule. For example, we discussed (i) anti-ligature measures with the Children and Adolescent Mental Health Service (CAMHS) team and (ii) how to address the presence of movement joints in clinical areas with the relevant departments. Sometimes the issues were flagged by us to clinicians and sometimes the other way round.

33. Overall, in my role as Project Clinical Director, I felt that the Project Team had a collaborative and positive working relationship with IPC. There was an IPC nurse who was allocated to support all NHSL new build projects including RHCYP & DCN and she worked closely with the Project Team often basing herself in our office. The IPC nurse would be the main conduit between the Project Team and the wider IPC team. The IPC nurse attended the majority of the design meetings and if unable to attend would submit comments. IPC were involved in technical aspects of the project, where appropriate, and these included issues pertaining to ventilation and they would also seek the

advice of HFS, the NHSL Hard Facilities Commissioning Manager and MM. The input of IPC was an essential element of the Project and very much valued by myself and the wider Project Team. As indicated in my previous statements to the Inquiry, the Project Team worked very closely with the clinical teams ensuring that there was positive, productive engagement and they were actively involved in the design of the new hospital.

Declaration

34. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Jeane Freeman

Dated 18 December 2023

Witness Details

1. I am Jeane Tennent Freeman OBE. I am the former Cabinet Secretary for Health and Sport.

2. In this statement I address the following:

    2.1. Professional Qualifications and Background
    2.2. Role as Cabinet Secretary for Health and Sport
    2.3. Role of Cabinet Secretary in The Royal Hospital for Children and Young Persons / Department of Clinical Neurosciences project (RHCYP/DCN)
    2.4. Period between September 2018 and 1 July 2019
    2.5. Ventilation issues on the radar
    2.6. Events of 2 July 2019
    2.7. Events of 3 July 2019
    2.8. Events of 4 July 2019
    2.9. Events of 5 July 2019
    2.10. Events of following days in July 2019
    2.11. Site visit on 18 July 2019
    2.12. Escalation to Level 3
    2.13. NHS National Services Scotland (NHS NSS) Review / KPMG Report / Oversight Board
    2.14. Escalation to Level 4
    2.15. Supplemental Agreement 2
    2.16. Phased Migration
    2.17. Development of NHS Scotland Assure

2.18. Reflections

Professional Qualifications and Background

3. When I left school, I trained and worked as a nurse. After I left nursing, I attended the Glasgow College of Technology (which later became part of Glasgow Caledonian University) from 1975 to 1979, initially studying for a Personnel Management Diploma then an honours degree in sociology and politics. In 1979, I became chair of the National Union of Students, Scotland. I then worked for the British Youth Council and became its General Secretary. I then worked with Saatchi and Saatchi's charities unit and I was also a researcher in the House of Commons and a bookkeeper for Student Travel.

4. I then moved back to Scotland to undertake a feasibility study for Apex, which is an employment focused organisation that works with people who have a criminal record. I established Apex Scotland in 1987 and was their Chief Executive for 13 years until 2000. I was awarded an OBE in 1996 for services in relation to the rehabilitation of offenders.

5. I joined the Civil Service as a Senior Civil Servant in 2000. I worked in Education initially to Sam Galbraith then Jack McConnell. I then left that role to work as a Senior Special Adviser to Jack McConnell when he was the First Minister. Between 2001 and 2005, in this role, I worked on the Scottish Budget, the government's legislative programme, relations with the UK government and in the Finance, Health and Justice portfolios.

6. In 2005 I set up my own Consultancy business. I was appointed as a member of the Parole Board for Scotland in 2006. I also served on the Scottish Police Services Authority Board from 2013 to 2015. In 2008 I was appointed to the board of the National Waiting Times Centre, the special health board that runs the Golden Jubilee Foundation which includes the Golden Jubilee National Hospital. In 2011 I was appointed as Chair to that Board, stepping down from this role in March 2016 in order to stand as an MSP candidate for the Scottish

Parliament in May 2016. As a Board Member my role was to provide constructive scrutiny and challenge to the work performance and proposals of the Executive Directors including the Chief Executive Officer (CEO) and to contribute to the specific work of the Board committee, including clinical governance, staff governance and audit. As Board Chair, my role was to lead the Board in its work of constructive scrutiny and challenge, support for Executive Directors and to lead the strategic direction of the Board as it contributed to delivering safe, effective, and person-centred care to the NHS. As a Board member and then as Board Chair, I learned a great deal about clinical and patient care advances, relationships between NHS Boards across Scotland, funding processes and challenges and the critical importance of effective clinical and strategic leadership to the provision of safe and effective care. I was appointed as a Lay Member to the Judicial Appointments Board for Scotland, commencing November 2011 for a four-year period.

7. In 2016 I was elected to the Scottish Parliament representing the constituency of Carrick, Cumnock, and Doon Valley. I was appointed as Minister for Social Security which I held from 2016 until 2018, when I became the Cabinet Secretary for Health. I held this post until 2021.

8. I am currently Dean for Strategic Community Engagement and Economic Development at the University of Glasgow. In this part-time role, I look at all of the University's strategic projects through the lens of turning their research outputs into deliverables. It is helping with their overall intent as a university to be a civic university contributing to deliverable economic development and effective community engagement. Our current work focuses on health innovation, precision medicine and data validation projects in the Glasgow Riverside Innovation District, which covers the Govan and Partick areas of the city on both sides of the river.

Role as Cabinet Secretary for Health and Sport

9. I was appointed Cabinet Secretary for Health and Sport on 26 June 2018. My role and responsibilities as Cabinet Secretary were, first of all, to ensure the delivery of the health and sport commitments in the Government's Programme for Government, including manifesto commitments, to contribute to the wider Programme for Government, to ensure the safe and effective delivery of Health and Social Care in Scotland. These health and social care elements of the programme are delivered through health boards and local authorities. As Cabinet Secretary, it was my job to provide overall strategic leadership to Boards, support Boards to deliver their responsibilities as best I could and, through the Ministerial appointment process and subsequent engagement for non-executive board members and Board Chairs, hold Health Boards to account for their work. In Scotland, our NHS is a single entity and, whilst comprised of different elements and funding mechanisms, does not operate with individual Trusts or internal competition (as is the case in England) and the relationship between the Health Secretary and Health Boards is a direct relationship, not mitigated by or conducted through any other agency. As Health Secretary I, as with other Government Ministers reported to and was scrutinized in the conduct of my responsibilities by the Scottish Parliament.

10. I worked hard to stay on top of my Ministerial brief. While there was nothing that came to me that I did not read, I did prioritise the order in which I worked through issues given that some, inevitably, are more urgent than others. I always had a box of papers, and I would sort out on the way home what I still needed to read and make decisions on and would tell my private office about it that night. I would deal with matters that could wait until the morning on the car journey to work the following morning, because during the day you do not have a lot of time to read everything, especially when Parliament is operating because, to an extent, Parliament dictates your schedule. I had a really good private office, who ensured that I was provided with all of the information I needed to perform my role, but my approach was to read everything myself. I worked for a First Minister who read everything, and I did not ever want to be in

a position where she had read or was aware of something about my job that I had not read or was unaware of.

11. The private office operated as a single unit that covered the junior health ministers as well as me. It was deliberately, and quite rightly, constructed like that by Andy Corr, my principal Private Secretary. There were five staff members, one of whom would be with me in all meetings taking notes and would then, at the end of a meeting, check with me whether I wanted them to follow anything up. If I had phone calls, which I did on occasion make or receive on the way to or from home, I would then tell Andy Corr so that he would know and have a record of whether I had agreed anything or required action to be taken.

12. It was important for me throughout my time in office to understand what statutory responsibilities and powers I had in respect of my remit.

13. The National Health Service (Scotland) Act 1978 states, at section 1, under the heading “General duty of Secretary of State”, that “(1) It shall continue to be the duty of the Secretary of State to promote in Scotland a comprehensive and integrated health service designed to secure — (a) improvement in the physical and mental health of the people of Scotland, and, (b) the prevention, diagnosis and treatment of illness, and for that purpose to provide or secure the effective provision of services in accordance with the provisions of this Act.”

14. Section 2 of that Act states “(1) It is the duty of the Scottish Ministers to promote the improvement of the physical and mental health of the people of Scotland. (2) The Scottish Ministers may do anything which they consider is likely to assist in discharging that duty including, in particular— (a) giving financial assistance to any person, (b) entering into arrangements or agreements with any person, and (c) co-operating with, or facilitating or co-ordinating the activities of, any person.”

15. Section 2(2) of that Act gives the Scottish Ministers very wide powers, and I was satisfied that it was open to me, as the Cabinet Secretary holding the

health portfolio, to apply those powers in a proportionate way. By that I mean adopting a ‘light touch’ if I had assurances from those advising me that the health boards were dealing with matters well; and increasing my level of direct scrutiny and intervention if that became necessary in light of it being reported to me that a health board was performing less well or if failures came to light.

16. As Cabinet Secretary, I was supported by clinical advisors from the Chief Medical Officer and the Chief Nursing Officer’s Directorates; Office of the Chief Pharmacist; Chief Dental Officer; Chief Scientist (Health); Health Protection Scotland and Health Facilities Scotland; the Director General (DG) for Health and Social Care and his or her team of directors; and people who could explain how infrastructure projects are built, such as the Scottish Futures Trust.

17. The role of DG for Health and Social Care within the Scottish Government incorporates the role of Chief Executive of the NHS. The DG is the accountable officer for the whole of the NHS. When I was first appointed Cabinet Secretary, Paul Gray held this role. He was succeeded by Malcolm Wright on an interim appointment basis on 11 February 2019 and then as a permanent appointment from 17 June 2019 until his retirement in July 2020. DGs report to the Permanent Secretary.

18. The DG is a principal policy advisor to the Cabinet Secretary, so the DGs worked closely with me to understand what my goals were and to make sure that the civil service provided what I needed to achieve them. This included forming a strong team of Directors within the Directorate, upon whom I could rely with confidence. When Malcolm Wright came into post, he ensured that the team was robust and I, in turn, had confidence in them.

19. As I mentioned, the DG is also the Chief Executive of the NHS. To fulfil that part of the role, the DG would be meeting with all of the Board Chief Executives regularly, both formally and informally. They were the accountable officers within their health boards, which are each separate statutory organisations.

20. I worked closely with the DG and the Directors within the Scottish Government Health and Social Directorate; and also met regularly with the individual health

board Chairs (who are appointed by the Scottish Ministers) and with the Chairs collectively.

21. The Directors I worked with at the time included, Catherine Calderwood (Chief Medical Officer)(CMO) and later Gregor Smith; Fiona McQueen (Chief Nursing Officer)(CNO); Shirley Rogers (Director of Health Workforce); and Christine McLaughlin (Director of Finance and Infrastructure). There was also Richard Foggo (Director of Population Health), who was responsible for the whole of public health and improvement and the setting up of Public Health Scotland; Eleanor Mitchell (Director of Health and Social Care Integration); Donna Bell (Director of Mental Health); and John Connaghan (Chief Performance Officer). I dealt with all of these directors directly.

22. I met with the whole Health and Social Care Directorate team on a weekly basis, immediately following the Cabinet meeting. This allowed us to have an hour every week, during which I would give relevant feedback from the Cabinet meeting and then we would discuss the live issues being handled by the team, so that I could hear directly from the directors on the issues at hand.

23. As Cabinet Secretary, the starting point in relation to any NHS project was for me to be assured, at the highest-level, that projects being run by the health boards were progressing on time and within budget. It is not the role of a Cabinet Secretary, generally speaking, to be involved in the day-to-day progress and decision-making on any project commissioned and being managed by a local health board.

24. At the time of the Royal Hospital for Children and Young People/Department of Clinical Neurosciences (RHCYP/DCN) project it was the responsibility of the local health board, in the first instance, to manage the project. That remains the current position, so far as I am aware. If there were any disputes between contractors and a health board, it was for the health board to resolve those, albeit if there was requirement for additional funds, then it was the Scottish Government's job to see if and how, those funds could be provided. Health Boards were expected to keep Scottish Government officials apprised of any area of difficulty or dispute that carried risk to completion timescales or budget.

25. The Scottish Government has to have a reasonable degree of trust in each NHS Board. If you asked a health board that managed a large budget, had an experienced Chief Executive, a director of estates and a medical director whether they had carried out what they were supposed to and they confirmed that they did, it is reasonable for the Scottish Government health directorate to rely upon assurances given.

26. I do not believe, however, that health boards are autonomous units. They are the delivery arm of our NHS. They have an important role in contributing to the strategic direction and resource requirements of health delivery in Scotland, a responsibility to apply the agreed strategy to their local circumstances of which they should be fully aware and an accountability in respect of standards and performance. I do not believe that they have, in some instances, the degree of discretion and autonomy that they might believe they have. That undoubtedly led to a number of difficult conversations between me and some health boards. One example I would cite is the situation in NHS Highland, which had prompted a group of whistleblowers to make public their claims of bullying and intimidatory behaviour by key senior staff and allegations as to the failure of the board to act effectively, or at all, in response to their grievances and complaints. Officials from the Scottish Government Health Directorate, including the then DG/ NHS CEO had provided support and counsel over a lengthy period, but NHS Highland had not responded sufficiently to that, and the behaviours continued. It was at that point I intervened, commissioned an independent review by John Sturrock KC and took decisions to implement recommendations flowing from his review. That involved a number of difficult conversations with the Chair and members of the NHS Highland Board. I remain of the view that our NHS health boards are the delivery arm of the NHS, with less discretion to determine their overall direction and behaviours than some Boards may believe; and I would repeat those difficult conversations if I were still in post and had the requirement to do so.

Period between September 2018 and 1 July 2019

27. When I was first appointed as Cabinet Secretary, I received regular high-level briefings on the progress of key elements of the various health board building projects, including RHCYP/DCN.

28. In relation to the RHCYP/DCN project, by way of background to the project, I understood that in March 2014, the NHS Lothian Board (NHSL) appointed Integrated Health Services Lothian Limited (IHSL) as its preferred bidder. IHSL's team comprised Macquarie Capital, along with IHSL's subcontractors: Brookfield Multiplex (Multiplex), Bouygues Energies and Services (Bouygues) and HCP Management Services Limited (HCP) (who collectively are often referred to as "Project Co"). As the project was NHSL's, oversight and day to day management of the project sat with NHSL. The Scottish Government's health finance team were kept abreast of progress on the project and officials within that team can provide the Inquiry with detail in that respect. The Scottish Government's principal interest was in the financial, rather than technical, aspects of the project.

29. There had been a dispute between NHSL and IHSL, their contractor - the full details which I cannot (with the distance of time) recall. Around September 2018 I was issued a briefing from the Scottish Government's Health Finance Directorate and asked to note the risks around the project. I was aware that it was Multiplex who were the main contractor for RHCYP/DCN and of all the issues that were associated with them and the Queen Elizabeth University Hospital (QEUH). I thought, we can't change contractors without an exceptionally good reason so I had to go on the basis that NHSL were aware, were asking for assurances and were on top of the situation, not least because all Board CEOs had been kept up-to-date with the ventilation and water issues arising at QUEH and assurances had been sought from all that they were taking proper account of these matters in the expected regular inspections and maintenance of their own estate and in any new builds underway or in design.

30. Although I had no direct involvement in negotiating the Settlement/Supplemental Agreement (SA1), I would have been briefed on the resolution of the dispute between NHSL and IHSL as regards the Scottish Government signing off on the provision of any additional funding, because that was about money that had to come from somewhere else within the healthcare budget. SA1 **(A32469163 - Settlement Agreement and Supplemental Agreement relating to the Project Arrangement for the provision of RHSC and DCN between Lothian HB and IHS Lothian Ltd – dated 22 February 2019 – Bundle 4 – Page 11)** between NHSL and IHSL was dated 22 February 2019. Others will be better placed than me to speak to the detail of this dispute and the terms of SA1, but the outcome was that the project was back on track and the RHCYP/DCN was expected to open on 9 July 2019. I was not aware that SA1 involved compromises to the ventilation system and deviation from normal guidance. Given that my officials were looking at this from a finance perspective, were not technical experts and no derogation from the normal guidance had been sought or highlighted to them, I would not expect them to have picked this up. SA1 could be seen as a missed opportunity for NHSL to have identified some of the reduced ventilation standards in the build prior to the critical issue coming to light.

31. I was not aware of any other issues with the RHCYP/DCN project thereafter (until July 2019) and was told that the project was progressing and that they would make their planned move date of 9 July 2019.

32. I met with the chairs of the NHS boards on a regular basis, possibly every four to six weeks. This gave me the opportunity to talk to them about their own board and whatever was current. One of these meetings was on 24 June 2019, when I met with Brian Houston who was the Chair of NHSL. It was a couple of weeks before the planned migration date of 9 July 2019. I can't recall everything we talked about, but we would have touched on how things were progressing for the new hospital, and he did not raise any concerns or issues. We did not have any formal minutes taken at these discussions, but either my principal private secretary or the deputy would have been with me; and they would have taken a detailed note and, if there was any follow-up action

required from my side, then they would send the email commissioning that follow-up action.

33. I was not aware of any communication from Scottish Futures Trust (SFT) regarding any possible concerns around the planned migration date set for 9 July 2019. The SFT are infrastructure specialists, employing a mixture of technical, legal, and financial specialists, who work hand in hand with the public and private sectors to maximise the benefits coming from their infrastructure projects. That includes looking at how projects are paid for, how they are built, how they are used or how they are maintained. They largely exist to ensure that major capital projects are properly financed, procured, and delivered into the public sector.

Ventilation issues on the radar

34. In January 2019 we had what has been referred to by some as the “Pigeon Incident” (the reporting of deaths where potential infection caused by pigeon droppings was a ‘contributing factor’) at the QEUH. Once I became aware of the very concerning issues at QEUH, I wanted a greater level of assurance that the issues arising were being given particular attention by the Chief Executives in all of our territorial boards, particularly those with ongoing infrastructure projects of all sizes, and that standards were being complied with. I instructed Paul Gray, as the Director General of Health and Social Care, to write to all NHS Boards to that effect, which he did. A letter was sent out by Paul Gray to all the Chief Executives of the Health Boards in Scotland **(A35270542 - Letter from DG Health & Social Care and CE NHSS Scotland setting out a set of actions about an ongoing incident (Cryptococcus infections in QEUH) – 25 January 2019 – Bundle 4 – Page 8)**. It included a section relating to assurances being sought that all critical ventilation systems were being inspected and maintained in line with SHTM 03-01. This was to make sure that any maintenance issues were being followed through and that they were maintaining an adequate maintenance programme. The focus was on maintenance of existing estate because, at least in part, the issues arising at QEUH appeared to have been exacerbated or contributed to by inadequate maintenance performance.

35. I expected that each health board would provide detailed responses, setting out what they were doing to address all points in the letter, what they had found and how recently any action might have been taken.

36. The responses were all coordinated by Health Facilities Scotland (HFS). Gordon James was responsible for this at HFS, on behalf of the Scottish Government. HFS have the technical expertise to understand what was coming back and be satisfied (or not) with the responses received. I expected that the responses would be reviewed and HFS would confirm that the position of each health board either satisfied them or that they would pursue matters further where they thought that a check was done too long ago and instruct that they should be conducted more regularly.

37. Whilst at this distance in time I cannot recall the detail of the update I would have received as it related to each Board, I would have received a précis of the responses, including any actions Boards had undertaken or were scheduled to undertake, together with my officials' advice on whether these were satisfactory.

38. On 27 June 2019, Michelle Ballantyne MSP asked me a question in Parliament about whether I had received assurance that the same issues experienced at the QEUH would not be experienced at the new hospital. Based on briefing from my officials, on the basis of the knowledge they had from NHSL at that time, my reply to that question was that we had that assurance, and that "NHS Lothian did not take ownership of the site unless it was absolutely assured that those steps had been taken" **(A41232683 - Email chain regarding Michelle Ballantyne MSP Parliamentary Question – dated 9 July 2019 – Bundle 13 – Volume 3 - Page 40)**. In hindsight I think the assurance process undertaken by HFS as described above was sufficient because I think it is entirely the health board's responsibility to meet all required standards and to alert the Scottish Government should there be any concerns. The people on these boards have really responsible jobs, for which they are paid well, and I expect them to do their job. This view may, from time to time, have created some

tension between me and the health boards. A few months after the critical care issue at RHCYP/DCN (which I discuss below) came to light, I requested details of all communication that had taken place with NHSL, seeking assurances and their respective responses. This came as a result of information that HFS were struggling with resources. One of the communications detailed,

> "While NHS Lothian confirmed that the engineering systems were in compliance, HFS thought there were a lot of assertions and were looking to gather more evidence to support the position that NHS Lothian were reporting. However, the issues at QUEH earlier this year became the focus of HFS during the first half of the year, so that evidence gathering had not progressed as quickly as we would want given the current position" **(A41231046 - Email from Calum Henderson to Cabinet Secretary for Health and Sport responses to request regarding Ventilation– dated 23 September 2019 – Bundle 5 - Page 5)**.

It may have been the case that if the information provided by NHSL had been reviewed earlier then the critical care issue could have been discovered sooner.

Events of 2 July 2019

39. On 2 July 2019 I was told by the then Director General for Health and Social Care, Malcolm Wright, that there was an issue with the ventilation in the critical care department of the RHYCP/DCN (thereafter referred to by some as "the Critical Care Issue"). This had been brought to his attention in a call he had received that day from the Chief Executive of NHSL. The standards required ten air changes per hour, but the system was only delivering four air changes per hour. A number of questions immediately came to mind, including "What does that mean? Why are we only finding out about this now? What are we doing about it?" Four air changes per hour was not even 50% of what was needed.

40. It was reported to me that there was a suggestion from NHSL that they could migrate some of the departments from the existing hospital to the new building

on 9 July 2019 as planned. My initial reaction was one of serious concern. I doubted whether this was a credible proposal because no clinician will guarantee that even a standard procedure carried out daily, even as an inpatient, will never result in something happening where the patient requires critical care. So, I couldn't immediately see how it would be possible to safely migrate patients, because they might need to access critical care facilities. In addition, we weren't clear at that point what would be required to fix this. I also did not want a repeat of the QEUH, where you try to retrofit to fix something and that potentially raises other issues around infection control.

41. Putting to one side the fact that I was furious about this situation, not least because this was the first that I was hearing of it, I do not believe there was any point at which I thought there was a safe and credible option other than not migrating patients over to the new hospital on 9 July 2019.

42. A briefing note was prepared by NHSL and forwarded to the Scottish Government on 2 July 2019 (**A41020525 – Email from Alan Morrison to Cabinet Secretary for Health and Sport attaching a briefing on emerging issues from NHS Lothian – dated 2 July 2019 – Bundle 7 – Volume 1 - Page 38**). It advised that NHSL had been informed the previous evening by the commissioning engineers, IOM, that four four-bedded rooms and five single rooms in the critical care unit had been discovered to achieve only four air changes per hour, when the applicable guidance required ten air changes per hour. It also noted that IOM had found non-compliance issues within the new hospital's theatre environments.

43. At the foot of the first page of this briefing note, NHSL states that "it should be noted that there is zero rate of air change in critical care at the existing Royal Hospital for Sick Children (Sciennes). There are 19 critical care beds at Sciennes. The new RHCYP has 24 beds." I read this as NHSL saying that although the new hospital did not meet the required standard, they thought it was better than the existing facilities at Sciennes. The existing DCN facilities were, arguably, in a worse condition than Sciennes. I took this into account as part of the balance in my decision-making. Whilst no specific problem had been

identified at this point with the facilities the DCN would use, patients here might also require both theatre-based treatment and/or critical care, so I was concerned that the sub-standard issues now identified could also impact upon the DCN and that would require further consideration.

44. After I had received this news on 2 July 2019, many meetings and telephone calls took place between 2 and 4 July 2019. I had various questions that I needed to have answered. At this point I was considering what needed to happen and I knew I had to make a decision quickly, but I needed more information. There was advertising and a huge amount of other activity ongoing in relation to the intended migration date of 9 July 2019. It would not have been enough just to say that the migration was not going to take place on the planned date. Patients, staff, and the general public would need to know what was to happen with scheduled appointments, where to take patients in need of emergency care; when migration would take place and what was being done about all of the arrangements. I needed to be able to answer these sorts of questions because (a) that's just reasonable and fair; and (b) people want some assurance. This was a big bolt from the blue; it was going to be unsettling and destabilising; and both patients and staff would need to feel confident that somebody had taken a grip of the situation and that it was going to be fixed. I certainly couldn't answer all questions at that initial point, but there were some key questions I knew I would need to be able to answer to patients, staff, the wider public and the Scottish Parliament and, at that stage, could not.

45. The other element in my decision making was: if this had come to light barely a week before the intended move date and everything up until then had been assured to be 'on track', was everything else constructed properly? Now that this had happened, how could I be sure that the drainage, the gases, and everything else about this building was as it should be? The simple fact was that I couldn't be that sure and, in that moment, I felt that I had lost trust and confidence in the assurances that had been given about the readiness of the RHCYP/DCN to open and deliver safely to patients.

46. In the briefing from NHSL **(A41020525 – Email from Alan Morrison to Cabinet Secretary for Health and Sport attaching a briefing on emerging**

issues from NHS Lothian – dated 2 July 2019 – Bundle 7 – Volume 1 - Page 38) there was also mention that they were making enquiries with a view to making a decision as to whether the services would be migrating or not. Because of the seriousness of the situation and because this hospital was to be a Centre of Excellence that would provide services and expertise to patients from a wider geographical location than just the Lothians, I was very clear that this decision would be the decision of the Scottish Government, not one for NHSL. I think NHSL thought this was their decision to make. However, the very fact of NHSL having reported the situation to Malcolm Wright, is indicative of NHSL realising that this was not a matter they would (or should) be left to deal with alone.

47. For me to make the right decisions as to what needed to happen, for all directly impacted and in order to responsibly report to the Scottish Parliament, I needed to take the advice of my principal advisers.

48. The first written briefing I received was from Alan Morrison in Health Finance, who sent me an email at 1653 hours **(A41020525 – Email from Alan Morrison to Cabinet Secretary for Health and Sport attaching a briefing on an emerging issues from NHS Lothian – dated 2 July 2019 – Bundle 7 – Volume 1 – Page 37)**. This email provided a note of the issue with the air change rates in the paediatric Critical Care Unit and gave the background, outlined the derogation and NHSL's assessment of the situation at that time.

49. From this point, given the urgency of the situation, I was having multiple conversations and receiving many 'real-time' updates from all of my advisers. I needed advice on the balance between the facilities staying where they were in Sciennes and existing DCN (which was arguably in more urgent need of the move that the Sciennes facilities) and moving to the new facilities. I needed views about staffing and to think through some of the practicalities.

50. I was being advised by the DG and all of the relevant Directors. The CMO and CNO were both on leave when the Critical Care Issue came to light on 2 July 2019, so their deputies stepped in to provide me with the advice I needed from both of those Directorates.

51. There were two categories of questions we needed to ask. One related to all the things we needed to know in order to put everything that would be required in place in the run up to making the announcement. That included everything from how to tell people (staff, patients, unions, the general public, the First Minister, and Parliament – which had just gone into recess), to re-arranging staff rotas and appointments. Then, running parallel to that, we needed to understand how this had happened; how could we be assured about the other areas; and what level of work would be needed and how much would that cost? Was the issue contained to the ventilation in critical care - was the ventilation everywhere else, okay? Were the water, drainage, and gases all right? We needed to quickly interrogate what had to be done in order to understand the full scale of the problem that required to be resolved, what would be required in order to resolve the problem and how much it was going to cost.

52. We were aware that in the background there were the issues with the QEUH, but primarily it was about patient safety and what would be safe for the RHCYP/DCN. Moving people to the new site did not immediately appear to be a safe option.

53. If it were true that some individuals within NHSL were aware of the issues within the critical care department, as early as the 24 June 2019 **(A41020535 - Email from Christine McLaughlin to DG Health & Social Care et al about water and ventilation issues, includes two email attachments on critical care ventilation timelines – dated 10 July 2019 – Bundle 7 – Volume 1 – Page 275),** then I would have expected that this should have been escalated that same day and without any delay to someone within the Scottish Government.

Events of 3 July 2019

54. I attended a meeting with Malcolm Wright (DG), on 3 July 2019 and he told me that he had received an email from Tim Davison (Chief Executive of NHSL), setting out potential options for proceeding **(A41020529 – Email from Malcolm**

Wright to DG Health Social Care on commissioning and ventilation issues at RHCYP/DCN - dated 3 July 2019 – Bundle 7 – Volume 1 – Page 66). He indicated that his preferred option was re-phasing the move over the following weeks and months, starting with allowing the DCN to move as planned on 9 July 2019. I viewed this as NHSL offering their views about what they thought should happen. I suspect that they believed they were offering their decision about what should happen, but I did not believe it was their decision to make.

55. I took the view that I could not leave this decision in the hands of NHSL because they had not been aware of the problem until the last minute. Instructing IOM is standard and so was not an indicator at all that they were on top of the situation. In addition, given the criticality of ventilation, which was not identified to be sub-standard until mere days before 'go live,' I could not have confidence in the governance performance of NHSL and consequently that all other required standards in the build had been met.

56. I am referred to (**A41020529 - Email from Malcolm Wright to DG Health Social Care on commissioning and ventilation issues at RHCYP/DCN - dated 3 July 2019 – Bundle 7 – Volume 1 – Page 66**), which refers to a meeting attended by John Connaghan, the then Chief Performance Officer, NHS Scotland. There is reference that various matters had been agreed, one of them being the clinical risk assessing and planning of the re-phased moves in line with option 4 (re-phase the timing of the move into the building to allow a phased occupation over the next few weeks and months). John would have been at that meeting observing from a Scottish Government perspective. He may well have made it clear that it was not for NHSL to determine this. I don't take the "we agreed" as implying that he agreed at all **(A41020529 - Email from Malcolm Wright to DG Health Social Care on commissioning and ventilation issues at RHCYP/DCN - dated 3 July 2019 - Bundle 7 – Volume 1 – page 68).**

57. I knew that the preference for NHSL was for some kind of phased move, commencing 9 July 2019. I knew that I did not agree with that.

58. I was aware that John Connaghan telephoned the Health Board later that day and advised them that any planned communication for the following morning should not go ahead. Given that my final decision on how matters were to be dealt with had not yet been made, it was entirely right for John to say to NHSL that they should not be putting out any communication and that the Scottish Government would now be making all the decisions about what happens here and would have a number of questions and requirements of NHSL.

59. From my point of view, I was really clear from the afternoon of 2 July 2019 that I was making the decision, and I am confident that that was communicated to NHSL by my officials. NHSL may have chosen not to pay attention to that and to proceed on the basis that they would decide how it was going to be resolved; and Scottish Government would be informed and given a role in a communications plan. All of that seemed, to me, to spectacularly miss the point. I think it's probably fair to say that my level of concern at this situation grew over the days. You can't talk about putting patient safety first and then say you want to have a phased entry from the date originally planned without having supporting information to confirm that it will be safe in all hospital areas including theatres and that all required clinical and safety standards had been met to confidently allow patients and staff to enter and use the building. We did not have that level of confirmation and assurance because NHSL could not provide it; and any attempt to move patients and staff into some areas of the new hospital and then 'retrofit' the sub-standard areas carried clinical risk (for example, from airborne dust). And of course, at this point, we could not be sure the extent of any 'retrofit' required.

Events of 4 July 2019

60. On 4th July 2019, Malcolm Wright sent a letter to the NHSL saying that the decision to delay the move in its entirety had been made **(A35827763 - Letter from Malcolm Wright to Tim Davison confirming that Cabinet Secretary has taken the decision – dated 4 July 2019 – Bundle 7 - Volume 1 – Page 79)**. That letter set out details regarding "further information that has emerged over the course of yesterday and last night." This was about the fact that we

still didn't know why it took until 2 July 2019 before anybody knew there was a problem. We didn't know if everything else was okay with the build, and we didn't know what NHSL thought should happen.

61. By now I also had the view of the Chief Medical Officer and Diane Murray as the Deputy Chief Nursing Officer, along with Malcolm Wright's views as the Director General from all of the ongoing discussions since 2 July 2019.

62. I held a meeting with all the health and social care directors. This allowed me to hear their views from their respective areas of responsibility. It was to make sure they all knew what we knew and allowed me to hear what each of them thought should now be our collective view on the way forward, that is, what we should do as a government. I wanted to know if anyone disagreed, and I wanted to know why because I was about to enact a really critical decision with lots of consequences. It was important that I knew what everyone thought.

63. I had already had numerous conversations with Malcolm Wright, John Connaghan, Dr Calderwood, and Diane Murray, and I had been keeping the First Minister briefed. I was also receiving updates from Alan Morrison (Deputy Director in Health Finance), who understands and has responsibility for projects like this (because whatever happened, this was going to cost money, there was no question about that). He was a key connector. I also had input from Shirley Rogers, who was in charge of people. I also had the communications team with their particular advice about how the various strands of communications might be handled. They all attended this meeting collectively to assist me in making the decision regarding how to proceed.

64. In holding this meeting, I was looking for that assistance, information that would give me consequences I might not have thought of and challenge: the "Well that's all very well Cabinet Secretary, but have you thought about…" question, because once you understand consequences you then can consider whether you can mitigate those consequences. You have to decide whether any potential consequences outweigh what you think you need to do.

65. I was looking for views, not to substantiate what I had decided, but that would deepen my understanding about the consequences of my decision-making.

66. I think it is fair to say that Malcolm Wright was supportive of the decision made. John Connaghan was supportive but worried about the consequences. My recollection is that the Chief Medical Officer was pretty clear in her view that the opening should not go ahead on 9 July 2019 as planned and specifically wanted to have the opportunity to discuss with clinical colleagues in the DCN what might be needed for them and their patients. Finance were worried about money, as finance should be and, for the others present, it was more about thinking about what we needed to do once the decision had been made.

67. The Deputy Chief Nursing Officer discussed the staff involved, who would all need to be written to and told where they were supposed to go on 9 July 2019 and thinking about the outpatient and inpatient appointments that would have to be rearranged.

68. Part of that discussion was just getting a long list of everything that needed to be covered off but, also consequences like, if patients and staff are staying where they currently are, what would we need to do to ensure that those current facilities were as safe as they could be (for, at this point, an unknown period).

69. The principal risk considered was that if it was not currently safe to move patients into the new facility, how safe would it be to keep them where they were, and what could we do to make that safer.

70. We needed to keep staff on board, not least because everyone was super-excited about moving to this new facility. Why wouldn’t they be - it looked fantastic. The new rotas had been set up, packing up had been done and holidays arranged. I was about to tell them all they could not move when planned and I couldn’t say when the move would actually take place. I was very aware that morale would likely dip considerably. People would be deeply disappointed, so we needed to give them assurance that we understood and

were taking the situation very seriously. This was not least because, to a degree, sensibly, NHSL had slowed down any investment in Sciennes or the existing DCN. That needed to be addressed. There was an incredibly long list of things that needed to be done, all of which needed to be worked through and prioritised.

71. As part of ongoing talks and meetings, my Directors (Alan Morrison and possibly others) were working closely with Health Facilities Scotland / Health Protection Scotland (HFS/HPS) and considering advice they could give. I would then know that we could commission them to do work and look at assurances they could obtain and give to the Scottish Government. Obtaining advice from HFS/HPS was a parallel exercise running with everything else that was going on.

72. Everyone in attendance at the meeting I held with the Director General and my other senior Scottish Government officials on 4 July 2019 was in agreement that no services should be migrated on 9 July 2019. Although all of my Directors in attendance were in agreement, some were more worried about the consequences than others. Brief notes of the meetings and importantly of all actions agreed would have been taken by my principal private secretary, Andrew Corr. The decision taken and outputs from the discussion were reflected in the letter that the Director General issued to NHSL that day **(A35827763 - Letter from Malcolm Wright to Tim Davison confirming that Cabinet Secretary has taken the decision - dated 4 July 2019 – Bundle 7 – Volume 1 – Page 79)**.

73. The impact upon patients and their family members of a delay in moving services to the RHCYP/DCN and remaining at the sites in Sciennes/ Western General Hospital (WGH) was high in my mind. I was thoroughly briefed on the conditions at the sites, including the advanced stages of preparations to vacate these sites and consequent reduction in all but critical maintenance of these sites pending the move to the new facilities. I was aware that the conditions at the existing sites were far from ideal (hence them being replaced by the RHCYP/DCN). I was also aware that, despite those facilities being far from

ideal, they were providing a safe environment for patients – something that on available information between 2 July 2019 and 4 July 2019 I had no assurance of in relation to the RHCYP/DCN.

74. The timescales concerned did not allow for a detailed risk analysis exercise, comparing and contrasting the pros and cons of remaining beyond 9 July 2019 at Sciennes/ WGH or moving on 9 July 2019 to RHCYP/DCN. There was no time to record a detailed risk assessment. As such, I had to make my decision based on all available advice from my advisers (including clinical advice from the offices of the Chief Medical Officer and Chief Nursing Officer, together with advice from HFS/HPS) and that decision, essentially, paused the move to allow time for more detailed consideration of all of these issues.

75. I didn't believe that NHSL would accept that my decision was correct. I decided that all communication both internal and external would need to be signed off by the Scottish Government. This was based on my view, and particular experience with the Greater Glasgow and Clyde Health Board, that our boards did not always communicate well or clearly with patients and the general public in times of crisis. The risk around communications was heightened if NHSL disagreed with the approach being taken. I was very aware of the importance of communications being transparent and delivered using straightforward language. I also understood, from previous experience, the importance of owning up to what you don't know. I think all of these are key elements of good communication. I wanted to be sure that all internal and external communications were written in a way that conveyed an understanding of how it might feel to be reading this difficult message; provide assurance where that could be given; and state with honesty where assurance couldn't be given but give a commitment as to what would be done next.

76. I also discussed matters with the First Minister in order that she knew what was going on and what I intended to do. Her critical question to me was whether I was sure the correct approach was being taken. I confirmed that I was sure that the approach was correct, and I am grateful for her support in confirming she was content with that. We issued a briefing to the First Minister that day, which

explained everything to her, set out what I was doing and how I would keep her informed **(A41444207 - Briefing for First Minister on RHCYP – dated 4 July 2019 – Bundle 13 – Volume 3 – Page 89)**. She supported my decision and didn't have any other involvement or make decisions regarding the project beyond being regularly briefed on progress. If the First Minister had not agreed, I am sure she would have intervened.

77. A lot of other activity was also ongoing. I wrote to staff; spoke to the unions (and thereafter maintained a continuous dialogue with the unions); wrote to MSPs in order to explain what I had done and why I had done it (N.B. the Scottish Parliament was in recess at the beginning of July 2019).

78. We set up the telephone line so that patients, relatives, and members of the public could phone in and find out about their appointments and whatever else they needed to know on a practical level about what was happening - the kind of things that staff go to straight away.

79. The Scottish Government were dealing with the situation on an emergency incident management basis. I was clear that patient safety and staff welfare had to be at the heart of decisions being made. I instructed my officials to work at pace in conjunction with NHS National Services Scotland (NHS NSS), drawing upon the technical expertise of HFS/HPS to determine what needed to happen in order to get the new facilities open as soon as it was safe to do so. At that early stage it was hoped that the delay might only be one of a matter of weeks, but further information was required as a matter of urgency in order to understand whether that would in fact be the case.

80. It was clear that significant work would require to take place in order to examine how this had happened, what required to be done to rectify the immediate problems, be assured that there were no other problems that had not yet come to light and what could be done to ensure this situation did not arise again. Those workstreams would all require detailed planning that could not be done in a day.

81. Those immediate plans, therefore, needed to focus on:

81.1. what planning needed to be stopped in a practical sense in the existing facilities (which were, after all, in the advanced stages of preparation for a move and closure)

81.2. communications

81.3. making sure patients and staff were going to be in the right place at the right time the following week (including re-arranging staff rotas, etc.)

81.4. what needed to happen immediately in terms of equipment and infrastructure to allow the existing facilities to continue to provide the services.

82. In relation to that last point, it was recognised that spending on the existing facilities had been on the basis that the facilities would cease to be used on 9 July 2019, so it was recognised that immediate steps would be required to address the new reality of the facilities having to continue to provide services.

Events of 5 July 2019

83. I appeared on BBC Radio Scotland on the 5th of July 2019 **(A41231996 – RE_Edinburgh Childrens Hospital – for tomorrow – (Attachment containing Jeane Freeman Good Morning Scotland transcript) – dated 5 July 2019 – Bundle 7 - Volume 1 – Page 86)**. I was asked by the reporter if I overruled NHSL and how they wanted to proceed with the opening of the hospital. I responded that "They hadn't made a decision about what they wanted to do." My position then was that I was aware from the email sent by their Chief Executive, Mr Davison, that he may have been under the impression that NHSL were going to make the decision and were simply informing the Scottish Government. However, in a radio interview, I was not about to throw NHSL 'under the bus'. Not least because people for whom NHSL delivers healthcare need to have some confidence in it. I also did not wish to have any distraction on what was a very serious matter – problems with a major hospital and people not being able to go there as planned. I was not going to create any distraction in the media about the Cabinet Secretary and NHSL having any disagreement.

Events of following days - July 2019

84. The events of 2 July 2019 triggered the DG involving the Scottish Government's Health Resilience Unit (HRU), which as I understand it was tasked with coordinating intelligence and information coming from NHSL. Evidence provided by other witnesses explains the role of the HRU to the Inquiry. I received emails from the HRU, including an email of 8 July 2019 explaining to me that "Your officials will now operate under a health resilience response…" **(A41022820 – Email from Cabinet Secretary for Health and Sport to Michael Healy on RHCYP delay and update on work undertaken – Bundle 7 – Volume 1 – Page 182)**. The HRU provides support in times of urgent need. They were involved in the immediate aftermath of the critical care ventilation issue being identified until measures were in place to take matters forward on a longer-term basis. They stepped down from this situation on 18 July 2019, see (**A41225838 – Email from Rowena Roche to Barbara Crowe attaching an action list that Health Resilience were maintaining as part of the initial response arrangements around the delay to the RHCYP migration - dated 22 July 2019 – Bundle 7 – Volume 2 – Page 10**).

85. Meetings were held over the weekend of 6th and 7th July 2019 between NHSL and the Scottish Government. I think our representative at these meetings would have been John Connaghan and he would have updated Malcolm Wright, who in turn would brief me. Unfortunately, I can't recall any conversation I had.

86. I believe there had been a DCN migration and feasibility study carried out by Fiona Halcrow at NHSL to assess whether the DCN could immediately move safely as a standalone service into the new building. The conclusion of this study was that no significant issues were identified that would prevent a standalone move of the DCN.

87. At that point, however, nobody could say whether, in addition to the ventilation system in the critical care unit not being adequate, resolving that issue would or would not impact on ventilation systems elsewhere in the hospital. Given the late stage at which the problems with the ventilation system had been identified, I also asked for additional assurance that drainage, water supply and clinical gases met required standards. That feasibility study did not answer those questions.

88. There were too many unknowns in relation to the new facilities. We knew the risks in the existing facilities and the steps being taken to mitigate those. What no-one knew at that point was whether there were other clinical or safety risks in the new buildings – we knew one major risk had been identified at a very late stage but didn't know whether that was the only major problem or what, if any, would be the knock-on impacts of resolving that (or any other problems that might exist). Actually, the point about what it takes to fix the ventilation in critical care, and whether or not that impacts on other bits of ventilation elsewhere in the hospital, is quite an important one because we didn't at that point know what we were going to have to do to fix this and what consequences there might be for ventilation and air changes in the rest of the facility in undertaking the work to get it to the required standard.

89. In those circumstances, you look at balance of risks. That's a big set of unknown risks that we needed to work our way through and bottom out. How do you fix critical care? Is there a risk that whatever is required to fix the problem we currently know about will have an effect on anything else? Are there other problems and, if so, what will be required to address them?

90. You have all of that on one side, and on the other side you have the DCN and Sciennes facilities that are not good, but you know what's wrong with them and you know whether or not you can do anything to make them better in the interim. For me it seemed sensible to deal with what we know rather than shunt people into something where we have no idea what the risks are.

91. That is why I, acting through Alan Morrison, commissioned NHS NSS to undertake a detailed assessment of all buildings systems in the RHCYP/DCN that could impact its safe operation for patients and staff, recognising how infection prevention and control must always be embedded within the design, planning, construction and commissioning activities of all new and refurbished healthcare facilities. I return to this in more detail below, but in brief, this work was to be phased, with assessment of water, ventilation and drainage systems prioritised, including the proposed fix for the ventilation unit. I viewed this report as critical to the determination of the timeframe for migration of services to the new hospital. I wanted a swift turn-around, so anticipated receiving the full report in September 2019. Running in parallel, I also asked NHS NSS to provide assurance that all current and recently completed major NHS capital projects comply with national standards.

92. It was also important to understand the factors, including information flow and timeframes, which led to the decision, announced on 4 July 2019, to delay the move to the new hospital. That is why KPMG were engaged to conduct an independent audit of NHSL's governance arrangements for the design and build of RHCYP, to provide an external and impartial assessment of the factors leading to the delay. That work began on 15 July 2019 and again I will say more about that below.

Escalation to Level 3

93. On 12 July 2019, NHSL was notified it was being escalated to Level 3 of the NHS Board Performance Escalation Framework (the Escalation Framework) **(A41263551 – Letter to Tim Davidson, copying in Brian Houston, from Malcolm Wright – dated 12 July 2019 – Bundle 7 – Volume 1 – Page 339)**.

94. The Escalation Framework is one of the key elements of the evidence-based approach to monitoring performance and managing risk across the NHS in Scotland. The framework is overseen by the National Planning and Performance Oversight Group, a sub-group of the Government's Health and

Social Care Management Board. The framework applies to NHS territorial boards only. Arrangements for national NHS boards are covered by separate arrangements.

95. The Escalation Framework provides five stages of a 'ladder of escalation' that provides a model for support and intervention by the Scottish Government. The wording of the Escalation Framework has been revised over time, but the version in place as of July 2019 is contained in (**A41430802 – Email from Calum Henderson on behalf of DG Health and Social Care to Malcolm Wright et al attaching two documents (Board Performance Escalation Framework for NHS Lothian 9 July 2019) and (a letter from Brian House, Chairman of NHS Lothian to Cabinet Secretary for Health and Sport which provides an update on progress on the 2017-2018 NHS Lothian Annual Review 25 June 2019) - dated 9 July 2019 – Bundle 7 – Volume 1 – Page 293**).

96. The designation of a board as stage 1 or stage 2 is a policy specific process. Stage 1 is when boards are steady state and on track with their annual delivery plans. Stage 2 is an informal support stage, where the Scottish Government is providing support and guidance, but not intervening in the board. This stage is intended to avoid reaching the threshold for stage 3 or higher. These designations are managed by the Scottish Government policy leads directly with individual boards. A board may be at stage 1 (steady state) in relation to one aspect of its operations and at stage 2 in another.

97. Stages 3 and 4 are formal escalations. This is when requirements for specified action by the board along with enhanced monitoring arrangements are put in place. No statutory powers are being exercised and, as such, the board Chief Executive is expected, in their capacity as Accountable Officer, to co-operate and provide leadership; to ensure the effectiveness and delivery of the Recovery Programme.

98. The decision to move a board to stage 3 is made by the Health and Social Care Management Board (HSCMB) which may be prompted by awareness of a known weakness or the identification of an increasing level of risk in relation to a particular NHS board. The support and interventions at stage 3 are: Formal approach incorporating significantly enhanced support and scrutiny and likely to include a level of external support; Relevant Scottish Government Directors engaged with NHS Board Chief Executive Officer and top team; Director General Health and Social Care aware.

99. In relation to stage 4, the decision sits with the DG Health and Social Care, where consideration of the board's position within the Framework would normally be prompted by a board failing to deliver on the recovery actions agreed at stage 3 or the identification of significant weaknesses considered to pose an acute risk to financial sustainability, reputation, governance, quality of care or patient safety. The support and interventions at stage 4 are: Senior level external support reporting to an Assurance Board chaired by Scottish Government; Assurance Board reports direct to the Chief Operating Officer for NHS Scotland and Director General Health and Social Care. The onus remains on the NHS board to deliver the required improvements.

100. The decision to escalate a board to the highest stage in the framework is taken by the Cabinet Secretary for Health and Sport with advice from the HSCMB. Escalation to stage 5 involves the exercise of Ministers' powers of intervention under the National Health Service (Scotland) Act 1978. Escalation to stage 5 should not be viewed as part of the normal progression of a board on the framework; it should only be used in exceptional circumstances.

101. The Scottish Government Health and Social Care Directorates Management Board (HSCMB) met on 10 July 2019. They discussed a paper that had been prepared in relation to NHSL, which carried a recommendation to escalate NHSL to Stage 3 of the Escalation Framework **(A41430802 – Email from Calum Henderson on behalf of Dg Health and Social Care to Malcolm Wright et al attaching two documents (Board Performance Escalation Framework for NHS Lothian 9 July 2019) and (a letter from Brian House, Chairman of NHS Lothian to Cabinet Secretary for Health and Sport which**

provides an update on progress on the 2017-2018 NHS Lothian Annual Review 25 June 2019) – dated 9 July 2019 – Bundle 7 – Volume 1 – Page 286). When NHSL was escalated to Level 3, an Oversight Board and Oversight Group were established. The Oversight Board related specifically to delivery of the RHCYP/DCN project and was initially chaired by Christine McLaughlin (Director of Health Finance), then from 10 October 2019 by Professor Fiona McQueen (Chief Nursing Officer). The Oversight Group, chaired by Professor John Connaghan, focused on improving performance across a number of different healthcare deliverables across NHSL.

102. I received a briefing note from Alan Morrison dated 25 July 2019 **(A41230822 – Email from Rowena Roche to Cabinet Secretary for Health & Sport attaching a briefing to Cab Sec to provide an update on RHCYP – dated 25 July 2019 – Bundle 7 – Volume 2 – Page 128)** within which you will note, at paragraph 10, the proposed representation and remit of the Oversight Board. The purpose of the Oversight Board was to oversee the delivery of the RHCYP/DCN project and to provide advice and assurances to the Scottish Ministers. The Oversight Board's terms of reference can be found at Inquiry document **(A41232145 – NHS Lothian RHCYP Oversight Board_ToR – Bundle 7 – Volume 2 – Page 352)**. Christine McLaughlin, as chair of the Oversight Board, prepared the terms of reference and I signed off on those. Those terms of reference define the scope of the Oversight Board's work as:

> "The Oversight Board will provide advice in relation to:
>
> - Advice on phased occupation
> - Advice on the proposed solution for ventilation in critical care areas and on any other areas that require rectification works
> - Advice on facility and operational readiness to migrate
> - Gain information and give advice to NHS Lothian about commercial arrangements with IHSL for completion of works
> - The approach to NPD contract management
> - Identification of areas that could be done differently in future"

103. The original members of the oversight board were:

103.1. Christine McLaughlin, Chief Finance Officer, Scottish Government
103.2. Catherine Calderwood, Chief Medical Officer, Scottish Government
103.3. Professor Fiona McQueen, Chief Nursing Officer, Scottish Government (deputy Diane Murray)
103.4. Susan Goldsmith, Director of Finance, NHS Lothian
103.5. Tracey Gillies, Executive Medical Director, NHS Lothian
103.6. Professor Alex McMahon, Nurse Director, NHS Lothian
103.7. Peter Reekie, Chief Executive, Scottish Futures Trust
103.8. Colin Sinclair, Chief Executive, NHS National Services Scotland
103.9. Alex Joyce, representative from NHS Lothian Joint Staff Side (deputy Gordon Archibald)

104. Attending the Board to provide advice and assurance were:
104.1. Mary Morgan, Senior Programme Director (from the date of her appointment in September 2019)
104.2. Brian Currie, Project Director, NHS Lothian
104.3. Judith Mackay, Director of Communications, NHS Lothian
104.4. Professor Jacqui Reilly, HAI executive lead for NHS National Services Scotland and SRO for centre of excellence work
104.5. Gordon James, Health Facilities Scotland, NHS National Services Scotland
104.6. IHSL would have a representative in attendance on an ‘as required’ basis

105. The first meeting of the Oversight Board took place on 8 August 2019 and was chaired by Christine McLaughlin. The next meeting was on 22 August 2019. Between 22 August 2019 and 31 October 2019, the board met weekly. The RHCYP/DCN was fully opened on 23 March 2021 and the final meeting of the Oversight Board was held on 8 April 2021.

106. The instigation of an Oversight Board is a well-trodden route for the government and the NHS. I received briefings on the work of the Oversight Board and, in turn, I kept the First Minister and the Scottish Parliament

updated, see **(A36610350 - Email from Barbara Crowe to the Cabinet Secretary attaching an update from the Cabinet Secretary to the First Minister – dated 9 August 2019 – Bundle 7 – Volume 2 – Page 376)**, which from paragraph 5 onward discusses the early work of the Oversight Board and makes clear its significance to decision making about critical care ventilation, other ventilation and other building systems issues.

Site Visit on 18 July 2019

107. Malcolm Wright (DG), Catherine Calderwood (Chief Medical Officer), and I visited the existing sites at Sciennes and the Western General on 18 July 2019 **(A41232293 - Cab Sec visit to Royal Hospital for Sick Children (Email chain) – dated 15 July 2019 – Bundle 13 – Volume 3 – Page 95**).

108. Before meeting with the staff, I had a meeting with the Chair and Chief Executive of NHSL. As briefed to the First Minister **(A41225889 – Email from Jack Downie on behalf of Cabinet Secretary and Sport to Stuart Low advising that the attached note from Cab Sec to FM on RHCYP will be sent – dated 12 July 2019 – Bundle 7 – Volume 1 – Page 336)**, I was very surprised not to have had any contact from Brian Houston (Chair of NHSL) up until 12 July 2019 and not to have met with him until 18 July 2019 at a meeting the Scottish Government asked for. There are a couple of reasons for my surprise. One is the Cabinet Secretary, representing the Scottish Ministers, appoints the Chair of NHS boards; and I had always been clear with all board Chairs that I considered them accountable for the performance of their board and the work they undertook. So, given the seriousness of this and that he knew he had met me towards the end of June, at which point no issues were raised (I assume because he was unaware of any issues himself), I was surprised that at no point on the second, third or thereafter had I received either a phone call from him, or a request into my private office for him to meet me, to talk to me about what he understood was happening, what he thought should happen, etc.

109. I didn't think that was the correct acceptance of responsibility by a Chair. Given that I had been a board chair, I knew that I would not have waited that long. I can only surmise he waited that long as it reflected a view that he held, that this was an NHSL matter to resolve and the government, and in particular the Cabinet Secretary, really had no business in interfering with that.

110. My meeting with NHSL's CEO and Chair was brief. I was clear with them what I was doing, why, what other steps I had set in train and what I expected from each of them.

111. The primary point of these visits was, however, to meet as many groups of staff as we could in order for me to explain personally and directly to as many staff as possible the situation, the decision I had made and why, hear their concerns, answer their questions and importantly, hear from them what they believed was needed in existing facilities given they were to continue in use, at that time for an unspecified period. Undertaking this was very important to me. I wanted them to see and speak to the person who had halted the move. I wanted them to hear directly from me why I had done that and, importantly I wanted to benefit from their advice and views on mitigations need in the current facilities. I think it's always better face-to-face than by other means. I think that's more respectful; and it also allowed me to ask them questions and for them to ask me questions, as well as allowing me to see the facilities.

112. It was a twofold response from staff. Initially they were upset, disappointed; but very quickly their focus shifted to commenting that the decision I had taken was right - "it's safer." I received no opposition at all to the decision, which I was a bit surprised at, but that's what health care staff are like. They moved very quickly to the practicalities and to addressing what would make staying there better for patients and families. It gave me an opportunity to ask staff what could be done to improve the immediate situation they and patients found themselves in.

113. We ingathered responses. Some of the responses involved regular maintenance that had been paused because everybody was moving. Our

immediate response to that was to say that we would reinstate maintenance – paint and fix what they needed.

114. In Sciennes, staff raised a lot of issues around what could be done to make the family accommodation better in the short term. The most pressing area highlighted to me was the Accident and Emergency (A&E) department. The staff raised an issue in relation to the positioning of a pillar that restricted their view of patients, which was making it more difficult to maintain observation of patients and making movement around that area awkward. They suggested that if you knocked the pillar down (it did not appear to be load-bearing) then that would make the sightlines and flow easier. That was their problem. If the sightlines and flow could be improved that would improve patient safety and avoid people stacking up with kids that weren't well. The removal of that pillar suddenly created more room and better flow. That was an example where we just lifted everybody's heads up because a thing wasn't in their way anymore. That was the kind of decision-making and judgement that we were making.

115. We also visited the DCN at the Western General site that day and talked to the clinical staff and others there. The overall reaction from staff at the DCN was that people were extremely disappointed and upset but didn't disagree with the decision or push back against it; and went straight-away to practicalities. We asked the staff what would make it better, given they were not immediately moving. We were speaking with them about the possibility of migrating the DCN sooner than everybody else and what we needed to know before we could decide that. Staff had the opportunity to ask questions, to hear my reasoning, to understand what more I believed I needed to know before I could decide things like when they could migrate. Again, I think that's a better way of doing it rather than only sending a written communication of some sort.

116. Neither the existing Sciennes nor DCN facilities at the Western General site were where you would start if you had a blank piece of paper. We would not have been building a new hospital if the existing facilities were adequate. One might question whether it was really any worse to go to the new hospital site with things that weren't working than stay where they were. My answer to that line was that the Sciennes and Western General facilities were deficient in

those ways because they had been built at a time when the current standards were not required, but they were coping with known risks and mitigations already in place. I was not about to sign off moving all those patients and staff into a new place which did not meet the standards. What could be the possible justification in doing that? The standards were there for a reason. It was not a choice between a good thing and a bad thing. It was a choice between levels of risk. I judged that the level of risk of moving to the new hospital before it met standards was greater than continuing at Sciennes and at the DCN. Somebody else might have judged it the other way but that was my judgement. Looking back, even on reflection, I still believe I was right to make the decision to delay migration.

117. I wrote to all staff that day to update them on the situation and thank them for their ongoing patience and continued focus on patient care.

118. There were some specific follow-ups that I recall about improvements that needed made in both sites and I had already given a commitment that the cost of all of this, and any pay promotions that came with moving to the new facility, would be met from the Scottish Government Health & Social Care budget and not come out of NHSL's existing budget. I did not want debate about where the funding would come from to give rise to delay in all necessary steps being taken. My directors made further site visits about the follow-up work that we knew had to be undertaken. Those visits were primarily, as far as the staff were concerned, about seeing a Scottish Government presence more in following through on some of the issues that they had raised with me about what they thought would make working in the existing sites better for them and for the patients. I wrote to NHSL staff again on 30 September 2019 to give them my thanks **(A41231067 – For Immediate Issue_Letter to all staff from the Cabinet Secretary for Health and Sport - dated 30 September 2019 – Bundle 13 – Volume 7 - Page 1023)**.

NHS NSS and KPMG Reports

119. As I mentioned previously, around 8 July 2019 I announced that NHS NSS would be conducting a review in relation to the RHCYP/DCN project. That was to be a two-stage review, with the most pressing need being to focus on the project's compliance with technical specifications. A brief **(A41020525 – Email from Alan Morrison to Cabinet Secretary for Health and Sport attaching a briefing on an emerging issues from NHS Lothian – dated 2 July 2019 – Bundle 7 – Volume 1 – Page 37**) was sent to NHS NSS requiring assurance as to whether current technical specifications were all in order and that ventilation, drainage and water were all in line with national guidance.

120. All commissioning communication was dealt with by either Malcolm Wright in his role as DG or delegated to his directors. I had asked for the first report from the NHS NSS review **(A41213257 – NSS Report that is a review of Water, Ventilation, Drainage and Plumbing Systems (version 1) – dated 9 September 2019 – Bundle 7 – Volume 3 – Page 373)** as a matter of urgency so that it would be clear what needed to be done first to address the situation that presented. In terms of the level of urgency, I would ideally have wished to see the output from this report in August but accepted that early September met my urgency stipulation in circumstances in which I was asking for a detailed and thorough report.

121. This report, along with that commissioned from KPMG, discussed further below, fed back into emerging thinking about supporting NHSL (with absolutely no disrespect to any individual on the board or its Chief Executive) in this major infrastructure project. This also connects with the thinking about the establishment of NHS Scotland Assure, which I discuss further below.

122. The NHS NSS report **(A41213257 – NSS Report that is a review of Water, Ventilation, Drainage and Plumbing Systems (version 1)– dated 9 September 2019 – Bundle 7 – Volume 3 – Page 373)** can be spoken to in full by a witness for NHS NSS. The NHS NSS report pointed to problems with the

electrics, with some aspects of water and, I think, oxygen as well. It was then clear that there was a lot of work that needed to be done.

123. The findings I took from it in relation to management and assurance were:
    123.1. for both IHSL and NHS Lothian, there appeared to be omissions in the identification, appointment, and definition of key roles in an effective management structure
    123.2. some records necessary to demonstrate compliance with appropriate specifications and guidance remained outstanding
    123.3. the Board cannot pass its responsibilities under health and safety law to a third party. It can pass duties, but the responsibility for ensuring the safety of those accessing its premises remains with the Board
    123.4. to discharge its duties, the Board should ensure appropriate structures and processes (set out in the Scottish Health Technical Memorandum (SHTM) suite of guidance, Statutory Compliance Audit and Risk Tool (SCART) and Healthcare Associated Infection-System for Controlling Risk in the Built Environment (HAI_SCRIBE), produced by Health Facilities Scotland) and personnel are in place to ensure that those responsible for operating the facility are doing so in compliance.

124. The key findings I took from the report in relation to water (all of which were alarming given the situation at QEUH) included:
    124.1. “From initial inspection of the Independent Tester’s reports, there is evidence that areas of the pipe work systems were installed without end protection. This may have allowed dust and organic material to enter the pipe system and this may not have been eradicated by the disinfection process” **(A41213257 - NSS Report that is a review of Water, Ventilation, Drainage and Plumbing Systems (version 1) dated 9 September 2019 - Bundle 7 – Volume 3 – Page 390)**

    124.2. “NHS Lothian commissioned a specialist safety consultant in May 2019 to conduct an overall safety audit of the RHCYP & DCN. Contained within their report is a section on the water system. They assessed the risk condition of the system as “high” mainly as a result of BFM’s

Legionella risk assessment, the lack of evidence of flushing across the system, the lack of maintenance on shower heads and outstanding information on the water management responsibilities by BFM." **(A41213257 - NSS Report that is a review of Water, Ventilation, Drainage and Plumbing Systems (version 1) dated 9 September 2019 - Bundle 7 – Volume 3 – Page 390)**

124.3. "management aspects of the water system by IHSL's FM contractor were not satisfactorily demonstrated. The system showed signs of biofilm and swarf contamination, particularly at the taps. Shower heads and hoses do not meet the required standards with respect to length." **(A41213257 - NSS Report that is a review of Water, Ventilation, Drainage and Plumbing Systems (version 1) dated 9 September 2019 - Bundle 7 – Volume 3 – Page 391)**

125. The key findings I took from the report in relation to drainage and plumbing (again alarming, given the situation at QEUH) included:

125.1. The connection on to the wash hand basin from the drain has proven to be an area where water does not drain freely, creating a dam effect where various organisms may grow in some circumstances. **(A41213257 - NSS Report that is a review of Water, Ventilation, Drainage and Plumbing Systems (version 1) dated 9 September 2019 - Bundle 7 – Volume 3 – Page 392)**

125.2. The Independent Tester noted in their report of 30th June 2017 "that an issue had been raised regarding the capacity of the basement sump. In further investigation this appears to be related to the fact that more areas/floors were connected to this system than NHS Lothian had originally been made aware of. The main drainage risk lies with the basement sump." **(A41213257 - NSS Report that is a review of Water, Ventilation, Drainage and Plumbing Systems (version 1) dated 9 September 2019 - Bundle 7 – Volume 3 – Page 393)**

125.3. "In the event of a catastrophic blockage and spillage the court yard would be impacted." **(A41213257 - NSS Report that is a review of**

Water, Ventilation, Drainage and Plumbing Systems (version 1) dated 9 September 2019 - Bundle 7 – Volume 3 – Page 393)

126. I felt the results from the NHS NSS review, to an extent, justified my decision. I wasn't particularly looking for justification though. My focus was upon what we needed to do next. Actually, if I recall, asking them to look at gases was an issue that came from discussions with the trade unions. They said they had raised the whole question of clinical gases, and the safety of those and the adequacy of those, with NHSL, but they still weren't convinced, so I think we added that in to check as well.

127. The NHS NSS report gave us a view of the scale of the number and scale of the issues that needed to be addressed and also, if I recall correctly, an assessment of which ones were really important and which ones could be fixed after occupation. I was clear that, as a lesson learned from the QEUH experience, I did not want major retrofitting going on once the hospital was occupied. Better to hold back from moving for a little longer and fix it before people go in, than have a situation where patients were in, but there would be scaffolding and all sorts of construction going on.

128. The NHS NSS report mentioned the Haematology and Oncology department (The Lochranza Ward) regarding the 10 air changes per hour requirement. I wasn't aware of any issues with that before this report, but I think it would be the Chief Medical Officer who would have asked that that ward be particularly checked (again given the experiences at the QEUH).

129. I asked for the NHS NSS report and the KPMG Report to be published at the same time. There was no particular reason for this not to happen. It gave everyone a timescale to work to and I was keen to be able to obtain information as quickly as possible. Thoroughness, clarity, and quality of work were the drivers and, if that could be achieved in parallel to allow publication at the same time, that was an added benefit. The sooner we could produce this information for Parliament, and to the wider public, particularly the Edinburgh based public,

the better. It would then allow us to work out some necessary actions, including the key one of what was needed to make this hospital safe. In parallel to that were other important aspects, including how long it might take and what it might cost.

130. The KPMG report was helpful too. It found that, essentially, what had happened was human error. Again, I wanted to make sure that every Chief Executive knew and were double-checking they had spelled out everything clearly if they had infrastructure projects.

131. The point of KPMG, and also the report from Audit Scotland who became involved as well, was to provide that level of independent scrutiny of what was happening for my benefit. It was an additional layer of assurance outside of government and the health service. When something big has happened that is unexpected and is a problem and affects individuals, they are never overly assured if what they see as one bit of the same body, reviewing the bit that didn't seem to get it right. People always worry that you're just covering things up or you're not scrutinising it well enough.

132. I relied quite heavily on each of the reports' findings to help me inform my thinking on next steps.

133. After the reports were published, I was advised against the removal of both the Chair and Chief Executive of NHSL **(A41231780 CSHS – Submission – 10 September 2019 – RHCYP Governance and Accountability Issues (002) – SGLD – 10.09.19 – Bundle 7 – Volume 3 – Page 432)**. The Cabinet Secretary can't remove a health board's Chief Executive because it's not the Cabinet Secretary who employs a Chief Executive, or any of the executive directors. It's a board that does that. The means by which government can intervene is through the DG/Chief Executive of the NHS who can remove accountable officer status, which then requires a board to review the Chief Executive's position. Even then they don't have to remove their Chief Executive. They can find a workaround if that's what they wish, although it's a pretty strong signal. Where the Cabinet Secretary has a locus is in the Chair's appointment because

it is the Cabinet Secretary who signs off the appointment of chairs and non-executive directors. I didn't have a view that either should go, as a definite view, but it was an obvious question that needed to be considered.

Escalation to Level 4

134. On 13 September 2019, NHSL was escalated to Stage 4 of the Escalation Framework in respect of the RHCYP/DCN project **(A41231071 –Letter MW -B Houston and T Davison – NHS Lothian Level 4 Escalation –Sept 2019 – Bundle 7 – Volume 3 – Page 564)**. NHSL stayed at Level 3 for all other purposes, so the escalation was solely in relation to the RHCYP/DCN project. The decision to escalate to Stage 4 rests with the DG and I was briefed accordingly. I agreed with the escalation. As a result of this escalation, Mary Morgan was appointed as Senior Programme Director to oversee the safe delivery of the project.

135. She was recommended for the post by the DG **(A41231824 – Email from Alan Morrison to the Cabinet Secretary and Christine McLaughlin providing a further urgent briefing – dated 10 September 2019 – Bundle 7 – Vol 3 – Page 533)** and **(A41231071 – Letter MW - B Houston and T Davison – NHS Lothian Level 4 Escalation –Sept 2019 – Bundle 7 – Volume 3 – Page 564)**. Again, I did not disagree and if I had thought for whatever reason that this would not be a good appointment then I would have said so. I made it clear that we needed such a person in post.

136. Mary Morgan's role as Senior Programme Director was to ensure that everything that needed to be done to make the hospital safe to open was done. She had the necessary skills to be able to work constructively with NHSL, bearing in mind there was a tension there, and also with contractors in order to get the best out of them; and do that with the understanding of when to flag issues that really government needed to know about. She was to have a strong input into what she thought the timeline would be towards migration, based

upon what she had done to understand everything that needed to be done, to talk to everybody that needed to be talked to.

137. Mary Morgan reported to the Oversight Board via her Senior Programme Director's Reports. She was a standing attendee at Oversight Board meetings in order that she could advise on progress and anything she was concerned about. Her reports updated on matters such as NHS NSS having produced a report on water and the pseudomonas had been eliminated or dealt with. She provided a rationale for her recommendations and set out the issues being dealt with in a helpful red, amber, green (RAG) format, which was easy to follow. She was a key member of staff who oversaw the delivery of what needed to be done.

138. The Oversight Board also had representatives from NHS NSS, including Health Protection Scotland (HPS), and Health Facilities Scotland (HFS), so I knew that those with the right expertise were feeding into that Board and the reports and recommendations I was receiving from it.

139. Once the Oversight Board and Senior Programme Director were in place with their remits and responsibilities, a regular pattern of reporting up the line was in place and decision-making became more formalised. From that point onward, until the project completed, my role was primarily to receive updates from those with the necessary technical expertise; to be satisfied that they were providing the level of assurance I was looking for; and take the high-level decisions as and when necessary. I received a copy of the papers for meetings of the Oversight Board and in addition was provided by my officials with regular briefings that summarised the key issues and progress being reported through the Oversight Board.

Supplementary Agreement 2 (SA2)

140. The contract to build the hospital was held by NHSL with IHSL and through them onwards to the contractors. How the additional work would be done needed to be commercially negotiated. The output of those negotiations was

Supplementary Agreement 2 (SA2). I had no locus in those commercial negotiations other than to be reassured that what I required to be done was going to be done. It was agreed that the Scottish Government would meet the additional costs, once quantified, and assured by my finance officials. I had already made a commitment that the Scottish Government would fund any additional costs incurred to bring the hospital to the standard that we needed for it to be safely opened.

141. I have been asked if I had any frustrations surrounding how SA2 was progressing. Yes, I did a little bit. However, I also understood it because the parties were seeking to protect themselves from liability. Whether I thought the way they were seeking to protect themselves, or to limit their liability, was reasonable or not was irrelevant. I understood what they were doing and why they were doing it. I just needed them to get on and conclude it because it was holding things up. We relied a great deal on Mary Morgan's negotiating skills to get people to that point. What Mary Morgan was partly doing was looking to see where we could minimise delays through obtaining agreement from contractors to move certain things forward. There was a point where, even though the final agreement was not signed, IHSL agreed to go ahead and commission the necessary equipment to upgrade the ventilation system anyway. All of that was to her huge credit. Inevitably, however, there were some delays we just could not minimise and had to live with.

142. All of this was delegated to the Senior Programme Director, Mary Morgan, and overseen by the Oversight Board. My job was to be confident that I was being kept up to date with progress, the timelines, and the attached risks. I received regular updates, through my officials, Ministerial Briefings (all of which have been provided to the Inquiry) and through the Oversight Board papers, which were copied to me. All of this was to ensure that I knew what progress was being made and whether it was, by and large, on track. I could then ensure that the First Minister and, where appropriate, Parliament were made aware of any developments. It would be then through Parliament that constituents would be made aware of what had occurred. It is important to be clear here that, whilst my role was not a passive one, it was important to let those with specific

responsibilities get on with exercising those responsibilities. My role was to ensure I was completely up to date, including with any problems as well as progress and, where I felt it necessary, to challenge matters, suggest ways to overcome problems, and encourage progress.

Phased Migration

143. I was kept up to date throughout as to whether there was any opportunity for phased migration. That was particularly so in the earlier days around the DCN which, at that time, was in the Western General. Whilst the hospital at Sciennes could continue to deliver safe patient care with some of the modifications we had agreed that it needed, it was clear that the DCN was in a more difficult building. If it was possible to move the DCN in any phased way, then it was preferable we did that as soon as possible. There were huge complications with timelines around buildings being brought up to standard and being assured about standards. There were then practical considerations that needed to be accounted for like staff rotas, inpatient appointments and so on. The Oversight Board and Mary Morgan were overseeing and leading on all of that.

144. As already explained, the Oversight Board was chaired initially by Christine McLaughlin and subsequently by Fiona McQueen. They understood very well what the big drive for me was **(A41232145 – NHS Lothian RHCYP Oversight Board_ToR – Bundle 7 – Volume 2 – Page 352)**. That was to ensure that everything that needed to be fixed was fixed. I didn't want a hospital opened where major infrastructure had to be retrofitted. I wanted the facility to be fixed to the appropriate standards so we could be confident it was safe and then get the people in there. If you do not open a hospital because it is not safe, you can't compromise on getting it to a point where it is safe.

145. Clinical input from day one is essential. We have good examples of where clinical input from day one is effective. We have seen it in the design and build of the extensions at the Golden Jubilee Hospital. It was part of what came forward as a proposition for the replacement of Monklands General Hospital.

Clinicians are the only ones who can know things like how patient flow works. They are critical at the outset but, at the same time, they are not architects or builders. You cannot put everything on their shoulders.

146. I have been asked by the Inquiry to what extent was I influential as to the phased migration period for the DCN. The people who needed to be most influential in the phased migration were the clinicians and the whole healthcare team in the DCN. Those people were the people who best understood both the level of seriousness of the situation for the patients they were caring for and the practicalities of moving in terms of that safe patient care. They had to be, if you like, the primary people consulted on what they needed to be assured of where they were going to, and their capacity to do a phased migration.

147. My role was to be sure that those people were being consulted before finally agreeing whatever the plan was that came forward. I needed to be assured that plans for taking matters forward were fit for purpose. I signed off every phase of the migration, see for example **(A41477155 - HIS Inspection of Sick Kids – dated 07 October 2019 – Bundle 13 – Volume 3 - Page 102)**.

148. I was dealing with the unions in parallel. That provided me with, if you like, an additional assurance. I would hear where things were not correct and whether the clinicians and healthcare staff were content.

149. Delays were incurred because of COVID. Although part of our response to the pandemic was to require construction work across the country to pause, we had given exceptions to healthcare facilities. However, there were still delays due to disruption to supply chains, the need for social distancing and so on. Construction, even in an approved site, could not proceed as quickly as it might otherwise do because workers had to abide by social distancing requirements. You could not have a bit of a building with electricians, builders, and plumbers all in there as they might otherwise be. Also, staff in the Western General were being redeployed to cope with the anticipated demand from the pandemic so, inevitably, there were delays caused through that. That all delayed everything.

The development of NHS Scotland Assure

150. The responsibility for delivery of healthcare projects lies with health boards and it is for health boards to ensure that they put in place sufficient technical resource to deliver those projects. I have sympathy, to a degree, with the executive directorship of a health board when asked to deliver a major infrastructure project when they have principally been appointed to deliver healthcare, to manage budgets, to ensure that healthcare is safe and effective, to recruit staff, etc. They are not appointed to be technical or construction experts; and for any Chief Executive it will probably be a once in a career task to deliver a major project such as the construction of a new hospital. However, they appoint external advisers to provide the expertise and advice they need. That is what NHSL did.

151. What we did not have and what I thought would be useful to health boards in dealing with infrastructure projects, was essentially a single place that they could refer to for the expertise, advice, and guidance that they could follow, regardless of whether they had been in charge of a major or minor infrastructure project at any point in their career. Such a body would itself grow in expertise through experience, could look at design and build elsewhere in the UK and beyond and could, critically, ensure that infection prevention and control would be key drivers in the design and build of all healthcare facilities. This all led to the establishment of what is now known as NHS Scotland Assure.

152. NHS Scotland Assure was also, from my point of view, a place where the Cabinet Secretary could go to look for expert opinion and assurance, a place which took responsibility for ensuring that all standards were being met, and where actual physical checks were being carried out.

153. We needed to move away from a situation where individual health boards had responsibility for the design and build of major healthcare infrastructure but did not have a single central point of support to which they could turn for all

relevant infrastructure design and build experience and expertise. That was partly because it was showing itself, through the QEUH and RHCYP/DCN projects, not always to work. I do not think you can have major healthcare infrastructure designed and built at a cost to the public purse without a clear line of accountability and, in my view, that can only come through a Minister of Government. In some instances, it is the force and nature of your personality that inserts yourself in a project. I think, to an extent, this was the case with the RHCYP/DCN project. There was no question in my mind that I, rather than NHSL, was now responsible for the successful delivery of the RHCYP/DCN project. Other Cabinet Secretaries might have taken a different view, and they could reasonably argue that they would have been legitimate to do so, because of the way in which contractual arrangements and responsibilities work.

154. I took the view that you need to pool the expertise into a central place and make it clear what Government is responsible for. That became clear to me following 2019. I remain definite on my view on that now.

155. One of the things that became clear in NHSL RHCYP/DCN was a lack of physical testing. I thought that what was needed was, as I termed it, a clerk of works – someone with a clipboard who would physically go around pressing a button to see if it works. That did not happen with RHCYP/DCN; things were done on basis of paper assurances. That self-evidently did not work; so the creation of NHS Scotland Assure was part of me trying to get my clerk of works: the person that nobody ever wanted to see, that prodded and pushed buttons and just made sure that if they said the ventilation system meets the standard, they have actually checked it and not just looked at bits of paper.

156. I made an announcement about it to the Scottish Parliament on 19 September 2019, at the same time as my statement about the NHS NSS and KPMG reports **(A41229927 – DH Statement 190911 – dated 11 September 2019 – Bundle 7 – Volume 3 – Page 544)**. It had been under consideration from an earlier stage though, and for me, in particular, in light of my experience at QUEH. The briefing to the First Minister of 5 July 2019 **(A41020453 – Edinburgh Children's Hospital – Note from Cab Sec to FM – Bundle 7 –**

Volume 1 – Page 118), has a section headed "Role of HFS in all future builds for NHS Facilities," and notes that my officials had, that day, received a proposal from NHS NSS that was being reviewed. The importance of moving this forward was underlined as the issues with RHCYP critical care ventilation came to light (see action list maintained by Health Resilience within the Scottish Government as at 18 July 2019, which included the following entry (number 18): "Provide acknowledgement to NSS to proceed to the next stage of development of the Centre of Expertise on Infection Control" **(A41225838 – Email from Rowena Roche to Barbara Crowe attaching an action list that Health Resilience were maintaining as part of the initial response arrangements around the delay to the RHCYP migration - 22 July – Bundle 7 – Volume 2 – Page 12)**.

157. The establishment of NHS Scotland Assure was to my mind, therefore, very much a response to events at the QEUH and RHCYP/DCN.

Reflections

158. Prior to the critical care issue coming to light, NHSL had signed off on the build and taken control of the site. That triggered the monthly unitary charge of circa £1.35 million payable by NHSL to IHSL. Had the testing against the standards been done properly, then NHSL might not have taken ownership of this site because it wasn't 'to standard', in which case, it wouldn't have triggered these payments. However, there was a contractual obligation. It's a galling cost to the public purse to be paying for something that couldn't be used, as well as the additional cost that would be incurred to get it to the necessary standard.

159. I had already said that the Scottish Government would cover the additional costs, because I wasn't prepared to get into an argument about taking money out of NHSL's budget. Inevitably what that means though, and I think I was clear about this to Health Board Chairs and Chief Executives and certainly in the Scottish Parliament, is that if we were spending that additional money on

RHCYP/DCN because of what had happened here, then that was money that was no longer available to spend elsewhere on healthcare.

160. It was clear to me that what had been done on the RHCYP/DCN and QEUH projects was not good enough. The problems uncovered on those projects did initiate some of the changes that have now been put in place.

161. One of the clear actions that I think would have raised this issue much sooner is a closer scrutiny and greater clarity in the contractual requirements. Another is that the testing of whether or not standards have been met is actual physical testing, not something that's undertaken as a paper exercise.

162. Those are not criticisms necessarily of what people did or didn't do because they did what was always done. In fairness, there were other infrastructure projects, including major hospital builds, which proceeded in the same way, to the same format and that opened without any issues with standards or safety and opened on time and, from memory, on budget (for example, in Orkney and Dumfries and Galloway). Those were major builds in those areas, so it can't be said exclusively that the old system was at fault, because it self-evidently worked fine in some places. One might say that the problems with the RHCYP/DCN project arose because NHSL 'messed up', but I think it is hard to then say there's nothing wrong with the old system. This is a small country. Infrastructure builds, particularly in healthcare, are absolutely critical. They must be safe. Standards change and improve all the time, so you need a repository of expertise and knowledge that health boards are required to use. I emphasise 'required to use', and, beyond that, government looks to see that what you are doing as a board has been assured by that repository of knowledge and expertise and that repository is actively engaged in what you're doing.

163. The alternative is to say that all infrastructure build in healthcare is only done by that central body but, that cuts right across the obligations of local health boards, so you need to find a way of balancing that, which was the intent in all the other stuff that was then done.

164. I am very grateful that that independent validation identified the issues within the hospital. I think everybody should be grateful about that. What would have happened without it would have been that we would have migrated everybody into the new hospital with lots of 'hurrahs', and then pretty soon our clinicians would have said, "Wait a minute. This isn't what it should be," at which point we would then have had to decant people. We would have started having a construction site inside a hospital, with all the risks, disruption and uncertainty and anxiety that that brings to everybody. You can't then have critical care. Where would you then have it because you've just sold off Sciennes. So, the consequences are horrendous.

165. There is something here that I think is quite important that we shouldn't miss, and that is the importance of clinical input to the design and construction of healthcare facilities. Whilst a clinician operating in critical care will not necessarily know what ought to be the case in theatres, or in another ward, they will know what they need in critical care. They will know what should be happening there, just as the theatres teams will know. So, you need to find a way to have their input into the design and compliance with the standards. This isn't hard. We have seen it elsewhere in NHS Scotland. It's about spending time with clinical teams at the design stage, so you have all that's needed where it is needed before you build. We find better outputs where that is done, alongside the critical input of expertise on standards.

166. As far as how NHSL handled matters, I think they attempted a version of, "Nothing to see here. We can fix this, and everything can just go ahead." Whilst I might understand their motivation for doing that, it's all about reputation and perception. I think it was a fundamental flaw on their part because their first and foremost responsibility is patient safety. If that means that, in pursuing that, your reputation is dented a bit, so be it. So, I don't think NHSL handled it well.

167. As far as how the Scottish Government handled issues when they came to light, I think we got the primary decision right. We got all of the things that

needed to happen done to communicate that decision to those that were most affected by it. I think we got the follow through actions right. I suspect (and I would arguably concede this) that NHSL may say that I was too high-handed, and that's possibly how they perceive what I was doing. I would accept that that was their perception. I wouldn't change what I did.

168. In terms of pace of information, I think it's fair to say that the Health and Social Care Directorate was used to the fact that I like things to happen quickly. That's not to sacrifice all the information needed; it just means I need the information quickly. So, in terms of how quickly the Directorate responded and how quickly they could find things out for me and give me their views, they moved at the fast pace I needed them to move. Where they may have struggled, in some instances, was getting information from NHSL. For example, the question of when that validation test actually happened feels to me like a really straightforward question. Somebody somewhere must have had it in their diary and yet there was an awful lot of to-ing and fro-ing trying to get hold of that information.

169. In that sense some things were slower than I needed them to be but, in terms of how quickly the Directorate moved, then they were keeping pace with what I wanted. Where they thought that they could not respond as quickly as I wanted, I think we had a quality of relationship where they could explain that and set out what was possible. Also, of course, in July we were in holiday period, so sometimes things aren't as quick as you might want them to be but, by and large, I think I got all of the information I needed as quickly as I needed it, and where I didn't get that, there was a reason for it.

170. I think the Scottish Government has to move away from a notion of being arm's length to all of this, facilitating the funding, but basically leaving it then to boards to get on with it. I think that's unrealistic but also wrong. It's unrealistic because at the end of the day, whoever is Cabinet Secretary is going to be accountable to the Scottish Parliament. You can't be accountable for things that you're out of the loop on, but at the same time you are still accountable in that way. It's also not sensible because we're talking about significant sums of public money

alongside, in healthcare, people's safety and the quality of the care that they receive.

171. I think what you need to have is a body of expertise and knowledge in everything to do with the safe and effective construction of health infrastructure that is accountable to the Scottish Government and mandated in its use by health boards. That way you've got a more direct line into what's going on and a more direct line of accountability, but also you are now giving health boards access to a resource that they would not otherwise have access to all in one place.

172. We don't need loads of experts, but we need experts. Also, they can, as part of what they do, not just make sure that everything complies with standards, but they can contribute to the development and the improvement of standards by applying their knowledge so that you are constantly looking to make sure that everything is not just as safe as it was yesterday, but as safe as you need it today because you've improved things. Giving the obvious example of 10 air changes per minute, a group of clinical experts will have come up with why that needs to be like that. They may change that in future, in the light of future knowledge; you need to be up-to-date and contributing to that.

173. In terms of reporting information and record-keeping I think there is a more active role for a central organisation in prodding that kind of reporting. That is what I think that central organisation (now NHS Scotland Assure) is there to do, because that then alters the relationship between government and health boards. By that I mean, you have NHS Scotland Assure and it does what I described I think it should do, so it is now the body that is prodding; and it's now the body giving assurance to the Cabinet Secretary because it has gone in and poked stuff, and it's confident about standards being met and patient safety being paramount.

174. When I talk about these people being experts, both in NHS Scotland Assure and any independent experts called in for a specific purpose, they absolutely

are, and so they don't really care about the politics of anything. They are construction engineers and are focused on providing assurance that, for example, the ventilation system is meeting standards. That means you can have confidence that they have gone and poked it they didn't just accept a bit of paper. That is not to say that the role of independent external experts and advisors is not also important – they absolutely are.

175. I think that the actions undertaken to remedy the defects were adequate and have resulted in a safe hospital. There were several lessons learned surrounding the design and build of major healthcare infrastructure and how you go about doing that. It is important to recognise that there have been other hospitals designed and built, both before and since the RHCYP/DCN, that did not have the sorts of problems experienced on that project. Balfour in Orkney and Dumfries Acute Hospital were built in the same period and none of the difficulties encountered on the RHCYP/DCN project were encountered on those projects, and there were no significant delays to their openings. I do not think that every bit of major healthcare infrastructure that has been designed and built in the most recent period needs to be looked at again, provided the assurances sought and noted earlier have been given. However, just because we have projects that have gone well doesn't mean that we should ignore those that haven't gone so well.

176. Part of the rationale for not letting the RHCYP/DCN open was that I knew, from experience, that retrofitting does not work for something as critical as ventilation. I had seen that on the QEUH project. You did not need to be a construction expert to realise the scale of the interruption to services, safety and infection control issues that will arise when you have to take down ceilings and put in new ventilation infrastructure. You run the risk of airborne particles that can be harmful; you create noise and disruption in settings where calm is critical to patient care; and you create anxiety amongst staff and patients with respect to actual or perceived increased infection risks. Trying to do such major infrastructure work in a hospital full of patients is just not possible and would

have required decanting (something that is also no small consideration, again as we have seen in the QEUH).

177. I would say, finally, that NHSL worked extraordinarily hard and well during the difficult circumstances of COVID. Notwithstanding anything else I might say about NHSL, I think it is to their credit that whilst they may not have been overly happy with the decision not to open the RHCYP/DCN on the date that they had planned, people basically just got on with dealing with the situation that they had to deal with. The same can be said in relation to their working with Mary Morgan. No Board likes the idea that they are at a heightened level in the escalation framework. No Board likes the idea of an Oversight Board overseeing them, working with a Senior Programme Director appointed by the Scottish Government at Stage 4 of the Escalation Framework, reporting directly into the Scottish Government. That is not a comfortable place for any health board to be. It is to NHSL's credit that they just swallowed, breathed deeply, got on with it and did very well. Notwithstanding the commercial issues and COVID, they achieved the ultimate goal of delivering a hospital that now ranks amongst the safest in Scotland, Europe, and the rest of the world.

Declaration

178. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Professor John Gerard Connaghan CBE

Introduction

1. My full name is John Gerard Connaghan. I am the Chairman of Lothian Health Board (NHSL), having been appointed to the role in July 2021.

2. In this statement I address the following:

    a. Professional Background and Qualifications
    b. Chief Performance Officer NHS Scotland
    c. Letter from the Scottish Government to Chief Executives, dated 25 January 2019
    d. The decision to delay opening RHCYP/DCN
        i. January to July 2019
        ii. 2 July 2019
        iii. 3 July 2019
        iv. 4 July 2019
        v. 6-8 July 2019
    e. Escalation of NHSL on the Scottish Government's Performance Framework
    f. Some reflections on my engagement with the RHCYP/DCN Project

Professional Background and Qualifications

3. I have the following academic and professional qualifications:

    - BA, Economics, Politics and Statistics, Glasgow Caledonian University (1976).

- PG Diploma – Management Science with manufacturing as the main topic, Strathclyde University (1980).
- MBA, Strathclyde University (1984).
- The Cabinet Office Top Management Programme, which was a 2-year course run by the Cabinet Office (2009).
- Visiting Professor – Management Science – Strathclyde University (since 2015).

4. Following graduation from Glasgow Caledonian University in 1976 I worked as a production manager within the publishers Wm Collins and Letts until 1987. I then joined the NHS, where I held a number of Chief Executive posts, principally Chief Executive of the Victoria Infirmary Trust, Chief Executive of the Western General Trust, and Chief Executive of Fife Acute Hospitals Trust until I left in 2006.

5. In 2006 I joined the Scottish Government as the Director of Delivery for NHS Scotland. In 2012/13, I became the Acting Director General of Health and Social Care for a period of about 11 months, pending the appointment of a new DG. Derek Feeley left the role in 2012 and Paul Gray was then appointed as Director General of Health and Social Care in 2013.

6. In 2016 I left NHS Scotland to join Health Service Executive for Ireland, serving as Director General of the Irish Health Service, with responsibilities for £16 billion and 165,000 staff.

7. I returned to the Scottish Government in January 2019, taking over the role of Chief Performance Officer, with a specific remit to improve the performance of frontline services, such as Unscheduled Care, Elective Care, Mental Health and Cancer Services.

8. I was asked to become Chief Executive of NHS Scotland in March 2020, to handle the operational response to COVID-19. In July 2021 I left Scottish

Government to take up the post of Chairman of the Lothian Health Board, and that is my position to date.

Chief Performance Officer – NHS Scotland

9. As Chief Performance Officer of NHS Scotland my remit covered engagement with health boards to produce their annual operational plans (known as "delivery plans") with a view to driving and improving performance. These plans set out how the health boards planned to deliver the services required of them in line with government's expectations and targets. My department also issued guidance to health boards associated with the preparation of these plans.

10. I had regular contact with the boards, both in the wider chief executive's forum as well as individually, with each chief executive and their top team, on the progress that we were making through the year. I had oversight as to the boards' performance against these plans, in relation to workforce, integration, unscheduled care, scheduled care, cancer, and mental health. My department would use the delivery plans to hold boards to account against their performance objectives.

11. The delivery plans were one-year forward-looking plans and were tied into the delivery of good financial governance in terms of developing a board's budget. These delivery plans were distinct from longer term strategic plans for the boards. The longer-term plans look forward 10 or 15 years.

12. At the time (January 2019 to July 2021), I was not an employee of Scottish Government. I was an employee of Greater Glasgow Health Board on a secondment basis into government with a two-year contract to improve the performance of the NHS. As a secondee and having the title of Chief Performance Officer, I sat alongside the heads of the various Scottish Government Health Directorates (Chief People Officer, Chief Nursing Officer, Chief Medical Officers etc) reporting to Malcom Wright as the Director General of Health and Social Care and Chief Executive of NHS Scotland.

13. I have been asked by the Inquiry what my understanding was on how the Royal Hospital for Children and Young People/Department of Clinical Neurosciences (RHCYP/DCN) project was progressing, following my appointment in 2019. My role as Chief Performance Officer did not involve, in any particular detail, the delivery of healthcare buildings. That is a matter more for the Capital and Facilities Health Care Directorates. I was aware that there was a building progressing but that was about the extent of my involvement. The building did not form part of the annual performance plans I describe at paragraphs 9-11 above.

Letter from the Scottish Government to Chief Executives, dated 25 January 2019

14. I have been shown the following document by the Inquiry, **(A35270542 – Letter from DG Health & Social Care and CE NHS Scotland to NHS CEs setting out a set of actions about an ongoing incident (Cryptococcus infections) in QEUH – dated 25 January 2019 – Bundle 4 - Page 8)** and asked my thoughts on why assurances were sought from Chief Executives around ventilation systems in operation. At the time that this letter was sent I would only have been acting as Chief Performance Officer for a week. I had no involvement in the drafting of this letter. I note the letter references the Queen Elizabeth University Hospital (QEUH) in Glasgow. My principal engagement with NHS Greater Glasgow and Clyde at that time would have been in and around their Unscheduled Care and Elective performance.

15. I have been asked by the Inquiry if there were any expectations of me in my role as Chief Performance Officer to implement any lessons learned from the QEUH, across other health boards. This is not something that was within my remit.

Period between January 2019 and July 2019

16. I have been asked by the Inquiry regarding what I knew of the planned migration date of 9 July 2019 for the RHCYP/DCN project. Prior to 2 July 2019, my understanding was that DCN at the Western General and the Sick Kids Hospital

at Sciennes were going to move to the new site at Little France on 9 July. To the best of my knowledge, I believe everything was on track for that to go ahead at that time. I do not recall being told anything to suggest otherwise.

Scottish Government Discovery of Critical Care issue on 2 July 2019

17. On 2 July I was in the then Director General of Health and Social Care and Chief Executive of NHS Scotland, Malcolm Wright's, office when he took an urgent call from NHSL's Chief Executive, Tim Davison. Malcolm took the call in my presence but not on speakerphone. After the call Malcolm explained that Tim had told him that a significant issue had been identified at the RHCYP/DCN. He explained that Tim had told him that it had been discovered that the ventilation in the critical care unit of the RHCYP did not meet the standard required in technical guidance and that this may impact the planned migration to the new site on 9 July 2019.

18. I recall reflecting upon how we were going to deal with this issue so that the hospital could be occupied as planned on 9 July 2019. At that time, I wondered if a standalone critical care unit could be sourced that would allow the migration to continue. It seemed to me, from a common sense point of view, that it would not be possible to migrate all other services without the hospital having a critical care unit as the provision of critical care is integral to the safe operation of the whole hospital. Hence my thought that we might only be able to proceed if an alternate source of critical care provision could be identified.

19. I spoke with Tim Davison later that afternoon and asked about the possibility of moving to the new site if a suitable modular critical care unit could be sourced to facilitate the provision of critical care. Tim advised that he would consider whether this was an option.

20. The next day I contacted a company called Vanguard that I had previously dealt with. I knew that Vanguard supplied modular operating theatres so I thought that they could probably supply a critical care unit. I made initial enquiries with

Vanguard and ascertained that they could supply a modular critical care unit that could, among other things, deliver the requisite 10 air changes per hour.

21. I have been asked by the Inquiry what my immediate reaction was on being told about the issue in the critical care department. My initial thoughts were, if it is an isolated part of the entire unit that is the problem, can we find a solution? The option of the standalone modular unit would probably facilitate the move going ahead, if not on 9 July, a couple of weeks later. As we subsequently found out, and as I explain in more detail later in the statement, this was an option that was not feasible and would not have been supported by NHSL so Vanguard was stood down.

22. At that time, I did not know what the extent of the issue was and began to form thoughts towards the end of that day, such as, “Is this the only issue that might be arising?”

23. I have been informed by the Inquiry that members of NHSL’s staff may have been aware of the issues within the ventilation at the critical care unit as early as 24 June 2019, and if this were the case would I have expected escalation to Scottish Government at that time. I can’t speculate as to what may or may not have been known on 24 June 2019 and without doing so it is difficult to answer the Inquiry’s question. However, I would have expected NHSL to notify the Scottish Government at the point in time that they were aware that there was an issue that was likely to jeopardise the planned migration to the RHCYP/DCN on 9 July. I would have expected initial contact to have been with the Scottish Government’s Health Finance Directorate as the Directorate with oversight of significant capital healthcare projects.

Events of 3 July 2019

24. On 3 July my former colleague Alan Morrison, then Interim Deputy Director of Health Infrastructure at the Scottish Government, attended a meeting with representatives from NHSL and NHS National Services Scotland (NHS NSS), which incorporates Health Facilities Scotland (HFS) and Health Protection

Scotland (HPS), to discuss the risks associated with the move of critical care only to the new site. A summary of this meeting is within **(A41020637 – Email from B Elliot (on behalf of DG Health & Social Care) to Malcolm Wright summarizing the main risks associated with the move of ICU to the new RHCYP – dated 3 July 2019 – Bundle 7 - Volume 1 - Page 48)**, which I was copied into.

25. Following this meeting NHSL held an internal meeting, which I attended. A draft note of this meeting and what was discussed is found at **(A35827798 – Draft meeting note (14:00 hrs) on Commissioning and Ventilation issues at RHCYP/DCN - dated 3 July 2019, Bundle 7 - Volume 1 - Page 57)**. This meeting provided an opportunity to further explore all available options following the discovery of the issue with the critical care unit. It was my understanding that at that point in time these discussions related just to the critical care unit. At the meeting I was keen to press discussion on the possible use of the modular critical care unit. I wanted to understand whether or not a modular unit could be used to safely open the hospital pending any remedial works being undertaken in the critical care unit. After discussion, it was clear that NHSL did not view a modular critical care unit as a viable option. The draft note of this meeting records a summary of NHSL's reasons as:

- "Disruption would be caused even if a modular unit was proposed as drilling etc would still be required and this was a material factor in terms of patient care
- Space, time and movement relationships were critical
- The timescale of 6 months was similar to the timescale for delivering a permanent solution without incurring the cost of modular units
- The relationship with the rest of the hospital and mutual support as well as clinical adjacencies were important."

26. I cannot recall if I asked to attend this meeting or was invited. If I hadn't been invited, I would have asked to attend. I saw the meeting as an opportunity to

provide NHSL with my thoughts, on behalf of the Scottish Government, regarding the potential for installation of a modular critical care unit.

27. I also wanted to make clear that both Malcolm Wright and the Cabinet Secretary would require to be comfortable with NHSL's proposal for opening the RHCYP/DCN given the significant potential for disruption. I had not been asked to do so by Malcolm or the Cabinet Secretary but, nonetheless, thought it was appropriate to make the position clear. Ultimately, Ministers are accountable to parliament for provision of health services in Scotland. Accordingly, it was only right that the Scottish Government and Cabinet Secretary were engaged in NHSL's decision making process.

28. I made it clear to Tim and NHSL that the Scottish Government would require to review and interrogate NHSL's plans. If the Scottish Government was not comfortable with NHSL's proposals they would retain the right of veto and to provide NHSL with direction as to how to move the project forward. The Government would, as part of its interrogation of NHSL's proposals, take advice from the expert services provided by NHS NSS in relation to infection prevention control and building safety. Such advice could be obtained promptly and without delay.

29. I have been asked by the Inquiry if the procuring of the modular units from Vanguard was the option I favoured. At the time of this meeting, I did not have a favoured option. Procurement of the modular unit was one option that I thought should be considered and discussed. Until the option had been discussed and considered alongside alternatives it wouldn't have been possible to identify it as a favoured approach.

30. During this meeting we discussed the need for a communications plan. It was clear that there had been a lot of communications to patients and staff about the planned move and we recognised the need to communicate any alternative proposal if the move was delayed. Patients and staff would need to know where they would be going. I advised NHSL that there would need to be carefully

choreographed communication given the complexity of the task. It was agreed that Judith Mackay (Head of Communication at NHSL) and Suzanne Hart (Head of Health Communications in Scottish Government) would discuss how to develop and deliver this plan in order to ensure that internal and external communications were aligned, clear and consistent.

31. Any delay, whether in full or in part, to migrate to the new hospital would attract significant public and political interest. I advised those at the meeting that I would be meeting with the Cabinet Secretary later in the day to brief her on the outcome of the meeting. I stressed the importance that no communications were issued until I had reported back the outcome of the meeting to my colleagues from capital planning.

32. It was important that the Scottish Government and NHSL were aligned as to the communications approach. This approach was inextricably linked to the decision to be made to delay the move to the new hospital. For example, if NHSL determined, without governmental approval, that there would be a phased migration on 9 July and communicated this position to staff and patients any decision by Scottish Government not to allow for such a migration would require to be re-communicated. Such a position would, undoubtedly, have led to confusion amongst patients and staff. I should add, however, that at no stage was it suggested by anyone that communications should not be aligned.

33. Following the conclusion of the meeting I advised those in attendance that I would personally contact Tim Davison and update him on the outcome of discussions with the Cabinet Secretary that were scheduled for the following day. I also asked Tim Davison to produce a short note for myself and Malcolm, detailing NHSL's proposal and rationale, including consideration of any alternative options, for opening the RHCYP/DCN.

34. I did not speak to the Cabinet Secretary on 3 July 2019. A meeting with the Cabinet Secretary had been scheduled for the next day. I would have briefed Malcolm Wright at some point following the meeting. I would have advised

Malcolm that NHSL were not supportive of progressing the “modular unit option” and that further information would be provided by Tim in writing. I would have relayed to Malcolm that we needed to have a joint communications approach that centered around, what was the right option to pursue. At that time, I was unable to make any suggestion as to the preferred option because NHSL had not presented any detailed options appraisals at the meeting.

35. The Inquiry have asked me about an email from Tim Davison, sent on 03 July to myself and Malcolm Wright **(A41020529 – Email from Malcolm Wright to DG Health Social Care on commissioning and ventilation issues at RHCYP/DCV – dated 3 July 2019 – Bundle 7, Volume 1 – Page 66)**. I have considered this email and believe that it is, in general, a fair summary of what was discussed at the NHSL meeting described at paragraphs 25 to 33 above.

36. This email highlighted, in my mind, three areas of concern. Firstly, communications to patients and staff needed to be clear and consistent to avoid confusion. Secondly, I worried that the concept of split site working may prove problematic given the scale of the moves. My third concern was whether or not the critical care ventilation issued was the only problem we had on the site.

37. I note that within that document Tim Davison writes “Following my meeting with senior colleagues this afternoon (which John attended), we agreed the following immediate actions.” This included the following; Clinically risk assess and plan the re-phased moves described in option 4 (phased migration over a number of weeks). I do not recall this being discussed at that meeting and do not see reference to it in the draft meeting note **(A35827798 – Draft meeting note (14:00hrs) on Commissioning and Ventilation issues at RHCYP/DCN - dated 3 July 2019, Bundle 7, Volume 1 - Page 57)**. I do not recall any discussion on timescales for a phased move or what services would move at the meeting. I had been very careful during the meeting to make clear that the Scottish Government would have the ability to veto NHSL’s proposals if we did not agree with them.

38. From my recollection of the meeting there was a general comment about moving some services to the new building. That is clear from the draft meeting note where I am noted as raising a question about staff rotas and providing my thoughts about split site working. Split site working is not normally recommended. Medical professionals may require to respond to an emergency at very short notice so it is not ideal to have professionals split across sites, particularly, if such split site working might inhibit an emergency response.

39. In the penultimate paragraph of **(A41020529 – Email from Malcolm Wright to DG Health Social Care on commissioning and ventilation issues at RHCYP/DCV – dated 3 July 2019 – Bundle 7, Volume 1 – Page 66)**. Tim Davison identifies as one of the actions he had agreed with senior NHSL colleagues, "Clinically risk-assess and plan the re-phased moves described in option 4." I do not recall any significant discussion around 'option 4' at the meeting. It is possible it was raised at the very end of the meeting after I had left.

40. I have been asked by the Inquiry if I had any concerns upon receiving this email as it appears that NHSL were under the impression that they would be making the final decision as to how matters were going to proceed. In my view, it was made clear at the meeting of 3 July 2019 that the Scottish Government would require to approve NHSL's plan. This is apparent from the draft note of the meeting, which concludes "John Connaghan would personally contact Tim Davison and update him on the outcome of his discussions with the Cabinet Secretary." Had the conversations I was to have with Malcolm and the Cabinet Secretary simply been to provide an update for 'noting' there would be no need for me to contact NHSL's Chief Executive directly with the outcome.

41. I have been asked by the Inquiry if I recall making a telephone call to Tim Davison at 2030 hours on 3 July, where I advised him that a planned communication for the following morning should not go ahead until further notice. I do not remember this telephone call, but it is consistent with the views I expressed at the meeting earlier that day that no communications should be

made without Scottish Government approval. I may have called Tim on re-reading the first bullet point under 'option 4' ("Develop a communications plan between SG and NHSL for implementation tomorrow morning") of his email to re-iterate this point.

42. I have been asked if making a call at that time of the evening would have been unusual. Working in the evenings was part of the job I performed at that time.

Events of 4 July 2019

43. I have been asked by the Inquiry if I have a recollection of a meeting I chaired at St Andrew's House, on the morning of 4 July, which was attended by Judith Mackay, Suzanne Hart, Alan Morrison, and Brian Currie. I cannot recall the detail of that meeting but it was probably called in preparation for the meeting scheduled with the Cabinet Secretary later that afternoon. As both Judith and Suzanne were present at this meeting it was likely that I was looking for an update on the communications plan. I did not want anyone jumping the gun before any meeting with the Cabinet Secretary that afternoon. I am not quite sure why Brian Currie and Alan Morrison were there, and I do not recall any discussions about the technical details of the project at this meeting.

44. I have been asked by the Inquiry, did the Scottish Government, as a result of this meeting, release a statement at 12 o'clock that same day advising that they would be leading on communications in respect of the RHCYP/DCN project. I do not recall the detail of what was discussed at this meeting but I think that it is unlikely that a decision to issue such a statement would have been made at the meeting without clearance from the Cabinet Secretary.

45. Later that day I attended the scheduled meeting with the Cabinet Secretary and other ministerial advisors (Malcolm Wright, Professor Gregor Smith [Chief Medical Officer], Diane Murray [Chief Nursing Officer], Shirley Rodgers [NHS Scotland's Chief People Officer and Scottish Government Workforce and Strategy Director] and Alan Morrison). After the meeting Malcolm wrote to Tim

Davison **(A35827763 – Letter from Malcolm Wright to Tim Davidson confirming that the Cabinet Secretary has taken the decision – dated 4 July 2019 – Bundle 7, Volume 1 – Page 79)**. This letter accurately records what was discussed at the meeting and the decisions made by the Cabinet Secretary. As is clear from the letter, NHSL were required to take a number of urgent actions. Those actions related to delaying migration to the new hospital building, putting in place a suitable communications plan in relation to the delayed move (to be approved by the Scottish Government) and taking a number of actions to provide assurance that the hospital, when it did open, would be a safe environment for patients and staff.

46. The Cabinet Secretary was provided with advice from all of those who attended the meeting. My input during the meeting was that we needed a good communications plan; that migrating with a critical care modular unit was not feasible; and highlighting my concerns over split-site working. Development of the communications plan would not be in my remit, that would fall to Suzanne Hart. Clinical advice would have been provided by Dianne Murray and Gregor Smith.

47. At the meeting the four options proposed in Tim Davison's email would have been discussed, but I cannot recall the precise details of those discussions.

48. Personally, I did not have a preferred option at that stage, but the primary focus of any decision making would be patient safety, as it always has been.

49. I have been asked by the Inquiry if I recall discussions related to NHSL's preferred option and why that was not considered viable. I can only refer to what is written within **(A35827763 – Letter from Malcolm Wright to Tim Davidson confirming that the Cabinet Secretary has taken the decision – dated 4 July 2019 – Bundle 7, Volume 1 – Page 79)**. There were concerns that this option would involve a partial move of services. The Scottish Government would need assurances that there were no patient safety issues associated with that – patient safety issues from the perspective of operational delivery and split-site working

but also, more importantly, patient safety issues in terms of meeting the required technical standards.

50. I have been referred to the letter from Malcolm Wright to Tim Davison **(A35827763 – Letter from Malcolm Wright to Tim Davidson confirming that the Cabinet Secretary has taken the decision – dated 4 July 2019 – Bundle 7, Volume 1 – Page 79)** which sets out that the decision has been made by the Cabinet Secretary to delay the move in its entirety, in light "of further information that has emerged over the course of yesterday and last night." I am not aware of any further information being made available to me during the course of the evening of 3 July 2023. This may relate to information gathered by others from, for example HFS, in relation to technical matters that are outwith my remit.

Events of 6 and 7 July (weekend)

51. I have been asked by the Inquiry if I recall two teleconference meetings on 6 and 7 July and to explain my role within these meetings. I have limited recollections of these meetings. I think these meetings related to staffing and patients. My participation at these meetings would have been as part of the Scottish Government team. In my role as Chief Performance Officer, I would have been interested in the number of patients that might be impacted and whether or not there was a plan for addressing those impacts. I would have wanted to make sure that if patients turned up at the wrong site, we would have a transport plan to move them to the correct site, and I would have certainly been interested in listening into the discussion about the impact on staff and leave.

52. I have been asked by the Inquiry for my thoughts on the DCN migration feasibility study held on 8 July by Fiona Halcrow of NHSL, and how it reconciled with the notion that the move was delayed in the interest of patient safety. I did not attend this event, however, my opinion on phased migration is per Malcolm's letter of 4 July. It specifies:

> "I require an assurance that there are no other material specification deficiencies in the building, that any re-sequence of moves at all occur only once we have received clearance that all facilities meet the required technical standards."

53. Without assurances that the new hospital provided a safe environment for patients and staff, it was not considered feasible for any migration of services to that site. The DCN had operated successfully from the Western General site for many years. If there were risks at this site, they could be mitigated. Many of the potential risks at the new site were unknown which makes mitigation against them very difficult.

Escalation of NHSL to Levels 3 and 4

54. The NHS Scotland support and intervention framework is used by the Scottish Government as part of its performance and risk management toolkit. In essence, the framework utilises an evidence-based approach to identify when health boards across Scotland require additional support to deliver and improve performance. The framework is overseen by the National Planning and Performance Oversight Group, a sub-group of the Government's Health and Social Care Management Board (HSCMB). The framework applies to NHS territorial boards only.

55. The NHS Scotland: Support and Intervention Framework is one of the key elements of an evidence-based approach to monitoring performance and managing risk across the NHS in Scotland. The framework was first published on 10 June 2021. There have been several updates, the latest being on 27 November 2023. **(A46674602 – NHS Scotland: Support and Intervention Framework – as updated 27 November 2023 - Bundle 13 – Vol 3 – Page 687)**

56. On 12 July 2019, Malcolm Wright advised NHSL that they had been escalated to level 3 of the Scottish Government's Performance Framework **(A41263551 –**

Letter to Tim Davidson, copying in Brian Houston, from Malcolm Wright – dated 12 July 2019 – Bundle 7 - Volume 1 – Page 339). On 13 September 2019, Malcolm Wright advised NHSL that, in respect of the RHCYP/DCN project, NHSL had been escalated to level 4 of the Scottish Government's Performance Framework **(A41231071 - Email from Calum Henderson attaching a letter from Malcolm Wright regarding the level 4 escalation – dated 13 September 2019 – Bundle 7 - Volume 3 – Page 563)**.

57. I have been asked by the Inquiry to describe my role in the HSCMB and the reason for escalating NHSL to Level 3 of the National Performance Framework. HSCMB provides an opportunity for Directors and other key participants to formally meet to discuss strategic, practical, and operational activities which contribute to the delivery of health and care services across Scotland. It also provides a platform for the Director General/Chief Executive of NHS Scotland to seek assurances on the progress of work, seek assurances that mitigations are in place for any identified risks, and seek advice that enables them to carry out their functions as accountable officer. A number of sub-groups report in to HSCMB on various workstreams at regular intervals. I was the principal advisor to HSCMB about the level of escalation that was required for NHS Boards in line with the Framework. **(A41029115 - HSCMB-85-2019 – Board Performance Escalation Framework NHS Lothian – dated 10 July 2019 – Bundle 13 – Vol 3 – Page 683)** is a report prepared by my team for discussion at the HSCMB meeting that took place on 10 July 2019 at which NHSL's escalation to level 3 was discussed. The report contains information about the operational challenges facing NHSL at the relevant time.

58. I highlight that escalation should not be seen as punitive. It should be viewed as a support measure. The Scottish Government reserve the right to put in place external help for a board that we consider might have multiple issues. For example, it was not uncommon for me to ask experts in unscheduled care to do a piece of work onsite to take a look at the flow dynamics, the capacity issues, whether there are any bottlenecks, and to produce an expert report on where we

could alleviate those and have better flow through the system. That is an illustration of the kind of thing that we would offer under Level 3.

59. Escalation of a health board is given serious consideration before decisions are made. At this moment I think there are five health boards in Level 3 and one in Level 4. These are unusually high numbers but reflect the pressures in the system post-COVID.

60. The higher the escalation level the more the Scottish Government are involved, culminating in Level 5, which is essentially full control. When a health board reaches Level 4 escalation, it is usually because of a serious service failure in one critical service area or, for a combination of services where the Scottish Government is of the view that the management team need general support. With NHSL, the subsequent escalation to Level 4 on 13 September 2019 for the RHCYP/DCN project, arose because of a combination of risks between operational aspects of the health board, which needed to have full-time focus for the management team, as well as the focus on resolving the hospital ventilation and other issues of the new RHCYP/DCN project.

61. Following the escalation to level 3, I chaired regular meetings with NHSL on the operational performance aspects of the escalation (scheduled and unscheduled care, Mental Health, and Cancer services). As I explain later in this statement, any issues associated with the RHCYP/DCN, which had been escalated to level 4, would be co-ordinated through the Oversight Board chaired by Christine McLauglin. In my engagement with NHSL, or any other board that was escalated for operational reasons, I would assess the milestones we would want to make in terms of improvement, and what resources the Scottish Government could make available to help that improvement.

62. When implementing NHSL's escalation to level 3, I would have been assisted by the heads of service who reported to me. These were the head of Scottish Government Cancer Services, head of Unscheduled or Emergency Care and head of Elective Care. I would also have been assisted by others in the Scottish

Government who did not report directly to me such as those with specialisms in mental health, maternity, and paediatrics. There are divisions within the Scottish Government with policy responsibility for these specialist areas and provide advice to ministers.

63. On 13 August 2019, I wrote to Tim Davison in regard to the NHS Board Performance Framework and Lothian Health Board's escalation to level 3. **(A41227221 – Email from Jackie Marr to the Director General for Health and Social Care attaching a copy of a letter to the CEO of NHS Lothian regarding level 3 escalation – dated 13 August 2019 – Bundle 7, Volume 3 – Page 26)**. This letter followed correspondence from Tim to Malcolm dated 16 July 2019 requesting a package of tailored support. Within this letter I propose that the Scottish Government forms an Oversight Group to maintain regular contact with Tim Davison and his lead Directors for their respective aspects of the Recovery Plans. This Oversight Group was separate to the Oversight Board that was later appointed to address issues arising in relation to delivery of the RHCYP/DCN project. As can be seen from its terms of reference **(A41348347 – Terms of reference of the Executive Steering Groups – dated 23 August 2019 – Bundle 7, Volume 3 – Page 180)**. The purpose of this Oversight Group was to support NHSL in the development and delivery to Scottish Government of a formal single recovery plan with clear milestones which included the following areas which had been identified for improvement:

    (a) mental health, specifically at the Royal Edinburgh Hospital, but also the design and delivery of services across NHS Lothian;
    (b) cancer waiting times;
    (c) scheduled care;
    (d) unscheduled care;
    (e) delayed discharges; and
    (f) paediatric services at St John's Hospital.

64. I would chair the Oversight Group meetings which met every couple of weeks. My role was to examine the recovery plan that NHSL provided for the areas of

operational performance that were considered to be underperforming and to determine if there was any additional support that was needed to make improvements. Thereafter, I monitored progress against that recovery to ensure that the board was on track and on plan, on time, and if not, what could we do to address that. Improvement would be monitored against NHSL's annual delivery plan as well as more specific plans concerning the areas resulting in escalation.

65. As I explained earlier, on 13 September 2019, as a result of the reports produced by NSS and KPMG, and the scale of the challenge in delivering the new RHCYP/DCN project, NHSL was escalated to Level 4 of the performance framework for that specific project only **(A41231071 - Email from Calum Henderson attaching a letter from Malcolm Wright regarding the level 4 escalation – dated 13 September 2019 – Bundle 7, Volume 3 – Page 563)**. I was concerned about the cumulative issues facing NHSL as they had to address not only the performance issues covering scheduled and unscheduled care, Mental Health and cancer but also addressing the delay to the migration of the RHSC, hence I supported the move to Level 4 for this project.

66. I have been asked by the Inquiry if the NHS NSS review and KPMG audit were factored in the decision making for escalation to Level 4. I cannot recall being involved in any decisions about the materiality of those reports and would have been focussed on the other performance aspects of escalation at that time. I note the report prepared by Christine McLaughlin in respect of escalation **(A41225979 – Item 178.1 – HSCMB_NHS Lothian escalation – Dated 11 September 2019 – Bundle 7, Volume 3 – Page 441)** provides:

> "Since Escalation to Stage 3, an Oversight Group has been established, chaired by John Connaghan, SG Chief Performance Officer, NHS Scotland and NHS Lothian re currently developing a recovery plan which is due in the first week of November 2019.
>
> We have also received the two independent reports into the Royal Hospital for Children and Young People (RHCYP). Taken together and based on advice from the Oversight Board for the RHCYP, our

assessment is that there are a broader range of issues that require to be addressed before the building can be fit for occupation.

The additional leadership capacity that will be required to deliver this programme may have an impact on the broader capacity of the Board in managing the Stage 3 escalation on a number of performance areas. There are also concerns about the management control of the project in the light of the points raised in the two reports.

The issue has been identified in the Scottish Government accounts as a serious control failure."

67. As a result of the Level 4 escalation Mary Morgan was appointed Senior Programme Director to oversee the successful delivery of the RHCYP/DCN project. She reported to the Oversight Board and to Christine McLaughlin. I had no further involvement in the project in respect of any remedial works.

Reflections

68. I have been asked by the Inquiry what actions do I consider would have mitigated against the delayed opening of the RHCYP/DCN in consequence of the installation of defective ventilation in the critical care unit at the RHCYP. I understand that the issue with ventilation in critical care arose because of a human error made early in the project as regards the specification of air change rates in this part of the hospital. This error resulted in a conflict between the number of air changes specified for the critical care unit and the number recommended by technical guidance. That error might have been identified earlier if there had been an assurance process that checked the design and installation of the ventilation systems against both contractual specification and guidance, with appropriate governance arrangements to ensure that discrepancies are remedied where appropriate.

69. I have been asked by the Inquiry how satisfied was I with how NHSL handled matters, following discovery of the critical care issue. Personally, I was at the

time, relatively happy that they had reacted in that week to take matters exceptionally seriously. In dealing with Tim Davison in the early stages of this, and then latterly with his officers as we sought to get more information, I personally found that NHSL were open to answering any questions that I had on various aspects of communication or operational issues. At no point did I feel NHSL were anything other than open and transparent.

70. I have been asked by the Inquiry if I was satisfied with the Scottish Government's handling of matters in the aftermath of the discovery of the critical care issues. Looking at the timelines, I believe the Scottish Government reacted appropriately to the facts that were presented to them. As you can see from the timeline set out above, we reacted on the same day, looking at what the alternative options might be available to NHSL to avoid delayed migration. We engaged with NHSL the following day and laid out our expectations as part of that engagement. I am satisfied that further down the line when we had the chance to reflect, that our decisions on escalation for both the hospital and the RHCYP/DCN project were correct. I am also satisfied that we put in as much as we possibly could in terms of external facilitation from NHS NSS, HFS and any other expert advice, and I reflect on the fact that this led, in part, to the creation of NHS Assure.

71. I have been asked by the Inquiry how could the Scottish Government have handled matters differently in the aftermath of the discovery of the Critical Care issue. I don't think it could have handled matters differently. From my perspective, I think we were consistent with our advice to NHSL, supportive both operationally and from the building point of view.

72. I have been asked by the Inquiry if there were anything I would change about how I handled matters. My involvement with the immediate aftermath of the delay spanned about a week to a week and a half and, as a pro-active director, I would invite myself along to meetings because I wanted to know what was going on. I think my interaction with NHSL and my briefings to Scottish Government colleagues were unbiased and neutral in respect of where we should go and what

should be done. On reflection I would not alter anything that I did in terms of my judgement.

73. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry
Witness Statement of
Julie Critchley

Professional Background and Current Role

1. I am Julie Critchley DPodM, BSc, MBA. I currently hold the post of Director at NHS Scotland Assure ("NHS S Assure") at National Services Scotland ("NSS"). I have held the post since September 2021.

2. My background in the NHS is clinical rather than technical. I joined the NHS in England as an Allied Health Professional, Podiatrist, in 1992. I then had several clinical roles before becoming a clinical manager. I then progressed to management of community services, before moving into a mental health trust, being responsible for community services and mental health services. My roles included being a Director of Operations, a Transformation Director, and an Integration Director.

3. I have worked predominantly on large-scale integration agendas across mental health, physical health and social care, with a focus on change management and the equalisation of service delivery. My roles have involved identifying how to bring services up to an appropriate level of delivery for patients and discerning how that is delivered in challenging circumstances. Prior to joining NSS, I held the position of Head of Due Diligence and Clinical Disaggregation for the NHS improvement facilitated mandated transfer of Pennine Acute Trust into the Salford Royal Foundation Trust and the Manchester Foundation Trust. That was a transaction of approx. £600 million with 10,000 staff.

4. As Director of NHS S Assure, I am a member of the Executive Management Team NSS, inputting into strategic discussions and operational delivery across NSS. I have the lead for the healthcare-built environment in NHS Scotland.

I am also responsible for the strategic direction and operational delivery of the Directorate, NHS S Assure. The directorate is one of a number within NSS and comprises approximately 300 staff. The directorate is divided into a number of elements: Property and Capital Planning, Sustainability, Facilities Management Services ("FM Services"), Research and Engineering, Assure Programme Team, Antimicrobial Resistance and Healthcare Associated Infection Scotland ("ARHAI") and Fleet.

Formation of NHS S Assure

5. NHS S Assure is a new directorate of NSS created in June 2021, incorporating two formerly standalone aspects of NSS, Health Facilities Scotland ("HFS") and Antimicrobial Resistance and Healthcare Associated Infection Scotland ("ARHAI"). HFS was a directorate within NSS which historically covered property, capital planning, facilities, research, and engineering. NHS S Assure has continued to provide to the Health Boards everything that was historically provided by HFS and ARHAI, but now has additional services to offer to the Health Boards. Both now sit within the framework of NHS S Assure, which was co-designed with users and delivers a co-ordinated approach to the improvement of risk management in new build and refurbishment projects across NHS Scotland. The service underpins a transformation in the approach to minimising risk in NHS Scotland's healthcare-built environments, protecting patients from the risk of infection and supporting better outcomes for patients in Scotland. This multidisciplinary approach allows NHS S Assure to consider all aspects of risk within the healthcare-built environment that impact on patient experience and outcomes. It was this innovative approach that attracted me to the post and led me to apply to be Director of NHS S Assure.

6. The Scottish Government ("SG") proposed in 2019 setting up a Centre of Excellence for reducing risk in the healthcare-built environment, in response to infection control concerns in two new builds, The Royal Hospital for Children and Young People and Department of Clinical Neurosciences ("RHCYP/DCN")

and The Queen Elizabeth University Hospital ("QUEH"). At that time, it was decided that a division of HFS and ARHAI, given their expertise in healthcare builds and infection prevention and control, would remain within NSS to contribute to the proposed Centre of Excellence (now NHS S Assure), giving a holistic view to the risks inherent in healthcare builds.

7. NSS received a commission from SG in 2019 to support the creation of Quality in the Healthcare-Built Environment. NHS S Assure was developed from this aspiration. The aim of NHS S Assure was to provide assurance to SG that current new builds and major refurbishment projects were being delivered in line with extant NHS Scotland guidance, and were fit for purpose and free from avoidable risk of harm, such as healthcare associated infections, burns, electrocution, ligature injury and medical gas intoxication.

8. The SG aim for NHS S Assure was: *"To ensure patient safety we will create a* ***new national body*** *to strengthen infection prevention and control, including in the built environment. The body will have* ***oversight for the design, construction and maintenance of major infrastructure developments*** *within the NHS and also play a crucial policy and guidance role regarding incidents and outbreaks across health and social care."* (**A32341688 – Target Operating Model document for the Centre of Excellence – Bundle 9, Page 6**). Hospital builds are complex, once in a lifetime events for most Health Boards. The people who sit on the Health Boards or the capital and estates teams may not ever have experienced that type of a build. It was considered useful to have a central resource to support that process and mitigate risk and ensure compliance.

9. On 27 May 2021, a "DL" letter from the Director of Health Finance and Governance, within SG, was sent to the NHS Health Board Chief Executives, Directors of Finance, Nursing Directors and Directors of Estates and Facilities (**A43494369 – Letter dated 27 May 2021 from Richard McCallum, Director of Health Finance and Governance to NHS Board Chief Executives and**

others – Bundle 9, Page 70). The purpose of the letter was to inform Health Boards of the development of NHS S Assure and its role.

10. An Interim Review Service was established within NSS and operated until NHS S Assure became operational in June 2021. The DL letter let the Health Boards know that NHS S Assure would be going live from June 2021. It also confirmed that NHS S Assure would comprise of a number of functions that would help ensure reduced risk in the healthcare-built environment. The letter explained that NHS S Assure would be accountable to SG and be hosted by NSS. It further explained that it had been co-designed with Health Boards and other stakeholders. The programme board for the delivery of this new service consisted of a large number of stakeholders, including Health Boards and SG, who are listed in the Target Operating Model ("TOM") (**A32341688 – Target Operating Model document for the Centre of Excellence – Bundle 9, Page 4).** The NHS S Assure role would encompass the lifecycle of a build from Initial Agreement ("IA") to final decommissioning of a building, when it would no longer be viable for service delivery.

11. NHS S Assure no longer officially uses the term 'HFS'. However, some of its services keep that as a sub-heading, in order to allow Health Boards to recognise historic service delivery and to incorporate into new terminology of NHS S Assure. Our branding will be recognised in its totality over time, however, for a period, NHS S Assure will also continue to use the names HFS and ARHAI in conjunction with NHS S Assure.

NHS S Assure Staffing and Structure

12. There are approximately 300 staff within NHS S Assure. They work within a number of specialised areas, made up of, but not limited to, highly skilled and experienced engineers, nurses, architects, healthcare scientists, facilities management professionals and capital planners. There are approximately 60 clinically qualified staff, comprising healthcare scientists, nurse consultants and

infection prevention and control ("IPC") nurses. There are also approximately 115 technical experts such as engineers, property capital planners, architects and sustainability specialists. NHS S Assure also employs 120 staff working within hard facilities management (capital infrastructure) and soft facilities management (laundry, cleaning, catering etc) and approximately 25 staff who are involved in areas such as decontamination, the mammography fleet and oxygen services. NHS S Assure supports the planning of Health Board decontamination services and commissions the national home oxygen service for patients. Its medical physics service supports the Scottish Breast Screening Programme with safety advice and NHS S Assure is also leading on the 'Once for Scotland' programme for the continued delivery of these services.

13. To assist in understanding the structure of NHS S Assure I have provided the Inquiry with an organisational chart **(A44601504 – NHS Scotland Assure Directorate Org Chart V3 Pack number 3 – Bundle 13, Vol. 3, Page 705)**. This Chart can be used to understand the structure within NHS S Assure. As stated, NHS S Assure is broken down into a number of departments, Property and Capital Planning, Sustainability, FM Services, Research and Engineering, Assure Programme Team, ARHAI. Each of the areas of delivery have a management structure, the senior members of whom form the Directorate Management Team.

Workforce Development

14. NHS S Assure has a diverse workforce in the healthcare-built environment, with many experts in their fields. In partnership with NHS Education for Scotland ("NES"), it provides opportunities for staff to develop their interdisciplinary awareness and knowledge. This supports an integrated workforce, with the knowledge and skills needed to reduce risk and improve safety and quality in the healthcare-built environment.

15. Access to other professions, for example lawyers and procurement professionals, is available through NSS, as it has both the Central Legal Office for NHS Scotland and NHS Scotland Procurement directorates.

Guidance

16. NHS S Assure produces guidance, policies and helps support intelligence and research. It also produces guidance in the form of Scottish Healthcare Technical Memoranda ("SHTM") and manuals to support operational delivery across a wide range of areas, including Infection Prevention Control, Engineering, FM Services and Property and Capital Planning. There is a rolling programme for updating guidance and NHS S Assure is currently consolidating and reviewing the production of all guidance it has produced. NHS S Assure is also currently exploring options of working with the devolved nations around healthcare-built guidance.

17. All divisions of NHS S Assure produce, review and amend guidance and policies in the way that HFS did previously. By way of example, NHS S Assure ARHAI produces the National Infection Prevention Control Manual ("NIPCM") that Health Boards adhere to when reporting infection outbreaks, and FM Services produces the NHS cleaning manual which is used by Health and Social Care providers.

    Within NHS S Assure we have a remit to develop and update policies and guidance to ensure best practice is reflected in them. NHS S Assure is currently working collaboratively with the other devolved nations around updating guidance.

NHS S Assure Detailed Structure - Property and Capital Planning

18. The NHS S Assure Property Capital Planning division provides expert services covering the full range of property and capital planning activity. For capital build

projects it provides a range of construction and professional services frameworks, an advisory service, a design assessment service called the NHS Scotland Design Assessment Process ("NDAP") and an equipping service.

19. The Digital Estate and Asset Management team assists Health Boards to understand the condition of their existing estate. It provides a range of systems and processes, advice and guidance and national estate survey programmes.

20. It also provides a response service to significant building failure events such as Reinforced Autoclaved Aerated Concrete ("RAAC"), where NHS S Assure commissioned a national survey of all healthcare buildings in NHS Scotland's acute estate, to determine if RAAC was present and if any urgent remedial action was required.

21. NHS S Assure supports Health Boards with operational Public Private Partnership ("PPP") and Non-Profit Distribution ("NPD") Health Care Buildings and Hub contracts. This service improves quality, reduces risk, encourages shared learning and provides a consistent best practice approach to property and capital planning.

22. As stated above, NHS S Assure includes design assessment, which falls under NDAP. The NDAP process is managed by the Property and Capital Planning team within NHS S Assure. The NDAP process is mandated and has been an integral part of the SCIM since the Chief Executive Letter ("CEL") issued in July 2010 (**A34253738 – CEL 27 2010 – Letter from the Deputy Director of the Capital Planning and Asset Management Division to Chief Executives dated 20 July 2010, 'Provision of Single Room Accommodation and Bed Spacing' – Bundle 4, Page 144**). The role of NHS S Assure is to provide support to Health Boards. Health Boards work with a private Principal Supply Chain Partner ("PSCP"), who may be appointed through the Frameworks 3 procurement process. The PSCP will be the Health Boards' primary construction partner, usually from Outline Business Case ("OBC") onwards.

The PSCP will often subcontract in a design team to work with them as part of the contract, as they may not have those skills inhouse. NHS S Assure will complete a number of workshops with the Health Board and the PSCP and give feedback to the Health Board on the proposed designs. This approach is mandated for Health Boards.

23. Healthcare built design and construction must do what it can to ensure that the environment provides a positive experience for patients. At the same time, NHS Scotland also must ensure that it is compliant with the current guidelines. When Health Boards are developing plans at OBC and Full Business Case ("FBC"), all Health Boards and their programme delivery PSCP will take into account the patient journey and experience as they travel through the building to receive treatment. As stated, the Health Board and PSCP and NHS S Assure will have a number of workshops where they will work through those processes. All partners will consider areas such as "Is there enough light coming in?", "Do we have enough access to open space?" and "What type of energy consumption will be required". These issues will normally be picked up at IA which is the first stage of a business case development PSCP and OBC stages when NDAP and Key Stage Assurance Review ("KSAR") assessment will take place.
    The KSAR process will be described in detail later in this statement. These stages allow time to work through the clinical strategic model of care that has been developed by the clinicians within the Health Board when it comes to considering issues surrounding sustainability.

24. Also included in Property and Capital planning is the Architecture and Design team and the National Climate Change and Sustainability Team.

Sustainability

25. A new department within Property and Capital Planning is the National Climate Change and Sustainability Team. This is an entirely new team that has been

recruited over the last twelve months, with funding from SG, to allow NHS S Assure to support Health Boards with climate change and the actions that are required to deliver the NHS Scotland Climate Emergency and Sustainability Strategy 2022-2026, and to become net zero organisations by 2040.

26. I have been asked by the Inquiry if there is a conflict between (a) NHS S Assure's remit to reduce the risk to patients and promote safety in health builds; and (b) sustainability. Sustainability obviously impacts on the design process and the type of environment that NHS Scotland would want for patients. As part of the NDAP the design phase of a build will take into account sustainability and energy requirements, as well as access to the outside environment and daylight. Sustainability and Capital Planning do have synergies; therefore the Sustainability Team require strong links to the team responsible for NDAP and are situated in the same division of Property and Capital Planning.

Facilities Management Services ("FM Services")

27. FM Services incorporates a number of different types of facilities services (both hard and soft). Within FM Services it is the medical physics department that supports the national mammography provision. NHS S Assure holds the mammography fleet, and the medical physics staff within mammography services validate and maintain the mobile breast screening units to ensure they are fit for purpose. NHS S Assure also has responsibility for the NHS Scotland fleet of 12 mobile mammography vans. It has recently taken over the maintenance and contracts for fleet vehicles.

28. NHS S Assure is responsible for commissioning and maintaining home oxygen services to patients at home, this service having become particularly important during COVID, when demand for home oxygen increased.

29. NHS S Assure also supports NHS Scotland's several decontamination units across the country, which are used for the cleaning of surgical instruments, making sure that they are compliant with legislation and able to deliver timely, fit for purpose, services to the whole of NHS Scotland. NHS S Assure has a number of decontamination authorising engineers who support that process.

30. FM Services maintains NHS S Assure's own estate and maintains and manages the leasing of NSS occupied estate. Some of the buildings we use are shared with other Health Boards. By way of example, Scottish National Blood Transfusion Service ("SNBTS") within NSS has some occupancy in NHS Grampian estate, and NSS occupies a leased building in Gyle Square in Edinburgh. NHS S Assure also provides soft facilities management services, such as catering, portering and domestic services, both to NSS directly and to other Health Boards.

31. NSS's Internal Sustainability Team sits within FM Services and is responsible for delivery against the Climate Change and sustainability targets set by NHS Scotland.

32. NHS S Assure has significant "business as usual" work that it continues to undertake for Health Boards around a new building provision, after handover. Part of its role involves linking in with the Health Board's own Facilities Management Team. NHS S Assure also supports catering, domestic cleaning, cleaning schedule standards and waste management.

Research & Engineering

33. NHS S Assure has a Research and Engineering department, with a programme of work with a research partner, Edinburgh Napier University, which is used to facilitate research into topics that are relevant to the healthcare-built environment. Sometimes NHS S Assure may be approached by a university who will invite it to partner and support it through its research.

NHS S Assure will sponsor, via Edinburgh Napier University, funding opportunities if the applicants to the fund are researching key risk areas within a healthcare build, including water, ventilation, drainage, electrical distribution, fire and medical gases or any other aspect that would affect the healthcare-built environment. NHS S Assure will support that research with funding and be able to use any available expertise at Edinburgh Napier University. NHS S Assure has a number of healthcare scientists who undertake literature reviews to support its research and guidance programme of work, leading to publication of research articles in the relevant journals, such as the Health Environments Research & Design Journal ("HERD").

34. The guidance and advice that NHS S Assure produces helps ensure that patients, their carer's and those delivering healthcare are in an environment which is safe, effective and person centred. Research plays a pivotal part in supporting this.

    It ensures that guidance and advice are based on best practice and best evidence. NHS S Assure supports Health Boards to identify, monitor and manage their healthcare environmental risks. Its data and intelligence collection, through national and international research, supports NHS Scotland's informed decision making and risk management.

35. NHS S Assure has an Engineering division which undertakes KSARs. KSARs were developed to allow Health Boards to monitor compliance with guidance; to support Health Boards to demonstrate assurance at key stages within the full lifecycle of an acute build, from procurement through to construction, building operations, maintenance and decommissioning, providing assurance to Health Boards and the SG through collaborative working between construction professionals and clinicians, to share findings relating to the building and any learnings across the systems with key stakeholders and to provide self-assurance tools for use at regional/local levels. KSARS are now embedded in NHS S Assure service delivery at key stages of a build cycle.

36. NHS S Assure has a programme of learning network events with presentation sessions that it utilises for education and learning opportunities for all Health Boards. The people involved in that network will present in an online learning event to an audience from the Health Boards on topics such as:

    - Workforce (March 2022)
    - Assurance Service: Initial Agreement Lessons Learned and Outline Business Case Look Ahead (What I wish I'd known - lessons learned from KSAR Initial Agreement projects) (July 2022)
    - IPC Network Workshop Event: Project Stage by Stage Overview (Sept 2022)
    - Assurance Service: OBC Lessons Learned and FBC Look Ahead (Oct 2022)
    - Research Service: An introduction to research within NHS S Assure: opportunities, networks and ways to break down barriers (Oct 2022, March 2023)
    - The NHS S Assure Key Stage Assurance Review from the Health Board's Perspective (April 2023)
    - The NHS Scotland Design Assessment Process (NDAP) - Lessons learned through a decade of use

37. NHS S Assure runs sessions across a number of topics relevant to the healthcare-built environment. It aims to be responsive to Health Board requests, so the formation of the learning network sessions are dependent on Health Boards' requirements at a particular moment in time.

38. NHS S Assure provides proactive and reactive engineering services, to assist Health Boards and their build partners or PSCPs to gain assurance that their engineering services are safe for patients and staff. The goal is to support Health Boards to reduce risks in the healthcare-built environment. The work is underpinned by industry-leading guidance, robust processes, and procedures.

I believe that prior to 2021, that HFS had two engineers. NHS S Assure now employs sixteen engineers and is continuing to recruit more to fulfil the requirements of our SG agreed work plans.

39. NHS S Assure has a number of principal engineers and senior engineers within its engineering department. They are subject matter experts for the whole of NHS Scotland. It has been quite difficult to fill those posts because NHS S Assure requires individuals who have specific expert skill levels and have experience in the healthcare-built sector. NHS S Assure has dedicated and skilled staff, but it has taken two years to recruit into those posts and NHS S Assure does still have some posts vacant. It has been difficult to compete with the private sector on salary and other remuneration.

40. The demographic of the staff is mature, due to the need to have the experience required to fulfil their subject matter expertise.

41. NHS S Assure is currently working with NES and Health Boards to produce a workforce and education plan to mitigate the succession issue for all organisations.

Assure Programme Team

42. NHS S Assure has a programme lead and team for response, performance and communications. This team looks at how NHS S Assure supports its other functions in discharging its duties. This service provides a project management function which supports subject matter experts, such as engineers or architects in, for example, the KSAR programme plans. The programme managers organise liaison and exchange of information with the Health Boards throughout a KSAR or NDAP process. That support has allowed our subject matter experts to be able to concentrate on performing their specific professional competencies, acting for example as a surveyor, consultant nurse or engineer.

ARHAI Scotland ("ARHAI")

43. The integration of ARHAI into NHS S Assure was instrumental in the NHS Scotland Assure service aim in the TOM, which is to underpin a transformation in the approach to minimising risk in our healthcare buildings and environments, protecting patients from the risk of infection and supporting better outcomes for patients in Scotland. NHS S Assure would not be able to provide a comprehensive, holistic approach to risk in the healthcare-built environment without the skills of ARHAI Scotland colleagues. Within that service is a Service Manager, and a Lead Nurse Consultant, who provides expert intelligence, support, advice, evidence-based guidance, clinical assurance and clinical leadership to local and national government, health and care professionals, the public and other national bodies. As the national organisation responsible for IPC and Anti-Microbial Resistance ("AMR"), ARHAI liaises with other parts of the UK and international counterparts in the delivery and development of national priority programmes.

44. The fact that ARHAI now sits within NHS S Assure is an enormous advantage for the Health Boards in terms of advocating the clinical delivery requirements of the healthcare-built environment to all parties involved. The input of clinicians very early in the build process can ensure that the organisational clinical strategy marries with the environmental aspirations and has the potential to reduce costly and time-consuming rectification at a later date.

45. NHS S Assure has a number of different professions represented within ARHAI. Such professions include Microbiologists, Nurse Consultants and Healthcare Scientists, who support literature reviews and review guidance around ongoing issues identified by the Health Boards, such as COVID. For example, ARHAI was instrumental in producing data around infection rates, both in hospital and community settings, throughout the COVID pandemic. It is still producing and disseminating COVID information on a weekly basis.

46. ARHAI also helps support Health Boards when they have an infection outbreak, in compliance with the national Healthcare Infection Incident Assessment Tool ("HIIAT") incident and outbreak reporting criteria in the NIPCM. Following an outbreak, a Health Board will submit an Outbreak Reporting Tool ("ORT") form to ARHAI. The ORT completed by the Health Board will triage the severity of the outbreak and what actions need to be taken next. ARHAI Scotland will allocate a clinical nurse to liaise with the Health Board and, if necessary, be part of the action process with the Health Board. The Health Board will pull together a short life working group that will progress the necessary actions required to mitigate the risks identified. ARHAI works with the Health Board's own IPC nurses and doctors to categorise the outbreak as per the NIPCM guidance. As part of that process, NHS S Assure may undertake epidemiological studies and check whether or not the DNA sequencing is the same as a previous outbreak, which may help identify a source. ARHAI will also consider whether it is the same organisms that have contributed to more than one infection. It will also support the Health Board in considering how the outbreak might have occurred and where it may have originated, including the possibility that the environment has contributed to the infection risk.

47. Staff within ARHAI support the Health Board until there is a resolution of the issue. Sometimes that process might also involve NHS S Assure engineers. An example of this crossover would be when there is an IPC incident following a pipe bursting and affecting a patient area. Engineers would consider what would be the best replacement for the water pipes, to ensure compliance with current guidance, and ARHAI clinicians would advise on the IPC impact. This example shows why it is beneficial for NHS S Assure to be able to make a multidisciplinary response to incidents. Another example of skills crossover is the KSAR process. That process looks at engineering as well as IPC issues. It looks at clinical as well as functional issues.

The ties between Property Capital Planning, Engineering and ARHAI during the planning phases of a development are beneficial from the clinical perspective as they link the environment with clinical service delivery.

48. This multidisciplinary approach allows NHS S Assure to consider all aspects of risk within the built environment and relate that back to patient experience and outcomes. NHS S Assure would not be able to provide a comprehensive holistic approach to risk in the healthcare-built environment without the skills brought to the fore by ARHAI colleagues.

Stakeholder Groups and NHS Assure

49. Stakeholder groups are referred to in 'The National Strategic Facilities Group" ("NSFG") (**A43407353 – RSFG information paper March 23 – Bundle 13, Vol. 3, Page 718**). There are two governance groups that sit above the NSFG. Firstly, the Chief Executives Group, which comprises the Chief Executives of all the Health Boards and, secondly, the National Infrastructure Board ("NIB"). The NIB is a Scottish Government Board that has remit around the healthcare-built environment. It comprises very senior leaders from SG and the Health Boards. NHS S Assure can report any issues that it has, either to the Chief Executives Group or to NIB. I also sit on the NIB.

50. NHS S Assure holds a weekly informal meeting with the SG around national infrastructure. This meeting is used to discuss current issues and share best practice. For example, this year the Health Boards have been asked to look at a whole system plan for capital investment and service delivery rather than just an internal capital plan for each Health Board.

51. The terms of reference for the NSFG can be seen in this document (**A44601013 – NSFG-2023-01-04 National Strategic Facilities Group TOR Pack number 7 – Bundle 13, Vol. 3, Page 724**). NSFG is a key collaborative

NHS Scotland stakeholder group providing support, professional advice and leadership to NHS Boards and SGHD on issues concerning estates, facilities and capital planning. I chair this Group, whose aim is to develop a modern NHS estate and a set of health care facilities and services of the highest quality for both patients and staff.

52. The NSFG oversees a number of sub-groups made up of subject matter experts from the Health Boards. These subgroups are usually chaired by either a Director of Estates or a Director of Infrastructure from one of the Health Boards. Their task is to understand, document and mitigate the risks and issues that are predominant in the healthcare-built environment within NHS Scotland. The sub-groups are as follows:

    a. **NHSS Environmental Sustainability Group ("NESG")** – This group is responsible for Waste Management, Energy, Environmental Management, and Sustainable Transport.
    b. **Scottish Engineering Technology Advisory Group ("SETAG")** – This group is responsible for National Water systems, the Statutory Compliance Audit and Risk Tool and National Electrical Systems. It also has an oversight role towards the National Medical Gas Advisory Group and the National Heating and Ventilation Advisory Group.
    c. **Scottish Facilities Management Advisory Group ("SFMAG")** – This group is responsible for overseeing the following groups:- Domestic Services Expert Group, Catering Services Expert Group, Security / Portering Expert Group, Linen Services Expert Group, Transport / Travel Planning Services Group and Reusable Medical Devices Decontamination Operational Group.

    d. **Scottish Property Advisory Group ("SPAG")** – This group is responsible for overseeing the following boards and groups;- Asset Management and Capital Planning Programme Board, Estates and Asset Management Group User Group ("EAMG"), Capital Planning

System (“CPS”) User Group, Frameworks Scotland Programme Board, PSCP Steering Group, Digital Estate Group, Property Transactions Group, Fire Safety Advisory Group, PPP Practitioners Group and NHS Scotland National Primary Care Premises Group.

53. These groups support some of the national templates that all Health Boards must fill in, such as the National Sustainability Assessment Tool return. All Boards are required to submit this return, which details their progress against sustainability targets. Health Boards are then assessed nationally by NHS S Assure’s National Climate Change and Sustainability Team and the achieved level is reported back to the Health Boards for publication. The subgroups are national operational groups that produce actions and monitor programmes of work, such as the decontamination programme progress. The subgroups can share learning, for example taking good practices from within one of the Health Boards and implementing said practice in other Health Boards. The groups also identify the high-level risks that NHS Scotland may have within a specific technical area.

54. Each of the subgroups has a membership from within the NHS Scotland Health Boards. This membership has broadly superseded the need for regional work. Group members from Health Boards take information and best practice back to their own organisations for action. If necessary, subgroups may produce action plans and monitor them.

55. This governance structure can be utilised by the Health Boards to collaboratively raise risks to both Scottish Government and within their own governance frameworks, including escalation to Board Chief Executives.

    As NSFG becomes a more risk-based meeting this will support the collective escalation of risks and issues.

56. By jointly assessing the risks within subgroups' technical areas, each of the subgroups has identified and brought to the NSFG their two highest risks. NSFG has now tasked subgroups to hold their own risk workshops for reporting in January 2024. This collaborative approach to risk will enable the facilitation of a NHS Scotland-wide solution and reduce the duplication of effort in the Health Boards to solve what may be a collective issue.

Relationship between NHS S Assure and the Scottish Government Health Directorate ("SGHD")

57. NHS S Assure is accountable to SG through NSS for supporting the Health Boards to provide assurance that their healthcare-built environments are fit for purpose, cost-effective and capable of delivering sustainable services over the long term. The Directorate of Health Finance and Chief Nursing Officer Directorate are NHS S Assure sponsors. NHS S Assure is involved in formal governance meetings with SG relating to healthcare-built environments and ARHAI. As Director of NHS S Assure, I have a seat on the NIB. NHS S Assure also has a seat on the SCIG, as discussed above. NHS S Assure meet SG informally on a weekly basis, to talk about any pressing issues that may be ongoing. There is a very good relationship between members of the SG and NHS S Assure and open communication channels. SG understands that NHS S Assure is evolving and that its current TOM may be reviewed in the future. That would be the same with every new type of delivery mechanism.

58. NHS S Assure is collaborating with the SG's sustainability team. NHS S Assure and SG are looking at joint work plans so that we do not duplicate pieces of sustainability work. We are also looking at delivering against agreed workplans delegated from the National NHS Sustainability Board.
59. NHS S Assure worked extremely closely with the SG around the Elective National Treatment Centres, which provide extra capacity for planned inpatient care, day case treatment and diagnostic services.

60. NHS S Assure has good formal and informal mechanisms surrounding communication with the Scottish Government. NHS S Assure issues reports to the Health Boards at points in the programme life cycle of a build which also can be tabled at the National Infrastructure Board and SCIG.

The relationship between NHS S Assure and Scottish Capital Investment Group ("SCIG")

61. NHS S Assure sits alongside the SCIG. At stages during the KSAR and NDAP journey such as IA, OBC and FBC, a Health Board is required to submit a report to SCIG. On receipt of the report, SCIG will consider it and decide whether that project is approved to move on to the next stage. That is not a guarantee of funding. An OBC or a FBC that goes through SCIG may be turned down if certain aspects need to be considered further. It may be that, following a KSAR or NDAP, NHS S Assure has given the project an 'unsupported status', as defined later on in this statement, with an action plan. SCIG may wish to see that action plan completed before it agrees to the project moving to the next stage, dependent on the KSAR being undertaken.

Health Protection Scotland ("HPS") and NHS S Assure

62. ARHAI used to be part of HPS when HPS was a directorate in its own right within NSS. HPS became part of Public Health Scotland ("PHS") on its inception. PHS itself arose from a reorganisation of public health in Scotland, outlined in the 2015 Review of Public Health, which was further developed in the 2016 Health and Social Care Delivery Plan. PHS came into existence on 7 December 2019 under the Public Health Scotland Order 2019.
PHS functions as Scotland's leading national agency for improving and protecting the health and well-being of all of Scotland's people.

63. It was felt by NSS and SG that, because ARHAI provides support around IPC issues that affect the healthcare-built environment, it would sit better within

NHS S Assure rather than within PHS, and so it remained in NSS (and then within NHS S Assure). NHS S Assure also felt that a clinical aspect to the healthcare-built environment was needed. NHS S Assure could have gone down the route that built environment would have been assessed on an entirely technical basis, but it was felt that it was important to include IPC as well and this was confirmed in the TOM. Involving IPC gives a more holistic and rounded view when NHS S Assure is looking at a new build environment.

64. ARHAI continues to sit within NSS and is an integral part of the assurance process for the built environment, and HPS has transferred to PHS. There are obviously still very close links between ARHAI Scotland and the rest of PHS. However, it is integral to the assurance processes for the healthcare built environment that ARHAI sits within NSS and NHS S Assure. NHS S Assure would not be able to fulfil its aims to reduce the risk in healthcare buildings and environments and protect patients from the risk of infection if ARHAI was not an integral part of NHS S Assure.

65. PHS is not wholly involved in healthcare. It is responsible for promoting health and wellbeing, improving health and extending life expectancy. Whereas NHS S Assure looks predominantly at the healthcare-built environment and any inherent IPC risks. PHS still maintains links with ARHAI, but PHS does not input into healthcare-built environment work.

Scottish Futures Trust ("SFT") and NHS S Assure

66. NHS S Assure does not have a relationship with the SFT with regard to ongoing acute builds funded by the Capital Allocation from SG. My understanding is that the RHCYP/DCN was a NPD plan build, which is a type of PPP build. As such, SFT was involved with that project. I have no knowledge of the level of relationship between HFS and SFT prior to my appointment in September 2021.

67. SFT does currently support the Scotland-wide hub Programme, which is based on a partnership between the public and private sectors to deliver new community facilities e.g., Health Centres.

68. NHS S Assure does have a working relationship with SFT through its Property Capital Planning, PPP specialist support team. If a build is not funded through SG capital allocation, then the NHS S Assure PPP team will support Health Boards in managing the contracts for PPP buildings. This will include end of contract negotiations and the options available to Health Boards at the end of a contract.

69. SFT also sits on SCIG with NHS S Assure. NHS S Assure is the professional construction or property representative on SCIG. As such, it shares data with SFT from NHS S Assure's Property and Capital Planning team around the PPP buildings that they have been involved with. I would say that NHS S Assure has a mutual stakeholder relationship with SFT.

Issues of Responsibility / Regulation

70. NHS S Assure is not a regulator. Health Improvement Scotland is the regulator for NHS Scotland. NHS S Assure exists as a mechanism to support Health Boards to provide the best healthcare-built environment.

    NHS S Assure endeavours to ensure the built environment process is right and that Health Boards understand their role and responsibilities in the healthcare-built environment. I have given a number of learning network presentations to Health Board members on the roles and responsibility of the Health Boards and the process that we will go through together around a new project. They have welcomed the clarity and collaborative approach NHS S Assure advocate throughout the process.

71. One of the first things that I did after appointment was run a number of learning network sessions with the Executives and the Non-Executives from NHS Scotland Health Boards. These sessions were well attended. I utilised the opportunity to inform the senior leaders about the role of NHS S Assure. The Health Boards required clarification on where the responsibility lay for any risks identified during the build process. It was explained that NHS S Assure is not there to take on responsibility for a new build and the Health Board's responsibilities remained the same as before the inception of NHS S Assure. Whether a Health Board was embarking on a new build or a significant refurbishment programme, the risks and responsibility would always lie with the Health Board.

72. At every stage, the Health Board has responsibility for the risks identified. NHS S Assure is often asked to sit within the governance structure for projects, but only in an advisory capacity.

73. Ultimately, it is the Health Boards' responsibility to identify risks, mitigate, manage and report on the risks with their PSCP. NHS S Assure's role is to work with the Health Boards, and through them their PSCP, so that they can fully understand their roles and responsibilities in any healthcare build.

74. As expected with a new service incorporating existing provision, NHS S Assure governance has been reviewed. Some reorganisation was required when HFS was integrated into NHS S Assure, including reporting of some functions within the framework that were previously in place. NHS S Assure now has a Senior Management meeting (Directorate Management Team DMT), where I and my direct reports will monitor performance, the strategic and operational aims of NHS S Assure and produce business plans for NHS S Assure's current and future strategic direction. In addition, there is now an Assure Management Group ("AMG") which consists of Heads of Service who manage service delivery and can escalate as necessary into the DMT.

75. Both internally and externally a risk-based approach has been adopted to identify issues in the healthcare-built environment on a “once for NHS Scotland” basis. NHS S Assure has led on this process for the Health Boards and produced a governance framework surrounding that. This consists of the NSFG, which I chair. This group has a membership from the Health Boards in NHS Scotland, including non-territorial Health Boards and Scottish Government. Underneath this national group there are a number of subgroups which are chaired by Health Board members and have representation from all of the Health Boards as discussed above.

76. The first risk-based workshop involving all the Health Boards was held in 2023. Concurrent collaborative identification of a number of key risks that affect all Health Boards led to them being collated into a risk log. The workshop was utilised to discuss common problems and issues that all the Health Boards have faced in five areas. Those areas are facilities management, property capital planning, engineering, environment, and other areas. A risk-based approach was utilised and the subgroups were tasked with identifying their risks for escalation to NSFG in January 2024. These identified issues and risks will be mitigated, monitored, and discussed with SG, to highlight and inform SG of the key issues pertinent to the Health Boards. This is turn may inform policy decisions and capital expenditure from SG.

Role of NHS Assure in large scale health build projects

77. I meet regularly with Health Boards, both formally and informally. It is important to me that I develop relationships with Health Boards, so that when they are considering a new build or significant refurbishment, they know they can contact me, or one of my subject matter experts, to have that all-important initial discussion. I also encourage Health Boards to engage clinicians early in the process, to understand the function of the healthcare-built environment and its links into the Health Board’s clinical strategy. A Health Board that engages

early with its clinical staff, and seeks their input, ensures that build aspirations link with clinical strategy and optimal utilisation of the environment.

78. For example, my senior team was recently invited to a Health Board to talk with the Executives from the Health Board about the process for a new build, should it get the capital funding for one. NHS S Assure took them through what would be expected from them and the touch points that they would need to have with us during a new build programme. It was beneficial for them to learn what our role is and how NHS S Assure would be there to support them through the required programme of work.

79. NHS S Assure has the formal NDAP and KSAR processes, but NHS S Assure also supports Health Boards with some of their procurement processes or equipping processes. NHS S Assure may be involved in procurement through Frameworks Scotland 3.

80. Framework Scotland 3 is a procurement programme which reflects a strategic and collaborative partnering approach to the procurement, development, design and construction of publicly funded construction and maintenance works, complimenting other procurement initiatives for the delivery of health, social care and other facilities in Scotland.

    This national Framework is an agreement with five PSCPs and one reserve PSCP selected via a public procurement tender process and is in place until 2025. An NHS health or social care customer may select a PSCP for a project they wish to undertake without having to go through a full procurement themselves.

81. Where procurement is through Frameworks Scotland 3, the build process would follow the project procurement journey and KSAR process interface diagram (**A43406829 – Project Procurement Journey and KSAR Process Interface Diagram – Bundle 9, Page 90**) known as the “tube map” process,

around the NDAP and KSAR processes, and then NHS Scotland Assure's equipping team would assist the Health Boards with equipping the build. NHS S Assure would support the Health Board around procurement for the fixtures and fittings required to deliver healthcare in a newly built environment. The equipping team would support standardisation of rooms and what equipment would be needed. Repeatable rooms, standardised room configuration and standard designs that will meet requirements of the function of that space, are being used to reduce design costs, embed quality and benefit patient care. Standardisation is one of the areas NHS S Assure has engaged in from a research perspective and has developed repeatable rooms for use, linking in with national and international research.

NHS Scotland Design Assessment Process, Key Stage Assurance Review ("KSAR") and NDAP

82. NHS S Assure operates to support Health Boards in an advisory, assurance and compliance capacity, and will work with them throughout the KSAR approval of reports and action plans. At the end of each KSAR, the KSAR team draft an independent assurance report to be shared with the Health Board. The Health Board then reviews the draft report and feedback to NHS Assure and, if needed, produces an action plan to address any findings.
83. The context of involvement of NHS S Assure in any new build is defined in the "tube map" (**A43406829 – Project Procurement Journey and KSAR Process Interface Diagram – Bundle 9, Page 90**), which shows how and what areas of NHS S Assure are involved in the healthcare-built environment form IA onwards.

84. Any new healthcare-built project is discussed initially and goes through strategic assessment, in order to be presented by the Health Board to NIB and SCIG, for agreement and capital funding. The project is then presented as an IA by the Health Board and undergoes a KSAR. At this stage it would also

undergo a NDAP. The results of both KSAR and NDAP are reported through SCIG.

85. A further KSAR and NDAP are undertaken at the OBC stage, which are developed with the Health Board. Both processes aim to identify risk and allow the Health Board to produce an action plan for those risks. This is done through a series of subject defined workshops, to allow the Health Board to understand its obligations and the regulations and legislation they would be subject to. It also gives them an understanding of the format of the evidence that it must provide to satisfy the asks within the KSAR workbooks.

86. NHS S Assure engages with the Health Board in understanding the compliance needed and the risks it may face throughout the process. It is the responsibility of the Health Board to produce, monitor and complete the tasks within the concurrent action plan, to reduce the identified risks and / or issues documented as they go through the workbook process defined below.

87. The Health Boards' assurance process, which involves use of KSAR, NDAP and other mechanisms, is a major part of the service that NHS S Assure provides. In particular, the KSAR process further augments the support that has always been available to Health Boards from the former HFS service, which now forms part of NHS S Assure.

88. The assurance arm of NHS S Assure incorporates all of the skills within Engineering and Assurance, as well as input from Property and Capital Planning ("PCP"), FM Services and ARHAI, as required. Everybody within Engineering and Assurance services is involved in the KSAR process. At the start of a programme of healthcare-built environment work for a Health Board a team will be pulled together by NHS S Assure, consisting of Engineering and ARHAI workforce plus FM Services and PCP staff, if required. This Assurance team function will be mobilised for each build project NHS S Assure is involved

in and may differ in makeup depending on the requirements of the project and the stage of the build programme when NHS S Assure becomes involved.

NDAP process

89. The NDAP process has been an integral part of the SCIM since a CEL issued in July 2010 (**A34253738 – CEL 27 2010 – Letter from the Deputy Director of the Capital Planning and Asset Management Division to Chief Executives dated 20 July 2010, 'Provision of Single Room Accommodation and Bed Spacing' – Bundle 4, Page 144**). NDAP applies only to projects that are to be considered by Scottish Government via SCIG, although it is recommended in guidance for all new build projects. It is intended, and expected, that Health Boards will develop design standards and utilise the assessment methodologies described on all development projects through their PSCP. Early and regular dialogue between the Health Board PSCP and NHS S Assure at key project decision points ensures that aim is achieved within an appropriate programme for each project.

90. NDAP was introduced in 2010 as a means of helping Boards describe a clear path between the business objectives for a project and the necessary clinical qualities of the building development. Project design statements (called SCIM Design Statements) are developed by Health Boards pre formal IA and incorporated into the project's governance. The NDAP process then provides assistance in checking the project is on target to meet these objectives and national standards for healthcare design and sustainability, so providing comfort to decision-makers at key points about specific design standards.

91. The NDAP is carried out by the Health Board and reviewed by the PCP Team within NHS S Assure. It is an intrinsic part of the programme of a new build or refurbishment. NHS S Assure has instigated a review of the current NDAP process for capital projects in Scotland to ensure it remains relevant. The review is being undertaken to determine whether any changes or

improvements can be made. The review is being led by NHS S Assure's PCP team. There has been a working / steering group established to take this work forward.

92. The design quality and service outcomes are considered and incorporated into the collaborative NHS S Assure NDAP workshop process with Health Boards. This is the point at which clinicians should be engaged around service provision into the new design and questions answered, such as - how are clinical services to be delivered and what type of patients will be treated in that environment. All of those considerations have an impact on the design process and have been part of the SCIM since 2010. Not every new build may have used the NDAP process prior to 2010. However, it is now mandated for all investments requiring SG approval through SCIG, as part of the healthcare build process, from 2010 onwards. Subject to the transitional provisions that meant there was no NDAP in the case of RYCHP/DCN.

93. Generally, the NDAP process finishes at the FBC stage. The KSAR process continues beyond that. Beyond the FBC stage there should be no changes to the design because it should be "locked in". That said, NHS S Assure does understand that sometimes clinical guidance might change around patient treatment, and the environment in which they require to be treated. In those circumstances the PCP specialists involved in the NDAP process might provide additional support through into the KSAR process.

KSAR process

94. The NHS S Assure service outcomes are there to support NHS Scotland and the Health Boards. In particular they exist to :-

    a. Support Health Boards to increase patient safety and public confidence

b. Support Health Boards to reduce costs associated with incidents and retrofits
c. Reduce avoidable delays in build timescales
d. Increase assurance around management of risks within the healthcare-built environment
e. Develop a common language across the Built Environment Professionals, ARHAI and Clinicians

95. KSARs cover the following installations as they relate to the healthcare-built environment, with infection prevention and control as a consideration for each:

a. Water and drainage
b. Ventilation
c. Electrical
d. Medical Gases
e. Fire

96. However, if any further issues are raised by either the PSCP or the Health Board with the KSAR team, that the team considers need to be reviewed, then it will fully incorporate those issues into the reporting process. The scope of the NHS S Assure service and KSARs will be reviewed and refined in line with lessons learned from completed KSARs.

97. NHS S Assure is looking at refining all of its processes, to make sure that the most relevant, skilled, qualified people respond to any requests by Health Boards. During NDAP or KSAR the Health Board will have a NHS S Assure nominated lead on that project to whom it can direct any queries. Holistic access to NHS S Assure will be provided via their KSAR Lead. The support required from NHS S Assure will flex with the stage of the programme and the type of KSAR being undertaken.

98. NHS S Assure does not only provide assurance in relation to engineering. It provides multidisciplinary input from a number of professions. In fact, the KSAR Lead does not need to come from Engineering, albeit NHS S Assure would always have a lead engineer on a project in which the KSAR process was in use. NHS S Assure has a number of different professionals who are involved and aligned to the KSAR process.

    Some of the healthcare-built environment projects may take many years to move from initial assessment to construction and, as such, will require a varied skill mix to ensure the build is compliant against extant standards. NHS S Assure endeavours to ensure that there is consistency of members, leads and ARHAI clinical input on the process of a build throughout its stages.

99. Regular liaison also takes place between the NHS S Assure Head of Engineering and the SCIG. NHS S Assure also prepares a regular monthly progress report for the SG that includes details of KSAR progress in individual projects.

100. The KSAR workbooks, depending on the stage of the build, detail the areas that the Health Board and their PSCP will need to present evidence against. The workbooks provide guidance on the structure of the KSAR and the areas to be addressed by the project team from the Health Board. There is a workbook for each stage in the building lifecycle, for example FBC KSAR workbooks and Construction KSAR workbooks. The workbooks include question sets for each of the project areas, with a specific set included for infection prevention and control. The question sets are designed to be indicative of the information required which may have several sources rather than prescriptive of a single source of information.

101. In some instances, a KSAR workbook submission will produce an information download of several thousand documents from a Health Board, to demonstrate compliance. Good document governance and nomenclature by the Health

Board of all those documents supports the progress through the KSAR process, as it allows the KSAR reviewers to locate the evidence quickly. The allocated KSAR team will work with the Health Board and PSCP through the technical aspects of the information accrued, to discern if the information provided will give assurance.

Quite often the Senior Responsible or Reporting Officer ("SRO") for a Health Board may not have a technical background and will welcome the collaborative and iterative approach to the review of information and subsequent formation of action plans. The Health Board SRO and I, at the senior level, will support the process.

102. NHS S Assure sets up a number of short life working groups or project groups with Health Boards and PSCPs during the KSAR process, around subject areas such as water, ventilation etc. NHS S Assure will gather information through the KSAR workbooks and review the KSAR document submission to identify gaps in documentation or information submitted, prior to working with the Health Board on any outstanding assurance requirements, such as electrical certification. If the NHS S Assure KSAR team is not assured by the evidence submitted, they may request further clarification. NHS S Assure will contact the Health Board immediately to progress clarification.

103. As this is a new process, and because healthcare-built environment projects can take many years from IA to opening, NHS S Assure has not yet conducted a KSAR process from IA right through to Handover on a single build. What NHS S Assure is seeing now within NHS Scotland is a number of Health Boards coming into this process at the point of the construction KSAR.

104. From 'lessons learned', NHS S Assure knows the best approach in future KSAR processes would be that the Health Board should have a very clear action plan before it is able to move on to the next stage KSAR. If there are a large number of actions within the previous KSAR action plan that have not

been completed or mitigated before moving onto the next stage, it will impact on NHS S Assures' ability to progress with assurance.

105. NHS S Assure has received positive feedback from the Health Boards saying that the contemporaneous KSAR action plan production has been a worthwhile process. It is an iterative way for both the Health Boards and NHS S Assure to monitor progress against risks that have been identified at each stage of the build process.

106. NHS S Assure along with Health Boards are developing joint 'lessons learned', what worked well, what NHS S Assure and Health Boards and their PSCPs could do better and what would NHS S Assure want the process and outputs to look like in the future. This approach of identifying areas for improvement or areas of non-compliance throughout the healthcare-built process, rather than letting such issues accumulate to the end of the process, and cause additional time and funding constraints, has been welcomed by all parties. This process was not in place before NHS S Assure was set up.

Streamlining Interaction with Health Boards

107. I have been considering and reviewing the governance that NHS S Assure has around projects and the requests that come into NHS S Assure since taking over the role as Director. Historically, Health Boards might contact engineering, ARHAI and PCP at the same time with the same query. Therefore, the same 'request for support' might be made to three different NHS S Assure departments, causing them each to be looking into the same matter. It was recognised that NHS S Assure needed to provide a centralised point so that it could bring together the relevant people to respond appropriately to the request. A commissioning process is currently being trialled where NHS S Assure formally and centrally records all Health Board requests, which will be reviewed internally by NHS S Assure to identify the correct mix of skills to

respond. This process has streamlined the approach to interaction with the Health Boards.

108. As asked about by the Inquiry, NHS S Assure's formal involvement in any large-scale build such as the RHCYP/DCN project would echo the tube map process explained in the previous paragraphs. NHS S Assure will be involved with an NDAP and KSAR at IA. NHS S Assure will examine the plans as they are submitted through SCIG at that stage. NHS S Assure will then be involved at the OBC and FBC stages where an NDAP and KSAR would be required. This will allow examination of the evidence and documentation submitted by the Health Board and their PSCP, the potential gaps in that documentation and risks that may have been present from that point will then be clarified. NHS S Assure will follow the tube map process and undertake KSARs at strategic moments during the build, each of these interventions will be an opportunity to examine documentation submitted around compliance with current guidance, identify and mitigate risk with the Health Board and their PSCP. Both KSAR and NDAP will be assessed in conjunction with the Health Board to identify areas of risk and to develop an action plan to mitigate those risks. I believe both NDAP and KSAR will potentially identify risk through these governance processes and will allow the Health Board to produce an action plan that would highlight and allow mitigation of that risk prior to the building opening.

109. From my own point of view, although NHS S Assure employees frequently refer to the tube map which sets out the project procurement journey, this tube map does not illustrate all of the contact that NHS S Assure has with the Health Boards and PSCPs. The KSAR lead meets very regularly with the Health Board through technical workshops and meetings during governance of the programme of work. The timeframes for this can differ but can be a weekly meeting. Health Boards are kept informed of the status of the KSAR via regular reports and ongoing discussions with Health Board Project Leads. Should any matters require further escalation there is a process for this. I set that out

below. NHS S Assure works very closely with Health Boards, so that they become aware of any emerging issues timeously.

110. NHS S Assure has a very clear governance process surrounding NDAP and KSARs, but, additionally, it also advocates a more informal type of process, where open dialogue with Health Boards is encouraged. The National Treatment Centres that opened in Fife and Highland in March and April 2023 are good examples of joint working. Those builds were nearing commissioning when the KSAR process was implemented, so NHS S Assure and the Health Board completed only commissioning and the handover KSARs processes. The NHS S Assure allocated team met with technical leads weekly, and I personally was meeting every week with the SRO and Estates Director around progress against the build schedule and any outstanding issues that would need to be completed prior to opening.

111. The Health Boards involved with NHS S Assure to date have been incredibly open about how they feel about the support that NHS S Assure has given them. This model of working has been successful and feedback from the Health Boards is overwhelmingly positive. If something is discovered during the KSAR process, then NHS S Assure look to resolve it immediately with the Health Board and PSCP.

KSAR Supported or Unsupported and Derogations

112. When NHS S Assure reviews a KSAR with a Health Board, it reviews all the information that has been submitted against the KSAR workbooks. This information is used to assess whether the healthcare-built environment meets all of the current guidance and minimises any potential risks identified. There can be thousands of pages of documents submitted for each KSAR stage in a significant build. The KSAR process itself is a significant undertaking not replicated elsewhere in the devolved nations.

113. NHS S Assure may inform a Health Board that following the KSAR process NHS S Assure is issuing an ‘unsupported status’, meaning that the KSAR has identified areas of non-compliance or risk in the built environment. The Health Board will at the same time as completing the KSAR workbook produce an action plan that has a number of key elements in it in response to any issues identified during the KSAR process. To get to ‘supported status’ the Health Board may need to demonstrate progress against these actions, and NHS S Assure and the Health Board would meet on a weekly basis to discuss the action plan and progress towards completion.

114. The joint sign off of the KSAR relates to the production of NHS S Assure’s KSAR report, which is checked for factual accuracy by the SRO and Health Board. The subsequent or parallel production of an action plan to mitigate the issues identified will then allow progression towards a supported status.

115. The issuing of Directorate Letter DL (2023) 03 (**A43494372 – Letter dated 6 February 2023 from Alan Morrison, Deputy Director of Health Infrastructure, Investment and PPE to NHS Board Chief Executives and others – Bundle 9, Page 75**) has set the conditions for Commissioning, Completion and Handover KSARs of healthcare builds. If the KSAR does not receive a ‘supported status’ from NHS S Assure, then the building will not open to patients or the public.

116. When supported status, as per DL 2023 03, has been achieved for the Commissioning and Handover KSARs, and the responsible Health Board is content for the building to open, the SRO sends a copy of the report to the Chair of SCIG for information.

117. The KSAR and NDAP process assists the Health Board to understand where they may need to implement derogations. The Health Board would then understand how the programme of derogation impacts on the built risks to patients and the building environment and how they should then report them

through their own internal governance. NHS S Assure has the tools, in the NDAP and KSAR, to be able to identify any potential areas that may cause issues and support the Health Board to produce action plans to mitigate those areas.

118. Sometimes there is a very valid reason for a derogation within a build project. Generally, I would describe a derogation in the sense of construction/operational estates as something that does not meet the requirements or recommendations outlined. Where such a derogation is identified, NHS S Assure seeks assurance that the Health Board has assessed safety and risk considerations to ensure there is no detrimental impact on any of these factors. An example would be where a Health Board is refurbishing an existing building to change its clinical function, where the Health Board cannot comply with some of the more modern requirements, due to the age and construction of the building. Where the Health Board has done as much as it can to mitigate that non-compliance, it has no choice but to derogate.

119. Importantly, all derogations made during the different stages of builds remain the responsibility of the Health Board, although NSS S Assure will advise the Health Board if the healthcare build is non-compliant with current guidance. NHS S Assure will still log the derogation, even if the Health Board understands the risk and has a valid reason for the derogation.

120. On a previous NSS project, a derogation was applied to SHTM 06-01 Part A 2015 (**A33662490 – 490 SHTM 06-01 Part A v1 Jul 2015 – Bundle 13, Vol. 3, Page 728**), with respect to electrical resilience. Paragraph 3.5 of the above noted document (**Bundle 13, Vol. 3, Page 751**) requires large healthcare premises to be provided with a dual primary electrical supply both rated at 100% of supply demand. A derogation was applied as the existing facility did not have such a configuration in place, so the provision of dual primary supplies was not possible (due to restriction from the electricity supply company). In that case, mitigations were applied by the Health Board, in the

form of standby generators, to ensure that continuity of clinical services could be maintained should a power outage occur.

121. Currently, Health Boards use their own forms or develop their own processes around derogations, as there is no standard derogations template/form within current Scottish Guidance. NHS S Assure requires Health Boards to be able to demonstrate their derogation process, including how derogations are identified/recorded, how safety/risk has been assessed, and, where mitigations are recorded, how they have been reviewed/approved. Assurance is also sought by NHS S Assure from Health Boards that appropriately competent people have been involved in the process, including engagement with subject matter experts, and also IPC, to ensure clinical impacts have been considered.

Resolution practices and escalation

122. NHS S Assure has no enforcement or inspection powers. If there is a disagreement between a Health Board and NHS S Assure's KSAR or NDAP outcomes, then there is a process for escalation. If, for example, the Health Board disagreed with a NHS S Assure 'unsupported status' for a KSAR, it would be referred to the NHS S Assure KSAR team in the first instance. Further escalation would then go to our Head Engineer, who would enter dialogue with his counterpart in the Health Board, and then on to the NHS S Assure Assistant Director, Engineering and Assurance, to discuss with the Director of Estates or the SRO. It would then come to me, as Director of NHS S Assure. I would then have a 'round table' discussion with the SRO and the Health Board Director of Estates. If needed, it could then be escalated up to the Health Board and Chief Executives. Ultimately, if no agreement were forthcoming, formal escalation to SG would result. However, to date this escalation route has not been needed and any contentious issues have been dealt with informally though the governance framework in place for the build.

Reflections on future development of NHS S Assure

123. I was asked by the inquiry as Director of NHS S Assure what the vision and purpose for this entity are. I aim to build on good practice to date and have developed the NHS S Assure strategy 2023-2026 **(A44601382– NSFG-2023-02-03 NHS Scotland Assure strategy pack number 5 – Bundle 13, Vol. 3, Page 932)** which details the NHS S Assure vision and purpose –

    a. **Our Vision – The Future we will create -** to be the recognised technical and clinical leaders in the Healthcare environment for NHS Scotland",

    b. **Our Purpose – how we will shape the future –** to provide expertise and evidence based advice that contributes to reducing risk, delivering a sustainable healthcare service, and improving the healthcare experience for Scotland.

124. NHS S Assure recognises that NHS Scotland is moving into a challenging fiscal environment, so the NHS estate is likely to move away from wholly new healthcare builds, towards more refurbishments and existing backlog maintenance of existing healthcare buildings. NHS S Assure now needs to consider the current NHS Scotland estate and its impact on sustainability, net zero attainment and suitability for service delivery. The inclusion of an ambition to move to net zero may necessitate review of some of the NHS S Assure's existing guidance and policies. It may be that NHS S Assure will have to revisit some of its guidance and policies in response to NHS Scotland's climate and sustainability challenges.

125. NHS S Assure will work collaboratively with Health Boards and SG to continue to deliver and develop a fit for purpose estate, to serve the needs of the

population of Scotland. This will concentrate on the current estate its refurbishment in the short and medium term.

126. NHS S Assure, SG and Health Boards now have governance systems and processes in place, as set out in this statement, that significantly mitigate health care build risks. In relation to RHCYP/DCN, I consider it would be likely that such significant issues as did emerge could be identified through the governance processes that NHS S Assure and Health Boards now have in place. The additional governance that NHS Scotland has in place around the healthcare-built environment, with its purpose of preventing harm to patients, now far exceeds that in any of the other devolved nations. NHS S Assure in collaboration with SG and the Health Boards are improving the outcomes for patients by reducing risk in the healthcare-built environment.

127. As Director of NHS S Assure, I want to ensure that the healthcare-built environment is the best that it can be for both patients and staff. We need to collectively understand what buildings are in use from a clinical perspective and ensure that NHS Scotland delivers the right environment for every type of treatment. I also want to ensure that the environment delivers the safest experience possible for staff and patients.

128. Patients need to get care in the right place, at the right time, in the right way. NHS S Assure's role and purpose is integrating all the services in its remit into a cohesive model to support the delivery of excellence in the healthcare-built environment in Scotland. I feel that the staff of NHS S Assure, and I have the skills necessary to transform the healthcare-built environment and governance. I am not an engineer, nor a technical person. I am a clinician by background and have worked within the NHS for over 30 years. I have experience of understanding the whole picture of both transformative care and service delivery and am of the view that NHS S Assure does and will continue to make a real difference to the built environment in NHS Scotland.

Declaration

129. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Malcolm Robert Wright OBE

Dated 18 December 2023

Introduction

1. I am Malcolm Robert Wright OBE. I am retired, having worked within the National Health Service (NHS) and Scottish Government until July 2020. The last role that I held before retiring was Director General (DG) of Health and Social Care within the Scottish Government and Chief Executive NHS Scotland.

2. In this statement I address the following:

    2.1. Professional background and qualifications
    2.2. Role as Director General for Health and Social Care / Chief Executive for NHS Scotland
    2.3. Ventilation issues on the radar
    2.4. Reporting of Critical Care issue to SG on 2 July 2019
    2.5. Events of 3 July 2019
    2.6. Events of 4 July 2019
    2.7. Communications
    2.8. Events of 5 July 2019
    2.9. Events of 8 July 2019
    2.10. Events of 9 July 2019
    2.11. Escalation to Level 3

2.12. The Royal Hospital for Children and Young People and Department of Clinical Neurosciences: review of water, ventilation, drainage and plumbing systems (NSS Review) dated 11 September 2019 and The Royal Hospital for Children and Young People: independent assessment of governance arrangements (the KPMG Report) dated 9 September 2019

2.13. Audit Scotland Report

2.14. Escalation to Level 4

2.15. Phased Migration

2.16. Reflections.

Professional Background and Qualifications

3. My Curriculum Vitae (CV) is produced within **(A46527591 CV of Malcolm Wright – December 2023 - Bundle 13, Volume 3, Page 942).** I was made a Companion of the UK Institute of Healthcare Management, the NHS UK-wide management body, in November 2006 and served as Vice Chair (2008 to 2010) and then Chair (2010 to 2012) of that body. I was appointed as a Fellow by the Churchill Fellowship in 2017; I hold an Honorary Fellowship of the Royal College of General Practitioners, having been appointed in November 2007; and am also an Honorary Fellow of the Royal College of Physicians of Edinburgh. I was awarded an honorary doctorate from the then University of Paisley in November 2007 and was awarded an OBE in January 2008.

4. I held a range of roles within the then Lothian Health Board, now referred to as NHS Lothian (NHSL), between 1975 and 1989, ultimately holding the post of Operational Services Manager at the Royal Hospital for Sick Children in Edinburgh. I held the role of Hospital Manager at Great Ormond Street in London from 1989 to 1992. My time within these roles provided me with a good grounding in paediatrics and child health care as well as experience of working at a major London teaching hospital.

5. In 1992 I was appointed as Unit General Manager for NHSL based at the Royal Hospital for Sick Children (RHSC) at Sciennes, Edinburgh. In this role, I had responsibility for hospital services and paediatric services. I was also responsible for establishing the RHSC as an NHS Trust, The Edinburgh Sick Children's Trust (ESCT), in 1994. I was Chief Executive at the ESCT from 1994 to 1999. I then became the Chief Executive of the Dumfries & Galloway Acute National Health Service Trust and held this role from 1999 to 2001. I became Chief Executive of the Dumfries & Galloway Health Board in 2001 and held this role until 2004.

6. In 2004 I was appointed as Chief Executive of NHS Education for Scotland (NES). NES is the national body responsible for the postgraduate medical, dental and other education for the whole of the NHS in Scotland. I held that position from 2004 to 2014.

7. Throughout my time as Chief Executive of NES, I received requests from the Scottish Government to carry out roles in different parts of Scotland. This resulted in me leading a Ministerial support team at NHS in the Western Isles in 2006. I was then asked to go to NHS Grampian, where I led a team of clinicians and managers in resolving challenges with relationships and service delivery there. I became interim Chief Executive of NHS Grampian in December 2014; and was appointed Chief Executive for NHS Grampian in July 2015, holding that position until September 2018. Following a request from the Scottish Government, I led a team in NHS Tayside to support system recovery and was subsequently appointed as Chief Executive of NHS Tayside, holding that post from April 2018 concurrently with my role as Chief Executive of NHS Grampian until December 2018, when I intended to retire.

8. I chaired the Ministerial Review of Specialist Services for Children from 2006 to 2009; and chaired the Scottish Government Ministerial Children and Young Peoples Support Group from 2000 to 2018.

9. I then was approached by Leslie Evans, then Permanent Secretary to the Scottish Government, who asked if I would help on a temporary basis when my predecessor, Paul Gray, resigned his post.

Role as Director General for Health and Social Care / Chief Executive for NHS Scotland

10. On 11 February 2019, I was appointed as interim Director General (DG) of Health and Social Care within the Scottish Government and Chief Executive NHS Scotland. I was then appointed to these roles on a permanent basis on 17 June 2019 following a full external civil service recruitment process. The role of Chief Executive of NHS Scotland is not a statutory position but flows from being the DG. The role of DG is a unique role that combines the strategic policy and whole-government approach with the operational responsibility for the NHS. There is no other DG within the Scottish Government that has that level of responsibility. I was the accountable officer for the Health and Social Care portfolio budget, which was roughly £14 billion at that time.

11. The role is multifaceted and requires an in-depth understanding of how the NHS works. The Permanent Secretary, with whom I met regularly, looked for the DG to be part of her corporate team, with responsibilities across government, a strong emphasis on working collaboratively and undertaking a number of cross-portfolio activities (for example I co-chaired the Health and Justice Collaborative Improvement Board (HJCIB), which was set up to draw on senior leadership across health and justice to look at how the NHS, Police and social justice colleagues could work together to get better outcomes for people in communities).

12. A critical aspect of the role was supporting the Cabinet Secretary for Health and Sport. As a principal policy advisor to the Cabinet Secretary, my role was to work closely with her, understand her ambitions for the health service, provide advice and make sure that the civil service and the NHS were delivering against the Scottish Government's policies for the people of Scotland.

13. The Scottish Government operates a director-led model, with Directors having direct access to Ministers. Directors have their areas of work and will put briefings and submissions to Ministers on an ongoing basis. I oversaw the Directors and I reported directly to the Cabinet Secretary. The team worked cohesively with other parts of government and linked with the NHS to ensure that the Cabinet Secretary was getting the best-rounded advice possible.

14. The other part of the role is acting as Chief Executive of NHS Scotland and accountable officer for the whole of NHS Scotland. As part of this role, I would meet all of the NHS Health Board Chief Executives regularly, both formally and informally. They were accountable officers within their statutory organisations. I also worked alongside the Cabinet Secretary with the Health Board chairs, who are appointed by the Scottish Ministers.

15. Within the Scottish Government Health and Social Care Directorate, which I led, I worked alongside John Connaghan (Director of Performance and Delivery); Catherine Calderwood, and latterly Gregor Smith (Chief Medical Officer)(CNO); Fiona McQueen (Chief Nursing Officer)(CNO); Shirley Rogers (Director of Health Workforce); Christine McLaughlin (Director of Finance and Infrastructure); Eleanor Mitchell (Director of Health and Social Care Integration); Donna Bell (Director of Mental Health); and Richard Foggo (Director of Population Health), who was responsible for public health, health improvement, primary care, and setting up of Public Health Scotland, which was a major development at the time. The Cabinet Secretary met with the whole senior Health and Social Care Directorate team on a weekly basis, immediately following the Cabinet meeting.

The Cabinet Secretary would debrief us on the Cabinet meeting, we would have a collaborative discussion of the live issues being handled by the team. All of these Directors would directly interface with the Cabinet Secretary, providing her with 'real-time' information. I was copied into submissions to the Cabinet Secretary, and I sought to ensure that submissions were cross-checked with other colleagues on the Health and Social Care Management Board (HSCMB) to encourage collaborative working.

16. I chaired the HSCMB, and the Cabinet Secretary regularly attended to discuss her expectations and what she wanted to achieve and listen to the advice of her Directors. The HSCMB terms of reference provide that it is*:*

> "an opportunity for Directors and other key participants to formally meet to discuss strategic, tactical and operational activities which contribute to the delivery of health and care services across Scotland. It provides a platform for the Director General/Chief Executive of NHS Scotland to:
>
> - seek assurance on the progress of areas of work;
> - seek assurance that mitigations are in place for identified risks; and
> - to seek advice from her team to enable her to carry out her functions as accountable officer.
>
> A number of sub-groups report into HSCMB on various workstreams at regular intervals, providing assurance around delivery and risks, delivering on work commissioned to them by HSCMB, but also highlighting areas for further improvement to HSCMB members."

17. In relation to the Royal Hospital for Children and Young People/ Department of Clinical Neurosciences (RHCYP/DCN) project, the Scottish Government had to sign off various capital projects through its Capital Investment Group (CIG) at different stages. The Director of Health Finance and Infrastructure, Christine McLaughlin, had a key role, supported by Alan Morrison, Deputy Director.

I was not in post when the Settlement Agreement (SA1) (**A32469163 Settlement Agreement and Supplemental Agreement relating to the Project Agreement for the provision of RHSC and DCN between Lothian LB and IHS Lothian Ltd - 22 February 2019, Bundle 4, Page 11**) relating to the RHCYP/DCN was signed off and cannot comment upon it. I expect it would have been reported to and signed off by the Cabinet Secretary due to the level of public funds being committed to SA1. During my time of working with the Cabinet Secretary, she read her briefs closely and regularly asked incisive questions when submissions came forward.

18. I sought to read everything that crossed my desk during my time in post; and I am of the view that the Cabinet Secretary read everything that crossed her desk. The Cabinet Secretary, or her private secretary, would then discuss appropriate submissions with me. She would often raise issues with me, request further information and suggest alternative approaches. The Cabinet Secretary and I were working together to make sure she got the best advice possible to inform her decision-making.

Ventilation issues on the radar

19. I have been shown a letter dated 25 January 2019 from Paul Gray, who was the DG at the time, to all NHS Chief Executives **(A35270542 – Letter from DG Health & Social Care and CE NHSScotland to NHS CEs setting out a set of actions about an ongoing incident (Cryptococcus infections) in QEUH – 25 January 2019, Bundle 4, Page 8)** and asked that assurances were sought from Chief Executives around ventilation systems in operation. This letter was issued before I took up the role of Chief Executive of NHS Scotland and DG of Health and Social Care. I would observe, however, that my experience of working within the NHS is that it strongly benefits from a number of national networks. The Strategic Facilities Group (SFG) is one of many such networks where NHS directors are brought together with counterparts in the Scottish Government to discuss emerging issues.

From my reading of this document, the SFG appear to be concerned about data coming out of the Queen Elizabeth University Hospital (QEUH) and wanted to make sure that every health board had an awareness of the data.

20. Each health board is a statutory authority that has accountability for delivering capital projects. I would infer from reading this document that SFG appeared to be aware that issues arose concerning the water supply. As such, SFG were seeking assurances from each health board and had asked Health Facilities Scotland (HFS) to co-ordinate the responses. These assurances included confirmation that all critical ventilation systems should be inspected and maintained in line with SHTM 03-01 **(A32353809 – SHTM 03-01 Part A - Ventilation for healthcare premises - Design and Validation – February 2014, Bundle 13, Volume 3, Page 951)**. I would also infer that, because he was writing directly to health boards, the Chief Executive of NHS Scotland and DG of Health and Social Care was taking the issues emerging from QEUH very seriously.

21. I have been asked if I can explain the role of HFS in the assurance process outlined in the letter. The NHS has a number of national bodies with particular expertise. In my own experience, significant expertise resides in NHS National Services Scotland (NHS NSS), which is a large national board with various divisions, each of which have professional and technical expertise. NHS NSS had a network of all of the Directors of Facilities and Estates, across Scotland, who have technical expertise and assist with the drafting of the technical guidance. HFS have infection control expertise and can also draw upon the expertise in that area from Health Protection Scotland (HPS) and health boards, so they are the points of expertise that we would place reliance on. This may well have been why the DG looked to HFS to co-ordinate the responses.

22. I have been asked if the Scottish Government was relying on HFS to ensure compliance with applicable guidance at this point and throughout the project. It was not the role of HFS at that time to ensure compliance. They were there to advise and support.

The responsibility for ensuring compliance lay with the statutory authority for the project, which was NHSL. That is why you see the Chief Executives of health boards being asked to confirm their boards' compliance. Each health hoard has a responsibility to make sure that it is obtaining professional technical advice and has the systems in place to deliver as required. HFS can be drawn-upon by health boards for that advice.

23. If we look back 10 to 15 years or so, the then Common Services Agency, which was the predecessor of NHS NSS, had a more formal role in projects across Scotland. By the time of the RHCYP/DCN project, the primary responsibility lay with health boards to set up a project structure, obtain guidance from HFS and assure themselves that matters were proceeding properly.

24. I have been asked if I received any briefing update regarding RHCYP/DCN when I took up the post of interim DG in February 2019. I was made aware of SA1 and that a number of outstanding matters covered in SA1 required to be completed before the hospital could open. I was also aware of NHSL's intended opening date on 9 July 2019 and that plans were in place for migration from the existing facilities to the new RHCYP/DCN facilities. I understood that NHSL were working hard within a tight timetable to meet the migration date of 9 July. It was my understanding that the indications the Scottish Government were receiving from NHSL at that time were that the project was on track and that NHSL were working hard within a tight timetable to meet the opening date of 9 July 2019.

25. The Scottish Government has a responsibility for the whole of the capital programme in Scotland, so I would expect my Directors only to raise any significant problems with me. These projects were being managed on a day-to-day basis by NHS Health Boards, not by the Scottish Government.

There are always issues with all capital projects, so I would expect my Directors to take a view on whether those issues are being properly addressed by the NHS health board concerned and what level of confidence existed that the issues would be resolved. If there were significant issues arising, such as cost overrun or differences of clinical view, I would expect to be informed. I had the practice of having regular one-to-one meetings with each of my Directors; and monthly meetings with NHS Chief Executives. Until the call I received on 2 July 2019, there were no issues of this magnitude being reported to me in relation to the RHCYP/DCN project in the weeks before the planned opening on 9 July 2019.

26. I am certain that the first time I heard about the 'critical care issue' was when I received a call from the Chief Executive of NHSL on Tuesday 2 July 2019. As far as I am aware, the critical care incident was not known to NHSL until the preceding Friday, 28 June. I am sure that it was not known about within the Scottish Government until Tuesday 2 July 2019.

Reporting of Critical Care issue to Scottish Government on 2 July 2019

27. I first became aware of the issue within the Critical Care Unit at RHCYP when a message came through to my private office early that afternoon advising that the Chief Executive and Chair of NHSL wanted to have an urgent conversation with me. That does not happen very often. John Connaghan (the then Chief Performance Officer within the Scottish Government's Health & Social Care Directorate) was with me when I took the call. The Chief Executive of NHSL outlined that NHSL had come across an issue with the Critical Care Unit at the RHCYP. In short, they could not get 10 air changes per hour within the Critical Care Unit. NHSL were extremely concerned about it and wanted us to know that this had been uncovered. The ability to resolve the issue by Friday 5 July, in time for the start of the planned migration, was going to be very challenging but they were trying to identify a workaround to the problem.

28. NHSL were, understandably, most concerned about the situation because many thousands of patients, all of whom had been told that their appointments, operations and procedures were going to be in the new hospital, were going to be affected, along with their families. Hundreds of staff had packed boxes and were ready to move; and a huge amount of work had gone into that. As such, it seemed reasonable to me for NHSL to consider, when they first found out about the situation, whether there was a potential for any workaround. There was nowhere near enough data available on 2 July 2019 to reach a concluded view on whether the move could continue as planned.

29. Upon being told this information it was clear to me that the Cabinet Secretary needed to be told immediately. My Directors (including the Chief Medical Officer, Chief Nursing Officer, Director of Workforce, and others) and I would need to quickly obtain a better understanding of what was going on, so we stood up the Health Resilience Unit. This Unit is a distinct resilience function, available to coordinate intelligence and information coming from NHSL to the Scottish Government. In addition to understanding the position ourselves, we had to be able to brief the Cabinet Secretary who, in turn, would have to brief the First Minister and manage the parliamentary process. Please see available emails (**A41022820 – Email from Cabinet Secretary for Health and Sport to Michael Healy on RHCYP delay and update on work undertaken - 8 July 2019, Bundle 7, Volume 1, Page 181),** explaining that "Your officials will now operate under a health resilience response…"

30. The Health Resilience Unit was engaged in the 'emergency' response to the information that came to light on 2 July 2019. The Unit 'stood-down' on 18 July 2019, by which point the Scottish Government had implemented the decision of the Cabinet Secretary (see below) and further measures to address the situation had been put in place. See (**A41225838** – **NHS Lothian – Edinburgh Children's Hospital – Action List Closure - Bundle 7, Volume 2, Page 10**) which indicates they were stepping down at that time.

31. I have been asked by the Inquiry about a second telephone call from Mr Davison at 5.30pm on 2 July. I do not recall this telephone call taking place. It was, however, over 4 years ago, since which time I dealt with the early part of the Covid pandemic and then retired. It may be that this call did not go ahead due to the rapid developments at the time and the multiple discussions that were taking place at Director level. Things were moving quickly, with information coming in constantly, including from NHSL, all of which was being collated.

32. I am asked why there are no records, minutes, or both, narrating the content of the calls on 2 July. In dealing with matters on 2 July 2019, and indeed the following days, I was dealing with the emergency situation that presented on that unexpected call on 2 July 2019, my focus was on finding out what was going on and how best to manage the situation. The outcome of discussions were encapsulated in submissions and emails, including the email dated 2nd July 2019 at 1653 hours from Alan Morrison to the Cabinet Secretary, which I was copied into **(A41020525- Email from Alan Morrison to Cabinet Secretary for Health and Sport attaching briefing on an emerging issues from NHS Lothian - 02 July 2019, Bundle 7, Volume 1, Page 37)**.

33. I cannot recall at what stage the Cabinet Secretary was actually told about the issue in the Critical Care Unit, but I am sure that she would have been told verbally before the 1653 submission. That would have been the first written briefing that went to her outlining the issues.

34. Within this email was a short-written brief prepared by Alan Morrison, regarding the issue with the air change rates in the paediatric Critical Care Unit. The briefing gave the background, the derogation and NHSL's assessment. Questions that we were asking and urgently seeking answers to at that point included:

- What can be done with the existing ventilation plan to improve on it?
- Is there an interim fix?

- Can a permanent solution be installed in the new building once it is occupied?
- What would be the level of disruption and loss of capacity?
- What loss of capacity can be tolerated, given the paediatric intensive care capacity is coordinated across Scotland?
- Any delay to the opening of the new RHCYP/DCN facilities would have a major knock-on impact, so how long is it going to take to resolve the issues?

35. When first informed of the issues within the Critical Care Unit, I was hugely concerned; the project had taken decades to plan and thousands of patients and families were going to have their plans disrupted. The impact on them and staff would be huge. There would have been no hesitation in informing the Cabinet Secretary of the situation. My office was literally a few yards from hers, so I expect that I would have gone round to the Cabinet Secretary's private office and told her private office staff (I cannot, at this distance, recall specifics).

36. I have been asked by the Inquiry about my expectations as to when I should have been informed about the critical care issue coming to light within NHSL, given the proximity of the migration date. I would expect to have been told by NHSL as soon as they were aware of the problem and understood it. From what I have read after the event, the issue came to light on Friday 28 June 2019 and NHSL were then immediately working to understand the issue. I understand (again from information I read after the event) that NHSL arranged for a number of meetings to take place during the course of Monday 1 July 2019. The Chief Executive of NHSL, Tim Davison, had been on leave and returned to work on Tuesday 2 July 2019. It was immediately escalated to him that day. Tim Davidson's immediate reaction was that the Scottish Government had to be informed. As above, I was informed on 2 July 2019.

37. I have been informed by the Inquiry that NHSL may have become aware of the issue within the Critical Care Unit as early as 24 June 2019. I do not know if this is the case.

38. Whilst I did not understand, as at 2 July 2019, what had gone on within NHSL that had led to this situation, my immediate focus had to be on managing the emerging crisis. All of my officials were fully engaged on trying to find out what the immediate situation was and what needed to be done to deal with it. NHSL were working very hard trying to establish what had happened and what needed to be done and were feeding information back to us. My team did not want to additionally burden NHSL with issues that could be considered at a later date.

39. The unfolding situation required urgent action by my whole senior team within the Directorate. John Connaghan played an important role in those first days, because he dealt with the performance management of the health boards. John regularly discussed performance issues with the NHS Chief Executives on my behalf, so he was involved from the outset. Christine McLaughlin and Alan Morrison were also key, given their finance roles in the capital plan. The Chief Medical Officer and Chief Nursing Officer's directorate were also involved (initially the Deputy Directors in each directorate due to the Chief Medical Officer and Chief Nursing Officer both being on leave), as was Shirley Rodgers, given the workforce implications. We worked as a team by getting in touch with our counterparts in NHSL to try to find out exactly what the issues were.

Events of 3 July 2019

40. I had a one-to-one meeting with the Cabinet Secretary on 3 July, at which I updated her on the RHCYP/DCN situation. We had one-to-one meetings every week, which provided an opportunity for the Cabinet Secretary and I to discuss current issues, prospective plans and what requirements she had. This particular meeting was one of my regular scheduled one-to-one meetings with the Cabinet Secretary and took place at Atlantic Quay in Glasgow.

I cannot recall whether or not one of her private secretaries was present at the meeting or whether any notes were made by her private office in relation to this meeting. I cannot recall any occasion when I had a one-to-one with the Cabinet Secretary where a minute was taken. It is important to differentiate between what is a formal meeting and what is a one-to-one. I had regular one-to-ones with all of my direct reports and have done that throughout my career.

41. Having been asked again about the absence of minutes, I can only observe that I appreciate that documentary evidence, such as minutes of real-time conversations (even in non-formal settings), would provide the Inquiry with a better understanding of matters being discussed between Scottish Government colleagues. We were managing a crisis situation at that time and were not, then, thinking about the level of after-the-fact scrutiny brought by a public inquiry. The migration to the new hospital was due to happen in a few days. We needed all available resource to be fully applied to finding out what was going on and processing all information coming through. The context within which we were operating was one of having limited time and resource available to tackle many urgent activities. This occurred during the first week of the school summer holidays and the Scottish Parliament was in recess, meaning that resources were already depleted due to annual leave; and, crucially, it was just days before the planned opening of the RHCYP/DCN. Within this context, I did not regard minuting all conversations that took place as a high priority at that time. The Inquiry will, of course, form its own view.

42. I cannot recall the specific details of my meeting with the Cabinet Secretary on 3 July 2019, however I would certainly have informed her of progress being made and we would have discussed the many questions arising from the issues raised in the email from Alan Morrison on 2 July 2019 **(A41020525- Email from Alan Morrison to Cabinet Secretary for Health and Sport attaching briefing on an emerging issues from NHS Lothian - 2 July 2019, Bundle 7, Volume 1, Page 37)**.

43. Alan Morrison sent me an email on 3 July 2019 regarding a meeting he attended with NHS NSS and NHSL **(A41020637 - Email from B Elliot (on behalf of DG Health & Social Care) to Malcolm Wright summarising the main risks associated with the move of ICU to the new RHCYP – 3 July 2019, Bundle 7, Volume 1, Page 48)**. I have no reason to disagree with Alan Morrison's account in this email. This encapsulates the main risks that were being discussed at that time and, from an assurance point of view, we knew that we wanted the national experts at NHS NSS to be involved immediately.

44. NHS NSS has a wealth of national expertise on a whole range of issues. They employ their own staff, co-ordinate all of the detailed technical guidance and memoranda and also have links with each of the health boards, including Directors of Facilities and Capital Planning. Through HPS, NHS NSS also have links into the Directors of Public Health and the whole infection control and infection prevention network, including virologists and microbiologists who will be advising on the technical requirements in order to minimise risk to patients.

45. The staff at NHS NSS would be able to provide expert insight into what had happened and the risks involved. They could draw on medical professional advice and buildings-related advice before presenting their advice to NHSL and the Scottish Government. The offices of the Chief Medical Officer and Chief Nursing Officer would also have been providing their input (although the Chief Medical Officer and Chief Nursing Officers themselves were both absent from work when the critical care issue first came to light, their deputies and teams were engaged).

46. From reading this email I can see that the consensus of those attending the meeting was that the safety of the patients would be best served by delaying the move and modifying the ventilation in the new building before moving patients. I agreed with that position.

The position is reinforced by the email that Tracey Gillies sent to Tim Davison on 1 July 2019, **(A44265139 - RHCYP critical care ventilation issues dated 1 July 2019, Bundle 13, Volume 3, Page 1140)**, where she discusses the Institute of Occupational Medicine (IOM) testing of the ventilation and provides a synopsis of the issue. In short, NHSL had tested the four bedded and single rooms and found that the air changes do not meet the required standard per SHTM 03-01. The email also discusses the use of a larger plant to deliver the air changes, as the current plant was not adequate. She asks the question, "Is this fit for purpose?", and then, "If occupied now, there is a risk to patients." Here we have NHSL's Medical Director informing NHSL's Chief Executive that it was unclear whether the space was fit for purpose and raising concerns about patient safety if the move were to go ahead as planned. In my view, if a health board Medical Director raises these issues, that requires very careful consideration.

47. Within the email, Tracey Gillies states that if the building is occupied now then there is a risk to patients, visitors and staff of airborne virus transmission and a decant would probably be required to remedy issues. There are significant risks involved in that and it would likely diminish national capacity. The final bullet point on the email states, "If not occupied now, the move needs to be postponed." This email provides a summary of the advice of NHSL's Medical Director to NHSL's Chief Executive. I think it complements what Alan Morrison says within his email. It appears to me that people realised very quickly that the problem was not going to be amenable to a 'quick fix' and there was a potential risk to patient safety.

48. On 3 July 2019 I received an email from Tim Davison **(A41020529 – FW_ RHCYP _DCN Commissioning_ ventilation dated 3 July 2019 – Bundle 13, Volume 3, Page 1141)** where he provided a summary and set out 4 potential options. My reading of this is that Tim was taking advice from NHS NSS and his professional advisors and was using this correspondence to set out potential solutions. I am aware there was a constant dialogue between the Scottish Government and NHSL over 2 and 3 July 2019.

I have been asked if, at the time of Tim sending this email with his preferred option, he may have been under the impression that NHSL would be making the final decision on how to proceed. I cannot say for certain what was in Tim's mind at this point. The key action for me was to get this email in front of the Cabinet Secretary prior to her meeting with all of her key advisors on 4 July 2019. I would not have immediately responded to this email because an email of this importance and complexity needs a very considered response from the Scottish Government and I certainly would not have replied without the full approval of the Cabinet Secretary.

49. I have been asked by the Inquiry if the Scottish Government gave any indication to NHSL that some services would move as planned. I would be surprised if that was the understanding of anyone in the Scottish Government as we had been in information-gathering and no decision had been made prior to 4 July 2019. I am aware that staff were exploring all possible options but would be surprised if any official from Scottish Government had said that any particular option would be alright because they would not have had authority to do that without sign off from the Cabinet Secretary.

50. I have been told by the Inquiry that NHS NSS were under the impression that some services would move as planned, however, I would want to know where they received any such information from. To my knowledge, no one within the Scottish Government could have made a decision to endorse option four and the only person who had authority to make that decision was the Cabinet Secretary. There was no agreement given by the Scottish Government regarding the partial migration of some services on 9 July 2019 and to my knowledge no 'U-turn' in decision-making.

Events of 4 July 2019

51. On 4 July 2019 I met with the Cabinet Secretary and other ministerial advisors in order to discuss the information by then available in respect of the issues at the Critical Care Unit at RHCYP/DCN.

Given that the RYCYP/DCN had been scheduled to open on 9 July and the move was due to begin over the few preceding days, the requirement for a decision to be made as to what should happen was of the utmost urgency. There were a range of officials in the room; from memory those officials included John Connaghan; Gregor Smith (Deputy Chief Medical Officer); Diane Murray (Deputy Chief Nursing Officer); Shirley Rogers (Director of Workforce); Christine McLaughlin and Alan Morrison (Director of Health Finance and her Deputy) together with representatives from the Scottish Government health communications team and health resilience. There may have been others who I am not able to recall at this time.

52. We all went into the meeting with a strong sense of the seriousness of the situation and that we were going to give the Cabinet Secretary the very best advice we could, based on the written reports available and conversations we had held with NHSL, HFS, HPS and others. The Cabinet Secretary chaired the discussions, making sure she listened to all in attendance and asked for their views and opinions. She took that advice onboard and made the decision to halt the move. The outcomes of the meeting were encapsulated in my email to Tim Davidson **(A35827763 - Email from Malcolm Wright to Tim Davison confirming that the Cabinet Secretary has taken the decision – 4 July, Bundle 7, Volume 1, Page 79)**.

53. The prime consideration during our discussions at the meeting was patient safety. I think the key concern was that we might be putting patients at risk if they were to move at this stage. I think everyone in that room was well aware of emerging issues at the QEUH; of having a brand-new hospital built, people moving in and issues then emerging in terms of infection control. We had to think about the risks associated with the move proceeding and something then happening to any of the patients – not only harm to the patients concerned, but also the wider loss of public and staff confidence in the facilities.

54. The experiences of and lessons being learned from the QEUH made us conscious that we had to be very careful about what action should be taken. We could not risk making the decision to open the hospital and then later discover that there were potential issues that we could have mitigated against by pausing, that harmed patients. In terms of understanding the scale of the problem with the building, we were concerned that there might be further issues that were not yet known of, so we could not confidently, at that stage, identify the solution or the consequences (including cost) of such a solution. Similarly, we could not, at that point, properly understand the disruption that any solution would cause, including whether any solution could be implemented with patients in situ. There needed to be assurance that the new building would be fully compliant with relevant standards. More work also needed to be done in order that we could know what the knock-on impacts would be for other services, including whether there would be a loss of national capacity. There was also the contract structure, which might impact upon the cost and timeframes of potential solutions, to consider. You cannot properly consider all of these complex variables within 48 hours.

55. I think there was particular caution due to the late discovery of this problem. In my experience, when one problem of a major magnitude is discovered at very short notice, very often other problems will emerge. These issues rarely happen in isolation. The priority considerations were clinical safety for patients, public confidence, staff confidence, and not putting anyone in harm's way. We needed to take time to get this right.

56. I have been asked by the Inquiry what advice I gave to the Cabinet Secretary at the meeting. I have worked in paediatrics and child health for a large proportion of my career and when I worked at Great Ormond Street, there was a sign above the door that says, "The child first and always.". If you put children (patients) first and work back from that, you do not put people in harm's way. I believe that very strongly. The Cabinet Secretary also instinctively immediately thought of the individual, the patient, and what it would mean for them. Quite simply, you do not expose patients to a situation where nobody fully understands the risk.

57. It was also clear already that a significant amount of public money would have to go into dealing with this situation; and that public money would have to come from the health portfolio budget. This would, inevitably, mean that other projects in Scotland would be impacted, but I would not countenance a position that did not put patient safety first.

58. A letter was drafted following the meeting, which I emailed to Tim Davison, the Chief Executive of the NHSL **(A35827763- Email from Malcolm Wright to Tim Davison confirming that the Cabinet Secretary has taken the decision – 4 July, Bundle 7, Volume 1, Page 79)**. This letter reflected the outcome of the meeting that day with the Cabinet Secretary and set out the Cabinet Secretary's decision to halt the move. I have been asked by the Inquiry what "further information" was being referred to within this letter. I believe this was reference to information provided by Alan Morrison in his email of 3 July 2019 **(A41020637- Email from B Elliot (on behalf of DG Health & Social Care) to Malcolm Wright summarising the main risks associated with the move of ICU to the new RHCYP - 3 July 2019, Bundle 7, Volume 1, Page 48)** and other information received since 2 July 2019 from HFS, HPS and via my Directors, who had been involved in a number of meetings, all of which was ultimately discussed at the meeting with the Cabinet Secretary on 4 July 2019 and upon which the Cabinet Secretary based her decision.

59. A number of actions required of NHSL, which had been raised by the Cabinet Secretary following advice from her officials, were set out within this letter. This letter was issued under the authority of the Cabinet Secretary. It had been very carefully drafted and we were collectively content that it summarised the Scottish Government's position towards NHSL and what it was required to do.

60. Again, surprise has been expressed to me by the Inquiry as to the lack of formal minutes for the meeting of 4 July 2019. I would refer to my previous observations as to the context within which we were operating.

Those in attendance would have been taking their own notes and there would be a lead official who was responsible for drafting the letter. The letter that I have just referred to was the output of that meeting and serves as a record of what was decided. The letter would have been cross-checked with all of the directors, including me, and cross-checked with the Cabinet Secretary's private office in order to confirm that it encapsulated what the Cabinet Secretary had decided. I think this letter captures the decision and actions that were agreed.

61. I have been asked by the Inquiry why NHSL's preferred solution was not considered an appropriate way forward in terms of migrating some unaffected services to those clinical areas. My view is that it did not account for the other issues that may emerge. The Cabinet Secretary, correctly in my view given the circumstances of late discovery of such a serious issue, wanted external assurances from HPS and HFS that the building infrastructure was safe and those assurances had not and could not have been given by 4 July 2019.

62. As we started to move forward there were other actions taken, such as the commissioning of NHS NSS to do reports and the formal commissioning of KPMG to look at the governance and the audit of the project. I also contacted the Auditor General because they would be looking at this project and the extra costs incurred as a result of the delay. The Cabinet Secretary would need to brief Parliament, the Health and Sport Committee, and the Public Audit Committee. I would need to brief the Permanent Secretary.

Communications

63. The media and the press had also become aware of the situation and the Cabinet Secretary took the decision that she wanted to authorise all communications to patients and staff. The letter of 4 July 2019 required preparation of a communication plan and for all communications to be cleared by the Scottish Government.

In a crisis situation such as this one, you need an alignment of communications to ensure a consistent message is put forward by NHSL and the Scottish Government. The Scottish Government's health communications team worked closely with NHSL's communications team.

64. The Inquiry has asked for my knowledge of the briefing sent to the First Minister by the Cabinet Secretary on 4 July 2019 **(A41444207 - Briefing for First Minister on RHCYP – dated 4 July 2019, Bundle 13, Volume 3, Page 89)**. I cannot comment beyond what I can read in the briefing. I am not aware of the First Minister having any involvement with the project in terms of decision-making.

Events of 5 July 2019

65. On 5 July 2019 I received an email from Tim Davison **(A35827764 – Email from Tim Davison to DGHSC UPDATE ON Transport, Telephone Helpline, Direct communication to individual patients and Communications – 5 July 2019, Bundle 7, Volume 1, Page 96)**. This email provided updates on the matters we had directed NHSL to put in place, such as transport, a telephone helpline and communications. We thought it was important for NHSL to have transport in place for those who presented at the wrong hospital and a telephone helpline for the public who had concerns; that they contact individual patients to provide updates on treatment; and a communications plan had been established.

66. The relevant Scottish Government Directors were working with their counterparts in NHSL throughout this period. The Cabinet Secretary and I wanted to avoid a situation whereby all of the management capacity at NHSL was being used to deal with this issue, as this could have a detrimental impact on other departments. We were very mindful of the capacity and the resilience of the senior team within NHSL.

67. There were a number of different streams of action that flowed from the events of 2 to 4 July 2019 and we had assistance from colleagues in health resilience in co-ordinating these. This work included commissioning the NHS NSS report, commissioning KPMG report to conduct their internal audit and establishing regular Incident Management Team (IMT) meetings with NHSL.

Events of 8 July 2019

68. On 8 July 2019 I received an email from Tracey Gillies, NHSL's Medical Director **(A35827765 – Email from Tracey Gillies to Callum Henderson et al providing a response– 8 July 2019, Bundle 7, Volume 1, Page 173)**, following the first IMT meeting regarding the RHCYP/DCN issues. Tracey was responding to questions that I had asked concerning the issues raised and was able to provide an informed medical opinion. One of the questions asked was if the derogation to change the air circulation from 6 to 4 to meet the terms of SA1 had been approved by HFS and HPS. The response to this question from Tracey was that it had never been NHSL's understanding that the derogations agreed during the project required formal approval. She advised that derogations agreed as part of the Settlement Agreement had been discussed with Scottish Government and Scottish Futures Trust (SFT) colleagues; and that technical advice on the derogations had come from NHSL's technical advisors to the project, infection control, clinical colleagues and facilities.

69. I asked if, NHSL could provide a new design plan for air ventilation that would meet standards and be cleared by HPS and HFS within the next 2 weeks. Tracey advised that it would not be completed within that timescale and, as the project was under NPD, any changes would require technical sign-off from lenders.

70. NHSL's reliance upon the advice of its technical advisers as to the change in air circulation is important to note. The Scottish Government does not have the depth of technical professional expertise available to advise on such matters on individual projects, nor should it as its role is to manage the whole of the capital programme for Scotland. Nor does the Scottish Futures Trust, in my understanding, have expertise available within their organisation to provide such advice for individual projects; rather it plays an important role in terms of the overall setup of the structures.

71. I have been asked if the Scottish Government might itself have approached NHS NSS to provide that relevant technical opinion on whether derogations to the air circulation were appropriate. I would not expect the Scottish Government to approach NHS NSS in this particular situation. The statutory body responsible for running a capital project is the health board; not the Scottish Government, SFT or NHS NSS. I would note again that NHSL sought assurance from their contractors, who in turn sought assurance from their contractors and advisors and that assurance was provided. Assurances were being provided to the Scottish Government that the RHCYP/DCN project was on track to open as planned on 9 July 2019, so I cannot see there being a trigger for the Scottish Government to involve NHS NSS.

72. The responses within this email from Tracey Gillies further informed the thinking of the Cabinet Secretary. The initial fundamental problem was the 10 air changes per hour, however, it was becoming apparent that further issues were being identified that also needed to be resolved.

73. The issues at the QEUH and RHCYP/DCN very much influenced the thinking about the Centre for Excellence, which became NHS Scotland Assure: the health board, as the accountable body, should have a sign-off from an external expert body at different points in the process to say whether work meets the necessary standards.

74. On 8 July 2019 I visited Tim Davison to better understand how he was dealing with the issues and how NHSL was managing. I discussed with him about the level of seriousness with which the Cabinet Secretary viewed the matter and how he might prepare for his upcoming meeting with the Cabinet Secretary. It was an informal meeting and therefore no minutes were taken.

75. The Inquiry have asked me if I was aware of the DCN migration/feasibility study that was carried out on 8 July 2019, where a workshop was held and chaired by Fiona Halcrow, Project Manager (NHSL Clinical Support). The purpose of the study was to discuss whether the DCN could move safely as a stand-alone service into the new building. This matter was raised in the briefing to the First Minister of 5 July 2019 **(A44264335 - Edinburgh Children's Hospital – Note from Cab Sec to FM – 5 July 2019, Bundle 13 Volume 3, Page 1144)**, where it highlighted that delay to the migration of DCN services was not risk free and that staying at the existing site posed risks. It is stated that*, "*there [was] probably a good clinical case to prioritise migration of the [DCN]*".* I was aware of this study and have been asked how this is reconciled with the notion that the RHCYP/DCN migration was delayed in the interests of patient safety and care. I believe there was an understanding that we could migrate DCN before the RHSC, that the DCN move was discrete and once we received the assurance that this building was safe, then that move could go ahead.

76. We knew the risks that pertained at the existing sites (they were old and being replaced for that reason) and the Cabinet Secretary made it clear that if resources were going to be needed to further mitigate those risks, then those would be provided. We immediately made that offer to NHSL. This was preferable to placing patients and staff into an unknown situation.

77. I believe the public in Edinburgh have always appreciated the RHSC and the staff there. There was public confidence that the staff were delivering excellent healthcare from the existing facilities.

Our assessment was that providing continuing and increased support to mitigate risks at existing sites was a more secure proposition than moving patients and staff into a new situation where there were new risks, which at that time were not fully quantified or risk assessed.

78. My view is that the cautious approach we took by postponing the move and supporting risk mitigation at existing sites was the correct approach. The alternative was to move earlier but there was an infection control risk and other patient safety concerns. In turn, this could impact public confidence and amplify the problem.

Escalation to Level 3

79. On 12 July 2019, consequent to the emergence of the issues at RHCYP/DCN, a decision was taken to escalate the NHSL to level 3 of the NHS Board Performance Escalation Framework **(A41263551 – Letter to Tim Davison, copying in Brian Houston, from Malcolm Wright – 12 July 2019, Bundle 7, Volume 1, Page 339)**. This escalation is the responsibility of the DG, acting on advice from the HSCMB, who met on 10 July 2019 **(A41029115 – HSCMB-85-2019-10 July 2019-Board Performance Escalation Framework NHS Lothian – OFFICAL SENSITIVE – 10 July 2019, Bundle 13, Volume 3, Page 683)**. This was not a Ministerial decision, however I would have spoken to the Cabinet Secretary about the decision.

80. NHSL had been escalated to Level 3 as it faced a wide range of challenges in light of the issues with RHCYP/DCN. The HSCMB had concerns that this would place significant pressure on the leadership capacity of NHSL and could impact across other services if their sole focus were the issues at RHCYP/DCN. The decision was made to provide them with a tailored package of support; and John Connaghan was to work with the Board to create a single recovery plan.

81. The NHS Board Escalation Framework (the Framework) provides a relationship between Scottish Government and statutory bodies, where concerns can be raised with relevant health boards. The ideal position is to have all health boards at the lowest level of escalation; with the worst-case scenario being escalation to Level 5. In this worst-case scenario, the Scottish Government would be directly running the health board. All health boards move up and down the escalation levels of the Framework. The level of escalation will determine the level of support provided to a health board. This is important for two reasons: firstly, the Framework is used as a vehicle to allow for resources to be directed to where they are needed; and secondly, it provides transparency to each health board as to why resources are being directed to a particular area.

82. The HSCMB constantly look at the criteria of the Framework and review the level at which each health board is placed. Escalation and de-escalation between the lower levels of the Framework is a frequent occurrence. If a health board is escalated to Level 4, however, then an improvement team would be sent in and a turnaround director would be appointed. Escalation to level 4 and 5 are significant events. The nature of the Framework means there will be varying levels of control by the Scottish Government over each health board, as they move to different levels within the Framework.

83. A paper **(A41029115 - HSCMB-85-2019-10 July 2019-Board Performance Escalation Framework – NHS Lothian – OFFICAL SENSITIVE -10 July 2019, Bundle 13, Volume 3 Page 683)** was produced for NHSL, outlining the reasons why it had been escalated to Level 3 and providing for tailored support to be provided in order to scaffold the formal recovery plan that we were seeking from the Board.

84. As part of the Framework escalation to Level 3, an Oversight Board was established. The scope of work of the Oversight Board is set out within its Terms of Reference **(A44284514 - NHS Lothian RHCYP Oversight Board_ToR– July 2019, Bundle 13, Volume 3, Page 1149),** but ultimately it was to oversee the successful completion of the project.

The Terms of Reference were drafted by Christine McLaughlin and would have been signed off by me and, ultimately, the Cabinet Secretary.

85. The Oversight Board membership brought together a variety of skills, technical expertise and significant experience, including clinical expertise with Fiona McQueen (CNO); Catherine Calderwood (CMO); Tracey Gillies (Executive Medical Director NHSL); Prof Alex McMahon (Nurse Director NHSL); and we also had Peter Reekie (Chief Executive SFT), Susan Goldsmith (Director of Finance, NHSL) and Christine McLaughlin herself. The role of the SFT, for example, was important in terms of bringing experience of contract structures. The Oversight Board reported to the Scottish Government, providing an important source of advice to the Cabinet Secretary, who received every set of Oversight Board papers.

Events of 18 July 2019

86. On 18 July 2019, the Cabinet Secretary, the CMO and I, visited the RHSC at Sciennes, where we met with the Chair and Chief Executive of NHSL. The purpose of this visit was to meet with patients and staff, and to communicate to them directly the decision the Cabinet Secretary had made and why she had made it, and she wanted to hear the views of patients and staff.

87. On arrival we had half an hour with the Chair and Chief Executive of NHSL. This provided an opportunity for the Chair and the Chief Executive of the accountable board to inform the Cabinet Secretary of what had happened and why it had happened. This was first time that they had met following the critical care issue being identified. The Chief Executive spoke in detail about the project, including its structure, its complexity, what issues had been found and what they wanted to do.

88. Following this meeting, we met with staff. The Cabinet Secretary provided them with the rationale behind the decision not to open on 9 July 2019, listened to their concerns and reassured them of the Scottish Government's intention to do what was needed to support them in staying at the RHSC at Sciennes for longer than had been anticipated.

89. We then split up and I spoke to a number of staff to get their views and opinions on the situation. From these discussions, I found that there was a profound sadness and distress from staff, however, at no stage did staff tell me the decision was wrong. Rather, their focus was on what we needed to do to support staff and patients staying at the RHSC at Sciennes for longer than anticipated. There were a number of risks that had to be mitigated, including maintenance that had not been carried out because they thought they were leaving. Issues such as these required extra resources to ensure the patient environment remained safe.

90. We had a similar experience on our visit that day to the DCN facilities at the Western General Hospital.

NSS Review / KPMG Report

91. I have been asked about my involvement in instructing NHS NSS to carry out a review of the RHCYP/DCN (**A41213257 - NSS Report – 9 September 2019, Bundle 7, Volume 3, Page 373)**. I cannot recall having any direct involvement in the formulation of this instruction. I was kept informed during this process and may have had a conversation with the Chief Executive of NHS NSS concerning the review and the time frames involved, but do not have a clear recollection.

92. A high degree of reliance was placed upon NHS NSS (for good reason), as they either had or had access to expertise in respect of these highly technical issues. This is why NHS NSS was approached to report upon the issues arising at RHCYP/DCN.

93. NHS NSS will be able to speak to their own report, but it highlighted issues with management and assurance and technical issues related to ventilation, water, drainage/plumbing and consequent infection control risks. It was clear that the issues extended well-beyond the initial reported issue regarding air changes in the RHCYP critical care unit.

94. On 12 July 2019, KPMG were instructed to conduct an independent audit of the governance arrangements in place for the RHCYP/DCN project **(A32512397 – 4.5 KPMG Report - Independent Assessment of Governance Arrangements – September 2019, Bundle 13, Volume 3 Page 1153)**. Again, I had no personal involvement in the formulation of the instruction of this report, but I would have seen the terms of reference and they would have been signed off by the Cabinet Secretary. I believe that Christine McLaughlin would have been involved in the drafting of the terms of reference. This process and the NHS NSS review were very much Director led, but sign-off ultimately fell to the Cabinet Secretary.

95. The KPMG audit sought to understand the system of governance. The report was clear that it could not and did not seek to personalise, which I consider to have been appropriate, given the number of people, companies and public bodies involved. In my view, the audit by KPMG principally sought to identify what processes of assurance were in place for NHSL and why fundamental issues had not been picked up by the governance systems in place.

96. Following the publication of the reports, I discussed some of the findings with Christine McLaughlin **(A41232875 – Email from Christine McLaughlin to Malcolm Wright - 9 September 2019, Bundle 7, Volume 3, Page 366)**. The report by KPMG identified the role of the environmental matrix in the process, which appeared to be central; the contract requirements; and what was described as a confused landscape. The report identified that what began as human error was likely to continue throughout the project, yet there were a number of opportunities where it could have been identified and rectified but was not. Had there been a point in SA1 where an independent assessment against standards was done, I believe the issues could have been identified.

97. The NHS NSS review and subsequent report did provide us with assurance; and also reassurance in that we had made the correct decision in delaying the move. The report revealed that there were further issues with the build than had been reported to us on 2 July and we would need to rectify those issues before we could finally allow patients and staff to move.

The Grant Thornton Report

98. I am referred to the Grant Thornton Report dated 12 August 2020 **(A32512442 - Grant Thornton Report –NHS Lothian Internal Audit Report – Report for the Audit and Risk Committee 31 July 2020 and the NHS Lothian Board, 12 August 2020, Bundle 10, Page 4) (The Grant Thornton Report))**. This was an internal report prepared for NHS Lothian. The report was shared with the Scottish Government in advance of publication and NHSL made clear that they would accept and action all recommendations and the Scottish Government expected all recommendations to be actioned.

Letter to Auditor General

99. On 19 July 2019 I wrote to the Auditor General **(A41232572 – Letter – AG-Lothian July 2019 (1) – 29 July 2019, Bundle 13, Volume 3, Page 1239)**, outlining the Cabinet Secretary's reason for the decision to delay the move to the new RHCYP/DCN facilities. The Auditor General is required to undertake an annual audit of the NHS in Scotland. The Auditor General will identify, during the course of the audit, significant issues that have arisen within the NHS in Scotland and specific issues within individual health boards. The Auditor General also conducts or oversees the audit of individual health boards. I considered that it was important, from a government perspective, as the accountable officer for NHS Scotland, that I make the Auditor General aware of the issues with NHSL. I understand that as a result of this, the audit of NHSL was brought forward and there was a specific audit carried out on the project. I think this audit was extremely helpful to everyone's understanding of what happened.

100. The Auditor General reports directly to the Scottish Parliament. I consider that it was entirely correct for me to formally inform the Auditor General, thus ensuring openness and transparency.

Escalation to Level 4

101. Following the publication of the NHS NSS report and the KPMG Report – Royal Hospital for Children and Young People: independent assessment of governance arrangements (the KPMG Report) on 11 September 2019, I concluded, on the basis of the scale and challenge in delivering the RHCYP/DCN, that NHSL should be escalated to Level 4 of the Framework in respect of the RHCYP/DCN project. This was outlined in a report for a meeting of the HSCMB **(A34931238 - NHS Lothian Escalation – 11 September 2019, Bundle 13, Volume 3, Page 1241)**. At that meeting, HSCMB's assessment was that a broader range of issues needed to be addressed before the building could be fit for occupation, and additional leadership capacity would be needed to do this.

102. Following the HSCMB meeting, I notified the Chair and Chief Executive of NHSL in writing of the escalation to Level 4 **(A44267042 - Letter – MW – B Houston and T Davison – NHS Lothian Level 4 Escalation dated September 2019 –Bundle 13, Volume 3, Page 702)**. The move to Level 4 allowed us to appoint a transformation director or project director, which led to the appointment of Mary Morgan as Senior Program Director.

103. Prior to her appointment, I believe Mary Morgan was carrying out the role of Director of Strategy, Performance and Service Transformation within NHS NSS. As the Senior Programme Director, she would be responsible for the actions required to ensure that the project facility was fit for occupation and report to the Scottish Government through the Oversight Board. I understood that she had excellent relevant experience as a director, was highly technical, professional and had a determination to get results.

Remedial Works/Phased Openings

104. Following the establishment of the Oversight Board, the Scottish Government continued to be intimately involved. Both the Cabinet Secretary and I had a high degree of interest in making sure the project was completed. In respect of remedial works or migration of services, those decisions were reserved to the Scottish Government as it involved further expenditure of public money. The Cabinet Secretary had made the decision that nothing was to move until it had her approval. We also wanted the assurance from NHSL, through the Oversight Board, that the decisions that needed to be made could be relied upon; and we put public money behind that in order to ensure the completion of the project.

105. I have been asked if I was satisfied with the rate of design development for the critical care solution and other remedial works. I would not use the word "satisfied". I believe it moved forward as quickly as it safely could. I was keen to see progress without undue delay but did not want to see anything not being properly done.

106. With the heavy caveat that I retired before the migration to the RHCYP took place, I have seen no evidence that the migration to the RHCYP/DCN facilities could have been carried out safely earlier. Importantly, not only did we need to get the technical solutions in place, but the logistics of the migration were extensive.

Reflections

107. I have been asked what actions, if any, would have mitigated the risk of the critical care issue leading to a blanket delay of the entire build. My major learning point related to what the Cabinet Secretary and I had discussed in relation to the Centre of Excellence. Within Scotland we have 14 territorial health boards of various sizes, with various critical mass of expertise.

All will, at some point, have construction projects running and, as an accountable officer within the Scottish Government, I would want external validation to give me assurance that all is satisfactory. The Centre of Excellence, which is now NHS Scotland Assure, will now look at these projects and at every stage of the project there will be an external sign-off to say that they are satisfactory and that the relevant standards are met. That would be my key learning point as to what could have been done differently.

108. I have been asked how satisfied I was with NHSL's handling of matters following the discovery of the critical care issue. I would say they escalated it to the Scottish Government; they had a hugely challenging time; and they responded to us and worked with us through hugely difficult circumstances, not only for NHSL as a whole but also for individuals.

109. I have been asked if I was satisfied with the Scottish Government's handling of matters following the discovery of the critical care issue. I have considered this at length and my reflection is that I think that the Scottish Government responded quickly and decisively, putting patient safety at the forefront of decision making. It was an incredibly challenging time and I am proud of the group of Scottish Government Directors who came together in this crisis situation and worked constructively with NHSL and NHS NSS. We managed to navigate through the first few days of July 2019, when people were unsure what was happening, to the point of decision on the 4 July 2019 and then quickly moved into a position of putting in place a system of support for NHSL that allowed for the project to move forward; in turn, allowing for the safe opening of the hospital for patients and staff. I am very proud of the work that the Scottish Government and the team that I led did in addressing the issues that arose. In this crisis response there was not a culture of blame. Instead, we worked collaboratively to resolve the issues and make the situation better.

110. I have been asked what I think was the key factor that led to the Critical Care issue going unnoticed until days before the planned opening date.

There will be others more qualified than me who can explain this, however, it seems to me that one needs to look to the detail of SA1 and the Environmental Matrix as to why the critical care beds were not receiving 10 air changes per hour.

111. I have been asked by the Inquiry if there is anything that the Scottish Government could be doing to avoid such an issue in the future. Again, I look to the establishment of NHS Scotland Assure: having their expertise and the checks and balances in place, goes some way to addressing these issues. I do not think it is a remedy to say we need to build up a significant capital planning function within the Scottish Government. That is not what the Scottish Government is there to do. I think we have to rely on the statutory accountable bodies, which are the health boards; and we need to make sure that they have the wherewithal to do these projects with appropriate external checks and balances in place and for the Scottish Government to exercise an oversight. The role of the Scottish Government was to manage the overall finances and the overall capital plan. I do not believe the solution lies in setting up a large capital planning function within each health board or that the Scottish Government should be micromanaging individual capital projects (it is too far removed from these projects and does not have the capacity or the capability to do that).

Declaration

112. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Mary Morgan

Introduction

1. My name is Mary Morgan. I am currently employed as the Chief Executive of NHS National Services Scotland (NHS NSS). I was appointed to this post on 1 April 2021, succeeding my predecessor, Colin Sinclair. I was appointed, by the Scottish Government, as the Senior Programme Director (SPD) for the Royal Hospital for Children and Young Persons and Department of Clinical Neurosciences (RHCYP/DCN) project on 16 September 2019. My appointment as SPD ended on 13 April 2021 **(A46527622 - Letter from Richard McCallum dated 13 April 2021 – Bundle 13, Volume 3 – Page 701)**.

2. In this statement I address the following:

    a. Professional qualifications and background.
    b. Appointment as SPD in respect of the RHCYP/DCN Project.
    c. My experience of the Non-Profit Distribution (NPD) Finance Model.
    d. My role as SPD with particular focus in relation to:
        i. Initial Activities and Key Relationships
        ii. Delays – the NPD Model and Covid
        iii. Concerns related to the hospital building
        iv. Remedial Works – Ventilation
        v. Other Remedial Works – General
        vi. The phased migration to the new hospital buildings.
    e. Governance and Reporting
        i. The Oversight Board
        ii. Senior Programme Directors' Report
        iii. Executive Steering Group
        iv. NHS Lothian (NHSL) Board Meetings

v. Strategic Liaison / Contract Review / Delivery Groups / Commercial Subgroup
vi. The Cabinet Secretary.

f. Escalation and De-Escalation – Level 4.
g. The Royal Hospital for Sick Children (RHSC) at Sciennes Road, Edinburgh and the Department of Clinical Neurosciences (DCN) at the Western General Hospital, Edinburgh; and
h. Some of my reflections from my time as SPD.

Professional Qualifications and Background

3. I started my career in the health service in the delivery of clinical care, working as a staff nurse and, ultimately, a ward sister at the Western Infirmary in Glasgow between 1985 and 1996. I moved into nursing management and then into general management with the then, NHS Argyle and Clyde Health Board, between 1996 and 2006.

4. Between 2006 and 2008 I was the General Manager of Emergency Care and Medicine at NHS Greater Glasgow and Clyde. As the General Manager for Emergency Care and Medicine, I was responsible for service delivery in those speciality areas in the Royal Alexandra Hospital, Paisley, Inverclyde Royal Hospital, and the Vale of Leven Hospital in Alexandria.

5. In September 2008, I moved to NHS National Services Scotland (NHS NSS) as the Director of Health Protection Scotland. As Director of Health Protection Scotland, I directed and managed a diverse, highly specialised team of clinical and managerial staff tasked with delivering effective and specialist national services which coordinate, strengthen and support activities aimed at protecting the people of Scotland from infectious and environmental hazards, in line with objectives set by the NHS NSS Board and Scottish Government Health Directorate directives.

6. I held this post until January 2012 when I became the Director of the Scottish National Blood Transfusion Service where I was primarily responsible and

accountable for ensuring the collection, manufacture and supply of high quality blood components, tissues and cells, and for the provision of some highly specialised clinical services, to meet the emergency and elective needs of Patients in Scotland, within statutory and regulatory requirements; including compliance with the Blood Safety and Quality Regulations 2005, as amended, and the Human Tissue (Scotland) Act 2006.

7. I became the Director of Strategy, Performance and Service Transformation on October 2018, a post I held until I became Chief Executive of NHS NSS in April 2021. The Director of Strategy, Performance and Service Transformation is a corporate role within NHS NSS responsible for providing:

- Strategic Leadership which is instrumental in positioning NHS NSS as a trusted partner and centre of expertise in transformational change, shared services, portfolio management and programme delivery
- Leading and directing specific corporate programmes to support NHS NSS in the discharge of its governance responsibilities and optimal operational delivery across NHS NSS' businesses.
- Direct responsibility for the delivery of National Transformation Programmes.

My role as Director of Strategy, Performance and Service Transformation allowed me to maintain a portfolio of different projects. As I explain below, it was during this time that I was appointed as SPD to the RHCYP/DCN project.

8. In April 2021 I was appointed as the Chief Executive of NHS NSS. As the Inquiry is aware, NHS NSS is a non-departmental public body established under s10 of the National Health Services (Scotland) Act 1978. NHS NSS is constituted by a number of distinct departments who are responsible for the delivery of specialist services and support to the NHS in Scotland. As Chief Executive I am responsible for the strategic management and oversight of NHS NSS' various departments and the organisation as a whole.

9. I hold the following academic qualifications:

- Master's Degree in Health Services Management from Kings College in London 2003
- BA Service Sector Management, Glasgow Caledonian University – 1995
- HNC in Management, Stow College, Glasgow – 1993
- NBS Diploma in Professional Studies, Western College of Nursing and Midwifery, Glasgow – 1988
- Registered General Nurse, Western College of Nursing and Midwifery, Glasgow, 1985.

Appointment as Senior Programme Director and Initial Steps

10. It may be helpful for the Inquiry to consider the context within which my appointment as SPD was made. On 4 July 2019, the Cabinet Secretary for Health and Sport, Jeane Freeman, postponed the planned move of patients and staff from existing facilities to the newly constructed DCN/RHCYP buildings. On 12 July 2019, Malcolm Wright, Director General (DG) Health and Social Care, advised NHSL that they had been escalated to level 3 of the Scottish Government's Performance Framework **(A41263551 – Letter to Tim Davison, copying in Brian Houston, from Malcolm Wright – 12 July 2019 – Bundle 7, volume 1 – Page 339)**. This escalation meant that NHSL would be provided with a tailored package of support with a view to improving performance. In July 2019, the Cabinet Secretary and the DG of Health and Social Care appointed an Oversight Board in relation to the RHCYP/DCN project. The purpose of the Oversight Board was to provide advice and assurance to Ministers that the RHCYP/DCN project would be delivered efficiently and safely. The first meeting of the Oversight Board took place on 8 August 2019. On 13 September 2019, Malcolm Wright advised NHSL that, in respect of the RHCYP/DCN project, they had been escalated to level 4 of the Scottish Government's Performance Framework. My appointment as SPD, effective from 16 September 2019, was part of the additional support accompanying that escalation **(A44267042 - Letter - MW - B Houston and T**

Davison – NHS Lothian Level 4 Escalation - Sept 2019 – Bundle 13, Volume 3 – Page 702).

11. I was first contacted about the SPD role August 2019. I can't remember the exact date but I think it was towards the end of August 2019. I was telephoned by Christine McLaughlin who was, at that time, Chief Finance Officer NHS Scotland and Director of Health Finance, Corporate Governance and Value (a Scottish Government Health Directorate). Christine explained that the Scottish Government wanted to appoint an SPD in relation to the RHCYP/DCN project. Christine asked if I was interested in the role and advised that I had been identified as a suitable candidate because of my background and experience from, amongst other things, delivery of the Jack Copland Centre (JCC) while I was Director of the National Blood Transfusion Service (discussed further below).

12. Christine told me that NHSL had been escalated within the Performance Escalation Framework and that the Cabinet Secretary was seeking to appoint somebody into a senior role to provide them with the support required of escalation. Christine advised that, if I was interested in the role, she would require to confirm that my credentials etc, were to the satisfaction of the Cabinet Secretary, and that a formal letter of appointment would follow. It was explained to me that, in essence, the role was to provide support; to work within NHSL and its governance structures; to facilitate the completion of remediation works at RHCYP/DCN and to provide assurance that the building would open safely and was fit for occupation. All other actions relating to the existing sites and the service migration to the new facility would remain the direct responsibility of NHSL.

13. Following my call with Christine and after giving the matter some thought, as well as discussing the role with the then Chief Executive of NHS NSS, I advised Christine that I would be interested in the role. Thereafter, the Cabinet Secretary approved my appointment effective as of 16 September 2019. I received a formal letter of appointment from the Scottish Government, dated 23 September 2019 **(A46527599 - Letter from Christine McLaughlin**

to Mary Morgan – 23 September 2019 – Bundle 13, Volume 3 – Page 704). This letter explains:

> *"This appointment forms part of the tailored support to NHS Lothian as part of the escalation to Level 4 of the performance framework for this programme, to strengthen the management and assurance arrangements for completing all of the outstanding works necessary to open the facility. The appointment formally commenced on Monday 16 September and will be reviewed on a rolling quarterly basis. During the period of this appointment you will remain an employee of NHS National Services Scotland and retain your existing terms and conditions and will report to the Chair of the Oversight Board.*
>
> *In your role as Senior Programme Director you will have responsibility for the actions to ensure that the facility is fit for occupation and I expect you to work as part of the NHS Lothian team. All other actions relating to the existing site and to the service migration to the new facility, will remain the direct responsibility of NHS Lothian".*

Prior Experience of the Non–Profit Distribution Model

14. When I joined the Scottish National Blood Transfusion Service, in January 2012, it was preparing to procure its new building: The Jack Copland Centre (JCC). The JCC is the national centre for the Scottish National Blood Transfusion Service, providing blood, tissue and cell manufacturing and testing facilities for Scotland. It is a Good Manufacturing Practice (GMP) facility providing pharmaceutical grades D, C, B and A manufacturing environments. Its functions and facilities require to meet stringent regulations and are inspected by the Medicine and Healthcare Regulatory Agency and Human Tissue Authority. Like the RHCYP/DCN, the JCC was procured as an NPD project. As far as I am aware, the JCC was the first NPD healthcare project to commence and, I believe, to conclude in Scotland.

15. Procurement and construction of the JCC, and the successful transition of services into the building was one of my major objectives as director of the

National Blood Transfusion Service. I directed that NPD programme from procurement through to completion and commissioning of the new facility.

16. Public Private Partnerships had been used to deliver public sector infrastructure across Scotland before the JCC, but not via the NPD model. Because the NPD model was new, all parties involved in the project were, to some extent, finding our way as the JCC was procured, constructed and commissioned. For example, prior to the JCC I had not been involved in procurement by competitive dialogue. Further, the NPD model is based on a standard form contract developed and controlled by the Scottish Futures Trust (SFT). While SFT provided support throughout the project as regards their standard form contract and commercial matters related thereto, that did not remove the complexity occasioned by the use of an entirely new commercial agreement.

17. As with all complex healthcare projects, the JCC was delivered by a project team including a project director who had a team of staff which included a range of technical and legal professionals, NPD and technical advisors. However, as Director of the National Blood Transfusion Service, I was ultimately responsible and accountable for delivery of the project reporting to the Chief Executive of NHS NSS at that time. The JCC project gave me direct experience of managing an NPD project with complicated, complex and stringent technical requirements, including those of ventilation and temperature control. This experience was directly transferrable to the role of SPD on the RHCYP/DCN.

My Role as Senior Programme Director

18. My role as SPD is as set out in the Scottish Government's letter dated 23 September 2019. In essence, the role was to support NHSL to deliver the RHCYP/DCN safely and effectively. I reported to the Oversight Board Chair, initially Christine McLaughlin and then, by Nov 2020, Professor Fiona McQueen, Chief Nursing Officer. I submitted reports, the Senior Programme

Director's Reports, to the Oversight Board. These reports accurately reflect the work that I was doing in performance of my SPD role. I also attended the meetings of the Oversight Board and contributed to those meetings where appropriate and required to do so.

19. My role was, in essence, to work with the DCN/RHCYP Project Team (Project Team) including Integrated Health Solutions Lothian (IHSL) and its partners to achieve safe and efficient delivery of the project. This included addressing the issues that had been identified with the ventilation systems in the critical care unit at the RHCYP as well as addressing the matters identified in the NHS NSS review of water, ventilation, drainage and plumbing systems, dated 9 September 2019.

20. I acted as the interface between NHSL, the Project Team, Scottish Government (either Christine McLaughlin or Fiona McQueen via the Oversight Board), NHS NSS (my own organisation), including Health Facilities Scotland (HFS) and Antimicrobial Resistance & Healthcare Associated Infection (ARHAI) Scotland: a clinical service providing national expertise for infection, prevention and control (IPC), antimicrobial resistance (AMR) and healthcare associated infection (HAI) for Scotland. As part of my 'interface role', I brokered and improved communication between NHSL and the NPD provider, IHLS. The commercial relationship and negotiations between these parties were challenging and I feel that I made a positive difference to these.

21. NHS NSS provided the Oversight Board with advice and also undertook the technical review of the six areas identified by them as potentially requiring remediation: Drainage, Water, Ventilation, Fire, Electrical and Medical Gases. I worked within NHS NSS and had the organisational knowledge, 'know how', and close professional relationships with the teams and individuals therein providing strong foundations for me to add value to the interface between the RHCYP/DCN project and NHS NSS.

22. In very simple terms, I was making sure everyone was doing what they were supposed to be doing, when they said they were going to do it by and

ensuring that all parties were accountable for their own actions. The purpose of this was to keep the project and required actions on track and to ensure that any proposed delays were properly interrogated.

Initial Activities and Key Relationships

23. One of the first things I did was meet with Brian Currie and the rest of the NHSL Project Team. They were working from the project office based at the Little France site. This location was very positive because it meant that they were already in that space and could experience the building first hand. IHSL, Bouygues and Multiplex also had space in the hospital, and it was good that all parties were, physically, working quite closely together, although in somewhat separate accommodation. Most meetings in relation to the project site were held in meeting rooms onsite.

24. I started to participate in the meetings and hear what was happening. The Project Team was, at that time, quite depleted. I recall that some members had planned to retire after the hospital opened. Some of those who had planned to retire delayed doing so but others did not and were no longer available to support delivery of the project. Other members of the Project Team had already been redeployed to other work.

25. Unsurprisingly, the general mood of the Project Team was low. I wouldn't go as far as to say that the team was demoralised, however, the general atmosphere was 'muted'. The team was slightly uncertain about what my appointment meant for them and what they were to face. I was, however, very clear that they needed to keep performing their existing roles and to keep me informed as they did so. This allowed me to understand their roles and project status. I hope I dispelled any fears they may have had early in my appointment.

26. NHSL's technical advisers, Mott MacDonald, were based in the same space as the NHSL Project Team (in essence, as part of that team). I found this to be a very helpful arrangement which facilitated the communication of good

technical advice combined with good project intelligence and shared knowledge across all relevant persons.

27. At the outset, we were particularly reliant on one of NHSL's commissioning managers, Ronnie Henderson. I asked for more staff because I believe he was overwhelmed by the amount of work that he needed to do and that which was forthcoming. It took a little bit of time to secure the additional people resource needed for the project and they really made a difference when they joined.

28. The other thing that I recognised was that there was a plethora of action plans and snagging lists. Some of the action plans were duplicates of previously identified work that was already underway or actions that were outstanding. There were also action plans coming out of the technical reports undertaken by NHS NSS as well as additional or emergent actions arising as works progressed on site. I ensured that the various action plans were combined for greater visibility and control to ensure there was clarity over what action was to be taken, by when and by whom. I asked Mott MacDonald to create a dashboard reporting tool to be able to track delivery against expectation and to document/record evidence of completion/outcome. Action plans were combined and duplication removed so we worked off single action plans for each of the six technical review areas: Drainage, Water, Ventilation, Fire, Electrical and Medical Gases.

29. With regard to relationships, everybody was very professional and welcoming towards me. Brian Currie and the Project Team were very keen to show me what had been achieved. It was difficult to assess the relationship between NHSL and IHSL other than to say it was of a commercial nature.

NPD Contract

30. IHSL was the Project Company under the NPD contract. IHSL contracted Multiplex to construct the hospital and Bouygues as the Facilities

Management (FM) provider. The role of the FM provider is to maintain and manage the facility once it is constructed. This is regulated by an agreement between Project Company and FM provider. Bouygues, as FM provider, had certain contractual responsibilities to undertake rectification works (discussed below). There was some resistance from Bouygues to some of the works they were asked to undertake. In short, they were concerned that some of the medium to high value rectification work they were being asked to undertake was not cost-effective for them in consequence of the payment mechanism that had been agreed with them.

31. Early in my period of appointment, I visited the Royal Hospital for Sick Children, Sciennes Road, Edinburgh and the Department of Clinical Neurosciences, Western General Hospital just to see what the facilities were like at those hospitals.

Delays – The NPD Model and Covid-19

32. The Inquiry has asked me about complications and delays that arose during my time as SPD. In particular, I have been asked whether the NPD model complicated matters or held up the job that I had to do.

33. My role was to oversee the delivery of a major healthcare construction project. Such projects are, by their very nature, complex. The RHCYP/DCN project was developed and delivered over a number of years before I became involved. That, however, did not diminish the level of technical and commercial complexity of the parts of the project in which I was engaged.

34. The NPD model, as a model of Public Private Partnership (PPP) finance, meant that more parties were involved in decision making than if the project had been delivered as a capital build project by NHSL. In particular, the involvement of investors who were funding the build through IHSL, increased the range of commercial interests that had to be taken into account and accommodated during decision making processes. This meant that a lot of the negotiations that we had were quite commercial in nature. I don't know if

this made matters more complex than they would have been had the project been a capital build as I can only comment on the facts and circumstances that were presented in my role as SPD.

35. I don't recollect, during my time as SPD, thinking that things might have been easier were we not working within the NPD finance model. The NPD finance model is what we had to work with. I would, however, reflect that the NPD finance model is very commercial in nature: private finance would not involve themselves in NPD projects if it was not financially sensible for them to do so. In my opinion this resulted in a lot of decisions being determined one way or another based on the parties' assessments of commercial risk. Such assessments are, of course, multi-faceted and were often matters which the parties' senior decision makers required to determine. At times, that caused me to reflect that while negotiations were undertaken between those who are 'on the ground' those persons were not always the decision makers. This, perhaps, prolonged decision making as decisions reached during negotiations still required to be ratified by senior decision makers, for example, by IHSL's funders.

36. On 17 September 2019 the Cabinet Secretary for Health and Sport announced that a public inquiry would be held in relation to, amongst other things, the delayed opening of RHCYP/DCN. The announcement that a public inquiry would be held added a level of complexity to commercial negotiations. I don't know if this resulted in any delays, but it seemed to create an additional level of anxiety amongst the commercial parties involved in delivering the RHCYP/DCN project. I think those parties saw the presence of a public inquiry that was likely to scrutinise their actions as an increased commercial risk to them. This applied to the appointment of external suppliers too.

37. At times, parties would approach me to discuss the prospect of a public inquiry. I think that some thought that I would know more about it than they did because I had been appointed by the Scottish Government but I didn't know any more than anyone else. These discussions did, however, allow me

to form my views related to increased levels of anxiety. I mention this simply as a matter I consider relevant to my observations related to the commercial decision making process I have described above. I am, in no way, being critical of the Cabinet Secretary's announcement or the important work being undertaken by the Public Inquiry.

38. I have no doubt that the onset of Covid-19 had an adverse impact on the project timeline. Although the Project Team and contractors kept working through lockdown (the RHCYP/DCN project was considered a critical infrastructure project), delays were caused by socially distanced working practices and supply chain issues arising as a direct consequence of the pandemic. Covid-19 meant that Imtech (the supplier of the remedial ventilation systems for the Critical Care Unit of the RHCYP) had to work harder to locate and to source materials because the supply chain was impacted. Delivery of goods and supplies did not arrive when expected. People had to work socially distanced so more detailed risk assessments and safe systems of work had to be undertaken.

39. I visited the hospital site and Project Team about once a week throughout the pandemic to maintain visibility. Working remotely, for example for meetings, was largely new to many of us and was unreliable in early stages.

40. However, as well as causing problems for delivery of the project the pandemic also provided an increased impetus to get as much of the hospital up and running as soon as was possible, to meet the increased demand on health services that was anticipated to arise in consequence of increased admissions to hospital as well as the need to maintain social distancing on other wards across the healthcare estate. While construction was ongoing in areas of the hospital, other areas were able to be used to provide a solution as part of the Covid-19 response. For example, out-patients were moved into the new building because additional space was needed for social distancing; The Ronald MacDonald House accommodation was used to house staff who could not return home; Covid-19 vaccination clinical research was undertaken in one of the wards. It felt good to have some parts of the building in use and to

be able to demonstrate the success of a phased approach to using the building. I discuss phased migration in greater detail later in this statement.

41. One of my reports highlighted this perfectly when we went from Green to Amber. There was a critical resource issue arising, with an entire specialist team being affected by Covid-19. **(A40933361- Oversight Board Papers – 14 January 2021 – Bundle 3 – Page 1077)**. I'm just using that to exemplify the types of issues that needed managed in terms of delay events for the project due to Covid-19.

Building Concerns

42. I have been asked by the Inquiry what were the main concerns with the project at the time of my appointment. When I was first approached by Christine McLaughlin about taking up the role of SPD I understood the principal area of concern to be defective ventilation in the Critical Care Unit. I understood that the number of air changes fell below the standard required by relevant SHTM guidance. At that stage, I did not appreciate that Health Facilities Scotland were undertaking additional investigations in relation to water, ventilation, drainage and plumbing systems or that subsequently, the second three areas for technical review: medical gases, electricity, and fire.

43. At that time, and primarily based on my experiences with delivery of the JCC, I had a general understanding of the guidance relevant to ventilation in Scottish healthcare environments. By that, I mean that I knew there was guidance applicable to ventilation systems and where the relevant SHTM could be reviewed. However, questions as regards the technical interpretation and application of that guidance are matters upon which I would draw upon experience from appropriately skilled technical colleagues. In the case of the RHCYP/DCN my understanding was that the air handling units did not provide sufficient air changes. Fundamentally, that needed to be remediated.

44. We had a similar, albeit not so serious, issue with the air handling units at the JCC whereby there was, initially, insufficient capacity in the air handling units to provide resilience and the units that had been installed had to be swapped for ones with bigger motors to achieve the requisite air changes and ventilation cascades.

Rectification Works – Critical Care Ventilation

45. As I explained above, Bouygues are the FM service provider for the RHCYP/DCN. Their engagement is triggered by practical completion of the project: when the construction phase comes to an end and a facility is available to manage. The Practical Completion Certificate for the RHCYP/DCN was issued on 22 February 2019.

46. Once practical completion had been achieved, Bouygues had expected to be working in a fully functioning hospital and they weren't. They were receiving payment but felt that the deductions they were experiencing because the hospital was not operational served as punitive penalties. There were many disagreements about the payment mechanism and the deductions made. Against this background, Bouygues didn't want to take on board the rectification works without re-drafting their agreements with IHSL to make it economically viable for them to do so. I recall meeting with a Bouygues Director, and she said, "No, we're not going to do this" and that while in terms of their contractual obligations they are responsible for undertaking any changes to site, their argument was that Multiplex was still on site and still had work to do. They took the view that Multiplex should be responsible for undertaking rectification works – this was not Bouygues' responsibility.

47. Multiplex was responsible for constructing the hospital. Practical completion had been achieved, and the hospital had been accepted. They did not consider that undertaking the remedial ventilation works was their responsibility. Accordingly, if they were to undertake the remedial works, they believed that this would be formalised in a supplemental agreement to their original contract.

48. I joined Susan Goldsmith and the team in the negotiations about facilitating the rectification works and finding contractors who could do the work. Those negotiations were difficult and Susan, Matt Templeton (IHSL Director) and I all worked hard to deliver a practical solution that resulted in the rectification work being undertaken, but it would be misleading to describe that process as anything other than difficult and challenging. Neither Multiplex nor Bouygues were going to do the works. Susan Goldsmith and I had been considering if and when NHSL should 'step in', as per their agreement with IHSL, when Matt Templeton came up with an alternative solution, to be supplied by Imtech, on the basis of a standard NEC 4 design and build contract. I recollect that Susan Goldsmith and I were quite surprised by the sudden nature of this development. Matt Templeton said he had not advised us sooner as he had not wished to raise hopes. Nevertheless, all three of us were delighted that a potential solution had been identified.

49. Imtech had considerable experience in hospital settings and was the only contractor that had been identified who were willing to undertake the work. My feeling at the time was that the public focus on the rectification works probably put some contractors off: I certainly wasn't aware of many suppliers who had expressed an interest in doing the works. I don't know if that is, in fact, what happened but it was the impression I formed at the time.

50. Having identified that Imtech could undertake the works it was then necessary for NHSL to enter into a supplemental agreement with IHSL in relation thereto. This required to be agreed and negotiated between the parties. Negotiating that Supplemental Agreement (SA2) became a significant part of the project. A lot of the concerns and negotiations related to warranties. If we were going to modify the ventilation system or put something new in, who was going to warrant that work.

51. Supplemental agreements are in some ways not supplementary. They are, in essence, new contracts that are layered on top of an existing agreement. They come with associated additional costs. SA2 involved rewriting

components of the pay mechanism that had already been agreed between NHSL and IHSL, and there were lots of meetings with lawyers with lots of negotiation on this point. These took a lot of time. My challenge was what work could progress while SA2 was being negotiated? Can we progress with some design work? Can we progress with actual works at all, without actually breaking the warranty terms ahead of SA2 completion?

52. There was some design work that Imtech were able to undertake pending finalisation of SA2. However, Imtech could not be contractually bound to undertake the full works until SA2 was agreed so there was a limit to what they could reasonably be instructed to undertake, without the guarantee that they would be instructed to undertake the full program of rectification works. Earlier in this statement I described that the NPD model is very commercial with each party having distinct commercial interests. Imtech, as a supplier operating in that model were another party who required to consider and protect their own commercial interests and liabilities.

53. The Inquiry has asked me if I have any concerns that agreement of SA2 delayed the project more than anything else. Commercial negotiations were a major factor that impacted on the timeline, but I don't believe it was just that, there were other factors. Firstly, the initial target date for completion of rectification works was set before the full knowledge of what rectification works were required. Once the NHS NSS reviews had been completed, it was clear that there was more work to be done beyond undertaking the necessary remedial works to the ventilation systems in the Critical Care Unit. These works had not been accounted for in the initial estimated completion deadline. Secondly, additional remedial works were identified as the programme of works progressed. The fact that the hospital was not occupied provided the opportunity to do the works at that time when, otherwise, they may have been undertaken as a programme of general maintenance. Thirdly, and most significantly, the Covid-19 pandemic was the biggest single factor impacting upon the project timeline.

Additional Remedial Works – General

54. Apart from the number of air changes being deficient, the technical review of ventilation and other matters undertaken by NHS NSS identified a number of other matters to be remedied and rectified.

55. In terms of water and its testing, there was learning from the Queen Elizabeth University Hospital Campus, Glasgow (QEUH), especially where gaps in formal guidance were evident. There were times when professionals disagreed about what was required to be done if anything. When there was disagreement, time was taken to discuss, secure professional consensus and to agree actions. An example of this related to whether it was necessary to strip down and inspect the taps installed at the hospital. HFS were concerned that the taps may have become corroded and contaminated. I understood HFS' concerns were derived from work they had undertaken at the QEUH. HFS wanted all of the taps to be stripped back and examined. NHSL did not agree that this was necessary. I recall that HFS' position was not supported by technical guidance and their learnings from the QEUH were continuing to develop. For my own part, I agreed with NHSL. In the end, after detailed discussion and dialogue between HFS and NHSL, agreement was reached that it was not necessary to strip down and inspect the taps at the RHCYP/DCN. This issue was not escalated to the Oversight Board as the professionals tasked with delivering the project were able to agree a safe and sensible way forward.

56. There was an issue with the patient baths supplied by Arjo. The baths were found to be contaminated with pseudomonas, possibly related to a manufacturing contamination. Arjo removed the baths, disinfected them offsite and moved them back in again.

57. The electrical issues identified by NHS NSS were mainly related to supplying evidence of safety. The requisite evidence demonstrating that the electrical systems, mainly in theatres, met requirements was produced. I don't recall

there being very much by way of rectification work that needed to be done for electrical safety.

58. The fire safety technical review made a number of recommendations. The main issue was the lack of fire dampers within the ventilation system. The main question was the definition of the hospital wards/rooms as “sleeping accommodation”, and the requirements of extant guidance. It was the area of greatest debate at the time. I do not believe this question was ever really answered satisfactorily for this project but it became a moot point as the decision was made to undertake improvements to fire safety through the installation of fire dampers in all ward areas. There was a concern that the installation of fire dampers would reduce obstruct ventilation flows, but this was not realised.

59. The installation of fire dampers requires these to be inserted into the ventilation ducts. The intent is that spread of smoke, fire, or both, through the ventilation ducts would be dampened and there would be greater time for evacuation. As a result of fire damper installation, the ventilation system needed to be retested to ensure there had been no adverse impact on the ventilation system.

60. For medical gases, the recommendations of the technical review were in relation to commissioning the systems by the appropriate pharmacists prior to opening.

Phased Migration

61. I was keen that there was a phased opening to the building. The public purse was paying for the building that wasn’t being used, and I always felt that it was important to get it occupied as soon as it was safe to do so. Further, the facilities at the RHSC at Sciennes Road and the DCN at the Western General Hospital were suboptimal for the delivery of modern healthcare. Phased migration was not, however, straightforward and particular regard had to be

had to NHSL's ability to clinically resource any part of the building that was opened.

62. Initially, I sensed reluctance to consider a phased opening of the hospital. I don't think anyone was ever overtly against the possibility and there was a willingness to have exploratory conversations.

63. There was resistance from clinical teams about dividing their places of work and existing clinical adjacencies. For example, the Child and Adolescent Mental Health Service (CAMHS) is essentially a stand-alone service within the hospital. However, when they need help, they need it from the rest of the Children's Hospital. So, if there is a clinical emergency or an incident that takes place, then they needed to have other staff who would come in to support them in their area. Whilst CAMHS is independent, they could not be isolated from other mechanisms of support and that, for them, was a no-go position.

64. The "game changer" for phased use of the building was Covid-19. Additional space was required across the NHS estate to allow for continuity of services while maintaining and accommodating the need for social distancing. I recall attending a meeting where Tracey Gillies, NHSL Medical Director, brought forward the proposal that perhaps the situation anent phased migration had changed with the on-set of Covid-19 and thus, the driver for change towards phased migration became the preferred option.

65. The phasing of migration was not in my remit (see my terms of appointment discussed at paragraph 18 above). The migration planning and execution were all for NHSL to deliver. I was constrained to ensuring that the new building was fit to occupy, including any parts that were to be occupied in a phased manner.

66. As the project progressed there were areas of the hospital that were or became fit to occupy ahead of other areas. Outpatient and diagnostic

services of the DCN were the first to migrate, which was within a year of the decision to delay the opening of the hospital.

67. At a meeting of the Oversight Board on the 9 April 2020 **(A40933361 – Oversight Board Papers – 9 April 2020 – Bundle 3 – Page 909)** there was discussion surrounding the recommissioning of ventilation systems being completed for all DCN areas and that general areas will be completed in the next three weeks. The original ventilation non-compliance was in the Children's Intensive Care Unit and Haemato-Oncology. DCN ward areas, served by their own air handling unit, were unaffected until fire dampers were installed requiring the ventilation system to be recommissioned. There were no ventilation issues within theatres, other than the air pressures were a bit high causing some door closure difficulties that needed resolved.

68. The rest of the DCN complement moved in July 2020 **(A40933361 – Oversight Board Papers – 18 June 2020 - Bundle 3 - Page 1005)**. There would also be a move of non-inpatient elements, including outpatient services, to the RHCYP.

69. The phased approach to occupation allowed clinical teams to gain confidence in the building and its facilities. In my opinion, phased opening was a good opportunity to test the building and to iron out any issues that there may be. Clearly, when you move into a new building, you're going to have things that the staff are going to find that are not quite right, that are not where they need to be, these kinds of things. From their point of view, it would be better to have that phased and to let it work, or have things changed as necessary. Another factor for me was that the new facility is far superior to what people were already working in and where patients were receiving treatment, at the RHSC at Sciennes Road and at the DCN at the Western General Hospital.

70. Around January 2021, NHSL decided that as all works were complete and that sufficient services were available then CAMHS could migrate over to the new building **(A40933361 – Oversight Board Papers – 14 January 2021 – Bundle 3 – Page 1083)**.

71. By 24 February 2021 I was able to report to the Oversight Board that apart from general snagging work all ventilation and other significant remedial works had been completed (reference SPD report of same date) **(A40933361 – Oversight Board Papers – 25 February 2021 – Bundle 3 – Page 1091)**. At that point, I was satisfied that, in accordance with my remit as SPD, the hospital provided a very safe modern environment for the delivery of health care services. The hospital fully opened shortly thereafter on 23 March 2021. **(A40933361– Oversight Board Papers – 8 April 2021 Bundle 3 – Page 1096)**.

Oversight Board

72. I attended meetings of the Oversight Board but was not a member. It was the members of the Oversight Board who made decisions. I would make recommendations to the Oversight Board but the board would determine whether these recommendations would be accepted. The Oversight Board was chaired initially by Christine McLaughlin, but then moved to Fiona McQueen, Chief Nursing Officer by November 2020. Details of membership and attendees can be found within the Oversight Board's terms of reference.

73. Colin Sinclair, the Chief Executive of NHS NSS was a member of the Oversight Board. Gordon James, Director of Health Facilities Scotland and Professor Jacqui Reilly, who was the HAI executive lead at NHS NSS and internationally recognised for her expertise in Infection Prevention and Control, attended meetings of the Oversight Board. This meant that the matters I was reporting to the Oversight Board on were being scrutinised by senior members of my employer: NHS NSS. At times, this was difficult as I didn't always agree with, or like, what my peers and NHS NSS colleagues would say or recommend. However, this additional assurance and expertise was obviously of considerable value to the safe and effective delivery of the project.

Senior Programme Director's Report

74. As I explained earlier in this statement, I submitted a Senior Programme Director's report for consideration at meetings of the Oversight Board. The style for this report came from Programme Management Services, a department of NHS NSS. I asked Programme Management Services for a range of report templates, and I chose the one best fit for the reporting I required to do for the project.

75. The report provided a general update on, for example, high level progress against the design and build targets, commercial negotiations and any other factors impacting upon the overall status of the project. The report also reported any mitigating actions to correct project timeline excursions and provided a status report against each of the six areas of technical review including RAG (red, amber, green) status and narrative report. The report evolved over time to include:
    i. delivery against critical path actions and key achievements, highlights, or both, since the previous Oversight Board and key challenges, activities, or both, for the next period.
    ii. project risks as included in NHSL's Datix (risk management) system; and
    iii. A strategic action tracker was also included once actions had been collated to single action plans.

76. The intention of my report to the Oversight Board was to provide a consistent factual record of progress and ensure the most up to date position was provided for the purposes of assurance and informed decision making. There were aspects of my report that were uncomfortable, especially where activities took longer to resolve than anticipated or problems seemed intransigent. For example: the length of time to agree supplemental agreements and the time to resolve shower hose non-compliance.

Executive Steering Group

77. The Executive Steering Group comprised members of NHSL's executive management team and members of the Project Team. The Steering Group was established prior to my appointment. I would describe meetings of the Executive Steering Group as being tactical in nature: Decisions were made across a range of activities in respect of RHCYP/DCN: progress at the new site, what was also happening by way of the old hospital sites to maintain services, to plan for relocation whenever that would happen and the Covid-19 response. It was a weekly check-in about what was happening with all things across the NHSL estate. I attended from the RHCYP/DCN new building perspective. It was the main route by which I worked within NHSL senior governance. I used the Project Director's report for the Oversight Board to provide any updates to the Executive Steering Group.

NHS Lothian Board Meetings

78. I attended NHSL's Finance and Performance committee meetings on two occasions to answer questions that were posed of me. I only attended these meetings when there were agenda items relevant to my role as SPD. More particularly, I think, agenda items would be around approval for the recommendations arising from the outcomes of commercial negotiations. Agenda items would be led by Susan Goldsmith, who as the Finance Director, was the Senior Responsible Owner (SRO) for the programme. I would be attending in support of her. I worked very closely with Susan Goldsmith. We frequently had conversations about what was happening, we were in meetings around commercial arrangements, we frequently had informal conversations about how those were going and so on. Susan was my main executive point of contact in NHS Lothian.

Strategic Liaison / Contract Review / Delivery Groups/ The Commercial Subgroup

79. The Strategic Liaison Group was chaired by Roger Thompson, IHSL. The Strategic Liaison Group was the Senior Officers Group where we came together and talked about the relationship and shared matters between NHSL and IHSL. Discussions focussed on what was happening on the ground with things like the performance of Bouygues, and the views of IHSL's on relevant matters of the project and so on.

80. I have limited recollection of the Contract Review Group and to my recollection, I did not attend it. I believe it was a group to review the payment mechanism and to resolve issues raised by Bouygues as previously described.

81. The Delivery Group would go through the action plans in some detail. I worked quite closely with the Mott MacDonald team who were gathering in the action status and evidence. Frequently they would come to me for approval to close an action once work was completed, the evidence obtained, documented and recorded. I would attend these meetings when possible.

82. The Commercial Subgroup was a subgroup of the Oversight Board. It was established at Susan Goldsmith's suggestion to provide additional focus to the commercial negotiations. It comprised members of the Oversight Board and NHSL team. I attended the Commercial Subgroup. It provided a reference group for the team involved in the detailed commercial negotiations.

Escalation and De-Escalation - Level 4

83. I was not party to the decision to escalate NHSL to Level 4 of the Performance Framework in relation to the RHCYP/DCN project. Administration of the Performance Framework is a matter for the Scottish Government. NHSL were already escalated at stage 4 for the RHCYP/DCN project when I was appointed. I understand this escalation was the reason for my appointment.

84. About a year after I was appointed, I sent an email to Fiona McQueen **(A41230028 – Email from Mary Morgan to Fiona McQueen – 7 September 2020 – Bundle 8 - Page 272)** voicing my reflections on the project and how pleased I was about its status at that time, with a view to its escalation being reviewed and de-escalated. I addressed this correspondence to Fiona as she was, as Chair of the Oversight Board, my link with the Scottish Government. It was not clear to me what the criteria were, or are, for de-escalation within the Performance Framework or if my appointment was inextricably linked to NHSL's escalation status. A lot had changed since my appointment, including the Chair and Chief Executive of NHSL. Given progress against the project and these changes, it felt the right time to raise the question of de-escalation.

85. I didn't take an interest in escalation status thereafter. It was up to NHSL and their Chairman and Chief Executive to progress. I was later made aware that de-escalation would not happen until the new hospital was fully operational.

Cabinet Secretary

86. I did not report to or communicate directly with the Cabinet Secretary or her private office. The only time I met her directly was when I accompanied her on a visit to the RHSC at Sciennes Road, Edinburgh and the DCN.

RHSC, Sciennes Road, Edinburgh and DCN, Western General Hospital Sites

87. It was not within my remit to assess whether the old sites for the RHCYP and the DCN were safe to continue operating whilst the project was being completed for the new build **(A44267042 – Letter – MW – B Houston and T Davison - NHS Lothian Level 4 Escalation dated September 2019 – Bundle 13, Volume 3 – Page 702).** From a personal point of view, they were obviously old and difficult to clean and to maintain and, from my site visits, were sub optimal for the delivery of modern healthcare. I understand that there was financial investment in both hospitals to maintain safe services pending completion of the RHCYP/DCN project.

88. The contrast between old facilities and the new RHCYP/DCN hospital was a really strong driver to get the new building completed so patients, staff and services could move into it. The new hospital had brand new equipment still wrapped in bubble wrap, awaiting commissioning in theatres.

89. I suggested that some of the IHSL project delivery team visit the old hospital sites to see the contrast. One of the Project Managers took up the opportunity and returned doubly motivated to progress completion of rectifications. It was a really big motivator to go and visit the old sites.

90. I can't comment as to the safety of these sites. I believe if they were unsafe then NHSL would have addressed those issues so that the healthcare services were delivered in as safe an environment as was possible.

Reflections

91. I have been asked by the Inquiry for my reflections from my time as SPD for the RCYP/DCN project. My principal reflections relate to the availability of infection prevention and control (and other specialist) resources for the delivery of healthcare construction projects and the difficulty that arose from the complexity of contractual arrangements between the various parties to the RHCYP/DCN project.

92. Infection Prevention and Control are very specialist resources. In my opinion, a dedicated Infection Prevention and Control specialist workforce resource should be assigned to projects of this magnitude. It is, in my view, insufficient to have workforce resources who have responsibility for inputting into the project as part of their day-to-day portfolio. I recognise, however, that Infection Prevention Control nurses and doctors are in short supply.

93. I also believe the same approach should be taken for fire safety, water safety etc. The NHS system needs to find a way of bridging the gap between

clinical service and engineering requirements, technical requirements, or both. Such resourcing is not just a financial consideration. It's also a workforce planning consideration and having the skilled workforce available.

94. The creation of NHS Assure (a department of NHS NSS) addresses, to an extent, the reflections I discuss in the preceding two paragraphs. The assurance process undertaken by NHS Assure on significant healthcare projects provides health boards with a greater level of both scrutiny and support in these areas of technical skill and expertise. I say "to an extent" because the responsibility for delivery of healthcare projects still lies with health boards and it is for health boards to ensure that they put in place sufficient technical resource to deliver those projects alongside the assistance of NHS Assure. NHS Assure should not be seen as a substitute for health board level expertise.

95. I found the negotiation, drafting and agreement of SA2 to be a challenging, stressful and protracted process. Everybody involved was very professional and given the construct that was being operated within, I don't think there is anything that could have been done differently or more quickly. However, the process was complicated, and I would hope that there is a simpler way to manage contracts and contracting in future cases.

96. I have been asked if my role was pivotal in the turnaround of the project. I think my role, whether it was me or somebody else, brought a degree of assurance, and maybe it's for other people to decide if it added value, but I don't believe we would have got through all those supplemental agreement negotiations as quickly unless I had taken some of the interventions I did.

97. In terms of eventual outcome, the result would always have been the same regardless of my involvement. The hospital would have opened, and patients and services would be using it. It's the timeline that maybe would have changed in that space. Everyone had a role to play in getting the hospital opened. My role was to challenge the status quo that had existed prior to my appointment. The ask of me had been to conclude the works and have the

hospital fit for occupation within a certain timeframe. This timeframe changed because there were different issues that presented but the facility was fit to occupy and subsequently opened against deadline and is functioning today.

98. I think it is for other people to decide if I brought any added value. I probably brought added assurance and, publicly, was somebody appointed to solve the problem. I think I did specifically bring to it clinical knowledge, from my nursing background, so I did understand the clinical service needs and patient flow and pathway in a practical sense. I understood the NPD model and how difficult that could be to execute, having been through that experience in one of the first projects that was opened. I knew a lot of the people involved within NHSL, NHS NSS and Scottish Government so could build on existing relationships. The IHSL team and legal teams got to know me. From that perspective, I had the ability to influence, and I think I had credibility over and above others who may have been appointed to the SPD role.

Declaration

99. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry
Witness Statement of
Robert Menzies

Personal Details

1. My name is Robert Menzies. I am currently retired after working for over forty years as a Senior Healthcare Architect. My last working role in this capacity was with Boswell Mitchell and Johnston (BMJ) Architects based in Glasgow and London.

Education and Professional Background

2. I have a number of professional qualifications, including a B. Arch (Hons) from the University of Strathclyde (1972), an MSc in Urban Design from the University of Heriot-Watt/Edinburgh College of Art (1975), plus the Royal Institute of British Architects (RIBA) Diploma in Urban Design (1984). Before retiring I was Architects Registration Board (ARB) registered and I was also an Associate of the Royal Incorporation of Architects in Scotland. I have also been a former Member of the Royal Institute of British Architects.

3. I started my career in 1969 as an Architectural Assistant with Sir Frank Mears & Partners in Edinburgh. Since then, my career has seen me working in various architectural roles including being a planning officer in Edinburgh in the 1970s. However, from 1980 onwards my main focus has been as an architect working across a range of building types, but primarily in healthcare.

4. Over that period, I have gained specialist knowledge and experience in a number of fields including fire safety, hospital design, stadium design and European procurement law. I have been a consultee to the Scottish Government on the Technical Standards, and I also compiled a report on hospital fire safety for the Scottish Government's Property & Environment Forum in the 1990s. This was done on behalf of the Royal Incorporation of Architects in Scotland (RIAS).

Role with BMJ Architects

5. I started with Boswell Mitchell and Johnstone Limited (BMJ) Architects in 2003 after five years at HLM Architects. Prior to that I had spent seventeen years with Keppie Design. With HLM I completed the Princess Royal Maternity Hospital and the neighbouring A&E unit within the Glasgow Royal Infirmary campus as well as working on a £1billion Private Finance Initiative (PFI) hospital project in London.

6. My first job within BMJ was working on a mental health unit at Stobhill Hospital. I moved on from that to become Project Architect for the new Beatson Cancer Centre in 2004. I gained a great deal of knowledge about adult cancer facility design from this project. This augmented the prior experience in had gained in paediatric cancer design that I had gained in 1995 as project architect for the new Children's Cancer ward based at Glasgow's Yorkhill Hospital. This was known as the Schiehallion Unit.

7. At BMJ I worked on further projects before being asked to get involved in preparing the reference design for the new Glasgow Royal Hospital for Children (RHC). This was a capital funded project using design and build. We were part of the advisory team alongside HLM Architects who were in the lead role and had responsibility for the adjoining adult hospital. My role involved attending the clinical meetings with the users to create an exemplar design to the point where it could be issued to bidders. After the winning bid had been selected by NHS Greater Glasgow and Clyde (NHSGG&C) BMJ and the other consultants on the team were told that we were no longer required in the procurement. This came as a surprise as we had anticipated continuing to act in an advisory capacity up to and including completion.

8. Following on from that, BMJ began bidding for the Edinburgh children's hospital. This was essentially procured under an NHS framework system, whereby a list of firms or consortia initially compete to get on a framework.

If successful it means the consortia can then bid for work on projects submitted to the framework by various health boards, and which are to be procured via the framework process. That is how we got involved with the original children's only hospital. In that instance we were with BAM, as the main contractor and consortium lead. BAM employed both ourselves and Nightingale Architects, along with Hulley & Kirkwood (mechanical and electrical engineers) Arup (structural engineers), and Tribal (medical planners). This was the core team with Nightingales' Cardiff office acting as both lead architect and design team leader.

9. The children's only hospital was to be capital funded and the BAM team duly won the competition to design and construct it. When that project was postponed because of financial constraints NHS Lothian moved to a revenue funded process. However, NHS Lothian (NHSL) decided that they would retain the BAM design team's services to prepare a reference design for bidders, but obviously without BAM participating. Having won the work on the original children's-only hospital, it made sense to keep the same team together to prepare the reference design. The other partners within the retained design team were as above.

Role in Reference Design Stage

10. At BMJ, I was a Senior Clinical Healthcare Architect. I joined the team that won the children's-only project, but I was not involved in the original bidding process for it. I only became involved after the initial contract had been won. I then started to develop those clinical layouts which had been allocated to BMJ. When we moved to the reference design stage for a revenue funded project, I continued in that role, liaising with Nightingales whilst developing the clinical departments that belonged to us. My role also involved providing commentary on some of Nightingales' layouts from a Scottish perspective (different building regulations etc). So, I was essentially doing a lot of the clinical design alongside the Nightingales team.

One of the advantages of employing BMJ was that we had just done the Glasgow Royal Hospital for Children (RHC) reference design (as outlined above) so helping to prepare a similar one for Edinburgh was a natural follow-on from that.

BMJ Role in the Reference Design Process

11. With regard to BMJ's role in the reference design process I think we were seen as clinical backup to Nightingales, who were the lead architects. We had direct access to the Scottish contacts, and we were also able to readily access the team members based here as well as NHSL. We were providing an input from a Scottish perspective because there are slightly different Health Technical Memoranda and Health Building Notes in Scotland, whereas Nightingales were more used to the English versions. They were also more used to the English building regulations whereas we had greater familiarity with the Scottish equivalent being used on the project.

12. On that point I have been interested to read some of the information that has come out of the Inquiry, which refers to Nightingales as the concept architects and BMJ as the clinical architects. To me, that did not seem to reflect what actually transpired. Nightingales took ownership of a lot of the main clinical departments like Theatres, Radiology and A&E, and drew up the layouts for them, whereas we took some of the lesser departments, such as Outpatients, Clinical Skills, and Child Life & Health. So, I was therefore quite surprised that Nightingales were described as primarily concept architects because they were playing a significant clinical role. At the time I felt that this created a bit of friction in terms of the interpretation of who was doing what. The Nightingale team was based in Cardiff, and they often struggled to make some of the meeting times in Edinburgh because Cardiff is quite a difficult place to reach with only two flights a day to and from Edinburgh. They were also finding it expensive to fly up to Edinburgh for e.g., a half hour meeting because that took their staff out for a whole day. So, to help out we therefore took on some of their smaller departments to alleviate the pressure on them.

13. It was quite easy for me, living in Falkirk, to get through to Edinburgh quickly and often at short notice. It therefore made sense for me to attend and take these meetings. BMJ consequently assumed a bigger role in terms of what had originally been anticipated when allocating the clinical layouts. This still left Nightingales with the many bigger departments such as theatres, radiology, A&E etc. Nevertheless, we retained a role commenting on the drawings they produced for these departments prior to issue to NHSL. Unfortunately, there often seemed to be some debate as regards the best way forward in terms of developing some of the layouts which were within Nightingale's ambit e.g., Oncology. The Nightingale architect responsible for that department did not seem to have any cancer or paediatric experience whereas I had. I therefore assumed she would welcome our input, but she repeatedly declined to take on board comments, even when it was pointed out to her that the layout she'd produced didn't meet Scottish building regulations. That surprised me and has led to me asking questions as regards our role on the project. If we were the clinical architects as the inquiry suggests, then why was our clinical advice being rejected? It also made the relationship between BMJ and Nightingales more fractious as a consequence.

14. With reference to "Subcontractors employed by BMJ architects," we did not actually employ any subcontractors as such that I am aware of. The original capital funded team was subcontracted to BAM as the main contractor. When the revenue funded reference design process started the team was essentially just novated to NHS Lothian.

15. On the Glasgow Royal Hospital for Children (RCH) I was not involved in gathering the employer's requirements. The procurement process and the creation of the Invitation to Participate in Dialogues (ITPDs) for that project was undertaken by Currie & Brown along with NHS Greater Glasgow and Clyde. Currie & Brown had been appointed as project managers after a competition which involved them competing with Mott McDonald and others for that role. So, they had the project manager role in the Glasgow hospital whilst Mott McDonald subsequently won the same role in the Edinburgh hospital.

Currie & Brown then put together a team of architects, mechanical engineers, and civil engineers. The lead architect for Glasgow was HLM who were going to do the reference design for the adult hospital with BMJ being brought on board to do the children's hospital. We were subcontracted to HLM. I was the Senior architect for BMJ involved in doing the reference design for the children hospital for Glasgow so that's where I came in to contact with Currie and Brown. I think the ITPD would be constructed in parallel to preparing a design but we were not inputting directly into it. The ITPD was the responsibility of the Currie & Brown Team. We were preparing an architectural design, and the engineers were then providing input with regard to structural, mechanical and electrical terms to verify that design i.e. that it could be built structurally etc

16. In Glasgow, The RCH reference design was completed by BMJ with HLM involved in preparing the Queen Elizabeth University Hospital (QEUH) reference design. We worked collectively as a team with others being involved to produce a reference design and specification. The whole package - including the ITPD - then went out to the market. From that point on we were engaging with bid consortia and not solely contractors. That engagement kicked in after we had finished the reference design, so as far as I was aware the ITPD was already in place as a document that had been issued to the bidders. That work was complete before the bidders got involved with us and as such, we were not directly involved in the ITPD preparation.

The Bidding Process Following the Reference Design

The Edinburgh Children's' Hospital

17. At the end of the revenue-funded reference design stage, the option was offered to the participants in the reference design team to join a consortium bidding for the actual project. BMJ had worked with BAM on the capital funded project, so BAM engaged us again. BAM then joined up with Balfour Beatty to form a consortium called B3. There followed an interview process conducted by BAM and Balfour Beatty to appoint another Lead Architect as Nightingales had

indicated that they no longer wished to be involved in the project (we never found out why). We interviewed several potential candidates and eventually selected BDP Architects to act as Lead Architect for B3.

The Glasgow Children's' Hospital

18. When this project went to market EU guidance stipulated that there should ideally be at least five bidders with a minimum of three. However, there were concerns that we might not get five bidders as this was a huge project (£840 million) and to win it, you would have to spend an awful lot of money on the bid. And if you lose, you have to explain to your shareholders why you just lost say, £10 million in bid costs. A lot of companies and consortiums will therefore not enter because of this. They will hedge their bets as to whether they have a chance of winning. The problem is, if you lose two or three such bids in a row, you suddenly have a huge financial hole in your company accounts to explain. That is one of the disadvantages of building large hospitals. They are more efficient with regard to clinical outcomes, but it is often harder to get enough bidders willing to design and build them because of the financial risks involved. We eventually did get the requisite three bidders including Brookfield. There then followed a series of engagements with each bidder as part of the competitive dialogue process. This involved the NHSGG&C team and their advisers (including ourselves) engaging with each of the consortia and assessing their bids accordingly. This included commenting on their layouts and asking them to make changes in order to get them all to a finishing line where they can then be scored as equally as possible. We then assess which one is best placed to meet the economically most advantageous tender criterion.

19. As I have stated, it can be a very expensive process, especially if the competitive dialogue process drags on. In the Glasgow project we were aware that Brookfield wanted to break into the Scottish market where they had had no prior involvement. They had already entered the English market by winning the Peterborough Hospital and they were keen to repeat that success in the Scottish market. We noted that they were throwing a lot of money at it, which

was impressive because they're taking a risk as a relatively unknown quantity on the Scottish scene. One of the things they were required to do was to draw up thirteen departments in the adult hospital and six in the Children's hospital.

These were to be fully developed to 1:200 scale, together with a number of 1:50 room layouts. To their credit they actually drew up the whole hospital at 1:200 scale, which gave them a huge advantage over the other bidders. For example, one of the issues we had with the Balfour Beatty bid was that when they drew up the required six departments in the children's' hospital to 1:200 scale, they were all above the scheduled area The remaining departments were just shown as an outline shape - but to the required area. So that meant that they were saying, OK we were over area in all the drawn up ones, but the other departments we have not drawn up will nonetheless be on area. That was what their bid cost was based on. Immediately, you are cautious because if they couldn't draw up six departments on area why would we believe the undrawn ones will be on area when fully drawn up to 1:200 scale. If these are then also over area that will inevitably cost more so your bid price is bound to be unreliable.

20. In contrast, by drawing up the whole hospital at 1:200 scale at bid stage, Brookfield demonstrated that they could fit all the departments into that footprint and the footprint was what the cost was based on. This showed that their bid was more reliable in terms of cost. In spending a bit more money, Brookfield succeeded in manoeuvring themselves into pole position, primarily because the NHSGG&C team had more confidence that their team were going to deliver what they said they were going to deliver.

The Reference Design Process in Edinburgh

21. In terms of the time that it takes to pull everything together and create a reference design, it really depends on the size and complexity of the project. Usually, the Trust will set down in the documentation, or even before that, a timetable as to how long they anticipate the process should take. I can't remember what it was or what was scheduled in Edinburgh. I think we started

the reference design process on or about November 2010. There was a gap between the end of the capital-funded project and the start of the revenue funded process with the project having been put on hold in the interim.

Then we were notified by NHSL that they were now going for a revenue funded project and that they wanted us to become involved again. I think that the reference design itself was completed on or around March 2012, but I would need to check my dates. You might also have to refer to NHSL documents as to how long they anticipated the process taking. We were definitely under pressure to get it completed by March 2012, from memory. So, it was about one and a half years - which may seem quite long - but there again it depends on the size and complexity of the project.

22. As to what that process involves, it was unique in the sense that we had already been through a process in engaging and preparing a design for a children's only hospital. In theory, the revenue funded version was supposed to be a continuation of that process, with the accumulated information now being amended and appended to suit the inclusion of an adult Department of Clinical Neurosciences (DCN) unit. I read Brian Currie's witness statement where he said that it was his belief that this was what had happened. But that is not my recollection of what took place. What complicated matters was the long gap between the decision to abandon the capital-funded project and the start of the reference design stage. A lot of Nightingales staff, for various reasons, had departed. Nick Durham, the Director in charge, left to go to Australia and was followed by Tom Withecombe who was involved as a Junior Architect. Their other Senior Architect, Charlie Stokes, then left to work in Northern Ireland. So, we had lost three key players from the Nightingale team when the reference design commenced. When we re-engaged with Nightingales their team was now headed by Jamie Brewster as Studio Director, together with Lindsay Gibbon a healthcare associate, and Tom Groves, a senior design architect. These were people whom we had not dealt with before. They therefore lacked the background knowledge and understanding of all the work previously undertaken by their colleagues and - crucially - what had been agreed with clinical staff. Brian Currie's assumption

that a seamless change took place was simply not borne out in practice. This soon proved problematic.

23. It was not immediately apparent at the time but as things progressed it concerned me that a lot of the work and information that had been accumulated on the capital-funded design was not being referred to in the preparation of the new reference design. And this wasn't just happening within Nightingales. It was also surfacing within BMJ to some extent. We had a design architect working with Tom Groves of Nightingales, and together they seemed to be developing a separate, new design for each department rather than pursuing a continuation of what had been previously been signed off. That created problems because a lot of the things that had been agreed with the clinicians in the previous meeting round were having to be re-addressed instead of being incorporated in the new design. That undoubtedly ended up prolonging the reference design process and often with a less satisfactory result as far as the clinicians were concerned.

24. To recap on the process being followed: what the Trust will do is give you the operational policies, a design brief, and a schedule of accommodation. They prepare the schedule of accommodation with the medical planners in advance of giving it out to the architects. The Trust then feed in the operational policies to us saying, "This is how the department operates, these are the parts you need to take into account in the design of this department," etc. The schedule of accommodation gives you the room areas and the department areas and you then input the clinical adjacencies e.g. "This needs to be beside that, that needs to be close to this, this needs to be there etc etc" You use this to work up a concept design at the 1:500 stage. That is then presented to the clinical groups - usually in one big meeting - and they comment on it and hopefully give the green light to proceed. We then go away and amend the layouts to suit their comments until we get the 1:500 layouts signed off. After that you move down to each department layout at 1:200 where you will engage with the clinical team for that department and agree the layouts and positioning of the rooms within that department. We then go and draw up the department and individual rooms in detail at a 1:50 scale and get these signed off. Once you

get the department signed off, once you get the rooms signed off, that is you ready to proceed to the construction drawings stage.

25. That is a brief summary of the reference design process. During that exercise, you are liaising together as a design team. This will include the mechanical engineers, electrical engineers, and structural engineers. We decide how, as a team, we will put together the building to achieve what the clinicians want in terms of layouts, adjacencies, and overall environment. This generates a second series of questions such as “How do we service this? Where do we put the lifts to achieve that?” So, there are separate meeting strands going on within the design team themselves with the design team lead - the architect - simultaneously interfacing with the clinicians to get layouts agreed. The engineers do not get involved in meetings with the clinicians. They interface with us. We have meetings in their offices, and we say, “This is what we have agreed with the clinicians,” and they then develop the structural and services design from there. Essentially, the architects and the medical planners will sit in with the clinicians offering comment as to whether e.g., the room needs to be increased in area based on what they know from a medical planning side. We as architects may feed in input we’ve got back from the engineers to the clinicians if it affects the room layout or location e.g., a risk of overheating in summer due to orientation. The engineers do not really get involved in that stage, but they are operating in a parallel stream with us. Similarly, the medical planners work with the architect but do not always attend internal design team meetings. Their locus is more with the NHS team where the cost consultants are also usually found. All of the clinical meetings are overseen by NHSL’s project managers who control the process in terms of keeping it within timescale and budget. This is so that clinicians do not become over-zealous in demanding extra changes or additions which will impact on programme and cost. Accordingly, we were generally not allowed to meet separately with the clinicians without NHSL’s permission.

26. As stated, a lot of the Nightingale staff had moved on once the funding model was changed and consequently, we had new architects coming in. My impression was that Jamie Brewster was smart, intelligent, and affable.

Everybody liked him - which is good in terms of building relationships - but I do not think he was fully equipped in terms of healthcare experience.

To be blunt I felt that he had maybe drawn the short straw when put in charge of the project. Tom Groves also did not seem to be that clinically experienced. I had previously encountered another Nightingale's architect, Jonathan Hendricks, during the capital funded stage. I had met him on the Glasgow project where he played a leading role. He was clinically experienced, but for some reason he did not seem to feature as prominently in the Edinburgh project as he did on the Glasgow one, perhaps because he would have been preoccupied with the build there.

27. Nightingales had others involved who were proficient clinically, but equally some who were not. However, the one thing I did notice was that there was no evidence of the continuity of information flow from the capital-funded project as claimed by Brian Currie. That said, if you bring someone new into a project, there is a catch-up period involved. I think there was not really enough time given for that catch-up stage to happen in the revenue funded project and it was further compounded by people not building on what had been agreed previously. They had to hit the ground running in order to get the reference design done by a certain date, and I think that the new team embarking on a major redesign became a potential issue because it further hampered our ability to achieve this objective. Sitting alongside this was a perceived reluctance by NHSL to accept unnecessary change if it affected programme. So, the project ended up being caught between a rock and a hard place.

28. In the capital-funded project we had 1:200 meetings concerning each department layout. These can be quite lengthy. We would scribble notes as to what needed changing and get clinicians' signatures on the layout saying, "subject to these changes and these alterations, this is signed off." That was then sent as a PDF to relevant parties so that there was a formal record of what had been agreed and what stage we had reached. This applied to with every single department and would generally involve three iterations if not

more. The continuation into the revenue funded stage should have involved taking that accumulated information and developing or modifying it.

However, I noticed even before that when the first 1:500s came out, there were significant changes and that some adjacencies which had been previously agreed and signed off were no longer there. I was left thinking, “that was all signed off and recorded, so why are the architects now involved not consulting the original documents when they are re-planning?” For instance, the first 1:500 layouts were sent to me a couple of days before a major presentation. I did a two-page set of bullet points for Jamie saying, “that’s not what was agreed previously,” and “this is not really acceptable.” There was no indication as to who had changed things or why. When he went to the meeting, and he presented the layouts Jamie got heavily criticised for this much to his chagrin.

29. One example was the Bereavement Suite. This is a very sensitive part of the hospital for obvious reasons, and I had had a number of meetings with the bereavement team. They were very explicit and wanted e.g., their own separate lift to bring the body up for parents to view (this was ruled out by NHSL on cost grounds). They also demanded a discreet entrance and exit because people do not want to be in a highly public area when they are struggling with grief. It is all about privacy and dignity. These requirements had been carefully documented and copied to Nightingales during the capital funded stage. And yet when we got the first set of 1:500s for the revenue-funded project, the bereavement suite was slap-bang at the main entrance, which was about the worst possible place to put it. I said to Jamie, “that's an absolute no-no.” But by then it was too late to change. We duly got mauled by the bereavement team. Jamie then said to me afterwards, “you need to get more involved in the reference design process” I think he had begun to realise that his team were missing a lot of stuff.

30. I do not know why that occurred. You would need to ask Nightingales what happened. It was all there already recorded and sent to them for filing and as a record of what was required, and yet this failure to reference it kept cropping up. Meetings where layouts had been agreed were just being redrawn and rearranged for no obvious reason other than to come up with an alternative or "innovative" design. I said to Jamie, "that's not how the process is supposed to work," and that was concerning me a bit. Something had gone wrong in terms of continuity of process. The option of developing the revenue funded design by drawing up what was essentially a new variant design had not been anticipated. It was not an option to, "start again from scratch," and the people that were doing this did not seem to be referring to what had previously been agreed. Unsurprisingly that started to cause issues with the clinicians. They were saying, "why are we now doing this?" I think there was a major hiccup there and that it impacted significantly on programme as well as damaging our relationship with the clinicians.

31. I also got the impression that if members of the team were indeed consulting with clinicians as regards what previously had been signed off and agreed - and which was often critical to operational functionality - then it was not being reflected in the revised plans. Your start point was to analyse the previously agreed layout: what are the key criteria and what should we do in the revenue-funded design which echoes that? Rather, the revenue-funded design seemed to be starting from a blank canvas and a new layout was being generated which incorporated the schedule of accommodation but missed certain key adjacencies or requirements that had been requested. The bereavement suite fiasco was evidence of this. It was only half a dozen rooms, but to put a bereavement suite at the front entrance of a hospital was to me inexplicable. It suggested to me that there seemed to be a lack of clinical understanding amongst some within the new design team as to where departments should be located in a hospital. I do not know if those involved appreciated that they were supposed to go back and consult the capital funded design layouts before proceeding in order to establish what had been agreed, or whether they

were simply referencing these documents and then deciding just to ignore them.

Continuity of process did not happen and that created a delay because we had to then pause and do further redesign as a consequence of failing to properly process what had previously been signed off.

Moving from the Glasgow Process to Edinburgh

32. After Glasgow had secured their preferred bidder, our team were told we were no longer required, which surprised us. We had expected to be involved up to completion as per our contract. At the same time, the Edinburgh project was starting up, so I just shifted across to work full time on the Edinburgh project. In terms of lessons learned, it was interesting because, having worked on the Glasgow project and having worked on similar departments, I expected to take that experience and understanding of how a department operated in Glasgow to transfer through to Edinburgh. Yet Edinburgh had entirely different ways of doing things compared to their Glasgow counterparts. I even commented on that to Neil McLennan, the NHS Project Manager. “You’ve got two hospitals fifty miles apart with both trying to achieve the same objectives in terms of the treatment of children, and yet you have a completely different set of criteria for the same department. I don’t get it” He replied, “That’s Glasgow for you, we don’t do that here.” To me both hospitals were treating children with the same condition, so why were the means for achieving similar patient outcomes interpreted differently?” It did not make sense to me given that you are working off the same Health Building Notes, Health Technical Memoranda, etc. I suppose one could say that what emerged is that each department had become the fiefdom of the group of clinicians in charge at that time. Its design was therefore based on their view of how that department should be run and how it should operate rather than an absolute adherence to the Scottish Health Technical Memoranda (SHTMs) etc. A group of clinicians in Glasgow for instance might have a completely different understanding or approach as to how their department should be laid out as compared to a similar team in Edinburgh. This struck me as odd in terms of the oft stated goal of providing

universal care across Scotland. It also makes for confusing role models for future projects if you are basing them on what has gone previously.

If you have two different models operating only fifty miles apart, which one do you copy if you decide to create a third facility?

33. As for lessons learned from one project to the other, that was not apparent when we were interfacing with the clinicians. They were following their own agenda. We were aware that the Glasgow project team were advising Edinburgh, so I think you would need to really speak to the people in Edinburgh to determine who was advising them from Glasgow and what were they advising in terms of lessons learnt from their own process. I do recall sitting at a meeting in Edinburgh where Morgan Jamieson, the Glasgow RCH clinical director was in attendance. However apart from that I was not conscious that there was specific advice being delivered from Glasgow. We ourselves would bring the experience gained in Glasgow to the table and say, “do you really want to do that?” Or we would point out, “normally, we would do this.” etc only for that advice to be rejected. I also sent a “lessons learned” list from previous projects to BAM when we were on the revenue-funded project. (For the latter project B3 had asked us the question as to whether there were any lessons learned that we could add to the bid to indicate what we had learnt about hospital design based on previous projects). I did a lengthy list of basic healthcare “lessons learned” procedures such as avoiding change at all costs, getting things agreed early, allowing for this, not assuming that someone will do such-and-such, etc. It was basically a list of bullet points as to how to run a healthcare project as opposed to specific lessons learnt from the Glasgow Hospital being applied to departments in the Edinburgh one. They were really two separate things. However, it seemed to be merely a tick-boxing exercise to demonstrate relevant experience because when we tried to input our Glasgow experience into the Royal Hospital for Children and Young People (RHCYP) it was often rejected by NHSL.

Business Relationships

34. Hulley and Kirkwood are based in Edinburgh, so they were quite easy to meet up with when the project was based there. The Director in charge was Michael O'Donnell. He like me, is from Falkirk originally, so we had a common base. Over the years I have engaged with Hulley and Kirkwood teams in both their Glasgow and Edinburgh offices. The same goes with Arup's teams in both cities. H&K were probably one of the best mechanical engineers I've worked with, and Michael in particular was very good at his job. I enjoyed working with him because of this. It was the same with Jeremy Grant of Arups. In the reference design process, we would have meetings with them on a regular basis as we met fairly often as a team along with Arup and Nightingales. With regard to specific issues, if I was through in Edinburgh at a clinical meeting, I would maybe discuss this with Michael over the 'phone or later at a design team meeting. But the latter tended to be periodic meetings addressing particular issues. We were not popping in to his office on a regular basis. I am not sure if Hulley and Kirkwood were directly interfacing with people within NHS Lothian in terms of engineering and services issues. They may have had questions and had meetings to clarify things, but I do not think there was a specific remit for them to engage independently with NHS Lothian. That was generally frowned upon by the NHSL project managers if they were not able to be present to control things. You would need to ask Hulleys about that.

35. With Nightingales it was tricky because they were based in Cardiff. and so it was particularly awkward for them coming up to Edinburgh. It was not like we could say, "can we meet in half an hour?" You had to organise these meetings at least a week ahead to make sure that it was a time that suited them due to limited flight availability. We were not working as closely with them as the rest of the design team, but we were in email and telephone contact every day. Sometimes we would even fly down to Cardiff to address specific issues.

36. I cannot recall a single project where an engineer would have been present at a clinical meeting. You are not expecting clinical staff to discuss temperature and air change rates despite these being laid down in the brief. The medical planners themselves generally sit as observers but will interject or make comment occasionally if a question is asked or an issue raised which they have specific knowledge of, and that does not include mechanical ventilation issues. Quite often, the meeting attendees are just architects, the clinicians, and the project managers from NHSL who chair the meeting. Neil McLennan or another NHSL project manager would lead it and introduce everybody before handing over to me. I would be sitting centrally with clinicians generally opposite and perhaps a medical planner to my side. I would put the plans in front of me and illustrate what we've done since the previous meeting such as we'd put this room here or moved that piece of kit there. If an issue came up with clinicians saying, "we must have 10 air change rates per hour" I would have noted that either in my notes or on the drawing. I would later send an email to the engineer saying, "make sure you've got 10 air changes per hour for this room," But that would only happen if such an issue is raised, and that rarely happens with clinicians unless it's a specialist room with specific requirements. They may say, "we must have a ventilated lobby," or something like that, but they would not say what air change rate they wanted. I am trying to think when we would have a Mechanical or Electrical Engineer at such a meeting, and I cannot think of one single case where I have witnessed that. Not even at the 1:500 presentations. They tended to engage separately with the NHSL engineering team. Again, you would need to ask Hulley and Kirkwood or the Trust about how they worked together.

37. The requirements like air changes and pressure regimes were already laid down in the SHTMs etc. Room data sheets have a page of environmental criteria that tells you the air change rate, temperature, etc, required for that particular room. That is generally where the engineers get their project specific data from. As regards any reporting on the reference design, we would report directly to Neil McLennan, who headed the NHSL project management team.

The Environmental Matrix

38. The environmental matrix seems to be the crux of the matter as this was where the problems first surfaced in the Edinburgh Children's Hospital. When I heard in the media that there seemed to be a ventilation problem, I contacted Michael to ask what this was all about. He stated that he did not know. It subsequently transpired that it was an issue in an environmental matrix. Despite now being retired I still had a copy of the reference design report on my computer, so I dug through it, and I checked the environmental matrix. It might seem surprising that I was not fully aware of the matrix previously but, as I have pointed out, we were under pressure to get the reference design completed and there were a whole lot of architectural issues to get resolved and that was the area within my remit. So, I had not reviewed it in detail, nor would I expect to as it is out with my field of expertise. However, I will generally cast an eye over all parts of such reports looking for glitches if I have time. From memory the cover page before the matrix said 10 air changes for critical care so I would have expected the matrix to reflect that without going into it in more detail.

39. I had said at one of the final team meetings that we really needed to delay the reference design completion for another couple of months to resolve some of the outstanding issues. On the architectural side alone, I could see a number of conflicting pieces of information that would confuse bidders. We needed to fix that, but I did not devote any time to checking out the environmental aspects of the design as I was preoccupied trying to pick up these issues on the architectural side.

40. When I eventually read the environmental matrix, I saw the problem. However, you really need a magnifying glass to read the field where it says that four air changes were required when it should have said ten. On the previous page, it does say that the isolation rooms should be 10 air changes per hour, so in hindsight I am a bit puzzled as to why nobody had picked up on the inherent conflict between the matrix and the preceding text.

41. I think the purpose of the environmental matrix is basically to summarise all the ventilation requirements contained in the room data sheets. Each room has a ventilation requirement stated. If you are a subcontractor trying to understand the ventilation requirements for the hospital it can be laborious exercise going through each room to work out what is required given the sheer number of rooms. It therefore makes sense to summarise it all up in a matrix. I can therefore understand why they produced that. However, I wasn't aware that it was a contractual requirement if I'm honest. As to how it came to be a key source for the design information for ventilation, I do not know if it was meant merely as an aide-mémoire indicating what a summary of all the ventilation requirements looked like, or whether it was a prescriptive list of requirements. To me the Activity Data Base (ADB) sheets perform the latter task.

42. I am always cautious about summarising everything in one spreadsheet. If a clinician asks to change the air change rate for one isolation room when you have got all isolation bedrooms at 10 air changes per hour in a column on a matrix, then you have to go back and redo the environmental matrix to include a line or column for that one room. Every change you make no matter how small means you have to reissue the environmental matrix, and this can become a problem in managing the sheet. If everything is summarised in one document, you need to keep re-issuing that document to catch every change and it becomes cumbersome. Sooner or later, you will miss a change. For that reason, I am always a wee bit wary about matrices, notwithstanding the fact that they are a great aid for people pricing ventilation requirements or estimating what's involved. But you have to monitor it very carefully and make sure that no error goes unnoticed. I think that's what happened here - it was a quality control issue that got missed. You would have to ask Hulley and Kirkwood how that happened. That said, we were under a lot of pressure to get things done and I think it was just one of those ones which slipped through the net without getting picked up. It only got noticed when it was too late and after it had been built.

43. The other puzzle for me is that one of the bidders had apparently asked a question about it. If a bidder asks a question under an RFI (request-for-information) and you give an answer, you are obliged to give that answer to all other bidders to avoid disadvantaging them. So was it an RFI request, and if so what was the answer that was given and why did none of the other bidders react to it? On receipt of the RFI response I would expect them to say, “Is this confirmation that you require 10 air changes per hour as per this response as opposed to that defined in the environmental matrix.” However, that did not happen here. From the evidence so far led it seems that one bidder did indeed change the matrix, but this was not picked up by the NHSL team perhaps because no RFI was issued by the bidder concerned. That would have flagged up the issue, but instead they merely changed to the correct rate. They should still have highlighted such a change in my view to check that it was a permissible departure from the matrix. As to the use of these matrices for hospital projects, it is not normal in my experience. But it is not uncommon to have summary spreadsheets. Within BMJ, Bob Hedivan, who was the Associate Director in charge during the reference design process, strongly favoured the use of spreadsheets for e.g., door schedules so as to incorporate on one sheet all information on every door in the hospital, including ironmongery. It was a huge spreadsheet, with all the detail in it making it difficult to read for the men on site. So, to me it was useful for quantifying but counter productive for construction. And if you make a minor change to one door, you then have to reissue the whole schedule, which again leads to dozens of revision notes. If you have got over 1,000 doors, you can end up running out of revision letters. And if you cross-reference the matrix with another drawing, it means every time you change one you have to reissue the other as well. That takes time because you are having to double-check you have not missed anything. To me they are counter productive. I can understand why they are used, and indeed a lot of the NHS guidance has matrices in them, but I am cautious about using them on site, especially when if it involves cross-referencing other drawings. As to how the details and figures in the various rooms are inserted into an environmental matrix, I would expect it to be done manually but I do not know. I’m not aware of any linking computer programme between the ADB sheets and a matrix.

44. The Edinburgh Reference Design Report was compiled by all disciplines and coordinated by Nightingales as lead architect. They and BMJ had the architectural input into it in terms of designing the departments that we were each allocated. The environmental section was done by Hulley and Kirkwood, and that is where the environmental matrix was located. H&K were also responsible for the environmental details in the various room sheets as I understood it at the time. I do not know if it was subject to any internal review or what would have been involved prior to them issuing it. That will be for the Inquiry to find out. There should have been some degree of quality control to check that what was included in the matrix actually matched what was being stated in the room data sheets. I do not understand where this figure of 4 air changes came from. You could argue I and others on the team should have checked it, but as stated it is not our area of expertise. I recall that there were some environmental issues I did have concerns with - e.g., daylight levels in the 4 bed rooms - but we assumed that these were being picked up by the team at Hulley and Kirkwood. It was they who had also queried the daylight factor in these rooms at a team meeting. (From memory, a computer simulation they produced showed the room almost in darkness).

45. At the time I was quite concerned about conflicting information on the architectural side that could confuse bidders. For instance, I attended a number of meetings regarding the schoolroom layout. This consisted of half a dozen rooms at the top of the building. From the very early stages of the capital-funded project, the school team made it clear they needed double doors to get orthopaedic beds into the classrooms and these were to be incorporated into the final layout. Yet in the revenue funded design the layout had single-leaf doors in some instances. During the sign-off process, I was asked three times by NHSL to make sure these classroom doors are at least a door and a half. But the architect responsible declined to change the drawings and insisted that a bed could get through a wider single-leaf door. This was despite the specific NHSL request for door and a half. Indeed, it led to a complaint from NHSL about our repeated failure to make the necessary changes.

I was getting concerned because this had the potential to make the classrooms unworkable for certain patients. However, both my concerns and the NHSL instructions were ignored. It also harks back to my previous observation that rather than building on the work done under the capital funded solution, there was an attempt being made to do a complete redesign - which was not my understanding of the process which we were supposed to be following.

Room Data Sheets (RDS)

46. From memory, RDSs do contain information relating to ventilation criteria. Indeed, there is usually a page with environmental standards included.

47. RDSs are part of what is known as the activity database, which is an NHS system of compiling information about hospital rooms, including what equipment is required in them. Room data sheets are generally about three to four pages long. The first page tells you the room name, room area, etc and there follows below it a list of the functions that take place in the room. There is then a second page which has the environmental criteria, including air change rates, ventilation, and temperature. The final page is a list of components, like plug sockets, tables, couches, cupboards, mirrors, etc., that are to be included in that room. That compilation produces a room data sheet for that specific room type. Historically I think that it was originally developed by Peter Mann at HLM Architects way back in the 1980s or 1990s. He came up with the idea of computerising everything to speed up a previously manual process. He then left to set up a development company for administrating this system. I don’t think he’s involved anymore but he was the originator of the system as I understand it. The current owners of the system now do it on behalf of the NHS and produce these standardised room data sheets with lists of rooms and all their components. This is known as the component database. Each component has a number taken from a manual called Codebook.

48. I cannot recall having seen RDS's specifically for the reference design being produced and do not think we had any, but the criteria for ventilation are included in Health Technical Memoranda and Health Building Notes as a general standard to be aimed for. They would tell you what the ventilation rates which the NHS demands for various rooms. The room data sheet should echo that and should also show an air change rate. I repeat that I cannot remember seeing project specific room data sheets at the reference design stage. That said, I would have expected to see them because we anticipated laying out exemplar rooms at 1:50 scale. They must have been done at some stage. The staff at Hulley and Kirkwood should have been aware of them, but whether they got copies of the RDSs or whether they relied on the criteria set out within SHTM 03-01, I don't know. I believe they probably relied more on the SHTM criteria. It is unusual to change criteria set out in the SHTMs on an RDS, but it does happen. This might be for a unique room within a suite of rooms, or it might be for a specific piece of equipment within one room which uniquely requires a higher air change rate as a consequence.

49. The RDS is the end product of a process and should come preloaded with the basic minimum guidelines. You can then modify it to be project specific. You can adjust it to suit your particular requirements for a particular room. The activity database just takes everything and breaks it down into departments and then into rooms. It will give you the criteria of what rooms are required for a department. That creates a document saying e.g., "this is what the board requires for their Accident and Emergency department." The health board then gives a list of RDS rooms that they require, and you produce room data sheets with the requisite room components. The components are given a code taken from the code list in Codebook. The latter is a manual which lists something like 30,000 codes. For example, an electrical socket with two 13amp outlets is an OUT131. When you drop that code into the room plan on Computer Aided Design (CAD), the computer registers it to that room. Doing this for every room makes it a very useful system in terms of pricing and calculating e.g., how many such sockets you have across the project. You simply enter the code OUT131 into the search element and it will tell you how many such

sockets you have in the entire hospital. You can even create your own project specific codes.

50. I do not know who made the decision to create the environmental matrix. I think it was basically done as a summary for what was required or what was being proposed for the benefit of the Trust. I would have thought when the Trust got the reference design, maybe their own engineers should have checked the environmental matrix. At the very least Mott MacDonald, who were the project managers responsible for reviewing the reference design, should have checked it using their in-house expertise.

The Activity Database

51. I think the activity database (ADB) is now owned by a company called Toucan. As mentioned previously, my understanding is that it was developed by a former HLM employee. They are licensed to use the information that the NHS provides. The NHS in England produces updates for the activity database. I do not know if they do that themselves and then provide the information for incorporation by this private company, or whether the private company does it for them on licence. To use the system, you have to license it from Toucan. BMJ had to buy it, and from memory it cost us about £30,000 twenty years ago. You then need to send your staff on a training course to learn how to use it. Its advantage is that it's very efficient and allows you to generate 1:50 room layouts and specifications far more quickly than drawing by hand. It has become a standard system for generating room 1:50s and is now being developed into 3D using Revitt. A lot of projects require it if you want to bid so it becomes an essential tool for bid teams.

RDS replaced in terms of environmental data midway through the design stage in place of an Environmental Matrix / Environmental Matrix become the main source of environmental data for the Reference Design

52. As stated previously, I am not sure why the environmental matrix became the main source of environmental data for the Reference Design, or who made this decision. But if it was cited as the primary source of information, as the ITPD seems to suggest, then it should have been double checked. I am unclear as to who made the decision to use the environmental matrix rather than ADB Mechanical and Electrical (M&E) sheets. I also do not know if Hulley and Kirkwood did this off their own back and the Board then incorporated it into the ITPD, or whether the board/Mott McDonald instructed them to create this from the outset.

53. Nor do I recall seeing RDSs for the revenue funded design per se. They were definitely there for the capital funded project as I sat in on meetings reviewing them. You would normally expect them to be issued as part of the briefing for the contract, but I do not recall seeing any for the revenue funded project nor did I sit in on any meetings to discuss them. So, it may well be that they were not issued, or hadn't been prepared. We would need them to generate rooms, so they must have been made available at some stage if NHSL wanted them to be incorporated in the bid information. They are standard rooms, so we can take it from the system. You would take an operating theatre, populate it with all the relevant codes and then ask the health board if they want to amend it in any way. However, I repeat, I don't recall seeing any during the reference design process. So, it's really a question of did Hulley and Kirkwood get any room data sheets? I would be surprised if the RDS criteria were replaced by the environmental matrix. As pointed out earlier, you would end up with one piece of information split between two sources.

54. As I've explained, the environmental matrix to me is basically a summary of what the RDSs say. In terms of ventilation, it should just take the ventilation rate from each room and put it into a spreadsheet so that you know what it is. Rather than having 10 RDSs with a ventilation rate listed, you take it all and

put it into one matrix so that the ventilation subcontractor knows exactly what is required for each room. I do not know if the environmental matrix became the main source of environmental data by default because that was the easiest way to access information in terms of ventilation requirements. As discussed previously, the fact that one of the bidders asked a question about the figure of four air changes per hour suggests to me that they had spotted that there was an inconsistency with what was within the reference design report. I think this may be because on the page before the matrix it says isolation rooms should be 10 air changes per hour. This inconsistency was flagged up to Mott McDonald as I understand it but was not acted upon.

The Approach to Reference Design Paper

55. I have not seen this paper but the purpose of setting out such requirements is essentially to ensure that you have a functioning department with functioning rooms etc within it, and thereby a functioning hospital. For instance, there is no point in having a long narrow room when clinically a square one is required to allow for all-round access to the patient as in an operating theatre. This is essentially what is meant by clinical functionality.

56. I think that these are a standard requirement at 1:200 stage. The operational policies, the schedule of accommodation, adjacency matrix, what rooms are required to be next to one another etc. These are usually assembled for a given department. (The adjacency requirements for departments are set out at 1:500 stage prior to this). You then incorporate that into the process when you are preparing a reference design so that you take into account all these things when finalising your design before going out to the market.

Mandatory Reference Design Requirement

57. As regards the distinction between the Mandatory Reference Design Requirements and the Indicative Elements of the Reference Design, I am not 100% clear on this if I'm honest but usually mandatory means basic department and room layouts, adjacencies etc which must be adhered to,

whereas ‘indicative’ covers other related aspects such as services, structure, landscape etc so that you can see how the structure fits into these layouts. Columns projecting into theatres for example will create an infection risk as the projecting column base at floor level becomes difficult to clean as compared to having the column built flush into the wall.

58. With the Glasgow children’s hospital, we went through the process of preparing a reference or exemplar design including extensive engagement with the clinicians for six departments. We did all the preparatory work, set out the principles of the design (how we had arrived at departmental adjacencies), prepared a set of reference design plans, held meetings with each bidder and explained to each why and how we had reached these layouts during the reference design process and what was important to the clinicians. Then it was left open to the selected bidders to either follow that and develop their designs accordingly, or to do their own thing. They all chose to do their own thing. This effectively rendered all the work that we had done with the clinicians beforehand irrelevant. I often asked myself what was the point of that whole exercise if the bidders were given the option of just ignoring it. The bidders only took on board a certain amount of what had been declared desirable or essential in my opinion. This created a problem because you then had three designs that had all departed from the reference or exemplar design and were completely different. So how do you score them fairly? To explain the problem better, if you are presented with an apple, a pear, and a banana, how do you score the taste of each when the original aim was to confine yourself to comparing the taste of three apples?

59. I think this was a lesson that NHS Lothian took on board from Glasgow. I got the feeling that NHS Lothian were advised that we had experienced a problem with this preferred bidder route in Glasgow, so they were probably told that “once you’ve got the reference design, make it mandatory so that the bidders must follow it.” I’m speculating that this is what happened, but the chosen procurement route clearly left little scope for a variant design. At B3, we felt that was a mistake and there was extensive debate as to how we embrace this. A two-pronged approach was subsequently agreed. I was mandated to

design a scheme which stuck with the reference design and modified it as little as possible i.e. to follow the reference design closely. In parallel BDP (B3‘s lead architect) did a separate scheme whereby they approached it from the stance of a complete redesign whilst nevertheless trying to incorporate as much of what had been agreed at the reference design stage as possible. This was a higher risk strategy. To assist their efforts, we advised BDP how to incorporate as much as possible in terms of adjacencies etc. given our intimate knowledge of the agreed clinical requirements. We then reviewed both options collectively as a bid team and concluded that in many areas BDP had come up with a far better clinical solution than the reference design. I myself conceded that I was still having a struggle to resolve some of the outstanding issues inherent within the original reference design itself without embarking on radical change to get it to work. So, when we compared the two options, the decision was taken to go for BDP’s updated version, even though it was departing a lot more from the reference design. There was an obvious risk in doing this, but we all agreed the clinical benefits (more daylight, better adjacencies) outweighed the potential downsides in departing from a mandated reference design. More importantly we believed that it could be a bid winner.

60. In retrospect, I think that approach maybe worked against us because in a post award discussion I had with Andy Anderson (HLM’s Lead architect) he advised that they too had wanted to do a redesign but his view was that since NHSL had made the reference design “mandatory”, they had no choice but to follow it. They judged the risk to be too great and that’s how they won the bid.

Personally, I thought something got lost there when a reference design that was not fully developed was made mandatory. Whereas we then took it and developed it more fully with BDP Architects to improve it - only to discover too late that it had worked against us. My view was that there was still scope for bidders to embark on further design development during the bid process as part of a “finalisation” of the reference design after it had been issued to them. However, it became apparent during the competitive dialogue sessions that this was not NHSL’s - or more accurately - Mott McDonald’s view.

61. HLM stuck as close to the reference design as possible, and it paid off. That also meant NHSL avoided the problem of assessing three completely different designs. They had three designs echoing a single standard reference design albeit with modifications. For NHSL, scoring three virtually identical designs was also a lot easier.

Input from Clinical Team and Microbiologists in the Procurement Process

62. A lot of the issues in Glasgow were around infection control, but it was less so in Edinburgh, I am aware that one of the questions asked by the Inquiry was just how much input the clinical team and microbiology teams had in the procurement process. This would be in terms of being part of the User groups that fed information to be used in selecting the winning bid.

63. In Glasgow we had meetings where we assessed the layouts that had been submitted by each bidder. There was an Infection control nurse in attendance at the technical meetings. I think her name was Annette Rankin, and she subsequently went on to join Health Protection Scotland (HPS). Infection Control nurses are trained to look out for infection control issues that might arise and comment on them. Annette was there to comment on the layouts and indicate where she perceived there may be an infection risk. There were a few queries from her as I recall.

64. As architects we also know of infection risks, for example you do not have a dirty utility door next to a clean utility door because if there is spillage in the dirty utility it can get trekked into the clean utility, so you try and keep the doors for each room as far apart as possible. But you do not want clean and dirty utility to be too far apart either. There were a couple of times when we commented to Annette that we had the FM clean lift close to the disposal hold room so you might have clinical waste from the latter going into the lift lobby which was shared with a clean lift. We thought that's not good and she agreed with us after we pointed it out. I'm not being hypercritical of Annette, but infection control nurses sometimes do not spot issues that architects have a

concern about. This is based on our greater experience in how things move about a hospital and its impact on clinical planning and adjacencies.

65. To elaborate on this point, on a separate project in Glasgow in the Institute of Neurosciences HPS went on an inspection there in 2020 and discovered clinical waste out in the corridors in unlocked bins. They commented on that, but only by saying they should have been locked. Now, my response to that was the bins should not have been out in the corridor in the first place as we design disposal hold rooms to accommodate clinical waste and these rooms are supposed to locked and secured. You don't need to lock the bins then because the room is secured. The reason we do that, is that the room should also be a fireproof room because clinical waste can be a significant fire hazard. This is in the building regulations so it's a legal requirement. There was a public meeting I attended in 2020 shortly after the HPS report in question was published and which the then Health Secretary, Jeanne Freeman attended. I said to her that what jumped off the page for me in the report was why there were clinical waste bins out in the corridor and not in the designated disposal hold room. The corridor is a fire escape route and these bins might be full of alcohol wipes which are highly flammable so there was a significant fire risk. Yet this was not commented on by HPS. If you have a team of inspectors who don't know the requirements for clinical waste bins then that would be a concern me. They are supposed to be the experts and they did not spot that.

    I think there are a lot of infection control personnel who are not as clued up on the disposal of clinical waste as I would like them to be. The hospital fire officer should also have commented on it, but either did not notice it or chose not to comment on it. That is what concerned me at the time - a risk from both the fire and the health protection sides got missed by the very people who are supposed to be experts.

66. We had experience of that on the Edinburgh Children's hospital where we had an Infection control nurse at one meeting. We were discussing an Activities for Daily Living (ADL) room where disabled patients or amputees are taught things such as how to use a sink again to prepare them for going home. The

room is designed to be used as a teaching room for that purpose. The room is also used a lot by people with dementia. During the meeting the Infection Control nurse said, “Well, if there is a kitchen sink in there that we only use for teaching people how to use a sink, can we cut the water supply to it?“ This was to reduce the legionella risk. But the clinical team were saying “we can’t do that because if you have a sink where water no longer comes out and you have a patient that is confused, they would just end up even more confused. They will not understand why there is no water coming out”. The argument actually got quite heated to the point where I intervened saying we could fix the Legionella issue by rearranging a nearby domestic services room so that it was downstream in plumbing terms thus avoiding a dead-leg in the plumbing to the ADL room. We also rearranged a couple of staff toilets so that the Legionella problem will be minimised as you’ll have running water going through the system day and night. It’s an example of how you can design out the problem rather than having to cut the water to the sink. The point I am making was that the Infection Control nurse was only interested in infection control because that was her remit, and she was reacting to what she had been trained to do. She did not understand the wider clinical picture. However, she had to stand back and listen to the comments made by the clinical team saying it was not acceptable to not to have water coming out of that sink. As such I just do not have confidence that many infection control personnel are able to see the wider picture in the way that an architect does.

They work to a very narrow remit and as a consequence they often seem to miss what, to me are often very obvious examples of an infection risk. They are not as fully up to speed as I would like them to be. I was not confident that in both Glasgow and Edinburgh they were picking up on issues which I as an architect saw as critical. That said, many architects are equally culpable in laying out departments with inherent infection risks built in that should have been caught before the drawing was issued. I have seen that repeatedly in recent years suggesting that there is also a knowledge deficit within the profession. That may have had a role in what happened in terms of infection control in both children’s’ hospitals, though more so in the Glasgow one. Microbiologists should also be picking up on these things, but I cannot recall any meeting I attended where a microbiologist was also present.

67. That surprised me. They should be there, but I suspect that limited resources and time constraints within microbiology departments limit their ability to get involved in clinical meetings. When I have engaged with them, they have always struck me as being very well informed and accordingly I would like to see them at all clinical meetings, or at least for key departments such as theatres.

Operational Functionality

68. Operational functionality to me normally means the ability to perform clinical functions safely and efficiently and sits alongside a list of criteria such as the output specification, schedule of accommodation, adjacency matrix etc. which you then use as the standard to be met for that room or department. So operational functionality essentially means that your room or department must satisfy the criteria contained in the bundle of information given to you as well as determining if it has the correct shape, correct area, etc. Do you have the requisite number of components in it? Is it adjacent to the rooms it should be adjacent to? Operational functionality is just saying, “does that room operate in a functional manner that will meet the clinicians’ expectations?”

    The architect’s job then is to coordinate the activities of the engineers and others to ensure that that happens in order to achieve operational functionality. That is just my understanding and is made without seeing the Appendix E to the ITPD.

69. I have subsequently had a look at some of the material which was submitted in relation to reports on the issue of the air change rate and the environmental matrix. I would query the proposed solution for a standard bedroom with six air changes per hour. The Brookfield Multiplex bid seemed to be achieving this by a combination of four air changes per hour mechanical ventilation plus a further two air changes per hour through natural ventilation. I would have issues with that. In my opinion you cannot control the natural ventilation in a bedroom to guarantee six air changes per hour if e.g., the windows are closed as they might well be in mid-winter to protect the patient from cold. If I

recollect properly the brief said that there should be a balance of either negative or equal pressure in the corridor next to the bedroom. Well, if you have got low or high pressure outside in the open air and an open window, I think that you will struggle to achieve a balanced air change rate with the corridor due to the natural fluctuation of external air pressures. But I am not a Mechanical Engineer. You would need to ask them how that requirement is achieved using natural ventilation. Normally, you can only really guarantee a specific air change rate if you have a fully mechanical system.

70. They also appear to have considered upgrading the four air changes per hour rate to ten by modifying the equipment to increase the air change rate. But again, you cannot really do that. The system has to be designed for the specified ten air changes per hour because modifying another system to a standard it wasn't designed for will inevitably introduce risk - and that's assuming it is physically possible or that it can be maintained indefinitely to do something it wasn't designed for.

71. The issue about the air change rates puzzles me. The bedroom air change rates across the Edinburgh Children's' Hospital seemed to be two air changes down from the normal six, which I just don't understand as outlined above. The guidance documents are fairly explicit, and you are supposed to follow the SHTMs and comply with them. I don't know if it was an agreed position to use mixed mode. It was not agreed as far as I know at the procurement stage. I do not recall seeing anything in the ITPD's that I have seen which outlined an agreed final position for all the bidders at procurement stage unless it was a late input. From reading the subsequent Grant Thornton Report on the issue there seemed to be an on-going debate between the bidders and Mott McDonald over what was deemed acceptable.

72. The minimum target for a ward bedroom is six air changes. Now, how you achieve that, can be through mechanical or mixed mode i.e., use of natural ventilation alongside mechanical. I have issues regarding naturally ventilated hospitals. I used to favour them in the past as it was deemed to be a healthier solution, but I no longer take that view because of rising air pollution. When

you are working with vulnerable patients, you discover there is a bigger threat with having natural ventilation than with mixed mode or pure mechanical ventilation. However mechanical ventilation also has its problems because, unless you keep the supply ducts extremely clean, you can get infection within the duct, from accumulated detritus which could be a source of biological contamination and that can lead to infection. Hospitals are always under pressure to make savings and often the first place they go to save money is by cutting back on the maintenance regime by e.g., not checking the cleanliness of the ducts on a regular basis. To me this is dangerously short-sighted. I have had many arguments with the late architect, Howard Liddell, from Gaia Architects, who was a great promoter of green, sustainable architecture. Howard was always arguing that natural ventilation was far healthier and more efficient than mechanical. However, the problem was that he did not really take into account air pollution or the presence of airborne particles, which could be a significant threat for patients suffering from asthma. For immunosuppressed patients suffering from cancer, it is a definite no-no. You have to have mechanical ventilation because the risk from spores in the environment getting into the patient's airways when they are immunosuppressed is a huge threat.

So, my preference has gradually swung round to having a mechanically ventilated hospital, which should offer a better safety regime. However this is challenging, especially in terms of management processes (maintaining cleanliness in the system) and energy efficiency.

73. On the Edinburgh project the need to meet the six changes per hour requirement by adding two extra changes from the naturally ventilated windows to the four that emanated from the matrix was I believe, a compromise position. If you have an openable window, how do you control the pressure in the room? Wind blowing against the facade will create a positive pressure while wind blowing away will reduce the pressure, so how does the system maintain a steady state pressure regime? That is the major flaw in that approach in my opinion – you solve one problem but create another. Depending on what the room is used for and the condition of the patients, it might well leave them open to a greater infection risk. I have been asked by the Inquiry if this position was

agreed at procurement stage, I do not know, but my reading of the Grant Thornton Report suggests it was reached after preferred bidder stage and was a compromise after the issue was discovered.

74. I have no knowledge whether BAM queried the air change rate at the capital funded stage. Hulley and Kirkwood were working for BAM alongside ourselves and they had done the environmental matrix so you would need to ask them. I also cannot recall there being a specific services engineer employed by BAM within their team to check this, but I would have expected there to be one, perhaps as a sub-contractor rather than in-house. They were relying on Hulley and Kirkwood who had a good team. As stated previously I was surprised that the error was missed, but the fact remains it was missed. We all make mistakes, and no one is perfect, but this was a fairly major one. The thing that I have mentioned more than once is that if one bidder spotted it and highlighted the discrepancy, then the board or Mott MacDonald should have issued a clarification such as a reply saying, “yes, that’s a mistake. It should be 10 air changes per hour.” I think it was the Grant Thornton report which highlighted that a bidder had actually changed the air change rates to the correct value.

    It’s still a puzzle for me therefore that there was not a reaction to that change given that someone had spotted the mistake. It did not generate a correction which could get fed out to the other bidders. That I find surprising, if not inexplicable. A formal RFI was not generated by the bidder in question, so that might explain why there was no notification to all bidders highlighting the existence of an error in the matrix. That failure looks like another human error.

75. Further to the Environmental Matrix issue the air supply of 4 Air changes per hour (ACH) for the bedrooms and multi bed wards should have raised questions with what was specified in the SHTM -03-01. However, it seems from the Grant Thornton report that one bidder merely made the correction on their submitted matrix without indicating to Mott McDonald that they had taken a corrective action. At the risk of endlessly repeating myself, it is puzzling as to why you would do that without first checking with Mott McDonald that this was acceptable.

76. With regard to the Isolation bedrooms and operating theatre suite in the matrix, provision was made for compliance with the SHTMs. For critical care and multi bed wards I would have expected a bidder to have raised the discrepancy regarding 4ACH (rather than 6ACH). 4ACH is very low for a patient area and I am surprised that it was repeated for a number of patient rooms without this raising any eyebrows.

Question 30 - Did any of the bidders spot these contradictions?

77. I don't know for certain if any of the bidders spotted the contradictions. The Grant Thornton report suggests that one did. That would need to be raised with them. So it seems one bidder spotted it and two did not. This is on top of Hulley and Kirkwood not spotting it when they originally issued the document. Nevertheless if it says on one page of the Reference Design Report issued to all bidders that all isolation rooms should be 10 air changes per hour, then that to me is explicit and is telling you what is required throughout.

    If you then have a matrix that says four air changes per hour is okay, I would be saying, "Wait a minute. There's a contradiction here." I did not spot it, but as I have said, I was pre-occupied with the architectural aspects of the report and not engaged with the environmental matrix to any degree.

ITPD Vol 1, and ITPD Vol 3 (includes Board Construction Requirements)

78. My understanding is that Building Research Establishment Environmental Assessment Methodology (BREEAM) 'Excellent' was the target to aim for but with 'Very Good' deemed to be the minimum acceptable. I think this is cited in ITPD Vol.1. I cannot really elaborate on the impact on M&E. That would need to be checked with Hulley and Kirkwood. However, a credit to achieve BREEAM "excellent" may conflict with clinical functionality e.g., as previously explained, providing natural ventilation to rooms may expose patients to external contaminants, plus noise, heat, cold etc. Clinical functionality should always

trump BREEAM in my opinion. I do not know where the 'operational energy model' came from but I suspect it would originate with Mott McDonald.

Glasgow Hospitals ITPD Volume 2.1

79. I have been looking at the IPTD as I have a copy of volume 2.1 Appendix M&E Plant Strategy and Design criteria. Design Criteria external design temperature summer, 26.2 degrees Celsius. There it states, "To be in accordance with environmental data at the time of tender HTMs and SHTMS requirements." I don't know where any derogation came from if that indeed happened here. If you look at, paragraph 3.8, volume 2.1 appendix M&E 4, it states, "ADB sheets relating to environmental conditions and a low carbon design. General principles to apply to ADB sheets". It states that "The contractor should update the environmental section of the ADB sheets in line with current HTM sub guides in particular LG2, and address the following issues. Temperatures are, in general, stated as absolute values. This does not allow a range which can be beneficial when considering passive options. Temperatures are not often defined for summertime, - these need to be added.
The temperature measure is not defined - this should be in general the operative temperature as defined in Charted Institute of Building Service Engineers (CIBSE) guide A"

80. I don't know where any derogation came from and if this did indeed happen in Glasgow then I don't fully understand why. But I know that there were issues with the ventilation design. I think that originally, they were applying to have the rooms naturally ventilated or use a mixed mode ventilation. And from memory they were going to have strip ventilation at the side of the window. This would provide the natural ventilation. But in their modelling for the ward tower block the Brookfield team discovered that there would be summertime overheating. My recollection is that they then went for an entirely mechanically ventilated solution. Now, as someone who has actually been a patient in the QEUH ward tower in the winter, I found that it was uncomfortably hot internally. When I asked the nurse attending me how I could I adjust the temperature in my room she replied that I can't. She told me that somebody in the plant must be notified

if you want the temperature lowered for a particular room. I said that was ridiculous. Patients should be able to control the room temperature. In my case even the nurses were commenting about the heat in my room. Again I am puzzled - not just as to why that was the case but also why such a system was accepted by NHSGG&C estates staff as acceptable, if indeed that was the case. It is grossly inefficient energy wise as well as producing a diminished patient experience.

80. I am trying to give you my understanding of the ventilation issues that arose in the Glasgow project. During the time that I was involved on the project there was nothing regarding ventilation that jumped off the page for me. But there again such issues would in all probability not even be circulated to me as an architect because it was a mechanical engineering issue, and we were not involved in their break-out sessions during the competitive dialogue stage.

81. So, I don't recall this issue or any concerns about it being raised in relation to the design of the wards. It was never highlighted beforehand as an issue for discussion by anybody. When we engaged with the clinicians discussing the generic wards for the children's hospital nobody on their side said temperature was an issue. I cannot recall it even getting mentioned.

82. Ventilation is the responsibility of the mechanical engineer. There would be periodic meetings within the design team which would include the structural engineer along with the mechanical engineer and electrical engineer. From memory it was Wallace Whittle who provided the mechanical engineering and electrical engineering input. Again, I don't recall the ventilation issue ever surfacing at any of these design team meetings. If it had been raised as an issue of concern, I would remember it. I repeat - there was nothing that I can recall that raised my eyebrows. I can't really add to that.

83. With regard to the Glasgow children's hospital, there was a requirement for us to produce 1:200 layouts for six departments as an exemplar of what we were looking for so I was responsible for producing these exemplar departments for the bidders to follow. These were radiology, a generic ward, the Schiehallion

Unit, A&E, theatres, and one other department that I can't recall. That involved me meeting with the consultants and nurses who ran these departments and presenting layouts to them to establish what they wanted in clinical terms. We would not normally have engineers present at these meetings because we were there to discuss and agree the basic clinical requirements. A layout that was acceptable to them was to be agreed in terms of room size, location, shape of rooms, position in relation to other departments etc and then we were to get that formally signed off. There were three iterations allowed to achieve that goal so there was a lot of pressure to get agreement within a set timescale (theatres took five iterations from memory and nearly delayed the entire project). The signed off layouts formed part of the package that went out to the bidders and represented the consensus for the work we have done with the clinicians. In preparing a bid, the bidders were meant to reflect that work and incorporate it within their layouts.

Clinicians don't usually bring up issues like temperature or voltages; they're interested in clinical issues, infection issues etc. They would not normally mention temperature or ventilation requirements, probably because they don't have the necessary expertise to comment. I say that in the sense that they are not generally aware of what the specific air rate change for a particular room type should be. That would be done more by the Health Boards in-house services team, who would normally engage with the project managers appointed to run the project. We would therefore anticipate NHS staff to be working with the project managers in the formation of the ITPDs, which are the main documents that would go out to the bidders. These would contain the generic information in relation to the desired standards for temperature, ventilation etc. You do not normally discuss ventilation issues with clinicians unless it is for something specific like an isolation room. For example, you might have to ask if it is a positive or negative pressure as a positive pressure will keep infection away from the patient and a negative pressure will keep the patient from infecting others outside. If they say they need positive pressure then it comes down to the mechanical engineer to establish what would be compliant with the relevant SHTMs. Clinicians don't normally discuss that in detail.

BREEAM Standards

84. I do not recall bidders being told that they have to develop this environmental matrix, or it being mentioned at any of the meetings that I attended. It was not part of the requirement to meet the BREEAM Excellent rating as far as I am aware. I took it as granted that NHSL would be seeking a BREEAM Excellent rating and that it could have an impact on both the ventilation and the M&E proposals.

85. In the Glasgow project, from memory there was a BREEAM Excellent rating being sought there. This was extremely hard to achieve as it was such a complex building. We therefore engaged a BREEAM specialist to assist. She wanted a biomass boiler amongst all sorts of other additions.

    However, this level of expense had not been budgeted for and she was bluntly told by Alan Seaborne, the NHSGG&C project director "that's not going to happen." They simply did not have the budget for it. So, I tend to view BREEAM as more of a contractual aspiration rather than an absolute contractual requirement. In Glasgow it was pegged down from being an absolute requirement to, "how close can we get to BREEAM Excellent?" I think the same principle would apply to the Edinburgh project. To get to BREEAM Excellent, you could end up spending millions of pounds extra, which was simply not tenable as the budget wasn't there to allow it. You would also need to look at any downstream consequences of such an approach e.g. - "will the installation of a biomass boiler increase pollution in the area? Will it get planning permission?" These unplanned 'extras' could accumulate to the point where they actually stall the whole project. The target specification was therefore to get as close to BREEAM Excellence as possible in those circumstances. You then have to refer to the BREEAM Healthcare Manual as to how to achieve it. I cannot remember what it said about ventilation and M&E, but I am pretty sure it stipulates that it should comply with listed criteria (e.g., SHTMs) in order to score the appropriate credits.

86. BREEAM will have an impact if you have got a high ventilation rate because you might have a consequentially greater loss of energy and heat at a time

when BREEAM has you trying to minimise energy consumption. Heat recovery might mitigate this. There is a balance to be struck in achieving a clinically acceptable specification for the air change rates without dramatically increasing the energy consumption of the building to achieve that. That is where you might get a situation where natural ventilation comes into play by allowing you to get the requisite air change rates without expending energy (and money) on mechanical air changes. But as I have previously commented, the compromise with that in a clinical setting is that if you have natural ventilation, you are exposing the patient to any contaminants that are in the air. In isolation rooms and others where you have got clinically vulnerable patients this is a risk that would be unacceptable.

You also have external noise hazards to cope with as well as issues with summer and winter temperature extremes, so that you no longer have a controlled environment in the room. There are a series of balancing acts that have to be resolved to reach an acceptable compromise, not least on cost.

87. There is a BREEAM section in the ITPD with cross references to the sustainable design section. The quotes I gave you earlier are from the sustainable design section which states you should follow the SHTMs, So the 2.5 air change rate emanating from the BREEAM section was contradicting what it said in the sustainable design section. That was a puzzle. If I saw two and a half air changes, I would be concerned at such a low air change rate. That setting would suffice for a toilet, but a bedroom on a ward is six air changes and sometimes that is not even enough in my view, so I do not know where two and a half came from. I do not know if it was a BREEAM thing to save energy, but for me it is not acceptable.

Operational Energy Model

88. I am not familiar with the Operational Energy Model in the Edinburgh project or who developed it. I would expect an Operational Energy Model to be developed by Hulley and Kirkwood in terms of the long-term use of energy. I do not know where the input data would come from either. Nor do I know what

technical work was done to reach these figures. Hulleys or Mott McDonald would know.

RDS developed by the winning bidder

89. I think there was an expectation on the Edinburgh project that the bidders would develop their own room data sheets (RDS), which would be the norm in such projects. However, I have worked on projects where the board issued their own RDSs modified to suit their requirements, but it is not always the case. It is common practice for the bidders to submit fully drawn up room layouts ('C' sheets) as a requirement of the bid.

    Usually these are 'generic' i.e., commonly occurring rooms, but it will also include specific and more complex key rooms such as theatres, x-ray etc. I have found some signed off room layouts dated 2013 on my database which suggests that they were issued with the reference design, but I have not found any accompanying RDS. Room types with an RDS sheet(s) can be found on the ADB system. The issued room schedule will then determine what rooms you need to download from ADB. But more often a list of rooms required at 1:50 is requested by the board at bid stage and you would generate the required RDSs accordingly. I cannot comment on IHSL's bid as we were not part of their team, nor were we involved in assessing any RDSs post award because by then we were no longer involved.

Conflicting Messages from the ITPD

90. It would appear that in Edinburgh at least one bidder spotted the problem with the environmental matrix but did not raise it directly with NHSL/MML. They merely corrected their version of the matrix. Unfortunately, this was not picked up by MML. The reference design environmental matrix should have reflected the requirements specified by the relevant SHTM(s) unless there was an explicit instruction not to do so. In the latter situation it is imperative to have a note of this placed on the matrix together with an explanation as to why it has been decided to derogate in this instance. I'm surprised that was not done with the four air changes rate and can only conclude it was indeed due to

human error in transcribing the required air change rate from the SHTM onto the matrix.

91. I am not familiar with all of NHSL's board construction requirements (BCR). I only managed to download one ITPD, but I do not think I have the relevant ones.

BCR's comparison to standard practice and innovation allowance

92. I have only a very vague recollection of the BCRs. My view is that they were not materially different to what is normally required. However, I had not fully read them due to limited time and access. As for innovation, I think what concerned us as a bid team was the intransigence which we encountered from MML during the actual bid process when we tried to innovate. This emerged when we sought to amend or address what we saw or knew were deficiencies in the reference design layout during the competitive dialogue discussions. It soon became apparent that there was no appetite for change even when it was clinically beneficial.

BMJ and the B3 consortium tackling contradictory elements of the Reference Design at ITPD

93. We had a lengthy discussion on this at an initial meeting of all B3 participants in Balfour Beatty's office at the start of the bid process. The general view of those who had not previously been involved in the Edinburgh project was that the reference design was poor. (BAM highlighted a room where there were three columns in the middle of the floor!) This reinforced the point I had made to the reference design team before finalisation of the reference design report. There were too many anomalies in the reference design that had not been resolved prior to issue to the bidders. As outlined earlier two approaches were then adopted by B3 in response to this. I as tasked with pursuing amendments to the reference design to stay close to its original intent - i.e., minimise risk - whilst BDP would engage in a more radical interpretation of the reference design, albeit with a greater risk of rejection. At a follow up meeting

and after some further design exploration of the first option, I explained that in my view we were not really gaining that much by merely tinkering with the reference design. The sketches I had developed solved some problems but not all. BDP then produced their sketch layouts which showed significant gains e.g. more and bigger courtyards with consequential better daylight into rooms. After a lengthy discussion we all agreed that it made sense to pursue the BDP option despite it departing more fully from the reference design.
That, by definition, carried a greater risk of rejection. Indeed, much of the discussion revolved around assessing the risk inherent within the BDP option rather than a more detailed analysis of the alternative design routes. The subsequent scoring that was sent to us post-bid suggested that we did indeed pay a penalty (wholly unjustified in my view) for taking this course of action.

94. The Glasgow project was a surprise in the sense that we had produced a reference or exemplar design as a guide to be followed. However, after it was issued, we got three completely different bids back, although two were quite similar. The deviation from the reference design was quite radical, and we thought, “what was the point of doing all that design work with clinicians if it is then just ignored?” To give one example, one of the things that we had in the reference design for the Glasgow RHC was a strong requirement for outdoor play beside the Schiehallion children’s cancer unit. In the winning bid design from Brookfield, children’s play was not incorporated adjacent to or even near to the ward. It was placed somewhere else. I remember thinking at the time, “what’s the point of that? You are supposed to have an outdoor play area close to the children’s bedrooms so they can walk out and play there to minimise exposure to others,” and they did not have it. I marked down their overall score accordingly. But they did not seem to be unduly penalised in the longer term, perhaps because there were similar problems with the other two bidders. I still felt that there seemed to be a certain leeway being given to Brookfield for reasons I could not determine. All four architect assessors rejected their bid because of an accumulation of such issues, but they were still awarded the contract. That tolerance of non-compliance may then have impacted the build in Glasgow. However I’m speculating here. The feedback from Glasgow maybe prompted the NHSL team to be more rigid in Edinburgh

by saying, “look, we must have what’s been designed in the reference design and signed off by the clinicians” To expand on this, if you come up with something that has not been signed off by the clinicians and it’s materially different to what they were expecting, then you should go back to the clinicians and resolve these via further design iterations.

However, this adds delay (and cost) that’s not been programmed in. And what happens if they still do not sign it off and you go ahead anyway? You have got a winning bid, you are on site, and the clinicians now say, “No, we’re not happy.” What do you do then? You still get tied up in delay and that adds further costs until you find yourself with a runaway train. Not only that but it invariably engenders a hostile environment with the clinicians as their expectations are reduced. In Edinburgh, I think they were trying to avoid that and exert greater control over any possible divergence and consequential delay, so there was not much scope for innovation or change to the Edinburgh reference design. Staying on programme was paramount. That would work if there was an acceptance of the reference design by the clinicians, but I saw a number of instances where their objections were simply dismissed even though there was scope for fixing the layout in question.

95. There was one Edinburgh meeting which I did not attend but where there was some controversy. The B3 team who did attend came back from this meeting and said Richard Cantlay of Mott MacDonald had acknowledged that the layout we had produced for that particular department was actually better than the reference design. However, it was thereby deemed non-compliant with the reference design, so they had to reject it. I know that David Stillie, who was Mott’s Healthcare Architect later said at another meeting that he wholly disagreed with Richard Cantlay over that response. Criticising your boss is a brave thing to do in public. But David believed - quite rightly - that if you have got something that is better, you should not unceremoniously reject it just because it is not fully compliant with the reference design. You should embrace it as design development - particularly if it offers the clinicians a more optimum working environment. That attitude flummoxed us. We were saying “So you’re saying this is better clinically, but you can’t accept it?” That

just did not make any sense to me. It was a very negative approach to the advancement of the reference design. In Glasgow we had gone from one extreme where innovation was all, to an approach in Edinburgh where we swung to the opposite extreme where no innovation was allowed, even when what we as a bid team had produced was deemed by the clinicians to be better for the patients.

I felt that this overly strict interpretation of the reference design parameters and its application when assessing alternative solutions was bananas. I thought that MML were making a big mistake with this approach and that it would ultimately impact on the effective delivery of paediatric healthcare within NHSL.

96. Unfortunately, I don't have a note from this meeting with Richard Cantlay. Nor is there a recorded minute that I'm aware of, though I'm sure it must exist. B3 would undoubtedly have recorded it as a comment whereby they had to be careful in terms of how far they went in departing from the reference design. We were even warned that we might lose points if we deviated too much from the reference design. That was made clear to me more than once and struck me as equally bizarre - i.e., you get penalised for potentially improving the clinical outcome for the staff and patients. Where is the sense in that? There is a risk then that the process is taking over from simply being the 'most economically advantageous design' to becoming the 'most restricted economically advantageous design'. Indeed, it begs the question as to whether it can really be called 'advantageous' when the long term consequences are poorer patient outcomes due to clinicians being hampered by a poorer design solution.

97. From a wider perspective the cost difference between a mandatory reference design and one that allowed a degree of change is in my view marginal, if not cost neutral. It's hard to measure when set against patient benefits e.g., a reduced length of stay in hospital for patients or improved staff morale by having e.g. a better working layout. I think the fear in NHSL was that having said the reference design is mandatory, but then allowing a winning bidder to change from that, meant that there was potential for any of the other bidders

to complain that they had not been allowed to do something similar, i.e. it was discriminatory, and that this had put them at a disadvantage. This might then open up a possible legal challenge and nobody wanted to risk that.

98. Technically, after you have been declared preferred bidder, there is still scope for continued design development and alteration, albeit limited in extent e.g., to meet unforeseen planning requirements. Only when you have nominated a preferred bidder and changes have been allowed to that one bidder but not to the other two prior to that nomination, would there be a risk of a court case. But after you have been named preferred bidder, there's still ongoing design development that takes place because you are refining the winning design more fully as you get more engaged with it and the clinical teams. I think B3 felt we were at risk of losing points if we deviated too much, but we still felt it was worthwhile putting forward alternative proposals. Finding that this perfectly logical approach was deemed to be non-compliant struck me as being a bit overzealous in applying the rules. It was nevertheless a legitimate action, so we had to accept it.

Expectations of the preferred bidder of further developing technical specifications

99. In my personal view, there were clear expectations on the preferred bidder to further develop the technical specifications. Vol.1 of the Edinburgh ITPD is fairly specific as in e.g., C8.3.

100. I think there was an expectation that we would develop room data sheets first. You normally develop it for specified rooms. There is a list of rooms that you develop at bid stage and submit it, and then you go on to develop a full set of room data sheets for an entire building. That is not to say there is a layout for every room. You might have a standard single bedroom so you do a room data sheet for that single bedroom which then applies to all the other bedrooms. These rooms are termed "generic rooms," which is a room where that layout repeats three or more times, like a cleaner's room or something similar, and which will apply across the building footprint. It becomes generic

for every cleaner's room albeit there may be minor modifications. That's what you will apply, even though it might be a slightly different shape of room.

I think the bidders were expected to do further room data sheets as required e.g., if the shape was significantly different, or required the agreed furniture arrangement to be modified significantly, or there was a piece of equipment needed for one room. It's often contentious as it involves a lot of work for what may be a very minor variant. As regards the environmental matrix, I cannot recollect if there was a request for that.

Price Point - Was price the central focus and to what extent did bidders frame their bids to maximise the tender evaluation points noted in the ITPD?

101. I cannot really answer if price was the central focus and to what extent the bidders framed their bids to maximise the tender evaluation points noted in the ITPD. It is a judgement to be made by each individual bid manager, and it is by definition a calculated risk. No point in going for an all-singing-and-dancing scheme if it is unaffordable. Nor is the cheapest solution necessarily better (higher lifetime maintenance costs can offset initial cost savings). That is why MEAT (Most Economically Advantageous Tender) is used so as to allow a more expensive bid to win if it can demonstrate longer term benefits over time e.g., in energy use and in lower maintenance costs by the utilisation of more expensive kit and materials. These will offset the consequential higher capital cost of the build. The key challenge for the bid manager is where to position your bid using these parameters in a way that gives you the best chance of winning without at the same time ending up with a cost that's not tenable for the end users.

102. It was exactly that kind of balancing act in Edinburgh, You would need to refer to the email that John Mitchell, B3's bid manger, sent regarding the naming of the preferred bidder, and which said it was not us. We had the best FM, and we were the lowest bid according to John, but we lost out because we had departed too far from the reference design. So, trying to improve the reference design backfired on us. That said, there were other issues that

surfaced in some of the areas during the debrief where we were inexplicably marked down. One of these was daylight provision where we pointed out that we actually had more and larger courtyards than the winning bidder.

How we ended up being scored less than them in terms of daylight provision baffled me. We had provided more daylight, not less and we could demonstrate that. I also remember reading that our building was four storeys high in certain areas and that would block out light. But when I checked our sections, the building was only three storeys high in these areas. Further, we had demonstrated that the winning bid would not meet the daylight factor of 3% that was required in the 4 bed rooms, and which was a key BREEAM requirement in the contract. But still we were scored less. That was an indication to me that something was not right with the assessment process. It looked like it was being manipulated to exclude B3.

103. There was therefore a large degree of scepticism as to whether the scoring of our bid reflected what we had submitted in terms of drawings. As previously stated, I did not understand how we were scoring less in so many areas compared to the winning bid, especially when we had increased the beneficial aspects with our solution when compared to the winner. This is a common problem when you are bidding. How far do you lower the price, or how much do you offset extra costs by highlighting demonstrable benefits? It becomes a calculated risk. With MEAT there is no guarantee that because you are the lowest price that you will win. As previously stated it is usually the most economically advantageous tender which succeeds - but MEAT has a wide range of interpretations. In Edinburgh, the view seemed to be that the Brookfield Multiplex bid offered certain benefits despite not being the lowest price. However, we could not identify what these benefits were in the winning design when we reviewed it. We thought we had a better solution and a lower price to boot. What surprised me though was the sheer extent by which we were marked down. It was as if somebody did not want us to win.

Evaluations of Bids

104. I have been asked which individual persons represented the Board when evaluating the bids for the Glasgow project. Regarding the evaluating of the bids, this was done behind closed doors, and I do not know who was involved in that because we were not invited to attend despite being part of the assessment team. That surprised me because I was under the impression that one of the reasons, we had been engaged was for our expertise in assessing bids. I believe that Alan Seaborne, the NHSGG&C Project Director, would be involved as would David Hall of Currie and Brown. David played the same role with Currie and Brown in Glasgow that Richard Cantlay played with Mott McDonald in the Edinburgh hospital. David was overseeing Currie and Brown's team. They would be involved in evaluating the bids. Perhaps Morgan Jamieson, the Children's Clinical Director would also be involved. Alan Seaborne and David Hall would be the only two that I could safely say would be directly involved in evaluating the bids.

105. On the Glasgow project we were advised we were being 'stood down' just after bid award but I don't recall being involved in any conversations about the bid process prior to that, It was the same for all the other consultants who were removed. I therefore don't know whether the winning bidder had proposed workarounds to some of our perceived concerns. It was never discussed in my presence.

Multiplex Bid and Reference Design

106. When Brookfield Multiplex were named as preferred bidder - and as I've previously highlighted - we were told that we were no longer required. This came as a bit of a shock. We pointed out that we had a contract which mandated us to monitor the build through to completion. However, Alan Seaborne, the project director told me that NHSGG&C had other people who could perform our role. This was unexpected especially given we were not told who was replacing us.

I think it was URS, the structural engineers, who raised issues about a potential breach of contract with NHSGG&C when we were told we were only being stood down, and that we were not being sacked. This meant that as we were still technically engaged on the project after award then NHSGG&C didn't need to pay compensation to us. This struck me as a somewhat mercenary approach to saving money, but nevertheless our involvement ceased at that stage. No further information was ever sent to us at any stage thereafter, not even minutes. That meant that if we were going to be invited to comment on any problematic build issues at a later stage, we would be coming back to the project completely in the dark. The fact is we were never contacted again prior to completion and in my view this was deliberate. The decision made no sense to me. We were basically being removed from the project on cost grounds with the assumption that existing personnel within NHSGG&C or Capita or whoever would take over our role. That struck me as being reckless if I am blunt. We were engaged for our expertise, so why would you suddenly get rid of that expertise at the build stage? What expertise did Capita and others have that we did not, and if they had it, why were they not engaged on that basis from the very outset? My own somewhat cynical view is that it was an exercise devised by the project managers Currie & Brown to get more of their own staff involved in the project at our expense. We knew they were experiencing financial problems. Moreover, I felt that they were not adequately equipped to carry out the role envisaged for them and that there would be downstream consequences as a result of this i.e., things would get missed. The subsequent fiasco over the ward tower cladding suggests this view was possibly not that wide of the mark. I am pretty sure I would have been picking up on many of the non-compliance issues that the cladding saga revealed if my involvement had continued during the build stage. I can state this having had previous experience of fire issues relating to cladding on a hospital.

107. In terms of making clinical commentary on each of the Glasgow bidders, we engaged with them in a series of competitive dialogue sessions during which we were making assessments of their bids. I was dealing with the children's hospital whilst HLM were dealing with the adult hospital. In the break-out sessions with each bidder's architect we had a team which included the Children's Clinical Director, Morgan Jamieson, and Mhairi Macleod, the Children's Hospital Project Manager. Both had clinical experience. Currie and Brown were usually represented at these meetings by David Hall, whilst Ian Buchan represented the medical planners. However, from memory Ian generally only attended the bigger department meetings such as theatres.

108. Theatres was by far the most complex of the six departments that the bidders were required to draw up for the Glasgow Children's hospital. There were originally only supposed to be three iterations of drawings to the clinicians during the exemplar design preparation. But it ended up being five because the theatre layout was very complicated. There were also a number of vested interests at play within the clinical teams present which hampered sign-off. Indeed at times it felt like we were refereeing a boxing match between the surgeons and the anaesthetists. However, we eventually got sign-off at the eleventh hour. We then presented our findings to each bidder for them to take away and develop. The irony was that having spent a huge amount of time getting the exemplar design to work, the bidders proceeded to come up with completely different proposals. We hadn't expected this nor had we factored this in. Morgan was quite scathing of some of these layouts given that they ignored all the work we'd put in with the clinicians to get to a signed off exemplar layout. I think part of the ensuing worry was that it was becoming evident that the bidders would undoubtedly need to go away and modify their proposals further to address our comments. Certainly, to a far greater extent than had been envisaged. This was due to how radical their departure from the exemplar design was. Further, this was going to add delay with absolutely no guarantee that what evolved would be acceptable to the clinical teams. This was a major worry for me. Once the winning bid was chosen, that bidder would then get involved in the detailed design with the clinicians.

However, the theatre solutions offered by all three bidders were way off what was wanted. Given it took us five attempts to get the theatre exemplar design signed off, there was a serious concern that we would get bogged down again with a completely new design which no longer met the clinicians' requirements. If you multiply that scenario across all other children's departments and then repeat it for the adult hospital, there was a potential for the whole project to grind to a halt with significant financial and political consequences.

109. That was the worry and I think that's maybe what subsequently got fed through to the Edinburgh project i.e., "You might end up with such a situation there, so stick with the mandatory design." However, I never saw formal confirmation of any such dialogue between Edinburgh and Glasgow and we were not invited to get involved in any such discussions by NHSL, so my comments are based solely on rumours I heard.

110. In Glasgow I expected to be involved at the subsequent clinical meetings with the preferred bidder where I could offer advice and direction based on the knowledge that we had gained through our earlier interface with the clinical teams. However, I cannot comment on how that process panned out because we were abruptly excluded from further participation, much to our consternation.

Reference Design and Exemplar Design

111. To me the reference design and exemplar design are both essentially the same except the exemplar design tends to be schematic whilst the reference design is more set in stone. An exemplar design can offer you options for coming up with a variant whereas a reference design is more restrictive. It is saying, "you can change bits and pieces, but not to the point where it becomes a variant design" That's my understanding, but other people have different interpretations.

My view - based on experience - is that a greater definition of what is required for each option would help. And exactly how much you can depart from the chosen option should be clarified at the outset of the bid process in order to avoid confusion further down the line. Guessing what is wanted costs money and can add delay so establishing how far bidders can deviate reduces this. However, the other side of the coin is that the more 'variants' you allow, then the harder it becomes to do a fair comparison of the pros and cons of each solution. As I've highlighted previously, instead of comparing three apples you end up trying to compare an apple, a pear, and a banana. That in turn can leave you open to a court challenge from a losing bidder arguing that the assessment was unfair or discriminatory. This in turn will result in more cost and delay which the health board then has to explain to their political masters.

The Build Stage vs Design Changes and Costs

112. Hindsight has demonstrated that Brookfield didn't deliver in either Glasgow or Edinburgh. In order to keep their proposed bid for the latter within target cost, they may well have chosen to save money elsewhere. I am speculating here but the feedback I have had from other people is that once it got into the build stage, they suddenly realised it was costing a lot more than they had bid and they started to carry out cost savings. In Edinburgh this information came to me via an electrical sub-contractor involved in the project. (He contacted me after reading comments made by me in the Edinburgh Evening News). Such actions may have been legitimate in terms of trying to control the costs, but the question was - did that then put them at odds with what they had promised to deliver in terms of air change rates etc.? Again, I stress that this is speculation on my part as I have no hard evidence to back it up other than that supplied to me by the sub-contractor. But I am trying to understand why, if you are willing to spend a lot of money at bid stage, you then choose to cut back on quality during the build process. Edinburgh was an NPD contract so the consortium of which Brookfield were a part would be responsible for maintenance during the contract term. Why would you skimp on materials when the long-term effect of that would be to increase your maintenance cost?

Trying to minimise the construction capital cost is a common feature of PFI projects and it has long puzzled me given the issues I've raised above regarding the increased long term costs to the consortium.

113. I will be blunt, in stating that I am aware that some contractors will happily go down that route promising you the earth at bid stage to win the contract, then once they have won it, immediately start trying to claim back money. Often, they will go so far as to have a team set up to generate claims. It is cynical but to be fair many NHS clients believe that the potential to make changes is still available to them once the contract is signed. In reality it is severely limited for obvious reasons. It carries cost implications for the consortium not just in capital terms but potentially for the duration of the contract, so they will only entertain it but greatly increasing the cost of the change. If they get their sums wrong, they are stuck with it for the next thirty years. Invariably that means that anything additional which the client wants or needs to change, can cost a fortune. Whilst many of these changes are a recognised part of a complex process, you need to avoid change at all cost because it can impact on the consortium as well as the client. A minor change agreed to and costed by the contractor may well throw up unexpected issues further downstream which then adds further costs and which he will seek to offload onto the client. Having won the contract you can argue that this is a legitimate tactic because a winning consortium is under pressure to build the contract to what they had said it would cost. It is not in their interest to overspend because they have shareholders to answer to, who in turn will be wondering why they have spent more than they had been assured and why they have lost money on their investment as a consequence. So the contractor will be asked to explain what happened and who is liable. Contractors and consortia are under extreme pressure to keep costs under control on these large projects and to do that sometimes they argue that certain standards will need to be lowered to achieve this. It then develops into a debate as to what degree of deviation is permissible within the contract constraints - and if it becomes heated you can end up mired in an adversarial process. This is never good when you are trying to build something as a team. If you adopt a particularly hard stance, it inevitably becomes more confrontational as each day passes.

If you want a good example, you can look no further than the two ferries they are trying to build in Greenock. The stance between Caledonian Maritime Assets Limited (CMAL) and the shipbuilder has become a classic adversarial relationship where the whole project falls apart as claim meets counter claim. Sometimes this can boil down to personality clashes on both sides. I've been involved in projects where we were forced to remove individuals at director level on both sides in order to break the impasse.

114. Cost constraints can come from both sides as the contractor is building to a cost and the Health Board are building to a budget. As I stated earlier, when they talked about BREEAM and biomass (boilers), Allan Seaborne the project director declined to go down that route as the budget he'd been given couldn't accommodate it. The biomass expert wasn't constrained by costs when voicing her opinion. She was saying if you want to meet BREEAM Excellence then this is what you need to do. However once we started to cost that, she was told bluntly it wasn't an option, so she needed to reign it back in again to keep to the budget to the figure set by the Scottish Government. From the Health Boards side, they are trying to control costs to stay within that figure whilst the contractor/consortia is also trying to do it from their side. In such circumstances you need a cooperative working environment so that you can agree what can be reduced, what can't be reduced, and what must stay. You need to avoid the debate degenerating into an argument over what is acceptable to each party and instead find a compromise position. If it becomes more adversarial it's a lot harder to work as a team, because you are not only constantly on guard to protect your client's interests but also seeking to prevent the contractor from cutting corners unnecessarily.

115. My own opinion is the somewhat obvious one that it is best to fix everything at design stage as much as you can. You really have to get it fixed before you are on site. Once you are on site and you make changes, it creates havoc; a minor change can bring about the domino effect referred to earlier and impact on the whole project. You initially cost a change at £10,000 but by the end of the week it could end up costing £100,000 because you failed to foresee something else that is going to be affected.

The Golden Rule is fix everything at design stage when it is still possible to do so. This may involve doing additional work that you had not budgeted for. That in turn may mean biting the financial bullet in some instances because once you get into the build, change is the enemy of staying on budget. You want minimal change and change will still happen because not every problem can be foreseen. It is being able to control that change that is the key element to staying on time and on budget. Being able to do so without adversely reducing quality and without introducing a risk that is not sustainable in the long run requires a lot of skill and more importantly, co-operation. It is a simple thing to say but it is really hard to achieve in practice.

116. It is the management of change that is the issue: how you address it: how you manage it? If you think about it, these huge hospitals can take five to six years to build. You start out with a ‘fixed’ design brief, but treatments will inevitably change over these five years and that will introduce the question of how to accommodate that change. The equipment that you specified five years previously, and which the engineer designed the air change rate for, could end up being obsolete and replaced with more modern equipment by the time it comes to buying it. Moreover, you will find that clinicians always wait until the last minute to choose or specify equipment because they want to acquire the most up to date piece of kit rather than what was acceptable five years previously. This is perfectly understandable but has consequences. When the original Schiehallion Unit was built back in 1995. they had a room that was used to prepare isotopes and drugs for administrating to the children. After we received a complaint about overheating in the room, we discovered that the clinicians had specified a more advanced isotope machine for the room and hadn’t told us. Whilst it was the same basic size, we ended up with this poor girl stuck in a room where the average temperature was about 80 degrees F all day because the ventilation system had been designed for a different machine. That resulted in us having to change the ventilation system even although the ward was now occupied. This in turn introduced an infection risk. Again, that’s a downstream consequence that was not foreseen. If they had told us, we could have caught it during the build, but they had just assumed that the ventilation system would be able to accommodate the new machine.

There may even have been an impact on the drugs being processed. So we had no choice but to change it, and there was an extra cost as a consequence. It's often challenging trying to catch such changes because they invariably surface at the last minute. I therefore always ask clinicians where they think the unit will be in five years time so we can factor in the potential for change at the point when it is most economical to do so. We ask where are they going in terms of treatment and equipment procurement so that we are at least aware of the likely direction of travel for the department and can therefore make provision for it. This is often called 'future-proofing'.

117. The key is to keep your eye out for any change then work back to see what the change will do to your layout. What will the change do to the temperature of the room, what will it do to the air change rate etc? Every change has a consequence, and it is the ability to sit and identify what that consequence will be before you actually make the change which is important. You can seek to address a problem only to discover it is going to cost a huge amount of money to fit this extra bit of equipment into the plan whereas previously you assumed that it was going to be a nominal cost. If you get that replicated across all departments on a large hospital project your costs will run out of control. So you need experience to understand that process and to recognise in advance that what seems like a minor change is actually going to cost a lot more money. You then warn the client of the consequences. But I do not think this was happening with the Glasgow or Edinburgh projects, or if it was happening, it was not being addressed in a controlled manner. Again, I have to emphasise that am speculating here as we were no longer in direct touch with unfolding events once the build started on both projects.

Declaration

118. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospital Inquiry
Witness Statement of
Robert O'Donovan

Witness Details

1. My full name is Robert O'Donovan.

Qualifications

2. My qualifications include a HNC in Construction Management, and an Irish Management Institute Leadership Certificate. I qualified as a mechanical fitter in 1992.

Professional Background

3. I began working at Mercury Engineering ('Mercury') in 1996 as a Project Supervisor. Mercury build and manage complex engineering projects and work across healthcare, pharmaceutical, data centre and semi-conductor sectors throughout Europe. I have since held the roles of Package Manager, Project Manager, Project Director, Operations Manager from 2017, and Director of the Healthcare Business Unit from 2019 to present.

4. I have over 30 years of experience in the construction industry and have had senior management involvement with several high-profile projects in the UK and Ireland including the New Royal Hospital for Children and Young People in Edinburgh, Queen Elizabeth University Hospital in Glasgow, the Bon Secours North Block Extension in Cork, and the New Children's Hospital in Dublin.

Current Role

5. I am currently the Healthcare Business Unit Director at Mercury Engineering.

SICK KIDS HOSPITAL PROJECT- EDINBURGH

6. I first became involved in the Royal Hospital for Children and Young People, also known as the Sick Kids Hospital, in around May 2015.

7. The Sick Kids Hospital is under the control of NHS Lothian (NHSL). In February 2015, NHSL entered into an agreement with Integrated Health Solutions Lothian Ltd (IHSL) for the design, build, finance, and maintenance of a project to re-provide services from the Royal Hospital for Sick Children and the Department of Clinical Neurosciences in a single building adjoining the Royal Infirmary of Edinburgh at Little France (referred to below as "the Project").

8. In February 2015, Mercury entered into a sub-contract with Multiplex Construction Europe Limited (Multiplex) **(A32431743 – Contract between HIS Lothian Limited and Brookfield Multiplex Construction Europe Limited – 2015 - Bundle 2, Page 858)** in relation to the construction of the Project for Mechanical, Electrical and Public Health (MEP) Services. The sub-contract consisted of the sub-contract agreement, the conditions, and the schedules, as well as the documents referred to and annexed to the Schedules.

9. My role was Project Director for Mercury. This involved managing a team of people including Project Managers (Mechanical & Electrical), Planning Managers, Commercial Manager, and Quality Manager. These Managers had teams of People working for them like Construction Managers, Engineers, Supervisors and Subcontractor Managers and Supervision. Within Multiplex, I mainly worked with Darren Pike (Project Director), Colin Grindlay (Mechanical and Electrical Lead), and Stuart Jackson (Project Manager). I was involved in the Project on a full-time basis from May 2015 to Oct 2017 and then more on a part time basis after October 2017, splitting my time between healthcare projects in Ireland and Scotland. The transition in the level of my involvement in the Project began in Q2 of 2017 as the workload began to wind down and I became an Operations Manager within Mercury. Declan O'Donovan and Sinead Rogan were promoted from package managers to electrical project

manager and mechanical project manager respectively in mid-2017 and took over the site-based responsibilities.

VENTILATION SYSTEM REQUIREMENTS - SICK KIDS HOSPITAL PROJECT

10. Mercury's scope in the Project was limited to the installation only of a design provided by Wallace Whittle (WW), such design primarily provided in the form of Schedules, Layout Drawings, and specifications. Mercury had no design responsibility on the Project. In this regard, reference is made to the following provisions of Mercury's Sub-Contract with Multiplex:

    - Sub-Contract: Fifth Recital
    - Sub-Contract: Seventh Recital
    - Contractor's Requirements Part Two: 2.0 Design Statement and Demarcation
        - 3. Air Conditioning and mechanical ventilation systems
        - MEP Subcontractor shall undertake: *"selection of plant and scheduling of equipment to meet design criteria, installation details to suit manufacturer's requirements. Final coordination and preparation of installation drawings"*
    - 64. Specifications
        - MEP Subcontractor shall undertake *"Final co-ordination"*
    - 70. Detailed design drawings
        - MEP Subcontractor shall undertake *"Final co-ordination and preparation of installation drawings."*

11. The installation of the ventilation system was to comply with SHTM 03-01 insofar as it was agreed with the relevant parties to the Project that it was required to do so.

12. The 'RHSC & DCN – Building Services Specification for Ventilation Systems' dated 1 October 2013 **(A35270871 – Re-Provision of RHSC and DCN at Little France Section 4.23 Specification – Building Services dated July 2014 –**

Bundle 2, Page 145) ("the 2013 Specification") was prepared by WW and issued to tendering mechanical and electrical contractors.

13. Section 5.0 of the 2013 Specification states "*The Ventilation System shall accord with all appropriate Hospital Technical Memoranda, Codes of Practice and relevant British and European Standards and Appendix A*".

14. As such, there was a general obligation to comply with the appropriate Scottish Hospital Technical Memoranda (SHTM).

15. Within the 2013 Specification, there were more specific obligations for parts of the ventilation system to accord with certain SHTM. For example, section U10 required that

> "*Air pressure regimes for theatre suites shall be designed in accordance with the guidance provided in SHTM 03-1 employing wall mounted pressure stabilisers*" and section 520 states "*The ductwork shall be constructed as a complete system to provide the rated protection for stability, integrity and insulation when tested in accordance with SHTM 81 and BS"*.

16. The 'Re-Provision of RHSC and DCN at Little France Section 4.23 Specification – Building Services' dated July 2014 (revised August 2014) **(A35270871 – Re-Provision of RHSC and DCN at Little France Section 4.23 Specification – Building Services dated July 2014 – Bundle 2 – Page 145)** ("the 2014 Specification") was prepared by WW and issued to Mercury prior to financial close of the Project. Part of this document (page 53 to 118) set out the 'Specification for Ventilation Systems'.

17. The 2014 Specification states that the specification shall be read in conjunction with all other mechanical and electrical engineering services specifications and the Architectural drawings.

18. Under section 5.0 Applicable Standards, it states

"*All elements of the works shall be in accordance with the requirements of current legislation, regulations and industry standards unless otherwise stated."*

19. The document then breaks down the specification for different parts of the ventilation system.

20. With reference to document 'IHSL-XX-XX-SH-001' dated 17 November 2014 **(A32477336 – IHSL-XX-XX-SH-001_K - Bundle 13, Volume 4, Page 1235)** (Derogation Register), there were derogations from the SHTM and other standards proposed by IHSL and agreed by NHSL. Several of the derogations related to the ventilation system.

21. In terms of whether the design of the ventilation system should have complied with the SHTM 03-01, Mercury was not privy to the full suite of contract documents between Multiplex and IHSL or between IHSL and NHSL. However, I understand there was confusion stemming from details contained within the tender and contract Environmental Matrix (EM), which was inconsistent with the SHTM 03-01 and in contradiction with the Board's Construction Requirements (BCR). Mercury were not aware of the detail – we were told that this was the issue. My knowledge in relation to this is not contemporaneous as Mercury built to a Multiplex / Wallace Whittle issued design.

DELAY TO COMPLETION OF THE SICK KIDS HOSPITAL PROJECT

22. The originally scheduled date for completion of the Project was July 2017. A settlement was agreed between Multiplex and IHSL which extended the planned completion date to 9 July 2019, owing to matters and issues of delay that were not the responsibility of Mercury. Mercury were not part of any dialogue or agreement that took place between Multiplex and IHSL. No responsibility for this delay has ever been attributed to Mercury, noting Mercury completed our final account with MPX on 1 July 2019. The issues set out in the IOM Issues Log **(A41213193 – IOM Issues Log – 25 June 2019 - Bundle 2,**

Page 68) detailed further below, became known to the parties to the Project on 25 June 2019.

23. I understand that, in or around 1 July 2019, it was agreed by the relevant parties that the issues set out in the IOM report could not be corrected in a timeframe that would allow the hospital to open on 9 July 2019. My understanding is that the primary cause of the critical path delay to the Project was the significant remedial work that was necessary to the Critical Care ventilation system as the air changes being achieved did not accord with SHTM 03-01 (10 air changes per hour) and the cause of this being that the EM issued by the Employer to MPX / WW was not in compliance with that SHTM.

24. Any issues that were notified through Zutec (the project/document management communication platform) during the currency of the Project in respect of ventilation that were Mercury's responsibility were corrected. This was a live document updated weekly so there is no consolidated list of defects/snags. Attached is a list which was exported from Zutec on 17 September 2018. Any associated delay in remediating the notified defects was minimal and was not critical to the overall Project completion.

AS-BUILT VENTILATION SYSTEM – SICK KIDS HOSPITAL PROJECT

25. In respect of the ventilation system installed at the Sick Kids Hospital, Mercury installed and commissioned as per the design provided by WW. The ventilation system installed was capable of performing as per the design which Mercury understood aligned with the Employers Requirements at that time. Based on the procedures carried out during the currency of the works, the system was accepted at Practical Completion by the Employer as being compliant in accordance with the Employers Requirements.

26. Practical Completion of the Mercury installation was issued by Multiplex on 22 February 2019 **(A34483196 – Practical Completion Certificate from Arcadis on Re-provision of RHSC and DCN – 22 February 2019 - Bundle 4 – Page 223)**, noting that the certificate of practical completion was subject to certain

exceptions, which are listed on the certificate. This handover was validated and certified by the Independent Tester employed by the Employer. The noted exceptions did not include the ventilation system meaning that the ventilation system was practically complete i.e., installed as per the Multiplex design requirements for the purposes of the Project on 22 February 2019.

27. With regards to the air changes per hour aspect of the ventilation system, there was significant engagement between IHSL and Multiplex post completion and handover of the Mercury scope. I understand that this engagement related to conflicts between the client's specification documents (detailed above) and the effect of same on the system installed. Significant remedial works were undertaken by the client post-handover of the Project which, I understand, related, in part, to the ventilation system. Mercury was not involved in this work, nor has it ever been suggested that Mercury was in any way responsible or liable for the need for the additional works.

28. The Defects Liability Period (DLP) for the works deemed practically complete, which included the ventilation system, commenced on 22 February 2019. Mercury was provided with the IOM Issues Log on 28 June 2019 **(A41213193 – IOM Issues Log – 25 June 2019 - Bundle 2 – Page 68)** (the Issues Log was dated 25 June 2019). This Issues Log identified what it considered to be issues / changes with the design and certain parts of the mechanical installation. The issues log identified certain issues (issue 11, 18, 24, 29, 32, 33, 35, 40, 43 and 45) which were deemed to be Mercury's responsibility to correct. These were addressed and the issues which were not Mercury's responsibility to resolve, were resolved by other contractors.

29. Following the IOM Report, the issues identified were managed in accordance with the sub-contract and Mercury carried out certain works to the ventilation system. For example, the Mercury team arranged for the Theatre Canopies to be serviced in a number of theatres by Mercury's sub-contractors Medical Air Technology UK (MAT) and H&V to carry out Test and Balance works afterwards (noted below). I was Operations Manager (based in Ireland) and supported the team on the ground from there.

30 Following the completion of this work, H&V produced a report entitled 'Royal Hospital for Children, Edinburgh Theatre Air Change Rates & Room Pressure Verification' **(A38137161 – 1.5.21 RHC Edinburgh – Theatre Air Changes & Room Pressures – July 2019 - Bundle 2 – Page 845)**. The testing in this report was carried out in the period 1-5 July 2019 and related to theatres 30 – 39. For each of the theatres tested, it demonstrated that the recorded air changes and room pressures were in excess of those required by the design parameters specified by WW and the SHTM 03-01 parameters referred to in the IOM Report.

REMEDIAL WORKS TO THE VENTILATION SYSTEM AT THE SICK KIDS HOSPITAL, EDINBURGH

31. As noted, Mercury completed remedial works relating to its scope arising from the IOM Issues Log in or around July 2019. In addition to these remedial works, Mercury was instructed by Multiplex to carry out Air Handling Unit enhancement works on 16 October 2019 (See MPX Contractor's Instruction dated 16 October 2019 **(A46844995 – 117751250-05. MPX-CI-002857 Mercury – Bundle 13, Volume 4, Page 1319)** and Mr Vent quotation dated 22 October 2019 **(A46844997 – 117751362-06 Mr Vent quotation dated 22 October 2019 – Bundle 13, Volume 4, Page 1321)** . The scope of work was developed by QNIS (supplier of the AHUs) and was additional to Mercury's original contracted scope. Mercury had a team on the ground at the Sick Kids Hospital carrying out these AHU works in the period from 21 October 2019 to 19 February 2020 who reported progress back to myself as Operations Manager for Mercury's Healthcare Business Unit, although I was based in Ireland at time. As set out in the scope of works document **(A46844996 – 117751385-04. Scope of works dated 14 October 2019 - Bundle 13, Volume 4, Page 1325)**, these works involved the removal of inverters from inside the AHUs and the mounting on the external of the AHUs, the installation of isolators, the re-routing of the associated inverter cabling and installation of new cabling where required, continuity testing on new inverter/cable terminations etc.

32. In consideration of clause 5.2 ‘General Standards’ of Mercury’s sub-contract, the remedial and instructed works conformed to relevant statutory regulation, applicable recommendations, guidance, and good practice.

33. In the period between February 2020 – 23 March 2021, Mercury carried out no further direct works on the ventilation system, except for notified defects such as the replacement of the domestic hot water expansion vessels, works to the combined heat and power system, and the low temperature hot water expansion bellows etc.

34. Mercury was aware that there was significant engagement between the client and Multiplex in respect of remedial schemes, but Mercury was not involved in this.

DECLARATION

35. I believe that the facts stated in this witness statement are true to the best of my knowledge, information, and belief. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry’s website.

Scottish Hospitals Inquiry
Witness Statement of
Sarah Jane Sutherland

Introduction

1. My name is Sarah Jane Sutherland.

2. I have been asked to provide a statement detailing my involvement with the Royal Hospital for Children and Young People and Department of Neurosciences ("RHCYP / DCN") Project ("the Project"). This statement has been produced in response to written questions provided by the Inquiry.

Background

3. I qualified as a Nurse in 2003 with a Diploma in Higher Education in Adult Nursing and a BSC Adult Nursing degree from Napier University, Edinburgh. I also have a Diploma in Infection Prevention and Control which was awarded in 2018 from the University of Highlands and Islands. I am registered with the Nursing and Midwifery Council ("NMC").

4. On qualifying I worked with NHS Forth Valley as a Theatre Scrub Nurse between 2003-2004 (5 months) then moved to NHS Lothian as Staff Nurse in Orthopaedics from 2004-2012 (8 years). I then moved to Edinburgh University as a Research Nurse between 2012-2014 (2 years) returning to NHS Lothian in 2014 as an Infection Prevention & Control nurse. In December 2018, I changed roles within NHS Lothian and became HAI Scribe Lead Advisor until June 2022. My current role within NHS Lothian is a Geographical Lead Infection Prevention & Control Nurse.

Role in RHCYP/DCN

5. I was involved with the RHCYP/DCN Project as part of my newly promoted role as Healthcare Associated Infection Systems for Controlling Risk in the Built Environment ("HAI Scribe") Lead Adviser between January 2019 until the end May 2019. This was primarily an induction period and fully supported role with no sole decision-making responsibilities. My involvement was limited to shadowing/supporting Lead Infection Prevention Control Nurse (LICN) Lindsay Guthrie and Lead Infection Control Doctor (LICD) Dr Donald Inverarity.

6. Prior to working on the Project, I had experience around reactive and planned small scale local refurbishment building works. Post my experience on the Project, I have been involved in a range of capital planning refurbishments and a new build project, however, my involvement was interrupted by the Covid pandemic because of increased clinical demand on my time.

7. My roles and responsibilities during the period I was involved in the Project were mainly to attend project meetings and to provide infection prevention and control ("IPC") advice in relation to: the built environment for the current stage of the Project (which was nearing end of construction); procurement of equipment etc; room reviews; and participation in HAI Scribe. Also during this time I was involved in providing IPC advice for other capital and estates projects in conjunction with other senior colleagues in NHS Lothian. During the Covid Pandemic, I also provided infection prevention and control team ("IPCT") support in a clinical capacity.

8. IPC specialists provide an advisory role to the project team, who will consult with the IPC specialist as and when required. The extent and nature of IPC involvement depends on the particular project and project team. The stage at which IPC specialists get involved in projects varies depending on the size and scale of a project. IPC specialists might get involved during the design stage and the construction and commissioning stage however IPC specialists would not usually be involved during the procurement of contractors. The advice given by IPC specialists would relate to any potential risk to patients.

From my own experience it is not the role of IPC to check compliance of building systems (such as ventilation systems) with Guidance (such as SHTMs); rather, the IPC role is to advise on any clinical risk of any aspect of design whether compliant or not.

9. The role of the Lead HAI-Scribe Adviser is a dedicated Infection Prevention Control Nurse ("IPCN") to provide Infection Control advice for built environment projects. However, there is no formal training available for IPCNs and Lead HAI Scribe Advisers and learning is based on an interest in this particular field and on the ground experience. Core IPC training or formal academic training to become an IPC nurse and/or a HAI-Scribe adviser (whether on the job or otherwise) does not cover the IPC implications of engineering systems, such as ventilation and water. Training does not cover such things such as the performance parameters required by NHS guidance (such as pressure and air change parameters) or cover familiarity with guidance such as SHTMs. This would all be on the job experiential learning.

General IPC Involvement in RHCYP/DCN project

10. My role in the Project was minimal and always followed up with emails under the supervision of Lindsay Guthrie. I was involved in HAI Scribe training for Bouygues, the hard FM provider, and Multiplex, the contractor, which consisted of an overview of the HAI Scribe document for reactive planned maintenance. My recollection is that the sessions were approximately 1.5 - 2 hours and were delivered by myself and IPCN Emma Collett on one occasion and IPCN Kirsten Imlach on the other. They focused around discussion of Stage 3 Scribe within SHFN 30 Part B **(A33662208 - 416 SHFN 30 Part B v3 Oct 2014, October 2014 – Bundle 13, Vol 3, Page 464)** including the importance of risk rating and identifying the correct type of work to ensure the appropriate class of precaution was put in place when carrying out any construction/refurbishment activities, particularly when the building was occupied. The first session was requested by Janice MacKenzie, the Project Clinical Director, and the second via Brian Currie, Project Director.

My recollection is that these were to highlight the importance of HAI Scribe, completion of the document/question set and to ensure that contractors and hard FM providers were clear on what was required from an HAI Scribe perspective going forward. If I recall correctly there was representation from Multiplex, Bouygues and IHSL alongside Janice MacKenzie at the training sessions. There may have been other project team members at the sessions however I cannot recall who exactly who those were.

11. The forums that were available to me to raise IPC issues in person were: commissioning meetings for the Project; IPC Business Meetings; and 1:1 meetings with Lindsay Guthrie. Out with these forums, email was used as the main form of communication. I had limited opportunity to engage with these forums due to my involvement towards the later phases of the Project.

General IPC involvement during commissioning and construction phases of the Project

12. The expected IPC involvement would be as per expectations laid out in SHFN 30 **(A33662182 – Scottish Health Facilities Note 30 Part 1 – Infection Control in the Built Environment – Design and Planning – Bundle 13, Vol 3, Page 553)**. Any risks/concerns were escalated to Lindsay Guthrie and Donald Inverarity who further raised through the appropriate forums and Project team. I don't recall any risks identified individually to myself.

13. My understanding is that SHFN 30 is an Health Facilities Scotland ("HFS") (now Antimicrobial Resistance & Healthcare Associated Infection Scotland ("ARHAI")) document mandated by Scottish Government to be implemented by NHS Boards for built environment project/works to help reduce potential infections from the hospital environment, including during design, construction, refurbishment, and maintenance activities. Parts A & B include built environment information around IPC for project management and stakeholders involved in the project and pro forma question sets to assess risk during the stages of a project lifespan.

The pro forma question sets, and project planning/design development should aid team members/stakeholders to identify any infection risks which require to be addressed/mitigated/minimised. The project owner/sponsor and project manager are responsible for ensuring HAI Scribe is implemented and followed.

14. I have been asked for my views on the likelihood of non-compliance with SHTM 03-01 being detected at the design stage HAI Scribe. I was not involved with the design stage of the Project. However, generally, the IPC role at design stage in respect of ventilation is not to check the engineering design but to provide advice on any questions/issues around specific room parameters. If, at any stage of the Project, IPC were advised that the designed systems were compliant, we would expect that this is because design engineering experts have deemed it to be.

Independent validation of ventilation systems

15. In relation to the ventilation system commissioning and validation reports, paragraph 8.64 of SHTM 03-01 states that: *"Following commissioning and/or validation a full report detailing the findings should be produced. The system will only be acceptable to the client if at the time of validation it is considered fit for purpose and will only require routine maintenance in order to remain so for its projected life."* In my view, this paragraph requires an independent validation report to be provided to the project team in the terms required. It may not be explicit that the report requires to be an independent report however in my opinion this is implied on the basis that it is a report to be provided to the client who will then deem whether the ventilation system is acceptable or not based on the (presumably independent) report.

16. In relation to the validation of Ultra Clean Ventilation ("UCV") operating suites, paragraph 8.67 states: *"In order to ensure that the complete system operates correctly it will be necessary to validate the system as a whole from the air intake through to the extract discharge. It is unlikely that "in house" staff will possess the knowledge or equipment necessary to undertake this process. Validation of Ultra-Clean operating theatre ventilation systems should therefore be carried out by a suitably qualified independent Authorised Person appointed by the client."*

Validation reports for UCV operating suites should have a clear statement indicating that the ventilation system achieved or did not achieve the required standard.

17. Arranging validation and ensuring this report is made available to IPC sits with the project team managing the project and not IPCT. I'm not aware that this is explicitly written anywhere but the Project Manager is responsible for Development Stages 2-4 including completion of HAI Scribe and such information would be required in order to sign off Stage 4, so I would have thought arranging validation would be part of this person's responsibility.

18. Where critical ventilation has been installed, independent validation should be undertaken before patient occupation. Critical Ventilation is defined in SHTM 03-01 part B at paragraph 4.7 and includes critical care, intensive treatment, or high-dependency unit, among others. SHTM 03-01 part A also sets out at section 7 the departments that require a degree of specialised ventilation, and that included critical care and high dependency units and, separately, isolation facilities.

19. I have been asked for comment on paragraph 4.8 of SHTM 03-01 part B, which provides that the loss of service from a critical ventilation system would seriously degrade the ability of the premises to deliver optimal healthcare, and paragraph 4.29, which provides that critical ventilation systems which are unable to achieve the specified standard are taken out of service. These are broad statements and therefore I am unable to comment on whether this would be true in all circumstances. It would be dependent on what the level of loss of service was and would require multi-disciplinary discussion including that of the engineering designers and experts.

20. I have been asked to review an email to Ronnie Henderson and Jackie Sansbury on 11 January 2019 **(A40988937 – Email from Ronnie Henderson to Donald Inverarity et al advising MPX will have carried out all tests and validations required in the SHTM by handover – 11 January 2019, Bundle 4, Page 6)**. I was not involved in the Project prior to January 2019 therefore not aware of the background to this email and to any previous discussions on this matter.

I responded to the question raised in the email only. I was not aware of any concerns at this stage. I did not have any concerns around validation as I had limited knowledge around what was required as I was newly appointed in the role. In relation to when independent validation was required to be arranged, the responsibility sits with project management team to identify when it needs to be arranged. I did not raise the issue of independent validation; I directed the Project team to the appropriate guidance as per this email. The risks of independent validation in terms of SHTM 03-01 not taking place timeously is that it could result in potential delay in the project process.

21. I have been asked to review an email from Brian Currie on 14 March 2019 (**A34010959 – Email from Lindsay Guthrie to Annette Rankin regarding a Sunday Herald Article on ventilation issues at QEUH and RHCYP 5 August 2019 – Bundle 5 - Page 27**). I am not copied into that email chain. However, within the email reference is made to a site visit on Monday 28 January 2019 which was attended by me and IPCN Emma Collett. I have also reviewed an email chain between me and the Project Clinical Director, Janice MacKenzie, and others in the project team, dated 24 and 25 January 2019 arranging the site visit for 28 January 2019 **(A46427526 – RE: Room Reviews RHSCDCN, 25 January 2019, Bundle 13, Vol. 3, Page 460**). This email chain notes that hospital handover would be very soon and so they had been busy doing the room reviews. I wanted to ensure that there were not any unidentified issued from an IPC perspective prior to handover and so we arranged for me to attend on 28 January 2019. I had requested to accompany the Project team to undertake room reviews including rooms previously reviewed by my predecessor given the time passed between the previous reviews and planned opening.

22. During the visit, we visited the DCN & the Lochranza in-patient ward areas and two outpatient departments in RHYCP. I self-directed what I wanted to look at from an IPC perspective with the focus on the material finish of the build (floors, surface finish, placement of gel holders etc). There were a small number of concerns raised relating to the placement of personal protective equipment (“PPE”) holders, lack of adequate amount of alcohol gel dispensers and suitability of furniture surfaces for cleaning.

An agreement was made in relation to locations for PPE holders and SOP (Standard Operating Procedure) for management going forward. The project team were advised that clinical staff would require to have an SOP in place, which they would write to ensure that PPE holders were emptied and cleaned accordingly following discharge of a patient with a known or suspected infection. This is related to IPC but not owned by IPC. The compatibility of equipment surfaces for cleaning were confirmed.

23. HAI-scribe Stage 4 was not discussed during or around the time of my site visit on 28 January 2019. I was not aware at this time when the HAI-Scribe process would need to be completed by, nor exactly when handover and occupation of the hospital would take place. I would have expected the Project Team to suggest dates for the Stage 4 HAI-Scribe as they are responsible for arranging and directing the process. IPCT are only one of the stakeholders. Other stakeholders are set out at SHFN 30 part B (section 2, pages 15 – 23) **(A33662208 – 416 SHFN 30 Part B v3 Oct 2014 – Bundle 13, Vol. 3, Page 464)**. At this point in the Project, the exact handover date was unknown, therefore it is difficult to say if there was lack of IPCT involvement.

24. A walkaround took place at the new site on 20 March 2019 (as referred to in an email from Ronnie Henderson of 21 March 2019) **(A40988839 – IPC site visit 20/03/2019 – Bundle 13, Vol 3, Page 681)**. I believe the purpose of this site visit was that it was part of the HAI Scribe Stage 4 process. I attended the site visit along with Donald Inverarity, Alex McMahon, Janice MacKenzie, Ronnie Henderson, and David Gordon (Bouygues). We were shown an isolation room, theatre suite, plantroom and external areas and were told general information about the new premises and points noted in Ronnie Henderson's email summary. I wasn't aware of any concerns during the visit. The outcome of the visit is as summarised by Ronnie Henderson in his 21 March 2019 email **(A40988839 – IPC site visit 20/03/2019 – Bundle 13, Vol 3, Page 681).**

25. At the meeting, Donald Inverarity and myself raised concerns that the Stage 4 HAI-Scribe had not yet been carried out. If the HAI-Scribe was not completed prior to patient occupation there could potentially be (i) a delay in the Project if there were concerns/issues/risks identified that required remedial work and (ii) a lack of assurance that the building was safe for patient occupation from an IPC perspective. IPC along with all stakeholders involved in the Project are required to be consulted as part of completing the HAI Scribe. After the March walkaround it was agreed I would arrange dates with the project team to carry out Stage 4 HAI Scribe Reviews. These took place on 26th April (in patient wards including haemato-oncology in Lochranza and PICU Paediatric critical care), 2nd May (outpatients) and 17th May (theatres and imaging) and were attended by those named in the HAI Scribe document (Lindsay Guthrie, Ronnie Henderson, Fiona Cowan, Dorothy Hanley, and Janice MacKenzie) as discussed in more detail below.

26. In relation to ventilation, as set out in his email **(A40988839 – IPC site visit 20/03/2019 – Bundle 5 – Page 44)** Ronnie Henderson explained that the commissioning and validation had taken place for both isolation rooms and theatres and that records were available on the project data storage system. He also explained that there were significant ongoing construction works post-handover; and that both isolation and theatre validation would be re done once the ongoing construction works were completed. Until this meeting on 21 March 2019 there were no reasons given by the Project Team as to why the Stage 4 HAI Scribe was not completed prior to Handover of the building. Until this point, I was unaware of significant post-handover construction works prior to the anticipated patient occupation date and was unaware that this was the reason why HAI Scribe stage 4 could not yet have taken place.

27. I have been asked what reassurance (if any) I took about the IPC risks associated with water and ventilation at the time. I had insufficient understanding of the documents on the project data storage system we were referred to by the project team and so needed to see evidence / reports that were in a format I could readily understand.

Stage 4 HAI SCRIBE

28. I have been asked to review an email of 27 March 2019 from Donald Inverarity re the Stage 4 HAI-Scribe **(A40988853 – Email chain regarding IPC site visit 20 March 2019 – Bundle 13, Vol. 3, Page 462**). I was requested to obtain air pressures for all the isolation rooms and ensure there has been some assessment of air flows and pressures as Donald Inverarity was unable to attend a potential meeting to discuss HAI Scribe phasing plan. I therefore agreed to take this action forward as substitute for Donald. As the request was not fulfilled, I do not know if there were any concerns around air pressures in isolation rooms at this point in time. Additionally, no HAI Scribe reviews were arranged by the project team by 27 March 2019. As above, after the March walkaround it was agreed I would arrange dates with the project team to carry out Stage 4 HAI Scribe Reviews. These took place on 26th April (in patient wards including haemato-oncology in Lochranza and PICU Paediatric critical care), 2nd May (outpatients) and 17th May (theatres and imaging).

29. The type of evidence required by IPC prior to the Stage 4 HAI-Scribe being passed would be evidence that ventilation and water systems are designed and performing in accordance with SHTM 03-01 and 04-01 respectively. If Stage 4 HAI-Scribe was not completed prior to handover of the build for patient occupation there is risk of delay and lack of assurance for safe occupation. The Project Management team is responsible for conducting and completing HAI Scribe with input from all stakeholders. All parties who took part in the Stage 4 HAI Scribe review are responsible for checking content for sign off and it is a joint responsibility, which the Project team coordinates.

30. In relation to the Stage 4 HAI Scribes for this project, department reviews took place on 26th April (in patient wards including haemato-oncology in Lochranza and PICU Paediatric critical care), 2nd May (outpatients) and 17th May (theatres and imaging). Lindsay Guthrie is best placed to respond on the Stage 4 HAI-Scribe review undertaken on 26th April regarding Lochranza – Haem/Onc ward; PICU – paediatric critical care; and DCN Acute care (**A35230420 – HAI SCRIBE Stage 4 – Inpatient wards & PICU – 3 May 2019 – Bundle 5 – Page 95)**. As part of the review team it was the first time I had participated in a Stage 4 HAI Scribe process and was therefore part of my learning alongside Lindsay as my senior colleague. The checklist question set was completed by Lindsay Guthrie, and she wrote comments that the review was incomplete pending request for more information and evidence. During the course of the HAI Scribe reviews, the team named on the Stage 4 HAI Scribes (Lindsay Guthrie, Ronnie Henderson, Fiona Cowan, Dorothy Hanley and Janice MacKenzie) visited the relevant areas and carried out a visual inspections, had discussions whilst doing so and therefore were able to complete the HAI Scribe document as seen (**A35230420 – HAI SCRIBE Stage 4 – Inpatient wards & PICU – 3 May 2019 – Bundle 5 – Page 95)** with comments where required. I do not recall exactly how long it took but each review took a number of hours. At this time, I did not see evidence around water sampling results nor ventilation validation.

31. I have been asked about a handwritten note at question 4.26 which asks: *Is the ventilation system designed in accordance with the requirements of SHTM 03-01 "Ventilation in Healthcare premises"* **(A35230420 – HAI SCRIBE Stage 4 – Inpatient wards & PICU – 3 May 2019 – Bundle 5 – Page 95)**. The box for "yes" is ticked but with an asterix and a separate comment which states, "*with derogation 4ach/r – single room, risk assessed + approved*". This is not my handwriting. I was not aware prior to the review that there had been a risk assessment regarding derogation to a/c rates nor when or whom this had been completed by and where it had been approved and therefore, I am unable to advise of the content. I believe the asterix was an indicator to follow up and review this information and other information asterixed in the document. Visibility of these would be required before IPC could participate in signing off the HAI Scribe.

I do not recall whether there was discussion regarding exactly which rooms the 4ac/h applied to at the time of the review. At this point in time my understanding was that SHTM 03-01 advises 6ac/h for single rooms and 10ac/h for Critical care and Neutropenic rooms.

32. I have been asked to review an email from Lindsay Guthrie to Ronnie Henderson of 17 May 2019 **(A40988859 – Email chain between Lindsay Guthrie, Sarah Jane Sutherland and Ronnie Henderson regarding RHSC Ventilation – 24 May 2109 – Bundle 6 – Page 152**). Lindsay Guthrie is best placed to comment on this email.

33. On 01 June 2019, additional information was requested by IPCT to allow completion of the HAI-Scribe Stage 4 Checklists **(A35230420 – HAI SCRIBE Stage 4 – Inpatients Wards & PICU - 3 May 2019 – Bundle 5 – Page 95)**. I cannot recall exactly what was requested, but my recollection is that IPCT had not received visibility of all water and ventilation results/commissioning yet. IPCT were unable to confirm completion of all items and if the HAI Scribe was not completed it could have potentially caused delays to the Project due to lack of assurance and management of risks.

Reflections on IPC involvement

34. I have been asked if there were sufficient opportunities for IPC to be involved with the Project at all stages. I cannot comment on the period before I was in post as I was only involved in Project for approximately 6 months from December 2018 onwards, and only attended a handful of meetings. My role was mainly around room reviews and participation in HAI Scribe with the Project team and IPC colleagues Lindsay Guthrie and Donald Inverarity.

35. In the short time I was directly involved in the Project, my request for room review on 24 January 2019 were not met positively initially but they did happen on 28 January 2019. There was resistance by the Project team to repeating any review or ‘sign off’ activity. The Project team cited involvement of the previous post holder advising that room reviews had been signed off by my predecessor. However, I felt

it was important for me to be able to physically see what was being provided and give any comment regarding any IPC issues or concerns as there had been ongoing construction activities since my predecessor left post. The Project team may not have appreciated that this was why I made the request. In respect of being involved in any future HAI Scribe review it would be inappropriate in line with my NMC registration to 'sign off' on anything I had not seen.

36. I cannot comment on whether or not there was sufficient IPC involvement within the Project because I was not involved in the Project prior to January 2019, having only taken up post in December 2018. The previous post holder as well as Lindsay Guthrie and Donald Inverarity are better placed in responding to questions in relation to IPC involvement during the life of the Project and up to the opening of the Hospital. I was not involved in IPC sign off of the remedial works.

37. I have been asked whether or not NHS Scotland Assure and corresponding Key Stage Assurance Reviews ("KSAR") will assist in involving IPC in new builds of healthcare environments. At this stage, it is unclear as they are a new organisation so it is difficult to assess the impact NHS Scotland Assure will have.

38. In my view, for formal IPC involvement to be guaranteed to a sufficient degree in similar projects, I would say there needs to be sufficient workforce in place with relevant skills, knowledge, and experience to support capital builds. The built environment is only one component of an IPCN workload. There is no formal in-house training available at this time and any courses offered out with the NHS usually require funding and potentially time off for staff to attend. Capacity and skill mix does not always allow IPCT to participate in every aspect of a project and support is given often based around other clinical activity. Staff require a good knowledge/experience base in IPC before undertaking such courses for training to be meaningful. There are more and more asks being placed on the IPC team over and above the daily tasks such as outbreak management, education and audit to name a few.

There are no associated uplifts in funding or staffing to support the expectation of IPC involvement across a variety of areas. There is no provision within the strategic workforce plan for workload demand.

Declaration

39. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry
Witness Statement of
Susan Goldsmith

Introduction

1. My name is Susan Anne Goldsmith. I was previously employed by NHS Lothian as Director of Finance, but I am now retired.

2. I previously provided written statements to the Scottish Hospitals Inquiry (the Inquiry) for the purposes of the May 2022 and April 2023 Hearings relating to the Royal Hospital for Children and Young People and Department of Clinical Neurosciences (RNYCP / DCN) in Edinburgh. The statement for the May 2022 Hearing outlines my roles with NHS Lothian, qualifications, and employment history (**A41982670 – Witness Statement of Susan Goldsmith – Final April 2023 Hearing – Bundle 13, Volume 7, Page 1028**).

3. The Inquiry has asked me to provide another written statement, this time relating to the delay in the opening of the RHYCP/DCN. This statement seeks to provide that information to the best of my recollection.

The Decision to delay the Opening of the RHCYP/DCN

4. I was on annual leave the week when it became known to the NHS Lothian (NHSL) board that the ventilation in critical care could not achieve the number of air change rates recommended by SHTM 03-01 therefore it is my understanding that, after discussions between NHSL and Scottish Government, the decision to delay the opening of the hospital was taken by the Cabinet Secretary on Thursday 4th July 2019.

5. As far as I am aware, the shortfall in air change rates in the critical care department ventilation system was the only issue which led to the Cabinet Secretary taking that decision. Scottish Government and the then Cabinet

Secretary would be better placed to provide further detail on what considerations fed into their decision to delay the opening of the hospital.

The Executive Steering Group

6. On 8 July 2019, NHSL convened an Incident Management Team, which I initially chaired. An Incident Management Team is an additional internal management meeting to enable senior ownership of issues. The Incident Management Team was renamed and re-established as the Executive Steering Group (ESG) on 2 September 2019 with the last meeting held on 8 March 2021. The ESG was chaired by Professor Alex McMahon (NHSL`s Executive Director for Nursing, Midwifery and Allied Health Professionals) and membership included key Executive Directors being Tracey Gillies (Medical Director) and Tim Davison (Chief Executive) along with myself as Finance Director. The ESG meetings were held weekly on a Monday afternoon. In addition to the key Executive Directors, the membership of ESG was made up of NHSL executive management along with the Brian Currie (Project Director), Donald Inverarity (Lead Consultant Microbiologist) and Lindsay Guthrie (Lead Infection and Prevention Control Nurse). Mary Morgan (Senior Programme Director), who had been appointed by the Scottish Government, also attended after she was appointed in around September 2019. The ESG liaised with both internal and external advisers including Health Facilities Scotland (HFS) and our legal advisers when appropriate.

7. The function of the ESG was to provide a specific forum for NHSL executive management to consider all business relating to, responding to and addressing the delay to the RHYCP/DCN. This included technical, commercial and operational issues as I explain below. The ESG reported externally to the Scottish Government's Oversight Board and internally to the Finance and Resources Committee, Healthcare Governance Committee, both of which are committees of the NHSL board. The ESG did not report to the Cabinet Secretary, that role was for Scottish Government Oversight Board but as set out below the ESG provided a response on a wide range of issues associated with the delay for consideration by the Oversight Board.

8. I have been asked if I was the conduit through which the ESG reported to the Scottish Government's Oversight Board and the answer is no. Mary Morgan as Senior Programme Director prepared the reports for the Oversight Board and independently the Oversight Board then made recommendations to the Cabinet Secretary. My role was to inform the Oversight Board in relation to my specific area of knowledge, being commercial and financial issues, and as Executive director lead for the NHSL Board on the Project.

9. My background in being involved in the Project from more or less the beginning was essential to understanding the history of the Project. I had an awareness of the key players within IHSL, Multiplex and Bouygues, and I had an understanding of the contract and commercial issues that arose in addressing the rectification and enhancement works required. This involved meeting regularly with those individuals and with the Senior Programme Director, Project Director and Iain Graham (Director of Capital Planning), to understand how the ventilation might be rectified and which party might undertake the works required. There were different commercial issues for each party to consider so this was not straightforward. In addition to trying to resolve these commercial issues, I also had to ensure that members of the ESG were kept informed of any key issues/risks for the NHSL Board.

10. Following the review by HFS of all critical systems, decisions were taken at the Oversight Board to enhance other aspects of the building. These were also considered within the ESG and would subsequently form part of the Senior Programme Director's report to the Oversight Board. Inevitably, the decision of the Oversight Board to include additional enhancement works added to the extent and nature of the works required of IHSL and their supply chain and involved further commercial considerations, which I took forward with Mary Morgan (Senior Programme Director) and our internal team.

11. In summary, my role on the ESG was to provide wider Project context and history as the rectifications and enhancements were considered, but also as the Director of Finance, to have a leadership role in relation to commercial issues

associated with the delay, rectification and enhancement works. I also had a responsibility to ensure that the key issues and risks from this stage of the Project were reported to the Finance and Resources committee, in addition to the capital and revenue budgetary implications for both the Scottish Government and NHSL Board.

12. The ESG were initially considering the extent of the issues within RHYCP/DCN including reviewing reports prepared by NHS National Services Scotland (NSS) / HFS, and agreeing NHSL Board's response. The ESG also considered the wider operational consequences, both day to day issues but as this was during the pandemic many operational issues were significantly complicated by this. The ESG required to routinely consider how to respond to pandemic related guidance as it emerged and immediate operational pressures.

13. The ESG were also tasked with considering how to mitigate any patient and staff safety risks associated with continuing to operate out of the older facilities for longer than anticipated. This included the review, and recommendations on investment in these facilities and issues such as the management of medical equipment purchased for the new facility.

14. As proposals were developed to rectify the ventilation in critical care and enhance other aspects of the new facility, the ESG was required to consider key clinical issues particularly in relation to infection control, patient safety and operational effectiveness of the proposed changes. In addition, the ESG considered the legal and commercial issues associated with the changes.

Commercial Subgroup of the Oversight Board

15. The Oversight Board agreed to set up a separate commercial subgroup which first met on 15 October 2019 **(A34194259 - Oversight Board Papers – 30 October 2019 - Bundle 3, Page 380)**. The purpose of the group was to enable more detailed discussion and consideration of the key financial, legal and commercial issues that required to be resolved prior to the changes to the RHCYP/DCN being instructed by the NHSL Board. It was not possible to cover

all these issues in the time available in the Oversight Board, and there was concern by all members of the Oversight Board at some of the difficulties being experienced by IHSL in securing a supply chain to undertake the works. The terms of reference were agreed at the Oversight Board on 31 October 2019, with the subgroup membership being Christine McLaughlin (Chief Finance Officer, Scottish Government), Peter Reekie (Chief Executive, Scottish Futures Trust), Colin Sinclair (Chief Executive, NHS National Services Scotland), Mary Morgan (Senior Programme Director) and myself. I also was the chair of the commercial subgroup.

16. The terms of reference **(A41232145 – NHS Lothian RHCYP Oversight Board_ToR – Bundle 7, Volume 2, Page 352**) detail the main functions and remit of the group, which were:

"The Oversight Board Commercial Subgroup will report to the Oversight Board and provide advice and recommendations in the following areas:

- *To consider the short, medium and long-term legal and financial consequences of emerging solutions that may be employed to achieve the overall desired outcome and to develop and propose options for delivery of those solutions in the light of an assessment of risk and cost;*
- *To identify and consider the commercial implications of any legally binding agreements to be entered into by NHS Lothian, whether by way of amendment to the Project Agreement or as free-standing Settlement Agreements, letters of intent or other formal document to which NHS Lothian or other public sector party is a signatory; and*
- *To identify and consider any circumstances under which, over the entire contract period, the risk profile of the project may be altered, public sector liability increased or obligations altered, and recommend any actions to be taken to mitigate or remove increased risk to the public sector."* **(A41232145 – NHS Lothian RHCYP Oversight Board_ToR – Bundle 7, Volume 2, Page 354)**

17. The commercial subgroup reported to and advised the Oversight Board. It did not report to the Cabinet Secretary. That was for the Oversight Board. However, given that any contractual obligations and associated risks, as a result of the changes required to the RHCYP/DCN, would rest with NHSL Board the commercial subgroup also provided support to me in my role as Director of Finance. In my role, I also reported to the Finance and Resources Committee.

18. The group met as and when required depending on the development of the commercial discussions. However, given the iterative nature of the legal and commercial issues, on occasions calls were set up by myself and the Senior Programme Director with members of the group to ask for their input and views of key legal and commercial issues. In essence, the group formalised the relationship with Scottish Government, Scottish Futures Trust (SFT) and NHSL that in normal circumstances would have been utilised to ensure all parties were content with how the legal and commercial issues were being addressed.

19. The group, or more often some members of the group, liaised with both internal and external advisers, IHSL, Bouygues, and then subsequently Imtech (the contractor which ultimately completed the rectification and enhancement works – see paragraph 24 below). The purpose of these meetings and discussions was to secure a supply chain for the rectification and enhancement works that did not compromise the key principles of the Project Agreement (PA) that NHSL had entered into with IHSL, as far as this was possible. Also, where possible to use the change mechanism set out within the PA to agree and instruct changes required to the building.

20. My role within the commercial subgroup was to provide a leadership role and knowledge of the commercial and legal aspects of the project to date, and to ensure that as the NHSL Board was the contractual authority the NHSL Board's contractual position was protected as far as possible.

21. Over this period there were multiple issues addressed by the commercial subgroup, but in essence the group provided input to the options for securing a supply chain for the works considering the contractual terms of the Project Agreement with IHSL. And secondly the group considered, and provided, input to the principles of the legal and commercial agreement secured with IHSL through Supplemental Agreement 2 (SA2) **(A32469196 - Project Agreement Supplementary Agreement (No. 2) - 5 August 2020 - Bundle 3, Page 1204**). The detail of both these aspects was worked through with NHSL's legal advisers and the Senior Programme Director with me and NHSL's Project team.

NHS Lothian Board Updates

22. As Director of Finance, I provided updates to the Finance and Resources Committee between July 2019 and 21 April 2021 (apart from 26 February 2020 when I gave my apologies), and to the NHSL Board, in both public and private (when there were commercially sensitive matters involved) between August 2019 and April meetings 2021 (apart from 2 February 2021 when I gave my apologies). This included presenting reports by NSS, KPMG, Grant Thornton and internal audit. I also provided progress updates on the remedial and upgrading works. As party to the Project Agreement, NHSL continued to play a full part in this process and had overall accountability for the Project. Additionally, because of the remedial and upgrade works, SA2 had to be agreed and entered into and in order to do so NHSL's governance arrangements in relation to approval of financial and contract arrangements as detailed in the Standing Financial Instructions were followed.

Supplemental Agreement 2 (SA2)

23. The securing of SA2 was the mechanism to deliver the ventilation and fire enhancement works in Critical Care. SA2 was based upon a Board Notice of Change under the Project Agreement. NHSL was able to raise a Board Notice of Change (i.e. a change to the Works or Services) at any point during the Project Term. Board Notices of Change were a means for NHSL to introduce

changes for which IHSL would be paid. SA2 was entered into on 5th August 2020, i.e. during the Operational Term not the Construction Phase.

24. IHSL had to engage a contractor to undertake the ventilation works required under SA2. As I understand it, Multiplex refused to engage with IHSL in relation to the ventilation works. IHSL were also unable to secure Bouygues, the Facilities Management (FM) provider, to undertake the ventilation works. As far as I'm aware, the decision by Bouygues not to get involved with the ventilation works was entirely for commercial reasons and related to their obligations to maintain the ventilation system for a further 23 years and reliance on warranties from Multiplex, which they considered would be at risk if they undertook the ventilation works. As a consequence, IHSL contracted directly with another contractor, Imtech Engineering Services Central Limited (Imtech), to carry out the ventilation works.

25. The securing of SA2 was undoubtedly complicated and took time. This was because we had to resolve each potential commercial solution with IHSL sequentially as different approaches to how the rectification works would be delivered, and by whom, were assessed. In particular, the inability to secure Bouygues to undertake the works required a different contractual arrangement for IHSL with Imtech. The consequences of this took time to work through and IHSL determined that there were additional risks for them, e.g. a different contractor to manage on site; and how that contractor would fit with the FM provider and their warranties. The senior lenders were also interested on the impact an appointment of the new contractor would have on IHSL's risk profile. Working through these types of additional risks resulted in further legal and commercial discussions with the NHSL Board. However, in the early stages of determining the commercial means to deliver the works there was still a significant amount of work being undertaken to determine the nature of the works to be delivered, so the issues were running in parallel for some time. For example the fire enhancement works **(A34194278 - Oversight Board Papers for 19 December - Bundle 3, Page 533)** (including those in critical care) were not signed off by the Oversight Board until December 2019. Nonetheless,

determining the commercial means to deliver the ventilation works and other enhancements did add to the timeline for the phased opening of the hospital.

26. I have been asked if there was an impasse between parties that resulted in a delay to the remedial works on the ventilation systems. I am not sure that we ever reached an impasse although the decision by Bouygues that it would not undertake the works on the ventilation in critical care was a significant factor in further delay to the rectification works.

27. I believe that delivering the rectification works was more challenging because of the non-profit distributing (NPD) model. This is due to the nature of an NPD contract which covers the contractual obligations of a special purpose vehicle (SPV) which carries limited financial risk, and flow through the building and FM contracts they hold with both a building contractor and an FM provider covering services over the life of the Project. The commercial consideration and risk profile across many parties is complex.

28. I have been asked to comment on the risk profile post SA2. SA2 was an amendment to the Project Agreement as allowed for within the Project Agreement. The change mechanism set out within the Project Agreement recognises that over a 25 year period contract changes will be required to the Facility and sets out the mechanisms for delivering those changes. NHSL raised High Value Change 107 for IHSL to carry out the ventilation works. SA2 was entered into by NHSL and IHSL which set out the obligations between the parties in relation to the ventilation works. The SA2 contract between IHSL and NHSL; the contract between IHSL and Imtech; and the contract between IHSL and Bouygues were all concluded in parallel on the same date. This did recognise the additional risks in connection with interface disputes between Imtech, Multiplex, and Bouygues, and some matters were excluded from the New Engineering Contract (NEC). But, in essence the delivery of the hospital didn’t change for NHSL with NHSL paying for the building and Bouygues providing FM services.

Settlement Agreement and Supplemental Agreement 1

29. I have been asked to comment on Settlement Agreement and Supplemental Agreement 1 (SA1) (**A32469163 - Settlement Agreement and Supplemental Agreement relating to the Project Arrangement for the provision of RHSC and DCN between Lothian HB and IHS Lothian Ltd - 22 February 2019 - Bundle 4, Page 11)**. SA1 was the mechanism by which many of the issues that had arisen during the construction period were resolved. It included a technical schedule which listed various items, including what had been agreed in relation to ventilation in single rooms and multi-bedded rooms. In relation to multi-bedded rooms, my understanding prior to entering SA1 was that NHSL agreed to 14 of 20 multi-bedded rooms to have balanced pressure. Janice MacKenzie (Project Clinical Director) had undertaken a risk assessment with input from clinical staff and infection control, and the reasoning for requiring balanced pressure in multi-bedded rooms was that we wanted to be able to cohort patients with the same infection in the same room. I was not aware specifically that, in relation to critical care, a requirement for balanced pressure was a derogation from guidance, which required 10 Air Changes per Hour (ACH) and positive pressure. The focus was very much on pressure rather than air changes.

30. In relation to single bed rooms, I remember discussions focussed on a derogation from guidance from 6ACH to 4ACH, and that we were content to agree to that on the basis that it would be 4ACH mechanical and 2ACH natural ventilation. I cannot recall ever discussing this derogation in the context of critical care.

31. The pressure regime for the multi-bedded rooms had been the subject of dispute between IHSL and NHSL for some time and SA1 was an alternative resolution to a court action in that regard. SA1 also dealt with numerous other issues that had arisen during the construction period, including the derogation from 6ACH to 4ACH for single bedroom. It is important to be clear that by the time SA1 was signed, the ventilation system had already been installed and

signed off by the independent tester (Arcadis) and the technical schedule was intended to reflect the agreed position.

Commercial Context to SA1

32. I drafted a Board Position Paper for the Public Inquiry dated 14 October 2020 (**A32371311** - **Board Position Paper for Public Inquiry & Appendices - Bundle 13, Volume 3, Page 6**), the purpose of which was to provide NHSL Board's initial view of what had gone wrong with the Project. The Position Paper included a summary of the issues which arose during the construction period and provides the commercial context to SA1. In short, SA1 provided financial support for IHSL, who were facing financial distress, without which they may not have been able to complete the hospital. I have copied over paragraphs 6.8 – 6.15 from the Board Position Paper below and adopt them as part of my evidence because they did and do reflect my understanding and answer the questions I have been asked:

"*6.8 In January 2017, IHSL formally notified the Board that it would be unable to complete the facility by the contracted date of July 2017. At the same time, IHSL also indicated to the Board that Multiplex had suffered significant losses on the Project. Prior to this date, there had been no acknowledgment by IHSL that the facility was unlikely to be completed by the contracted date.*

6.9 Both parties engaged experts on ventilation in relation to the contractual obligations on the pressure regime for the multi-bedded rooms (and not air changes) and ultimately sought a legal opinion from Counsel on the matter. The Board was, reluctantly, on the brink of going to court for resolution when Multiplex indicated they wished to enter negotiations for a Settlement Agreement that would allow a solution to be found by mutual consent. A key consideration for the Board was the time, cost, and the uncertainty for delivery of the facility that would be created by such Court action. The parties agreed a set of principles that would underpin the Settlement Agreement that allowed Multiplex to progress with the

rectification of the pressure regime for the multi-bedded rooms while the detail of the agreement was negotiated.

6.10 *Under the terms of the contract, IHSL would not begin to receive payment for the new facility until it was available to the Board. Therefore, at this time, IHSL had no income with which to service their debt obligations to their senior lenders. Under the terms of IHSL's contract with Multiplex, IHSL could seek damages from Multiplex to replace the lost income that would allow debt service payments to commence and avoid a default under the terms of the loans with their senior lenders. However, while the process of agreeing the Settlement Agreement was taking place, the Board became aware that, as well as the losses Multiplex was facing on the Project, they had not been paying damages to IHSL.*

6.11 *As a consequence, IHSL faced financial distress and insolvency. If IHSL became insolvent, they would be in default of the contract, which may have led to their termination, leaving the Board to then complete the facility or to find another party willing to take over the contract. However, prior to the Board being in a position to exercise any termination rights under the Project Agreement, the Board are obliged under the terms of a direct agreement with IHSL's senior lenders to give them prior notice of an intention to exercise the termination rights. Following the service of such a notice, Senior Lenders have extensive rights to step-in and seek to resolve the default. This scenario, or any alternative approach such as Court action, would have resulted in a timescale for completion of the facility that would have been completely unknown. Further, even if the Board were in a position to pursue termination under the terms of the project documents, the facility would only revert to NHS following agreement or determination of the applicable compensation payable to IHSL / Senior Lenders. The compensation would likely have been in excess of £150 million, a sum that would have had to be funded from the Scottish Government's capital programme. Avoiding this scenario became a key driver of the Settlement Agreement and the quantification of the settlement sum that it entailed.*

6.12 Unfortunately, progress on site suffered a further severe setback in June 2018 when a major release of water occurred from what transpired to be a faulty crimped pipe joint. This further amplified the Board's concern over the quality of workmanship and lack of supervision by Multiplex.

6.13 For all parties, not least the Board, securing a negotiated Settlement Agreement was important to gain certainty on all aspects of the disputed items. Under the terms of the NPD contract, the Board and IHSL, once construction is complete, have a contractual relationship in the operational period for the facilities management and Life Cycle maintenance of the built hospital.

6.14 Prior to finalising the Settlement Agreement, the Project Team and the Board's technical advisers identified further issues that the Board considered to be non-compliances in relation to drainage, void detectors and heater batteries, all of which would require further remedial works. The Settlement Agreement ultimately covered 81 technical issues ranging in size and complexity. As noted, the key technical issues that could have had an impact on patient safety and care are summarised in Appendix 3. The Board can provide more information on the other technical issues as required by the Inquiry. To further preserve IHSL's financial stability, and to introduce a higher degree of certainty over completion timescale, the Board agreed that their own commissioning programme to facilitate commencement of clinical services would run concurrently with the remaining works.

6.15 The business case for a financial settlement to IHSL was agreed by the Scottish Government in February 2019. The Settlement Agreement was signed in February 2019, signifying formal completion of the facility and allowing the flow of payments from the Board to IHSL to commence. However, the agreed works to address the various outstanding issues would continue until June 2019, at which point it would be possible for the Board, its staff and patients to occupy the facility."

Governance re SA1

Finance & Resources Committee (F&R)

33. There was significant governance around SA1. I reported in to F&R and the NHSL Board throughout the negotiations as to the progress of SA1 and this is reflected in the minutes of the meetings. In respect of F&R, at paragraph 15.2 of the minutes of the meeting on 19 September 2018 **(A33887882 - Finance and Resources Committee Minutes 2005 – Present - Bundle 13, Volume 7, Page 1050)** it is recorded that I tabled a position paper on the proposed settlement agreement (SA1). The paper provided detail and an update on the current situation with the RHCYP/DCN project. There was discussion on the IHSL financial difficulties; the need for a finalised SA1 to move forward, the factors delaying the signing of this and the position of senior funders; residual technical issues with the key issue being around drainage systems; amendments to the business case; the leadership and competence around IHSL and the next steps to make progress. The Committee noted the current position with the project and gave its absolute support to the project team in terms of the current strategy and approach.

34. On Wednesday 23 January 2019, (**A33887882 - Finance and Resources Committee Minutes 2005 – Present - Bundle 13, Volume 7, Page 1067**) I updated the F&R Committee on the position on completion of the new facility and commercial arrangements with IHSL, such position being documented in SA1 between the NHSL and IHSL. It is recorded in the minutes that the Committee noted the contents of the paper and the progress made in recent weeks. The Committee continued to support the commercial and technical position as described which would be reported to the NHSL Board for approval at its February meeting.

35. On Wednesday 20 March 2019 **(A33887882 - Finance and Resources Committee Minutes 2005 – Present - Bundle 13, Volume 7, Page 1077)** I provided the F&R Committee with confirmation that the commercial arrangements with IHSL were now documented in SA1 between the Board and

IHS Lothian Limited on 22 February 2019. The Committee accepted significant assurance that the conclusion of SA1 was in line with the previous reports to the Committee and NHSL Board. The Committee noted that a due diligence report (**A33406223 – Report on PA Settlement Agreement dated 28 February 2019 - Bundle 10, Page 156**) had been received from Macroberts Solicitors and that all parties were now working to the programme and contract as amended by SA1, with a planned full service operational commencement date of 15th July 2019.

NHS Lothian Board

36. I also reported to the NHS Lothian Board in relation to the ongoing negotiations with IHSL that lead to SA1. Minutes from 4 April 2018, 27 June 2018, **(A33887885 - Minutes of NHS Lothian Board Meeting - Bundle 13, Volume 7, Page 1079 and 1095).**

37. 5 December 2018 **(A33887885 - Minutes of NHS Lothian Board Meeting - Bundle 13, Volume 7, Page 1141)** reflect those discussions.

38. On 4 April 2018, **(A33887885 - Minutes of NHS Lothian Board Meeting - Bundle 13, Volume 7, Page 1079)** I reported to the NHSL Board that following the previous Board Development session a special meeting of the Finance and Resources Committee had been held which had been attended by a representative from MacRoberts NHSL's legal advisers. The meeting had concluded that an interim court order should be prepared for possible issuing to IHSL to get the ventilation work concluded. The timescale to move to a court hearing would take up to a year. The process around the serving of the court order was explained. The detail and timescales around the court order had been shared with IHSL in draft form and included affidavits. Communication continued with IHSL in order to keep lines open. Opportunities still remained for a negotiated settlement.

39. On 27 June 2018 (**A33887885 - Minutes of NHS Lothian Board Meeting - Bundle 13, Volume 7, Page 1095)** I reported to the NHSL Board that

ventilation work was underway and design work had been agreed and Multiplex were progressing this. I also reported that SA1 was taking time to conclude and the draft agreement was being worked through. It is recorded that in terms of the financial settlement it had initially been hoped to provide a loan to IHSL. A capital injection supported by a Business Case was being looked at. The minutes reflect that Scottish Government was comfortable with this process with a key issue being that value could be demonstrated. Although the proposition had been developed it had not yet been shared with IHSL. Essentially the offer would be what NHSL deemed to be appropriate. I commented that it was in IHSLs interest to get SA1 signed. There was a residual danger that if SA1 was not reached then Multiplex might walk away from the Project leaving the hospital incomplete.

40. On 6 February 2019 **(A34978959 - 6.2_0111_Private Board Minutes 2005 – Present - Bundle 13, Volume 7, Page 1159)** there was a private session of the NHSL Board in order to approve SA1 by way of Board legal minute. NHSL Board members received an update on the progress made in recent weeks on the conclusion of SA1 with IHSL, and the associated commercial and technical agreements. The NHSL Board was asked to receive assurance that all negotiations on the terms of SA1 had been supported by the NHSL's legal and technical advisers. The NHSL Board approved SA1 with IHSL and considered a short extension to the longstop date to allow all commercial and technical matters to be concluded.

41. It is of note that Audit Scotland and Scott Moncrieff had reviewed the settlement agreed with IHSL in light of a possible request by the Parliamentary Audit Committee and this review had been included in the external Audit Report where it had been reported that a good system of governance had been evident in respect of the IHSL settlement arrangements. I would agree with that finding.

The Phased Migration

42. Although I was party to the discussions on a phased migration the key considerations were clinical and took account of the challenges with the existing infrastructure that both the RHCYP and DCN were operating out of. That said the Cabinet Secretary had given a public commitment to open DCN in the Spring of 2020.

43. There were also commercial considerations, although the clinical ones were the key driver. Those commercial decisions related to the fact that Lothian was paying part of the service charge each month for the building. I don't know whether the fact we were paying the service charge carried significant weight for the Scottish Government but they were aware of it. Scottish Government and SFT had been briefed about SA1, which commenced the payments so it was a well-known position.

44. I also had a role in ensuring that the associated commercial and financial consequences for the PA with IHSL were considered, and agreed by NHSL, particularly in relation to Bouygues' performance while the building was part occupied (due to the phased migration) and partly in construction. In short, the operational phase of the Project Agreement had commenced on signing of SA1. Due to the delay, NHSL were entitled to apply deductions to the service payments made to IHSL and by virtue of the FM Agreement meant that Bouygues were not receiving their full service payment. In order to incentivise IHSL and Bouygues to agree to SA2, which NHSL was under significant political pressure to deliver, various compromises were agreed and parties reached a commercial settlement.

The Royal Hospital for Sick Children at Sciennes

45. The Royal Hospital for Sick Children at Sciennes was already providing safe and effective clinical care for children and young adults although the facilities had been assessed as inadequate for many years, hence NHSL Board's strategy to replace the hospital. The key piece of work as I recall was

determining whether any short term investment in the Sciennes buildings was possible that would enhance the environment and any of the critical systems. I am not aware of any issues with the ventilation system other that as a Victorian hospital it was not possible to deliver a ventilation system that met current standards.

Response to Grant Thornton Report

46. At the time of retiring NHSL had already set up a small working group to consider how the recommendations from the Grant Thornton report **(A32512442 - Grant Thornton Report – NHS Lothian Internal Audit Report – Report for the Audit and Risk Committee 31 July 2020 and the NHS Lothian Board 12 August 2020 - Bundle 10, Page 4)** could be implemented. As I recall this had already provided updates on progress to the Finance & Resources Committee. In addition, the Scottish Government had announced the establishment of NHS Scotland Assure, and its role also addresses some of the recommendations of the Grant Thornton report.

Reflection

47. Due to the extensive testing undertaken on completion of the rectification works I consider that the actions taken have been adequate and effective.

48. In my view, the utilisation of PPP funding for major complex hospital acute hospitals is challenging and in this case delivering a private public partnership (PPP) funded hospital on an existing (old) private finance initiative (PFI) funded hospital made this even more difficult. Undoubtedly this increased the risk profile for this project. In addition, at the time of awarding the preferred bidder status the policy was to prioritise the cost criteria marginally above the quality criteria. Although value for taxpayers money is essential, when the rectification and enhancement works were agreed as being required quality became the key driver. The public sector needs to be consistent as uncertainty or change costs taxpayers money. That said the extent of technical specification required for acute hospitals may mean that delivery of these projects is unlikely to be

affordable in the current financial environment. And if there is likely to be a future partnership between the private and public sector in how hospitals are funded there may need to be more flexibility/shared risk on how hospitals are delivered. Finally, there needs to be greater clarity on what is national guidance and what is mandatory.

49. I would also reflect that the separation between national policy and how projects are prioritised, and the implementation vehicle for delivery for major projects is important. This means that the Authority or legal entity delivering the project can evidence a robust project structure and system of control. For this project it was NHSL Board's system of control that identified the non-adherence to guidance although this was immediately prior to opening because of the terms of SA1, and hence far too late in the project.

Declaration

50. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry
Witness Statement of
Thomas Rodger

Qualifications and Professional Background

1. I am Thomas Rodger. I currently hold the post of Head of Engineering at NHS Scotland Assure at National Services Scotland (NSS), which I have held since September 2022.

2. I joined NHS Scotland Assure in April 2021. I initially joined as Principal Engineering Manager. I was subsequently promoted to Head of Engineering in September 2022. I joined NHS Scotland Assure ahead of the formal launch of the NHS Scotland Assure service, which went live on 1 June 2021. Since then, I have been effectively leading the day-to-day delivery of the Key Stage Assurance Review (KSAR) process, the development of the KSAR workbooks, and helping with the wider rollout of the NHS Scotland Assure service.

3. I graduated from Heriot-Watt University in 2006 with a Master's degree with distinction in Electrical and Electronic Engineering. Following graduation, I joined the private sector and began working for a company called Faber Maunsell (later bought by an American company and rebranded as AECOM). I started as a Graduate Engineer, ultimately progressing to the position of Associate Director. I led the mechanical and electrical engineering team within their Glasgow office and was the healthcare technical lead for Scotland, feeding into the wider AECOM UK Healthcare Centre of Technical Excellence.

4. I am a Chartered Engineer and a member of the Chartered Institute of Building Services Engineers (CIBSE). I am a member of the Institute of Engineering and Technology (IET), and a Fellow of the Institute of Healthcare Engineers and Estate Management (IHEEM).

Through my role with the IET, I also sit on the National Technical Committee for the production of BS7671, commonly known as “The Wiring Regulations”, which is referred to as JPEL/64. I have over seventeen years’ experience in the health sector.

5. Over the course of my career, I have experienced a wide range of healthcare projects, both in the UK and internationally, as a senior person with responsibility for delivery of designs, provision of technical advisory services and providing subject matter advice. Whilst I qualified as an electrical engineer, I have also managed multidisciplinary engineering projects. I have a working knowledge of other technical disciplines including mechanical engineering and public health. I have been the lead designer on multiple technical design projects. Those roles involved overseeing team resources to deliver projects, coordinating technical teams, and overseeing quality assurance processes.

6. Within Scotland, I have designed various projects. During the COVID pandemic, I was the lead designer on the temporary field hospital “NHS Louisa Jordan” at the Scottish Exhibition & Conference Centre in Glasgow. That role was undertaken whilst working for AECOM on behalf of NSS. During the project, I was lead engineer on site, coordinating all the engineering design activities including design of the electrical systems, and reporting back to NSS on the progress and the processes involved. I also supported NSS as a technical advisor, overseeing the delivery of the COVID laboratory facilities in NHS Grampian, NHS Lothian, and NHS Greater Glasgow and Clyde (NHS GGC).

7. I have acted as an accredited NEC (New Engineering Contract) Supervisor and Technical Advisor to various Health Boards on projects of all different sizes. Those projects include the Golden Jubilee Hospital National Treatment Centre Phase 1, during which I was responsible for monitoring the engineering components of the construction projects on behalf of the Health Board, reviewing the works to ensure they were progressing in accordance

with the relevant standards, highlighting any technical problems & defects and providing technical advice to the Boards.

8. I have also worked on other projects within the UK and overseas. I designed the electrical systems for large hospitals in Bermuda and Abu Dhabi.

Current Role

9. My current role is Head of Engineering within NHS Scotland Assure. I oversee a team of fourteen people (correct as of December 2023), ranging from Senior Engineers to Principal Engineering Managers. I have direct line management responsibility for the Principal Engineering Managers, who, in turn, manage the Senior Engineers. The Engineering & Assurance Team is responsible for the delivery of the Key Stage Assurance Reviews (KSAR) as well as the work on the production of guidance and technical standards and the provision of other subject matter technical advice to Health Boards. In my capacity as Head of Engineering, I am ultimately responsible for assigning a “supported” or “unsupported” status to any KSAR undertaken. I maintain an overview of all ongoing KSAR projects so that I am informed should any significant findings be identified during the review phase of a KSAR. Typically each KSAR project is led by one of the Principal Engineering Managers or Senior Engineers.

10. I report to the Assistant Director for Engineering and Assurance, who is currently Ian Storrar. He reports to Julie Critchley, who is the Director for NHS Scotland Assure. Julie Critchley reports to Mary Morgan who is the Chief Executive of NHS Scotland Assure. If Ian Storrar is absent, I report directly to Julie Critchley.

Role and Remit of NHS Scotland Assure

11. NHS Scotland Assure was commissioned as a result of various developing issues within the healthcare-built environment in Scotland **(A43494369 - Letter dated 27 May 2021 from Richard McCallum, Director of Health**

Finance and Governance to NHS Board Chief Executives and others – Bundle 9 – Page 70).

The service was developed in conjunction with Health Boards across Scotland and other key stakeholders, including the Scottish Government. The vision of the service was set up following an initial consultation phase with the Health Boards. I was not involved during the consultation phase.

12. The aforementioned letter notes

> "*NHS Scotland Assure has been co-designed with users to deliver a co-ordinated approach to the improvement of risk management in new builds and refurbishment projects across NHS Scotland. The new service will underpin a transformation in our approach to minimising risk in our healthcare buildings and environments, protecting patients from the risk of infection and supporting better outcomes for patients in Scotland. NHS Scotland Assure, via NSS, is accountable to the Scottish Government, and will provide assurance that the Healthcare Built Environment is safe, fit for purpose, cost effective and capable of delivering sustainable services over the long term. Its relationship with the Scottish Government will be with both the Health Finance, Corporate Governance and Value Directorate and the Chief Nursing Officer's Directorate."*

Note that the reference to sustainability is not necessarily linked to net-zero, although that is important. Rather it refers to the need for the healthcare built environment to not only function at day one but to continue to function over the lifecycle of a building.

13. It is the intention that NHS Scotland Assure, through its functions, be there for all Health Boards where healthcare is delivered. Its role does not extend to private healthcare providers.

14. I have been asked what other services NHS Scotland Assure provides out with my team. There are eight core services outlined in the initial NHS

Scotland Assure Target Operating Model (TOM) **(A32341688 - Target Operating Model for the Centre of Excellence – Bundle 9 – Page 4)**.

15. They are knowledge management and communication, guidance, provision and coordination of subject matter expertise, research development and innovation, intelligence, the response service, compliance (which we would recognise as the "Assurance," service) and workforce planning and development. My team predominantly supports the provision of the Assurance service and subject matter expertise, but also supports other areas of NHS Scotland Assure.

16. An example of how my team support other NHS Scotland Assure services includes provision of Subject Matter Expert (SME) support to the research service. NHS Scotland Assure has a managed research fund in conjunction with Napier University. My team support the wider NHS Scotland Assure research team in the assessment of research applications by providing technical SME advice. We work very closely with the research team to identify potential areas for forthcoming research. Similarly, on matters such as workforce planning, we liaise with Health Board colleagues through forums such as the Scottish Engineering & Technology Advisory Group (SETAG) and the National Advisory Groups (NAGs') (these include, but are not limited to, the National Electrical Advisory Group (NEAG) and the National Water Safety Advisory Group (NWSAG)). Collaboration with other stakeholders and service lines very much depends on what the operational priorities are, which are reviewed regularly.

Assurance Team Structure & KSAR

17. The NHS Scotland Assure Assurance Team (which is part of the Engineering & Assurance division of NHS Scotland Assure) comprises built environment professionals from various backgrounds including infection prevention & control, fire safety, design, construction and operational healthcare estates. The members of the Assurance Team noted above are responsible for undertaking the KSAR "reviews" – I have referred to them as the "KSAR team"

within my statement. We want to ensure that the team that assesses a project has the relevant competence and experience to assess what is being provided. That is a critical function of what we do.

As Head of Engineering, I am responsible for the day-to-day delivery of the Assurance service within NHS Scotland Assure. The team undertaking the KSAR will consist of multiple professional people within the organisation.

18. The Assurance Team includes colleagues from the Antimicrobial Resistance & Healthcare Associated Infection (ARHAI) team, which is also part of NHS Scotland Assure. They are specialists in infection prevention control within the healthcare built environment and include healthcare microbiologists. We further have fire safety colleagues who are part of the team. It is all these people that deliver the service together. The Assurance service team is truly multidisciplinary in that sense.

19. I have been asked by the Inquiry who is responsible for the overall management of the multi-disciplinary team across all the different disciplines. In terms of the overall NHS Scotland Assure structure they report to Julie Critchley and Mary Morgan. Below them there would be the service leads within the respective departments. The engineers, for example, would report to me, whereas ARHAI and fire safety colleagues have their own line management structure. Each discipline has their own management structure. We work on a matrix management approach, which is essentially task management in terms of delivery on the KSAR process. When it comes to the delivery of a KSAR, one of my team manages the KSAR processes. For the purposes of the review phase, and writing a KSAR report, the team would feed into either myself or to one of my team, because the primary authors on those reports would be coming from my team.

Role of Authorised Persons

20. There are people within my team who had previously fulfilled the role of an “Authorised Person” for Health Boards prior to joining NHS Scotland Assure. However, we do not offer an “Authorised Person” service within the operating

model of NHS Scotland Assure. NHS Scotland Assure does provide Authorising Engineer services, for which there is a prerequisite requirement for individuals undertaking that role to have completed Authorised Person training.

21. Note that a health board is not mandated to utilise NHS Scotland Assure for Authorising Engineer services – they are free to utilise the services of other independent third parties should they wish to do so.

22. Scottish Health Technical Memorandum (SHTM) 00 **(A33662233 - Scottish Health Technical Memorandum 00, Best Practice Guidance for Healthcare Engineering, Policies and Principles dated February 2013 – Bundle 13, Volume 3, Page 325)** provides an overview of the role of both an Authorised Person and an Authorising Engineer. SHTM 00 notes that the authorised person has the key operational responsibility for the specialist service and that specialist service would be covered under the respective SHTM (for example SHTM 03-01 is for ventilation, SHTM 04-01 is for water and SHTM 06-01 is for electrical services). The Authorised Person should be qualified and sufficiently experienced and skilled to fully operate the specialist service. The Authorised Person is typically nominated by the Authorising Engineer. That person will have attended appropriate levels of professional training courses in order to do that. They will have a certain level of experience relative to the systems that they maintain and will be able to evidence their knowledge and skills.

Purpose of the Key Stage Assurance Review (KSAR) Process

23. The KSAR process falls under the Assurance service part of NHS Scotland Assure. The Assurance service looks to assess compliance with guidance. It supports Health Boards in demonstrating compliance at key stages within the full life cycle of a healthcare-build. That is from the initial procurement and design stage right through to construction, commissioning, and the ultimate handover of the facility. Currently, NHS Scotland Assure does not undertake a KSAR in the operational stages of a building. There is currently no scope

agreed with the Scottish Government for that. That may be something that comes in the future. If it happens, that would be something that would need to be developed in conjunction with Health Board stakeholders (in a similar way to how the initial NHS Scotland Assure service was set up).
A building must be compliant, and functional, not just on day one but on day ten, day one hundred and day one thousand. It is a challenge in the healthcare-built environment to achieve that.

24. The purpose of the Assurance service, provided through the KSARs, is to support Health Boards to increase patient safety and public confidence and to reduce the costs associated with incidents and retrofits. It is about being proactive rather than reactive. We are promoting a culture of getting things right first-time round, to reduce avoidable delays in build timescales and to tackle emerging issues early on. It can be the nature of construction that problems are not clear until the end, for example during the commissioning and validation, if for example, defective components were identified. The KSAR workbooks have been designed to cover key milestone stages of a project and by seeking assurance from health boards from an early stage in their project journey, it reduces the potential for problems to go undetected.

25. The ultimate legal responsibility and project liability, in terms of the accuracy of the design information and calculations, is retained solely by the Health Board and its Project Team. The KSAR process does not change this.

26. During a KSAR, the NHS Scotland Assure KSAR team will assess the information provided by the Health Board and make an assessment on whether it provides assurance or not – for example whether the design is developed to an appropriate level reflective of the current stage of the project. If no assurance is provided the project would be noted as ‘unsupported.’ If it does provide assurance, then the project would be noted as ‘supported.’ However, NHS Scotland Assure’s ultimate decision on whether a project is ‘supported’ or ‘unsupported’ does not happen until the end of the KSAR review period. After making our decision, the status is notified to the Senior Responsible Officer (SRO), the Health Board Project Director and the Health

Board Project Manager in writing and noted within the KSAR report. We would also notify the Scottish Capital Investment Group (SCIG) in writing. SCIG are also provided with a copy of the final KSAR report.

27. During the design stages of a project (typically covered by the Initial Agreement (IA), Outline Business Case (OBC) & Full Business Case (FBC) KSAR workbooks), the SCIG has intimated that if a project is unsupported, the project will not be approved by it to progress to the next stage until it is supported (e.g. it would not be allowed to move from OBC to FBC or from FBC into Construction). In such instances the Health Board will be expected to prepare an action plan to address the findings of the KSAR and subsequently demonstrate resolution of the significant findings. Once such assurance has been provided to NHS Scotland Assure, we will then notify SCIG and the Health Board that the project is supported.

28. We are still working through that mechanism for projects that are in the construction cycle. We recognise that you cannot suddenly just say “stop” in a build, as in certain instances that could introduce more risk. If a project is unsupported at Construction stage, we will work collaboratively with the Health Board and SCIG to identify an appropriate course of action. Central to this will be the Health Board action plan and the onus will remain with it to evidence resolution of the significant findings that led to an unsupported status being allocated.

29. A directorate letter (DL (2023) 03) was published in February 2023 **(A43494372 – Letter Dated 6 February 2023 from Alan Morrison, Deputy Director of Health Infrastructure, Investment and PPE to NHS Board Chief Executives and others – Bundle 9 – Page 75)** which notes that if a project is not supported at the Handover stage, the Scottish Government’s recommendation is that the building does not open. Any such decision, were it to be taken, would be enforced by the Scottish Government rather than by NHS Scotland Assure. We have not yet encountered this scenario in a KSAR project.

30. NHS Scotland Assure's scope was originally intended to be for new builds and major refurbishments within the acute estate. The service was designed for the bigger builds because they typically would be the most complex builds.

31. It became clear following discussions with SCIG, that they were concerned that there would be other projects that may have be of a significant value out with the acute estate that may benefit from the KSAR process.

32. SCIG was looking to achieve an appropriate level of assurance within those projects, prior to them being allowed to progress. Because of that, the scope of the service provided by NHS Scotland Assure has changed. There are quite a lot of projects that now go through SCIG which require a KSAR. One example would be the Northeast Health Hub (often known as the Parkhead Health Centre). It is currently the largest primary care centre in Scotland and has a construction value of approximately £60 million value. The Scottish Government took the view that it was a significant investment within the healthcare estate and asked if there was the relevant level of assurance. That resulted in a KSAR being undertaken for the project. Generally, in order to establish whether a project requires use of the KSAR process, NHS Scotland Assure would discuss and agree this with SCIG.

KSAR Stages

33. The 'Project Procurement Journey and KSAR Process Interface document' or 'tube map,' as it is more informally known, can be found at **(A43406829 - Project Procurement Journey and KSAR Process Interface Diagram – Bundle 9 – Page 90)**. The tube map shows that the KSAR process is a continual journey. This document shows some of the key interfaces that we would have with a Health Board. The "tube map" indicates that a KSAR is undertaken during the following stages of a healthcare build project: Initial Agreement, Outline Business Case, Final Business Case, Construction Stage, Commissioning Stage and at the Handover Stage. The full life cycle of a build is important because a decision made on day one could have an impact on how that building is run in ten, fifteen or twenty years' time.

34. I would note that an Initial Agreement KSAR is no longer undertaken. This was a decision taken in conjunction with Scottish Government as a result of similar findings being identified on each of the IA KSARs undertaken to that point.

35. It has been superseded by a 'lessons learned phase' where we have a workshop with Health Board stakeholders. The presentation affords a Health Board an opportunity to learn and helps it to establish a solid foundation for the future stages of the project to build upon. The change was all about making sure that time was spent in an optimal manner to get to a successful outcome for the project.

36. Where projects are not mandated to undertake a KSAR, Health Boards are advised they can still use the KSAR workbooks as a tool to support the development of their project. In such instances these would generally not be assessed by NHS Scotland Assure. All KSAR workbooks are available on the NHS Scotland Assure website. This may be applicable for example to a smaller project, under a Health Board's delegated authority, which may not require to be approved by SCIG.

37. It is important to note that a KSAR also looks to identify any positive lessons learned from a project. We have also found that there is a lot of good work that Health Boards do through the course of a project that they do not formally record. That has been a key theme that we have been trying to get Health Boards to address through the KSAR process. Maintaining a documented "golden thread" through a project is important. The Building Regulations Advisory Committee (BRAC) define the golden thread as:-

> "*The golden thread is both the information that allows you to understand a building and the steps needed to keep both the building and people safe, now and in the future".*

38. The initial scope of the KSAR process was developed in conjunction with the Scottish Government and key stakeholder groups. Some of that stage predates my time with NHS Scotland Assure. I am aware that there was a consensus group that was set up to look at the formation of the KSAR workbooks. The initial core topics were water and drainage, ventilation, electrical, medical gas, and fire safety.

39. Obviously, in a healthcare environment infection prevention and control (IPC) must be considered at all levels. When I present on KSARs, I highlight that IPC, and patient safety, is at the heart of everything we do. We have a dedicated section for IPC in each KSAR. IPC is also considered currently within the governance section of the KSAR workbooks. Governance, as it relates to these topics, is not about procurement or contractual governance. That is not within the scope of the KSAR and does not sit within the Assurance Service area of expertise.

40. I have been asked by the Inquiry why, when KSARs were being developed, there was a focus on the topics of water and drainage, ventilation, electrical, medical gas, and fire safety, and whether the issues at Glasgow and Edinburgh had any influence on that focus. I was not party to the actual development of the workbooks, so I cannot comment as to what went on at that time. I cannot talk through the specific detail of how and whether those focuses were drawn from Glasgow and Edinburgh, but I imagine that learning fed into the development of the KSARs. I do know that these topics tend to represent some of the more complex areas within any build. The mechanical and electrical (M&E) services can sometimes constitute fifty per cent, if not more, of the cost of a project.

41. We want to make sure that Health Boards have an avenue to access the relevant part of the wider NHS Scotland Assure service. Where we discover issues that are out with the current scope of the KSAR, we would look firstly to identify the issue to the Health Board so it could take appropriate steps to resolve and secondly, if required, provide support to it through the wider NHS Scotland Assure service. For example, if any issues relating to architectural

and structural engineering elements were identified we would liaise with the relevant subject matter experts within other parts of NHS Scotland Assure. We would discuss the issue(s) internally then support the Health Board to identify the relevant people or processes required to address the issue(s).

Content and Structure of the KSAR Workbooks

42. NHS Scotland Assure continually tries to improve the content in the KSAR workbooks and the way that we frame our questions to Health Boards. Areas evolve over time and, as and when we get feedback from Health Boards on the KSAR process, NHS Scotland Assure takes that on board, to ensure the service works as effectively and efficiently as possible. NHS Scotland Assure is currently working on version 2.0 of the KSAR workbooks to formally capture feedback which we aim to launch in 2024. The consensus group previously referred to will be involved in the final sign-off of the revised V2.0 workbooks before they go into service.

43. The structure of the workbooks provides a framework that allows NHS Scotland Assure to undertake the KSAR. The questions provide a framework for the review that allows us to adapt the workbook to suit any particular nuances of a project. They can also be applied to any project, irrespective of the procurement route being utilised. It would be impracticable to produce a list of every single question that you may want to ask on a healthcare build. We want to ensure that we have an overarching topic or a question that covers those items. We use our skills, built on our knowledge, qualifications, and experience, to delve into the required level of detail on a project. There are times where the initial information provided by a Health Board provides the necessary assurance and therefore, we don't need to ask for further information. However, if we do not get that initial assurance, we will probe further and seek to identify if further assurance can be provided – if not the project will be "unsupported" and the Health Board will be expected to implement an action plan to address the findings of the KSAR.

44. There is a workbook for each stage in the life cycle of the project. There are specific question sets within each of the workbooks associated with each of the core topics explained earlier in my statement (specifically governance, water and drainage, ventilation, electrical, medical gas, and fire safety). Importantly, NHS Scotland Assure is not an inspectorate service or regulatory body. We stress this to Health Boards when we work with them.

45. There are other organisations that fulfil those roles, such as the Health and Safety Executive (HSE) and Healthcare Improvement Scotland (HIS). Our role is very much an advisory one. When you look at what our strategic aims and objectives are, it is important that we make that differentiation.

46. Whether we are producing a piece of guidance or evolving a workbook, collaboration with Health Boards is important. A Health Board must trust us and feel supported. Whenever I present the KSAR process to Health Boards I want to make sure that they are aware that it is not a 'them and us' type scenario. I explain our function and what we have come in to do. We do not want Health Boards to feel hesitant in any way when accessing NHS Scotland Assure's services. We are also very aware that there are other services within NHS Scotland Assure and it is important that we do not prejudice or restrict access to those services through the KSAR process.

Experience of the KSAR Process

47. I think that, overall, the KSAR process has been successful. It continues to evolve to reflect on our own learning and Health Board feedback. There have been challenges which would be expected, given that it is a new process – for example, a number of healthcare build projects were part way through a particular Royal Institute of British Architects (RIBA) Stage of Design and, following issue of the Scottish Government Directorate Letter (DL(2021) 14 27 May 2021) **(A43494369 - Letter dated 27 May 2021 from Richard McCallum, Director of Health Finance and Governance to NHS Board Chief Executives and others – Bundle 9 – Page 70)** which noted

> "*From the 1 June 2021, all NHS Board projects that require review and approval from the NHS Capital Investment Group (CIG), will need to engage with NHS Scotland Assure to undertake key stage assurance reviews (KSARs)*"

Health Boards found that their projects required to be reviewed using the KSAR process. In such instances, as there was no time allowed within their existing programme for the KSAR process to be undertaken, they had to adapt their existing project programmes and processes to provide a response to the KSAR workbooks. To assist Health Board colleagues adapt to the new process, NHS Scotland Assure provided support in the form of presentations and workshops.

48. Overall, the feedback NHS Scotland Assure has received from Health Boards has been positive. Health Boards have intimated to us that they have changed some of their processes as a result of learning through the KSAR process. We regard that as positive as it relates back to both the TOM and the supportive functions of NHS Scotland Assure.

49. There have been several examples of behavioural changes evidenced by Health Boards, particularly where they have undertaken KSARs across different complexities of projects and business case stages. One such example is where a Health Board received an unsupported status on a project, primarily as a result of lack of evidenced supporting documentation in relation to their governance processes. This was subsequently addressed through its own action plan. In subsequent projects, the Health Board in question was able to demonstrate that it had learned from this experience and was able to provide evidence and assurance for its project in response to the KSAR team's request. We have subsequently reflected on this with the Health Board and noted it as a positive step in it adapting its internal processes.

50. On wider reflection, NHS Scotland Assure has found through the experience of a number of KSARs, that the KSAR process and workbooks have helped

health boards to enhance their governance processes, including how they are documenting key decisions. The KSAR workbooks promote a theme of good governance throughout all stages of a project.

The NHS Scotland Design Assessment Process (NDAP) and KSAR

51. NDAP and KSAR are distinct processes that were developed separately. The NDAP process predates the KSAR and is overseen by the NHS Scotland Assure Property and Capital Planning team, supported by Architecture and Design Scotland. Further information on the NDAP process can be found in CEL (2010)19 **(A37215536 – Chief Executive Letter (2010) "A Policy on Design Assurance for NHS Scotland 2010 Revision" – 2 June 2010 – Bundle 13, Volume 5, Page 57)**. The KSAR is overseen by the Engineering & Assurance team within NHS Scotland Assure, as described previously. Both processes benefit from SME input across NHS Scotland Assure, as the teams work very closely internally.

52. What we have tried to do at NHS Scotland Assure is to minimise any duplication between the two processes for the Health Boards – for example the engineering topics that are reviewed as part of KSAR will not be duplicated in the NDAP report. For some of the early KSARs we did find that, at times, there were still elements of duplication taking place – for example in the way information was being transmitted to review teams – however, as the KSAR process has matured, this is now working more efficiently. NHS Scotland Assure is also reflecting on whether further improvements can be made to enhance these efficiencies so that time can be best spent reviewing the evidence provided by the Health Board in response to the KSAR.

53. Within NHS Scotland Assure there are regular internal meetings between the NDAP and KSAR teams to discuss progress and any concerns surrounding projects, to ensure we are aligned as an organisation. With respect to external meetings, whilst there may be separate and distinct KSAR and NDAP meetings, we will also look at when it make sense to have a single meeting,

where the agenda will span both processes – for example to discuss hospital theatre layouts.

54. I have been involved in NDAP reviews from an engineering perspective (where projects were not subject to a KSAR). However, that has been very much feeding into the collation of the NDAP report rather than anything else.

55. I have been asked by the Inquiry what would happen if the NDAP had raised certain concerns and recommendations, but the KSAR was supported and also if the KSAR would proceed where such NDAP recommendations were still outstanding? There can be, and have been, scenarios where the NDAP has been 'unsupported' but the KSAR has been 'supported', and vice versa. In such instances, NHS Scotland Assure will advise SCIG of the respective findings and where further assurance may be required. We will also support SCIG in its understanding of potential interdependencies between the processes, any risks identified in the respective reviews and how they may impact on the project moving forward, if not addressed. Ultimately, any decision as to project funding and/or approvals to proceed to a subsequent stage will remain the responsibility of SCIG.

56. An example of a project where this occurred was where assurance was provided by the Health Board in relation to the KSAR workbook topics, however the NDAP identified concerns around the architectural form of the building. In this instance the KSAR noted a supported status but also noted that, as the assurance provided was related to a particular architectural scheme, if the scheme had to change because of the NDAP findings, the KSAR might require to be revisited. Through open dialogue with the Health Board, SCIG and NHS Scotland Assure colleagues from the Property & Capital Planning team, we were able to monitor the steps taken to address the NDAP recommendations without the need to revisit the KSAR. Ultimately, the Health Board received a supported status from NDAP and KSAR.

57. I have been told by the Inquiry that it has been informed that when NDAP is carried out at an early stage there can be limited engineering information

available and, as a consequence, it is not designed to spot highly technical issues.

58. I have been asked whether this is also my understanding. NDAP as a process will undertake a detailed technical analysis of a project, however at an “early stage” of a project (for example the Strategic Assessment or Initial Agreement Stage as outlined in SCIM guidance), the health board will not yet have commenced its detailed technical design. At these stages it will be developing the project briefing requirements and initial strategies – the NDAP will focus on these. As a design matures through subsequent stages, a health board would be expected to provide much more in the way of technical detail and NDAP (or KSAR) will review this. Even at OBC, the level of technical information would not necessarily be considered “detailed” as this would typically be provided at FBC, aligned to a RIBA Plan of Work Stage 4 level of detail – the RIBA Stage 4 being classed as “Technical Design”. NDAP is an iterative process that spans the IA stage all the way through to the end of the FBC stage.

KSARs & Sustainability

59. The assessment of a Health Board’s sustainability strategy is not directly in the scope of KSAR. The KSAR would consider the consequential impacts of a Health Board’s sustainability strategy on the KSAR workbook topics. By way of example, Scottish Government policy outlines a requirement for zero direct emissions by 2038 for heating infrastructure. It would be our role to look at the technologies employed as part of the engineering assessment within a KSAR. However, how that related back to the overall sustainability strategy in terms of a net-zero carbon strategy would fall out with the scope of the KSAR. The assessment of the sustainability strategy would fall within the NDAP and Sustainable Design and Construction Guide – SHTN 02-01 (SDaC) processes.

60. Within NHS Scotland Assure, the KSAR team works closely with colleagues who are assessing the NDAP and SDAC components to ensure a co-

ordinated approach. This is an important element of the NHS Scotland Assure approach, as it is essential that we do not assess the project in silos. In the same vein, it is important that the project design team does not develop the design in silos.

Put simply, architecture has an impact on engineering and engineering has an impact on architecture. It is imperative that the Health Board provides assurance that there is a coherent and a coordinated approach to the design.

61. The KSAR will consider implications on patient safety with respect to sustainability strategies. NHS Scotland Assure would never accept a situation where safety was compromised, even if it was part of a Health Board's sustainability approach or policy. Health Boards, as part of their governance processes, should be able to demonstrate an awareness of risks on their projects. This could include processes such as the HAI-SCRIBE (Healthcare Associated Infection Systems for Controlling Risk in the Built Environment) which is underpinned by Scottish Health Facilities Note (SHFN) 30. A HAI-SCRIBE is an assessment tool health boards use to help them identify, manage and record built environment infection control risks.

62. We would also consider Health & Safety Executive (HSE) guidance in terms of assessing how the Health Boards have considered risks, asking - can a risk be eliminated altogether and, if not, has the Health Board provided mitigations to ensure the risk has been reduced to as low a level as reasonably practicable? For example, such mitigations might not be able to be addressed through engineering design, it may be that a management policy would be required.

KSAR Workbooks

Construction of the Workbooks

63. The stages of the KSAR are linked to the Scottish Capital Investment Manual (SCIM) stages **(A32375006 – Scottish Capital Investment Manual (SCIM) –**

Introduction – Bundle 13, Volume 5, Page 2279). I don't know why the decision to link them was made because I was not party to that. The SCIM stages are aligned to the RIBA plan of work **(A46192243 – RIBA Plan of Work 2020 – Bundle 13, Volume 5, Page 2289)**. The RIBA plan of work is a well-defined process within the built environment, not just in healthcare. The KSAR workbook questions are typically aligned and reflective of the level of detail expected at each of the milestone stages of a construction project.

64. In my opinion, the alignment to the milestone SCIM and RIBA Plan of Work stages is logical. The RIBA Plan of Work is generally considered as the "norm" within industry in terms of benchmarking at the respective stages of design. With respect to alignment between SCIM and the RIBA Plan of Work stages, OBC would align with a RIBA Stage 2 level of detail and FBC would align to a RIBA Stage 4 level of detail. As a project moves through the relevant stages of a design, the level of technical detail increases, and that is considered within the KSAR workbooks in terms of the types of questions asked and the level of detail the KSAR team will be expecting to see presented in the Health Boards KSAR response.

65. At OBC the presented designs will not represent the finalised detailed technical solution. The Health Board should provide assurance that they have in place suitably developed project briefs (relevant to RIBA Stage 2 "Concept Design") and that concept design proposals have been developed. The Health Board should also be able to demonstrate assurance as to how it plans to develop these into detailed technical design solutions in subsequent stages of the project. We would typically be provided with outline specifications and drawings related to the KSAR topics. We would also consider the Health Board's project governance associated with the development of these concepts, including for example evidence of stakeholder input to and approval of the briefing requirements.

66. RIBA Stage 3 is considered as the "Developed Design" stage and is where the Project Team will start to build upon that detail. It represents a pivot point before the Health Board would finalise their detailed design during RIBA stage

4 (Technical Design). There is no requirement for a Health Board to undertake a KSAR at the end of RIBA Stage 3. We do however recommend to Health Boards that they continue to implement a robust internal governance process and potentially "pause and reflect" that the development of the designs is in accordance with their briefing requirements at this stage.

67. Some Health Boards have expressed a desire to undertake a RIBA stage 3 review, however, as noted above, that is not something that is currently mandated within the scope of the KSAR, as agreed with stakeholders when the KSAR workbooks were created. This may change in the future if there is a collective drive for this amongst stakeholders, including SCIG, however at this time it is not something that has been explored.

68. With respect to my personal involvement in constructing the content of the KSAR workbooks, when I joined NHS Scotland Assure, KSAR workbooks were already in place for the IA stage through to Construction Stage. The Handover and Commissioning workbooks had not yet been finalised (they existed in draft form only) and it was my team that developed those to a conclusion.

69. The content of all the KSAR workbooks was formed through a consensus group of various stakeholders from NHS Scotland Assure (previously HFS), Health Board colleagues and Scottish Government. NHS Scotland Assure retains editorial responsibility for the content of the workbooks, however all workbooks are issued to the consensus group for review prior to publication. NHS Scotland Assure provides specific subject matter expertise relevant to each KSAR workbook section – for example the fire safety sections are developed with support from the NHS Scotland Assure fire safety team, the IPC sections developed with support from ARHAI colleagues and so on.

70. Health Board representatives within the consensus group consist of estates professionals, estates directors and IPC professionals. Having those professionals within the group allows for a balanced perspective. We have a collective approach across the whole of NHS Scotland. It is only when we

have consensus that the workbooks are released into circulation. This process will continue to be utilised for any future updates of the workbooks.

71. In undertaking a KSAR, the NHS Scotland Assure SMEs' will use their experience in the field of healthcare construction projects to probe the Health Boards further, as required, and additional questions may be asked of Health Boards over and above those noted in the workbooks.

72. When undertaking a KSAR, a KSAR lead is allocated on each project. Their role is to coordinate project specific KSAR activities on a day-to-day basis. Each of the technical sections will have a technical lead who is a relevant SME. The leads come together as a project team and it is through that that we exemplify what we are looking for the Health Boards to do in terms of a co-ordinated multi-disciplinary approach to managing projects.

73. In the course of a KSAR, there will also be a number of technical workshops related to each of the KSAR topics held with the Health Board to discuss any emerging findings of the KSAR. These would typically be led by the relevant discipline SME outlined above. We would look to have attendance from both IPC and technical colleagues, given the significant independencies between these engineering systems and infection control measures.

<u>The KSAR Process and Guidance</u>

74. KSAR workbooks at all stages provide explanatory text around the types of guidance that a project may be expected to comply with and provides some examples. The KSAR workbook is not "guidance" in its own right. Throughout any KSAR, NHS Scotland Assure seeks assurance from the Health Board that it can demonstrate compliance with the relevant statutory and guidance requirements. That can include British Standards, Building Regulations, Health Technical Memoranda and so on. The starting point for that process would be looking at what guidance and technical standards the Health Board and their Project Team (e.g. including external advisors, design

teams, etc) and any other third-party experts have defined as being applicable to their project.

75. The ultimate responsibility for defining standards applicable to a particular project remains with the Health Board and their Project Team. We expect the Health Board to be able to clearly evidence the standards to which their building is being designed and constructed. We would look to establish through the KSAR that they were appropriate standards for that type of facility.

    If we felt there were gaps, or if there were particular standards that they should be compliant with, we would seek further assurance from the Health Board as to, for example, why it had decided not to comply with a particular document, or to whether it was possibly an oversight.

76. I have been asked by the Inquiry if it is the case that a hospital would not be deemed safe if the ventilation did not comply with published guidance. That is a question that is subject to many variables and not one I could categorically answer without further context relating to what the “non-compliance” related to. Compliance and safety are different concepts, sometimes safety is demonstrated by compliance with a particular document, other times they are not related. There are many complex variables to consider when assessing safety. In the context of a healthcare project, ventilation would be considered as one of a series of infection prevention measures to, for example, reduce the risk of airborne contamination. However, it is not just a case of considering the “ventilation” in the singular sense – you would also need to consider adjacencies to other rooms, patient cohorts, patient pathways and the clinical triage systems that were in place. You cannot make an assessment based on air changes alone. They are important, but safety must be assessed on a wider basis than through just one component part.

77. There may be scenarios that arise in the process of a KSAR where it is identified that a project does not comply fully with guidance, but the Health Board can provide assurance that it is safe. In such instances, NHS Scotland Assure would seek supporting evidence from the Health Board as to how it

had assessed the safety of the facility in relation to the non-compliance with guidance. For example, where there was an air change rate lower than that contained in published guidance, we would probe how the Health Board had assessed this (including what the actual air change rate achieved was); we would also establish how the Health Board proposed to monitor air change rates over time to ensure that they did not degrade; we would also question whether there was to be any enhanced air monitoring regimes or maintenance regimes.

78. We would also consider whether the Health Board could evidence an appropriate pressure cascade, what their patient cohort was and whether there was likely to be any greater risk present because of that. We would further probe the Health Board as to whether the variation in air changes was restricted to one room or to a larger space. These are just some of the examples of the complexities that we assess. One line in a SHTM is important, but so is the sum of all the parts of all the guidance documents and all the requirements that go into designing a healthcare project, when it comes to assessing safety.

79. It is just not possible for guidance to cover every scenario. When people refer to ‘ambiguity in guidance’ one needs to question whether it is truly an ambiguity or whether it is something that is just not covered in extant guidance. In the context of applying that to a project, NHS Scotland Assure would expect a Health Board to have outlined what its approach was to implementing the guidance and be able to demonstrate the rationale for arriving at a decision.

80. During a KSAR, NHS Scotland Assure will assess the Health Board’s inputs (e.g. project briefing requirements) before assessing their outputs (e.g. the design), because there might be a very particular reason as to why they have made a decision, or where they have taken an alternative approach to what is outlined in guidance. A Health Board should be clear on what its requirements are and demonstrate why it has arrived at that decision. This then gives the KSAR team a clear indication as to what investigations we need to undertake

next. The direction of the review will be dependent on the types of evidence the Health Board provides. Often a detailed solution is an intricate web formed of various different guidance requirements. Guidance must be considered in a wider context and be implemented in practice by competent individuals and organisations.

Typical Structure of a Key Stage Assurance Review

81. The structure of a KSAR can be thought of in distinct sections, specifically the "information exchange process" where Health Boards provide a response to NHS Scotland Assure in relation to the KSAR workbooks, moving on to a "gap analysis" to ensure successful transmission of a KSAR response from the Health Board to NHS Scotland Assure, and then ultimately the "review period" itself where we assess the evidence provided by the health board in detail. These stages are outlined for each KSAR project in a Dashboard, which I discuss later in this statement.

The Information Exchange Process

82. On a typical project, the lead up to the information exchange process can take several months and builds up to the point where we can start the KSAR. The first point of reference for any Health Board will be the KSAR workbook, as that represents the framework for undertaking the review. NHS Scotland Assure supports Health Boards to identify the type of evidence that they can provide and how they can prepare their KSAR response. Health Boards must ensure that the documentation provided is of an appropriate standard/quality and addresses the KSAR workbook questions – it is not a case of ticking a box to say something has been provided, the evidence must provide the assurance.

83. At OBC, FBC, and the Construction Stage we also provide an aide-memoire document with recommended deliverables the Health Board may wish to provide in response to the KSAR questions **(A46190585 – Exemplar FBC Key Deliverables List – Bundle 13, Volume 5, Page 2437)**. This was

created following feedback received from Health Boards who underwent some of the earlier KSARs following the launch of the NHS Scotland Assure service. Health Boards intimated that they would welcome further support in identifying a "good practice" deliverables list for their projects. These aide-memoires provide an expanded list which is aligned to Building Services Research and Information Association (BSRIA) BG6 (detailed below) and other relevant industry guidance relative to each stage, including SHTMs. It is not a mandated requirement for Health Boards to provide the documents within the list and not all may be applicable. If the Health Board doesn't provide a particular document we would, through the course of the KSAR, try to understand why. We would ask, for example, whether it was because the health board deemed it not to be required or whether it might have been captured within another document. The deliverables list should be viewed as a support tool for Health Boards.

84. In creating the deliverables list, as noted above, NHS Scotland Assure utilised a document known as 'BG 6 Design Framework for Building Services' (BG 6) **(A36853347 – BSRIA allocation of design responsibilities – BG 6-2018 Concept design-4 - Bundle 13, Volume 5, Page 2454)** as the starting point**.** It is not a healthcare specific document so we supplemented this with other requirements, such as requirements noted within SHTM documents, including a design risk assessment for water services.

85. I refer to **(A46192243 - RIBA Plan of Work 2020 – Bundle 13, Volume 5, Page 2289)**. During a KSAR we assess the level of detail relevant to the RIBA stage as it is prescribed in SCIM for each of the key stages that the workbooks are utilised. RIBA itself describes the Plan of Work as follows:

> *"The RIBA Plan of Work organises the process of briefing, designing, constructing and operating building projects into eight stages and explains the stage outcomes, core tasks and information exchanges required at each stage. Guidance in the RIBA Plan of Work 2020 overview is based on nearly seven years of feedback gathered by RIBA from the construction industry, and it now includes an expanded glossary in*

comparison to international Plan of Work equivalents, and guidance on the following core strategies; conservation; cost; fire safety; health and safety; inclusive design strategy; planning strategy; plan for use strategy; procurement strategy; and sustainability strategy."

86. Not everything featured in the Plan of Work is represented within the scope of the KSAR. The RIBA Plan of Work is more architecturally focused in nature. BSRIA looks through BG6 to expand on that from a more technical engineering perspective.
The important point is that the RIBA Plan of Work is recognised in industry as good practice. It provides a logical way in which to develop the technical requirements of a particular project. It builds stage upon stage through a project's lifecycle, from the early stages through to a fully constructed building. BG6 and the RIBA Plan of Work are not mandated documents.

87. BSRIA itself defines the purposes of BG6 (within BG6 2018) as:

"The purpose of BG6. There is a variety of activities required to produce the necessary level of detail and information as well as the output documents. The role of BG6 is to provide a platform where the activities can be identified and allow them to be allocated to individual organisations or roles within the project team. It is vital that each party knows what they are expected to do in terms of design activities, responsibilities and deliverables, and using this approach also ensures that all necessary activities are identified and allocated and that there are no gaps between or duplication of responsibilities." **(A36853347 – BSRIA allocation of design responsibilities – BG 6-2018 Concept design-4 - Bundle 13, Volume 5, Page 2454)**.

88. Health Boards which have undertaken multiple KSARs and been through the information exchange process are now well versed in it. Health Boards who are going through the process for the first time tend to require more support and guidance on the mechanics of the KSAR process. For those Health Boards we would hold a series of workshops leading up to the

commencement of the formal part of the KSAR workbook review. During the workshop, people representing the Health Board tend to look for support in identifying whether a particular document may suitably answer a particular KSAR question and ask if that mirrors what we see from other Health Boards. At this juncture we would share learning from previous KSARs to help them formulate their response.

89. Some Health Boards submit written reports to accompany their KSAR response, as they feel this can help to contextualise how they believe they can provide assurance on their project.

90. This is not currently a mandated requirement of the KSAR process as we are conscious of the Health Boards' time in responding to the KSAR. However, in my experience, such a document can prove beneficial and may in the future become a requirement for the KSAR process. This can help where the assurance provided by the Health Board is formed of multiple documents where there may be no obvious linkage initially – a report or file note from the Health Board - can help to sign-post these to the NHS Scotland Assure KSAR team and allow an expedient review of the information.

91. Ultimately, it remains the sole responsibility of the Health Board to provide evidence of assurance related to the core topics of the KSAR workbook.

<u>The Gap Analysis and Review Phase</u>

92. Following the information exchange phase there is a gap analysis phase, prior to commencement of the formal "review phase" of the KSAR. The gap analysis phase looks to confirm a successful transfer of documents from the Health Board to NHS Scotland Assure, rather than reviewing the documents themselves. NHS Scotland Assure also use this phase to make sure that we can successfully access the documents. That allows us, during the review phase, to focus our time on the important issues rather than seeking further records and documentation. Investing time in the gap analysis part of the

process allows us to focus more on the technical detail during the review phase.

93. NHS Scotland Assure currently uses Microsoft Teams as an information transmittal portal. We have set up a series of standard folders which are aligned to the KSAR questions and to the deliverable items. This allows Health Boards to effectively "drag and drop" information across by way of response to our requests. We then take a copy of that onto our main server, in accordance with our own information governance protocols.

94. The Health Board submits a transmission log during the information exchange and gap analysis phase, which provides a record of the evidence the Health Board is submitting in response to the KSAR.

    When making observations in the KSAR report we will reference any of the Health Board's documents that are relevant to the observation.

95. It is during the gap analysis phase where we will agree collaboratively with the Health Board about whether we are ready to move onto the review phase. Only once we agree that we have the relevant documentation to start the review, would we start the review itself. It is important to then be able to see the review phase through to a conclusion and provide a "snapshot in time" view of the assurance provided by the Health Board. We tend not to accept further information during the review phase as this may delay the overall KSAR process. Where the Health Board identifies further evidence, we may choose to make an exception and consider it within the KSAR, or it may be deferred to later and considered as part of the Health Board's action plan. The action plan also provides a documented audit trail of the decision-making process around the resolution of any observations raised in the KSAR.

<u>The Review and Report Phase</u>

96. After the information exchange process is complete, the KSAR moves to 'the review period.' That period can vary in duration depending on the size and

complexity of the project build. The larger the project, the more documents there will be and the longer that stage will take. The final phase of a KSAR is the publication of the report. There is a cycle of quality assurance before the final report is issued to the Health Board and SCIG. This includes issuing a draft report to the Health Board for a factual accuracy review. That needs to be done because there is a lot of complex information contained within the report. We then allow the Health Board a final opportunity to review the report to make sure that it agrees with the findings, prior to us then finalising the report. Finally, we issue the report in parallel to colleagues at the Scottish Government via the SCIG and the Health Board itself.

Sharing of the Results of the KSAR Process / Action Plans

The Dashboard

97. I have been asked by the Inquiry how Health Boards respond to each area within the workbooks. I outlined earlier in this statement the relative parts of a KSAR, and these are also outlined within the project dashboard document. The dashboard is something we provide to all the Health Boards on all KSARs. The format of the dashboard (a blank template has been provided to the Inquiry) **(A44600860 – 2023-06-13 – Redacted Example of KSAR Dashboard V1.0 pack number 10 - Bundle 13, Volume 5, Page 2462)** is common for all projects. The detail contained within the template will be generated by the KSAR lead to contain project specific data, relative to how the KSAR is progressing.

98. The dashboard provides a snapshot in time as to how the KSAR is progressing, including a high level “RAG” (red / amber / green) status. Red would represent that there are risks/gaps in the information being provided by the Health Board, and thus there is a risk that the project may receive an “unsupported” status from NHS Scotland Assure if no evidence of assurance is forthcoming. Occasionally it may also be used if concerns have emerged relative to the KSAR programme or collective NHS Scotland Assure/Health Board resource relative to the KSAR process. Amber would be used to

represent similar concerns, albeit these may be emerging or of a lesser concern (hence the lower rating). Some of that might be down to our understanding of the information that the Health Board has provided and, as such, we may seek further clarifications on these through the review period. We occasionally might allocate an amber status to a project if we feel that the programme is starting to slip (for example, we found during COVID that staff had either been unavailable on our side, or on the Health Board's side as a result of ongoing pandemic response priorities). If there are no concerns overall, then a green status would be applied. The dashboard template is a controlled NHS Scotland Assure document. Any changes to the dashboard document template would need to be approved by myself or the Assistant Director for Engineering & Assurance.

99. It is unlikely that the dashboard would be coloured red in the lead up to a KSAR, as the Health Board will not yet have provided their evidence for review. The exception to this would be if a project was "unsupported" at a previous stage and the Health Board had not yet provided assurance they had resolved the key issues via their action plan. We might look to allocate an amber if we were starting to think that the Health Board may not be able to provide the information on time, which might consequently impact on the availability of the KSAR team or Health Board key stakeholders to undertake the KSAR relative to the originally agreed dates.

100. NHS Scotland Assure aims to be as transparent in our processes as we can. If concerns emerge during a KSAR in terms of the project itself, or if we are growing concerned around the actual KSAR process, we have found that the dashboard document provides a really good high-level snapshot that can be shared with Health Boards. It is a document that we can provide to senior colleagues at Health Board level to explore what they, and we, may need to do in response to the issues identified. The document might not necessarily just be about highlighting risks around the project itself. For example, if a key stakeholder in a particular KSAR is not available, it can limit the ability of the KSAR to progress within the timescales. That could have a significant impact

on the Health Board going to the Scottish Government for funding approval. Maintaining visibility on progress is vital.

101. There would not be any detailed technical observations provided within the dashboard as this document is not intended for that purpose (it is essentially acting as a KSAR progress tracker). It might note, for example, “we have emerging concerns on compliance with SHTM 03-01”, or “we have identified a non-compliance with SHTM 03-01” or “there is a lack of detail to support a derogation to SHTM 03-01”. The detail would be notified to the Health Board by means of a separate communication and detailed within the KSAR report.

102. If a significant concern was identified during a KSAR then an escalation pathway would be followed, and we would seek to engage with the Health Board further.

103. It might be something that we can address through the weekly meetings we have with the Health Board or in a separate technical workshop. If it requires further escalation, we would typically liaise with the Health Board project director and / or the SRO in order to identify what the appropriate course of action should be. The dashboard would only provide a summary of the concern. The detail would be formally recorded through our final KSAR report or in intermediate written correspondence with the Health Board. The dashboard is effectively a progress tracker where we can monitor concerns.

104. The frequency of issuing the dashboard to the Health Boards can vary depending on the stage of the project. The minimum period is typically quarterly, when we are not in the “review phase” of the KSAR. As the KSAR ramps up, the frequency will increase and during the review phase it will be issued weekly. We notify the Health Board immediately if we come across any issues that give us concern. We don’t want to sit on something that could be rectified there and then. If a case or process takes twelve weeks, and we uncover something on day one, it is not in anyone’s interest for us to sit on that until completion of the KSAR. We want to get out in front of that and notify the Health Board timeously.

105. The dashboard will typically be issued to the project director and the SRO at a particular Health Board. They will then be able to monitor any recommendations or instructions through the dashboard.

Weekly Meetings, Other Meetings and Technical Workshops

106. In addition to the project dashboard, during the review phase of a KSAR, we have a regular weekly catch-up with the Health Board. At these meetings there is a weekly agenda which identifies any key themes that are starting to emerge from the KSAR or any points that we would look to clarify. For example, we may note “We have not found any evidence of your ventilation strategy. Here is where we have looked (relative to the evidence provided by the Health Board). Can you point us in the right direction?” We may be directed to a particular document by the Health Board, and we can move on with the review.

107. Other times it could be “We have reviewed your ventilation strategy, and we think that there is a lack of supporting evidence. Is there anything else that you can provide in support of that?” Quite often it is difficult at the weekly meetings to intimate whether that is going to lead to a project being ‘supported’ or ‘unsupported’. We will not give a definitive ‘supported’ or ‘unsupported’ status until we are content that we have a ratified position. By that I mean that we have reviewed all the evidence that has been provided by the Health Board and we are content that we have a factually accurate observation. We may convene other more specific meetings in addition to the weekly meetings if we feel these would be of benefit to the health board or the wider project team.

108. At the midpoint of the KSAR “review” phase, we undertake in-depth technical workshops with the Health Board and its project team (typically consisting of the contractors, designers and relevant project stakeholders). These present an opportunity to discuss any points identified in the review in more detail. Attendees are typically identified in conjunction with the Health Board to

ensure that the personnel with the relevant knowledge are present. We would typically have a dedicated workshop for each of the KSAR topics.

Action Plans

109. The Health Board creates an action plan at the end of every KSAR, which is monitored through future KSARs. If a project is ‘supported’, the Health Board may still have actions. These could include items the Health Board should consider for future stages and to help ensure successful project outcomes. If a project is ‘unsupported’, then the action plan becomes important as it is through this medium that the Health Board would be required to demonstrate how it intends to address our observations and thus provide further assurance.

Communication with Health Boards, the SRO, SCIG and the Scottish Government

110. Health Boards are provided with an overview of KSAR progress through the project dashboard and through meetings and workshops, as described earlier in this statement.

111. Only once a Health Board has provided assurance would a project become ‘supported.’ Health Boards and SCIG are notified in writing as to whether a project is supported or unsupported. The mechanism is usually emailed correspondence, originating either from myself or the Assistant Director for Engineering and Assurance. The email would go to the Scottish Government (SCIG) and the Health Board in parallel. For the projects that have an ‘unsupported’ status it may also be sent to their Chief Executive – this will be dependent on whether further escalation is required within the Health Board. In the event of an unsupported KSAR, we will continue to engage with Scottish Government and the Health Board around resolution timescales and actions.

Contact after KSARs are Published

112. Since the launch of the KSAR process in 2021, NHS Scotland Assure has evolved the approach for engagement with Health Boards following the issue of the KSAR report. In the past, NHS Scotland would maintain limited engagement with a Health Board if it was a supported project – the onus would be on the Health Board to monitor the resolution of items within the action plan. If a project was 'unsupported', an active level of engagement would be maintained, as ultimately the Health Board would be required to provide assurance to reach a "supported" KSAR status. We tended to get less involved if it was a 'supported' project as generally this would mean there were no significant project risks identified in the KSAR previously. We now continue to liaise with a health board following all KSARs until a project is complete – this allows them to provide evidence at a point in time to demonstrate resolution of action plan observations. This revised approach has also supported health boards in preparing for the next KSAR stage.

113. The KSAR process is not intended to be a burden, rather it is a supportive process for Health Boards. The continued involvement between Health Boards and NHS Scotland Assure following a KSAR report being issued has been positive as it maintains an insight into how Health Boards are addressing the key recommendations of the KSAR process – which is important learning to help inform future projects and development of the KSAR process.

114. We have shared key learning outcomes via a series of presentations to the NHS Scotland Assure Learning Network, which is a platform that Health Boards can attend to share experiences and knowledge.

KSAR and Disagreements

115. I have been asked by the Inquiry whether I have encountered differing opinions or disagreements during a KSAR. Thankfully, we have not got to a point where a Health Board has not accepted the factual accuracy of a KSAR report. I like to think that is a result of the processes that we have put in place.

By acting in a transparent manner there are no surprises, because the Health Board should know if there are going to be any key findings in the report before we publish it. There have been differing opinions at times around some of the recommendations. However, through the weekly meetings and technical workshops, we have always been able to reach a consensus with the health board.

116. The way we present recommendations and observations through the KSAR process is also a contributory factor as to why Health Boards have accepted the reports as factual. We always reference observations back to the evidence that the Health Board has provided, or a piece of guidance or statutory requirement in our findings. We take any subjectivity out of the process.

117. I meet with SCIG colleagues monthly and run through the active KSAR project list. It is through this process that we give the Scottish Government an early indication of progress on the KSAR process on each project, including an early insight into any emerging issues that may impact on our ability to "support" a project.

118. I think NSS and NHS Scotland Assure's structure is effective when it comes to potential disagreements and their resolution. The typical escalation pathway within NHS Scotland Assure on a KSAR project would firstly see any concerns raised with me in both my capacity as Head of Engineering and as being responsible for overseeing the day-to-day delivery of the KSAR process. Should further escalation be required, this would initially be through the Assistant Director for Engineering & Assurance. Ultimately, the escalation path would go via the Director of NHS Scotland Assure and in certain instances to the NSS Chief Executive.

119. As Head of Engineering, I would look to initially try and resolve any disagreement with the Health Board, whether that be through the project director or the SRO. If I could not reach resolution in that first instance, I would look to escalate that to the Assistant Director and even up to Chief Executive

level. Typically, the escalation pathway does not require to go further than myself or the Assistant Director. There have been examples though where the escalation to senior colleagues has been required and worked well, including one large National Treatment Centre project.

120. Another example was where the project was allocated an ‘unsupported’ status following the Commissioning and Handover KSARs, and due to concerns over the time until the first patient was due to be treated within the building, the NSS Chief Executive was briefed on the significance of the issue. This allowed her to liaise with the Chief Executive of the Health Board and to ensure that actions were collectively prioritised. It also maintained the open and transparent ethos behind the KSAR process and ultimately the Health Board addressed the concerns identified, received a “supported” KSAR status and opened on time.

121. In the unlikely event that a resolution could not be reached between NHS Scotland Assure and a Health Board, we would escalate this via Scottish Government. The KSAR presents an objective position and is linked back to guidance and the evidence provided by a Health Board. We would present the risks to Scottish Government to help them identify an appropriate resolution pathway. Thankfully, we have never had to go fully down that route.

KSAR at Outline Business Case (A43494374 – KSAR Outline Business Case Workbook – Bundle 9 – Page 120)

122. As noted earlier in this statement, the KSAR at OBC will consider if the Health Board can provide assurance that the designs have been developed to a RIBA Stage 2 level of detail. The KSAR will also consider whether the Health Board can provide assurance that it has a comprehensive knowledge and understanding of the type of patients who will use the facility, and that the project team consider how appropriate quality and safety standards will influence the design. The Health Board should also be able to evidence that the project is suitably developed to be able to proceed to the FBC.

123. The Health Board at OBC, should be able to demonstrate the governance processes it has in place to support decision making, including for example how they it has engaged with clinical and IPC colleagues. NHS Scotland Assure would also seek assurance from the Health Board that solutions had not been developed in silos (e.g. without full and transparent consultation with stakeholders) and that appropriately competent personnel had been engaged in the Health Board's respective processes. An example of a KSAR question at OBC is "Does the Health Board continue to demonstrate service and clinical input in design decisions?" If we only receive the clinician or the service lead's perspective on the design, and we do not receive the engineer's or the project management team's perspective, then we would look to probe the Health Board to determine if it can demonstrate a full alignment of understanding across the project team. For example, this could be in the form of a design approval document with signed approvals from relevant stakeholders.

124. If the KSAR identified concerns around an integrated approach to design decisions, NHS Scotland Assure would probe further to establish how the Health Board ensured that clinical requirements and engineering strategies (for example) were compatible. We may for example probe topics such as "The clinical team has outlined certain requirements, but your engineers were not in the room when that was discussed, so how was that conveyed to your engineers?"

125. How have these requirements informed their outline ventilation strategy?; How have these requirements informed the briefing documents that you have developed for your ventilation?; If it is an isolation room, for example, have you applied the correct guidance for an isolation room?; Do you understand the clinical function of that room? and If you do not understand the clinical function, how can you design the engineering?" NHS Scotland Assure will consider the Health Board's project approach to understand if all the relevant stakeholders are talking to each other. We want to see whether there is a clear linkage between a Health Board's clinical briefing requirements and the development, evolution, and implementation of their technical briefings. This is

part of the reason why the workbooks are structured in the way they are. We often find that where a Health Board cannot demonstrate adherence to a defined governance process in this respect, that we need to probe further in terms of the technical information requested in other sections of the workbook.

126. Dependant on the procurement route of a project there may or may not be a construction partner appointed at OBC. Where a project doesn't have a construction partner, NHS Scotland Assure would probe how a Health Board was assessing the "buildability" of the concept solutions. We would also review how the Health Board had considered and defined any risks in that respect, including how they planned to integrate with a construction partner in subsequent stages of the project.

Technical Review of the Specifics of the Design Solution at the Outline Business Case Stage

127. NHS Scotland Assure implements a common approach to the review of design solutions presented by Health Boards as part of its KSAR response, regardless of the stage of the project. We will effectively appraise both the design solution and the project briefing requirements. We have to consider whether the Health Board provides assurance that the technical solutions presented are relevant and appropriate to the type of facility that is being built. In terms of our processes, that begins with a review of the Health Board project requirements. The KSAR team needs to understand what it is that the Health Board is setting out to achieve through their construction project before we delve into the intricacies of the technical detail. We would then assess whether the technical solutions had been developed to the appropriate level (relative to the stage of the project, as noted earlier in my statement) and in accordance with the project requirements.

128. NHS Scotland Assure considers how the Health Board has defined the project requirements at this stage, how it has reached key decisions and who was involved in that process. We would assess governance around that early stage and whether the Health Board is setting expectations and requirements

through the project briefing documents. We would further assess how is that being used to inform the design. At the OBC stage, we would be looking at an assessment of the concept technical solutions that are being proposed. That process would involve obtaining and reviewing a number of different documents. Those documents could include technical specifications, drawings, schedules, notes of meetings, various briefing documents and others.

129. I have been asked by the inquiry how the KSAR considers the requirements for commissioning at OBC. I have included a wider explanation of this for all KSAR stages later in this statement but note here the specific considerations at OBC. At this stage of a project, we would seek assurance that a Health Board has commenced planning for commissioning, including for example whether a designer's commissioning brief for ventilation and water had been commenced in accordance with SHTM requirements. Health Boards should also provide assurance that they can demonstrate how they have assessed the appropriate standards that need to be applied. The KSAR will consider who was involved in that process and how that was reflected through the project documentation. One specific aspect for example would be - has the Health Board defined roles and responsibilities for commissioning? We would also consider whether the project programme has appropriate time allowances for commissioning (noting that a detailed commissioning programme may be provided during later stages of the project).

130. The Health Board at this stage should also be able to demonstrate an awareness of any commissioning dependencies (for example ensuring that building fabric works are complete before commencing microbiological air quality sampling) and whether they were captured in appropriate risk registers, programmes, etc. The Health Board should also be able to demonstrate it has appropriate governance controls in place and sufficient project documents in place to support the actual implementation of that commissioning, including considerations of its own internal resources to support the commissioning process.

KSAR at Full Business Case (A43494373 - KSAR Full Business Case Workbook – Bundle 9 – Page 151)

131. The KSAR at FBC will consider if the Health Board can provide assurance that the designs have been developed to a RIBA Stage 4 level of detail. The KSAR process at FBC stage is similar to the process at OBC stage, as this helps to ensure a commonality of approach when undertaking a KSAR. At this stage we would expect the Health Board to have concluded its detailed design and there be confidence that the project can move onto the construction stage.

132. The RIBA Plan of Work 2020 notes:

> *"Stage 4 is about developing the information used to manufacture and construct the building. This requires information from the design team and the specialist subcontractors employed by the contractor, regardless of which procurement route is used."* **(A46192243 - RIBA Plan of Work 2020 – Bundle 13, Volume 5, Page 2289)**.

The FBC KSAR is the last review before construction. We expect a lot more detail in the information that is being provided and a lot less information stating itself as "still to be developed at the next stage." We would expect all room data sheets (RDS) to be in place at this stage. Any gaps in such information can impact on the coordination, viability, and functionality of a build.

Furthermore, it may potentially impact the time, cost, quality, and safety of the build. We would only review a sample of the room data sheets' as we are not a shadow design team.

133. If a project had previously been subject to a KSAR at OBC, NHS Scotland Assure would initially look to assess whether the Health Board had evidenced resolution of the action plan from the previous KSAR. The KSAR team would also look to understand what (if any) changes had been made to the project in

terms of briefing requirements, to ensure the subsequent FBC review was fully informed. Where changes were identified, either as advised by the Health Board or through the KSAR itself, we would seek assurance from the Health Board as to how it had assessed the change. The KSAR team would consider, for example, whether the change fundamentally impacted any of the core principles that were signed off. We would also consider how the Health Board project governance protocols had been implemented in managing the change.

134. In terms of the information provided by the Health Board at FBC, we would expect a greater volume of information to be provided (than at OBC) and that the information be of a detailed technical nature, reflective of the stage of the project. This will both inform how the building is to be constructed and, from an engineering perspective, how the building will be commissioned and validated.

135. The FBC KSAR remains a rigorous process. Some documents may remain unchanged from a previous stage and we would not necessarily need to review them again if there were no significant changes to the project briefing requirements.

Design Calculations

136. It states within the FBC workbook **(A43494373 - KSAR Full Business Case Workbook – Bundle 9 – Page 151)** that there will be a check of design calculations. As NHS Scotland Assure is not a shadow design service or a checking service, this will not extend to a check of all calculations on a project – rather it will be a sample of calculations. The sample size will vary on the size and complexity of a project and be established by the KSAR team on a project by project basis. Our involvement does not change the liability on the project. The ultimate legal responsibility and project liability, in terms of the accuracy of the design information and calculations, is retained solely by the Health Board and its Project Team.

137. When reviewing a calculation, the KSAR team would firstly assess whether the usage/performance criteria of a space had been defined (and thus how it would inform the calculation). This could then include an assessment of the type of patient that would go into the space, which had informed the decision, how that decision was recorded, how the Health Board had developed the environmental parameters for that space, how it had undertaken the calculations, what software it had used, who had checked it, who had validated it, whether it aligned with the guidance and whether there were any associated derogations. The KSAR team will then assess the accuracy of the calculation. For example, if reviewing a Health Board's ventilation calculation we consider how the Health Board demonstrates the way that calculation relates back to the patient cohort, how the outputs have been validated (e.g. does the air change rate meet SHTM or briefing requirements), how that calculation is then used to inform the ventilation design strategies (such as fan sizing).

138. The KSAR will also consider the process a Health Board and its Project Teams have in place for checking and approving design calculations. We would seek assurance it has a demonstrable process for checking and validating calculations and that it identifies the individuals with respective responsibilities – for example who are the checkers? Who are the verifiers? If the Health Board and the Project Team can demonstrate they have robust audit processes in place for checking all their calculations, then this reduces the potential for errors to have been made. We would expect similar processes to be in place for documents such as an environmental matrix (an environmental matrix is a tool, typically spreadsheet based, that project design teams and health boards can use to record the environmental parameters relevant to their specific project

– note this does not supersede the requirement to use Activity Data Base (ADBs) on projects as per Scottish Government's "A Policy for Design Quality for NHS Scotland' issued under CEL 19 (2010) **(A37215536 – Chief Executive Letter (2010) "A Policy on Design Assurance for NHS Scotland**

2010 Revision" – 2 June 2010 – Bundle 13, Volume 5, Page 2234) or room data sheets.

139. In my opinion, a robust quality assurance process that incorporates peer reviews and validation, in addition to a self-checking process, promotes good quality outcomes and reduces the potential for errors to go undetected.

KSAR at Construction Stage (A43494368 - KSAR Construction Workbook - Bundle 9 – Page 183)

140. The KSAR review at the Construction Stage is the first to be undertaken once the building is "out of the ground" and takes place during the RIBA Plan of Work Stage 5. During this KSAR we consider both how the construction activities are progressing relative to the project requirements (inclusive of the detailed design proposals and Health Board requirements), in addition to how any outstanding design activities have been concluded.

141. Whilst most design activities should be concluded at RIBA Stage 4 and within the FBC stage, there are "contractor design portions" that may not have been developed by the end of RIBA Stage 4 and as such fall within the Construction Stage of the project. By way of context, during the FBC KSAR stage we would seek assurance from the Health Board that there was an appropriate level of detail within the project documentation to inform those contractor design portions.

142. We would not expect any contractor design portion to have a fundamental impact on the form, function and the coordination of the building. BSRIA BG6 provides an overview of the subtleties between particular packages. The KSAR would seek assurance from the Health Board and the Project Team that none of those contractor design portions had altered the signed-off detailed principles approved by the Health Board at RIBA Stage 4/FBC.

143. Over the course of the KSAR construction review we would consider how the Health Board and Project Team have managed the evolution of contractor

design portions and how they continue to maintain an appropriate level of stakeholder engagement. Even though the project has passed the design stage, the Health Board stakeholders still have an important role to play in terms of the implementation and finalisation of those strategies. That is particularly so when it comes to approval of contractor design portions.

144. As with the FBC KSAR, if a project had previously been subject to a KSAR, NHS Scotland Assure would initially look to assess whether the Health Board had evidenced resolution of the action plan from the previous KSAR. The KSAR team would also look to understand what (if any) changes had been made to the project in terms of briefing requirements, to ensure the subsequent review was fully informed. Where changes were identified, either as advised by the Health Board or through the KSAR itself, we would seek assurance from the Health Board as to how it had assessed the change. The KSAR team would consider whether the change fundamentally impacted on any of the core principles that were signed off. We would also consider how the Health Board project governance protocols were implemented in managing the change. For example, if it had been as a result of a value engineering exercise (this could include where project specifications, designs or material selections have to be changed for affordability purposes), we would be looking to establish who had been consulted. We would seek evidence from the Health Board that it had the right stakeholders involved and that there was transparency around what they were doing.

145. The KSAR will also seek assurance from the Health Board and Project Team that there is an appropriate level of supervision on site, to make sure the physical build is progressing in accordance with the project requirements (including any statutory processes).

146. The KSAR will also assess how the Health Boards and the appointed Contractor are managing the supply chain, particularly where sub-contractors are employed for specialist packages, to ensure that quality and safety on the project is not compromised. As part of this we will consider what briefing information has been provided to the contractors/sub-contractors, particularly

if they were not appointed during the design stage of a project and may therefore be initially unfamiliar with the project requirements.

147. I have been asked by the Inquiry whether the briefing information provided would include Room Data Sheets (RDS). I would note this could include but not be limited to RDS. We would also expect additional information to be provided. This may include for example technical specifications provided by the design team. It all depends on the scope of work and the function of the subcontractor, as well as the scope of their duties. It wouldn't specifically be the ADB. The ADB is the start of the journey in creating an RDS. The briefing documents are an evolution of that and are specific and bespoke to any given project and its requirements. Essentially, the Health Board and the Project Team should be able to demonstrate that roles and responsibilities for all sub-contractors are fully defined and that all individuals are appropriately briefed on the requirements of the project.

148. The KSAR would also consider the processes Health Boards and Project Teams have in place for appointing Contractors and Sub-contractors, to ensure they possess the relevant experience, competencies and qualifications to work within the healthcare built environment. Healthcare buildings present very specific challenges and nuances, for example a water system in a hospital is different to a water system in a school, particularly as the water may be used in clinical procedures or certain patients may be more susceptible to waterborne organisms than the general public. By way of further example, if an individual plumber had no demonstrable experience of working on a healthcare project, we would want to know how they had been considered competent to work on the project.

149. The Construction KSAR will also consider how the Health Board and the Project Team continue to prepare for the commissioning of the facility, as even decisions made early in the Construction phase can impact on the outcomes of later stages. An example of this is assessing how the Health Board and the Project Team are looking to manage the water system through the Construction phase, including when & how water will be safely introduced

into the system. If the project involves connecting into an existing healthcare building, there will be a lot of additional considerations compared to a brand-new build with no interfaces to existing infrastructure. We would also assess how the contractors are interfacing with Infection Control, with Estates, and how they are considering any existing safe systems of work or policies that Health Boards may already have in place, for example permitting systems (which would be required to gain authorisation to work on a particular system) or water management protocols.

150. The KSAR will also consider whether the Health Board can demonstrate a coordinated approach at all levels across the Project Team. The KSAR seeks assurance that the Health Board has systems in place to ensure that there is a commonality of approach. This is true for all stages within a healthcare project, however, at Construction stage we are getting to the point where patients and staff members are ever closer to using the facility, with an ever-decreasing ability to amend anything that may not be correct. The KSAR seeks assurance that systems are being commissioned appropriately, and in accordance with the aims and objectives of the design.

151. The Inquiry has referred me to the use of the term “correct standard” with regard to design within the Construction Stage workbook. As referred to earlier in this statement, the Health Board and its Project Team are ultimately responsible for specifying the standards to which a project should be designed and constructed, notwithstanding any statutory or legal obligations placed upon a project. The KSAR will seek assurance as to whether the Health Board has a process in place to establish this in terms of a project briefing or specification. The standards to which the project is subject should also be documented. This is considered at all KSAR stages and is not exclusive to the Construction KSAR. If a project had undertaken a previous KSAR to this point, one would assume that it had a supported status and that there was assurance around the project.

152. Whilst a KSAR may highlight ambiguities in applied standards, ultimately the process for resolving any ambiguities in standards would rest with the Health

Board. The KSAR process requires a Health Board to prepare an action plan in response to observations made and, within that document, we would expect the Health Board to outline how it planned to address the ambiguities and then ultimately evidence that such had been addressed. The specifics of this evidence would depend on the nature of the ambiguities. NHS Scotland Assure has in the past been asked for support by Health Boards in addressing such matters, which we would support where possible, albeit without affecting the overarching obligations/responsibilities which remain with the Health Board.

Derogations at Construction Stage (Through Variations)

153. A variation at the Construction stage may not necessarily lead to a derogation. What is key is the nature of the variation. A variation could include a change in manufacturer or product, if the original specified requirement is no longer available or unable to be procured in the timescale required. At the opposite end of the variation, it could be a result of a change in the Health Board's projects requirement, such as change in use or it could be something else that is completely unrelated. All of that would need to be assessed by the Health Board to identify whether a derogation was required. As part of the KSAR, should such changes be apparent, the Health Board should provide assurance that it has conducted a full technical appraisal of the changes, to establish if a derogation was required.

154. The Health Board should be able to demonstrate that it has not just assumed that any change is not going to have an impact. It needs to be able to demonstrate a process that proves that there is not going to be an impact on compliance with guidance, safety, risk and reliability. Time and cost may also be considered.

155. If, for example, there has been a change in manufacturer, we would seek assurance that the Health Board and the Project Team have considered if the change will impact on performance and reliability or is it a true "like-for-like" change. We would seek evidence as to how they have assessed that, for

example whether they had looked at product data sheets, who looked at the product data sheets and whether it was a demonstrable like-for-like change.

156. We would seek assurance on the change control processes implemented by the Health Board. The Health Board should be able to provide assurance that an appropriate level of due diligence had been applied when considering that variation. Depending on the nature of that change, that absolutely should include clinical and IPC involvement. They are subject matter experts in their field, and they must be consulted if the change may impact on IPC strategies.

157. The workbooks throughout all stages promote good project governance and technical due diligence by competent people. Whilst there is always potential for variations on any project, if Health Boards can provide the assurance outlined in the KSAR workbooks at all stages of a project, it would, in my opinion, reduce the potential for a variation to be required to address an error in design. If a Health Board can demonstrate appropriate levels of governance, appropriate levels of technical due diligence being applied, if they are following a prescribed framework for developing the design (like a RIBA Plan of Work for example), the potential for those errors to exist should, in theory, be reduced.

KSAR at Commissioning (A43494367 – KSAR Commissioning Workbook – Bundle 9 – Page 213)

Commissioning and Validation

158. I note paragraph 1.8 on page 14 of the Commissioning Workbook which asks the question

> *"How does the Health Board ensure that Commissioning results are witnessed and agreed as acceptable including independent validation where required?"*

Commissioning is the process of advancing a system from physical completion to an operating condition. Commissioning is normally undertaken by a specialist commissioning contractor working in conjunction with equipment installers. It may also be undertaken by specialist personnel within a particular company who may be trained in commissioning of a particular system.

159. Validation is subtly different from commissioning. The purpose of validating a system is to assess the complete installation to ensure that it performs to the desired level and parameters. Validation is a process of proving the system in its entirety is fit for purpose and achieves the operating performance originally specified. SHTM 03-01 for example, recommends that it should be a condition of contract that the system will be acceptable to the client if, at the time of validation, it is considered fit for purpose and will only require routine maintenance for its projected life. Effectively, validation proves that a system (or systems) is ready to be put into service, whereas the commissioning may only include elements of that in isolation.

<u>The KSAR Process at Commissioning Stage</u>

160. The Commissioning KSAR takes place towards the very end of the Construction Stage of a project and prior to the Handover Stage. At this time the building works will be substantially complete and system commissioning complete (or nearing completion). As with all KSARs we will establish whether a KSAR had been undertaken previously and assess whether the Health Board had evidenced resolution of the action plan from the previous KSAR. The KSAR team would also look to understand what (if any) changes had been made to the project – the process for which I have described earlier in this statement.

161. The overarching aim at this stage is to seek assurance from the Health Board that all commissioning activities have been successfully completed and that it continues to prepare for the facility being put into service. The Health Board should also provide assurance that the building is fit for purpose and safe from

foreseeable risks. If any residual risks are identified we would look for assurance that those had been properly documented, mitigated and accurately assessed. The KSAR will assess who was undertaking the commissioning and who would be validating that commissioning, particularly critical care areas or areas of significant complexity. The KSAR will also consider how the Health Board has implemented any independent validation of particular systems, such as critical ventilation for example.

162. Often the Commissioning KSAR and Handover KSAR are undertaken back-to-back, given the project will be close to completion.

163. There should not be any design activities remaining when a project reaches the Commissioning KSAR because the systems should be fully installed and commissioned. If there is still design ongoing then that would be viewed by NHS Scotland Assure as a risk.

164. If we identified such a risk we would look to probe this further with the Health Board to establish how it was assessing the risk – for example how is it reviewing the impact of the outstanding design work against the physical site works and commissioning progress to date?; how is it assessing the safety of the facility relative to the design work?; how is it assessing compliance against relevant standards, including SHTMs?

165. The Commissioning KSAR builds on previous stages and will assess whether Health Boards and their Project Teams have defined their aims, objectives and standards to be followed for commissioning. I would stress that this will not be the first time that the KSAR process considers this question – but it is revisited during the Commissioning KSAR. I have also been asked by the Inquiry as to whether there may be mandatory commissioning activities. There will be certain activities that are mandated through law or a statutory process, such as compliance with the building regulations. For other “good practice” activities that may be outlined in guidance, these would typically only become mandated through a contract.

166. The KSAR will also consider whether commissioning activities have been completed in an appropriate sequence and the results documented, checked and approved by relevant stakeholders.

167. I have been asked by the Inquiry if the commissioning is now carried out against published guidance, such as SHTM's, regardless of what the contract states. Through the KSAR process, we would be considering how Health Boards had defined the standards to which the building should be commissioned and validated. At the commissioning stage of a project there should not be any ambiguity between a contract and the technical specifications. We would seek assurances from a Health Board that it had developed those documents in an appropriate manner and was able to demonstrate its governance processes in relation to this, through the KSAR process.

168. Use of SHTMs themselves are not mandated by default – they would, for example, tend to become mandated through a contract. For a healthcare facility they would typically be seen as good practice. Should a Health Board choose not to implement a SHTM, through the KSAR process we would seek assurance as to the rationale behind such a decision, including evidence that there would be no impact on the safety, risk or reliability of the given system or facility. We would also seek evidence from the Health Board that such requirements were outlined within the project information, such as briefing documents, specifications, etc.

169. There may be instances where an alternative approach may be entirely justified and this would be fully considered as part of a KSAR – for example a healthcare facility within a prison may present instances where a derogation from a SHTM may be required due safety & security considerations. Provided the Health Board can demonstrate that doing something a different way hasn't compromised the safety of the person within that space, be that a patient or a member of staff, then it may be an acceptable approach – but it must be evidenced, as noted earlier in this statement. There should be no ambiguity in

existence because the project documentation should be robust enough to demonstrate what a building needs to achieve and why it needs to achieve it.

170. As part of a KSAR, NHS Scotland Assure would not necessarily review the contract where any potential ambiguities are identified. The contract would remain the responsibility of the Health Board. The KSAR observations made by NHS Scotland Assure may point out specific issues that the Health Board needs to address, such as clarifying the scope of works for a particular role or organisation on a project.

171. If we identified a scenario where a contactor was not doing something in accordance with a SHTM and the Health Board believed that they should, we would seek clarification from the Health Board as to what its contractual requirements were or what the project briefing requirements were, and probe as to how the Health Board was monitoring the quality & performance of the Contractor to ensure they were discharging their duties accordingly.
Where a gap was identified we would seek assurance from the Health Board as to how it proposed to address that gap. We would recommend that it document what the relative risk was that it was facing and how it proposed to mitigate & address that risk. Ultimately, that might result in a significant remedial measure, or it might not. It is the responsibility of the Health Board to assess that risk relative to the situation that it is facing. Contracts and technical documents are complex; however, the Health Board and its Project Team must make sure that such documents are suitably formed to ensure successful project outcomes.

172. I have been asked what independent validation involves, by reference to SHTM-03-01 Part A 2022, **(A37301627 – Scottish Health Technical Memorandum 03-01 (Interim Version) – Part A: The Concept, design, specification, installation and acceptance testing of healthcare ventilation systems: February 2022 – Bundle 13, Volume 5, Page 2463).** Sections 12.4 and 12.5 of this guidance document note that

"In order to ensure that the complete system operates correctly it will be necessary to validate it as a whole from the air intake through to the extract discharge. It is unlikely that the client's in-house staff will possess the knowledge or equipment necessary to undertake this process. Validation should therefore be carried out by a suitably qualified competent engineer appointed by the client. The validator would be the client's AE(V) (see Chapter 2 in Part B of Scottish Health Technical Memorandum 03-01) **(A37301626 – Scottish Health Technical Memorandum 03-01 – Part B: The management, operation, maintenance and routine testing of existing healthcare ventilation systems: February 2022 – Bundle 13, Volume 5, Page 2690)** *or someone of similar standing who is familiar with the ventilation requirements for healthcare facilities. They will be completely independent of the system designers, contractors, suppliers, installers, commissioners and those who will subsequently operate and maintain the system… To retain independence, the validator should be appointed and paid directly by the client.*

The validator will act as the client's representative to inspect the system, check its performance and recommend acceptance, or not, to the client."

Relating back to the KSAR process, NHS Scotland Assure will seek assurance from the Health Board in relation to the processes and procedures they have in place in that respect.

173. The mechanics of the KSAR process will entail a review of the Health Board and Project Team processes, as well as a review of the outcomes/outputs. The processes themselves would typically be designed to outline the governance associated with commissioning & validation activities. It is important for the Health Board to provide assurance that these are robust and being adhered to.

174. The Commissioning KSAR includes a site visit to gain a general understanding of the site conditions during the construction and commissioning stage. This visit could, for example, include an inspection of

the air handling unit installation, to check if the condensate traps are clear and running free and to make sure that there is no visible contamination within the respective chambers of the Air Handling Unit (AHU). We may also check the protection of the sanitary ware, the water services pipework and inspect fire safety measures that are installed. It is important to note that this is not intended to act as a replication or replacement of a clerk of works or site supervisor. The site visit can also offer perspective relative to the Health Board's quality control processes – for example if we attend the site and observe quality issues, that would potentially lead to a further probing of the quality controls in place on the project.

175. The Commissioning Stage KSAR will also consider the assurance provided by the Health Board in relation to the structure and competency of the workforce involved in the commissioning process.

176. In response to the Commissioning Stage KSAR, the Health Board would typically provide evidence including risk assessments, method statements, commissioning programmes and documentation, to demonstrate engagement with the relevant stakeholder groups such as the water safety group, the ventilation safety group and other such specialist groups.

177. Following a review of the governance and workforce arrangements, the KSAR will then look at the detail of the commissioning results and information provided. This includes an assessment of the commissioning data relative to the design and functional requirements, in addition to considering how the Health Board itself has assessed the data to ensure it is within the required tolerances. The KSAR will also consider how the various organisations involved in the commissioning process are collating this information for the Health Board at handover. We recognise that a lot of the responsibilities will start to shift onto the health care provider at that point. The project is moving from a construction project to a live health care environment.

178. As with any KSAR, the Commissioning KSAR does not change the liability on a project. It remains with the Health Board and its Project Team. As already

stated, NHS Scotland Assure is not a shadow design team – if that function is required it would need to exist within the Project Team itself. The KSAR process is designed to receive assurance from Health Boards that they have appropriate governance and quality control processes in place and that they are being discharged by competent personnel. The KSAR also considers the level of supporting evidence in relation to this, including technical documentation. It is important that a Health Board can provide demonstrable evidence, otherwise this can represent a risk to it.

179. The workbooks identify different types of evidence that may be applicable to a project in order to provide assurance – the evidence types are not intended to be exhaustive. The KSAR team uses its own experiences to expand on areas to probe, as required, but ultimately these are related to the core KSAR topics. The Health Board must provide evidence through its KSAR response that it has fully considered the safety, risk and reliability of a facility as it is put into service. That is what the questions in the workbooks are trying to tease out. From my perspective, I view the workbooks as being self-explanatory. They set out the areas to probe and identify how they will be assessed during the review. There is explanatory text at the beginning of every single workbook that sets out the aims and objectives of the KSAR process.

KSAR and the Handover (A43494370 – KSAR Handover Workbook – Bundle 9 – Page 249)

180. The KSAR review at the handover is a point of transition in the project life cycle, moving from a construction project to an operational healthcare facility. The focus of the handover KSAR is the detail around the “handshake” between the contractor, the wider project team (including the designers) and Health Boards. It generally marks the transition to Health Boards taking on full ownership of the facility/works and any associated risks. The KSAR will consider the level and quality of information provided by the contractor, subcontractors and technical specialists to the Health Board, to ensure that the Health Board can provide assurance that it has all the relevant information in place to safely operate the facility. The KSAR seeks assurance from the

Health Board that all the commissioning activities have been completed, that the outputs have been reviewed and approved by the relevant stakeholders and that it meets the requirements of the design. As noted previously, the handover and commissioning KSAR go back-to-back in terms of a typical project timeline, with the time between completed commissioning and a facility handed over being short (in comparison to the time between other milestone stages such as OBC to FBC).

181. As with all KSARs, we will establish whether a KSAR had been undertaken at a previous stage of the project and assess whether the Health Board had evidenced resolution of the action plan from the previous KSAR. The KSAR team would also look to understand what (if any) changes had been made to the project. We might not necessarily undertake a site-based audit at the handover stage.

182. If we had already been to site and assessed that during the commissioning stage, there may only be a difference of a few weeks in the process. For much larger complex projects, we may have to go back to site at that point. It is all dependent on the nature of the project.

183. As stated, the KSAR team adopts a common approach across all KSAR stages and the Handover stage is no different. The KSAR team will review the evidence provided by the Health Board that outlines its handover processes. We would then look to review this information to establish whether the Health Board has provided assurance that all the statutory and key health and safety information is in place, and whether all commissioning & validation information has been reviewed and confirmed to be within tolerance. “Within tolerance” could mean for example a range of values relative to the design specification or it could be an overarching requirement, such as disconnection times for electrical circuits, in accordance with the Wiring Regulations BS7671. It would be very much dependent on the type of system.

184. The KSAR would also probe whether any out-of-specification results were identified in the conclusion of the commissioning and seek assurance that the

Health Board and its Project Team had reviewed and addressed the results appropriately.

185. The KSAR will also seek assurance from the Health Board that it has a process in place for managing any defects at completion, and where defects are present it must evidence that such defects will not fundamentally impact the safety or performance of the facility in operation. If any long-term risks were identified by the Health Board we would seek assurance that it had documented plans in place to manage that risk. The fundamental objective here from a KSAR perspective is for the Health Board to provide assurance that defects would not compromise patients, staff or visitors or the Health Board's ability to maintain the facility.

186. The KSAR at handover will also consider the assurance provided by the Health Board as to how it has discharged its statutory obligations or obligations under guidance at the point of handover, and also consider how it proposes to move forward into the operational phase and maintain that compliance. For example, what may be considered is whether existing Health Board operational policies (such as electrical safety policies) will cover the new facility or whether amendments to existing or new policies are required.

187. In addition to Health Boards' documentation, we will also seek assurance that the contractor (& sub-contractors) have ensured that they have prepared an appropriate package of information at handover for the Health Board, and that there is a clear audit trail in place showing who has taken ownership. In historic KSARs we have seen contractors also provide a "letter of comfort", typically on their company-headed paper, signed by an appropriate person within their organisation, in order to provide further evidence in respect of who has taken ownership. This is important as it brings individual accountability from a decision-making perspective.

188. The Inquiry has referred me to the directorate letter, DL (2023) 03 **(A43494372 – Letter Dated 6 February 2023 from Alan Morrison, Deputy Director of Health Infrastructure, Investment and PPE to NHS Board**

Chief Executives and others – Bundle 9 – Page 75). The recommendation in that DL from the Scottish Government is that no building should open without support from NHS Scotland Assure. At handover, if there are any critical areas where further assurance is required, we would continue to be involved until such time as the Health Board provides the additional assurances required to allow us to allocate a supported status to the project. There may still be some minor residual actions at this point, however these would very much be within the ownership of the Health Board.

189. Once a project is "supported" at handover that would typically signal the end of NHS Scotland Assure's mandated involvement. It would only be if the Health Board asked us for further support that we would continue to be involved.

190. Effectively, that would fall under 'business as usual' activities for NHS Scotland Assure, through the provision of Subject Matter Expert support. If a Health Board asked us for support, we would assess that request, relevant to capacity, and the nature of the requested support, to determine under our terms of service whether that was something that we could support.

Derogations

191. Within current Scottish guidance there is no standard derogation template or form. Health Boards tend to develop their own templates. I am aware that Health Boards share ideas and knowledge through forums like SETAG.

192. The KSAR process will consider how Health Boards provide assurance that they have a robust process in place for identifying and managing derogations. The KSAR will seek assurance from Health Boards that any derogations have been fully reasoned, transparently discussed and the implications understood, recorded and signed off by relevant members of the Health Boards and their Project Teams.

193. For example, the KSAR will probe whether a Health Board can demonstrate a derogations process flow. The Health Board would typically be asked to provide evidence to demonstrate how they assess derogations, how they record them, how they assess them and ultimately who (within the Health Board) approves them. The KSAR process will also seek assurance that Health Boards have considered safety, risk, and reliability in their derogations assessment. We require assurance that the Health Board is not going to compromise the safety or the reliability of a particular service. We would further look to assess how the Health Board defines supporting mitigations, where they have identified risks or where they believe they demonstrate compliance by another manner.

194. Often, one person alone in the Health Board may not have the required knowledge and competency to assess all facets of a particular derogation. It is therefore important within the KSAR process to assess who has reviewed and approved any derogation within the Health Board and who has been consulted in the process. Given the complexity of a healthcare project there needs to be a collaborative effort across all the stakeholders. It is important that competent people are used in assessing the derogation. That includes engagement with relevant technical subject matter experts such as IPC colleagues, clinical colleagues and finance colleagues.

195. Not all derogations will require full input or review from IPC teams, however we would seek assurance that Health Boards have reviewed whether a derogation may result in a consequential impact on infection control measures or risk assessments. If the derogation does impact on these control measures or risks, then I would expect IPC colleagues to be fully consulted on the derogation.

196. There are dedicated questions within the KSAR workbooks that look to probe the derogations process on a project.

197. Different Health Boards take different approaches to management of derogations, as often the approvals process will be linked to their own internal

governance structures. For example, Health Boards may have different roles within their Estates Departments and job titles might be different. Ultimately, what the KSAR is looking for is assurance that the Health Board's derogations process is encompassing of all relevant stakeholders.

Evaluation of Commissioning Plans

198. As noted earlier in this statement, "guidance" is not necessarily mandated, however it can become mandated through a contract, or where it is related to a statutory process. An example of the latter would be the electrical testing required to meet the requirements of the Building Standards Technical Handbook. If it is not a statutory requirement, we would typically consider the guidance to be described as good practice.
Recommendations for commissioning may be contained within a SHTM or other relevant industry guidance, for example through Commissioning Codes published by CIBSE.

199. Another example of a "mandated" commissioning process would be those linked to processes such as receiving an occupation certificate, for example, from Building Control. There may be commissioning activities required in order for a Health Board to meet legal requirements – for example the Control of Substances Hazardous to Health Regulations 2002 (COSHH).

200. The KSAR process seeks assurance as to how a Health Board has outlined its requirements for commissioning. This begins at an early stage of a project (it is considered from the OBC KSAR workbook onwards) and a Health Board should be able to demonstrate that as its project progresses through the respective RIBA stages, the level of detail in support of the commissioning proposals increases. It is important to seek assurance on the commissioning of a facility from an early stage, as it could have a fundamental impact on buildability and the ability to comply with the required/recommended technical standards. The KSAR would also consider whether roles and responsibilities associated with commissioning have been defined by the Health Board.

201. We often see projects engage a specialist commissioning manager whose role it is to oversee the commissioning process. Responsibilities under such a role would include (but not be limited to) coordinating activities, to make sure that they were appropriately sequenced, looking at programming and looking at the types of parties that may need to be involved in the commissioning . The most recent CIBSE guide for commissioning management "Commissioning Code M: Commissioning Management", which was published in 2022, **(A47201177 – Commissioning management - Commissioning Code M (2002) - Bundle 13, Volume 4, Page 1335)** promotes engagement with a specialist commissioning manager from an early stage of the project. Historically, it was common that this role would not be appointed until much later in a project. The importance of the role has evolved over time and is now recognised through other industry bodies' guidance.

202. It is the responsibility of the Health Board to demonstrate how it proposes to resolve any ambiguities we identify through the KSAR. If 'document A' is competing with 'document B', then this would be recorded as an observation within the KSAR report. Our recommendation would be that the Health Board should assess and demonstrate how it is responding to that ambiguity. Depending on the nature of the observation, we may be able to make a more specific technical observation. Ultimately, the responsibility for the resolution would sit with the respective Health Board and its Project Team.

Environmental Matrices, ADB, Room Data Sheets and CEL 19 (2010)

203. The use of an environmental matrix is not something that is mandated in SHTM Guidance. An environmental matrix is a tool that can be used by designers and contractors to develop various engineering solutions and strategies, including input into calculations. Where there are a number of designers using spreadsheet-based calculations, they can utilise data from an environmental matrix in their manipulation and assessment of particular figures. NHS Scotland Assure does not consider an environmental matrix to be a direct equivalent to ADB, because the ADB contains more than just engineering information. The ADB is used to inform an environmental matrix.

An environmental matrix is referenced within the KSAR workbook as it is a tool we often encounter in projects.

204. I have been asked if RDS produced using ADB is now a mandatory briefing tool for all projects. The use of the ADB is mandated. It is a database from which information can be obtained to populate a RDS, which would in turn become a project-specific document. The ADB will contain a lot of information relative to various different technical standards and requirements. It is not limited to engineering technical data. The Health Board should look at how that information matures into a project-specific requirement and the ADB should be used in conjunction with all other relevant technical guidance, and not in isolation.

205. Where an environmental matrix is provided by a Health Board as part of the KSAR response, NHS Scotland Assure would not undertake a full line-by-line check on the environmental matrix. As stated previously in this statement, it is not within the scope of our service to act as ‘a shadow design team’ in that respect. Our role is to assess the Health Boards’ processes in setting up the document, which includes an assessment of its quality control and assurance processes. I fully acknowledge that to make a mistake is only human. However, if you have a robust quality control process then that reduces the potential for such errors to go undiscovered. The KSAR would consider for example, whether the Health Board and its Project Team were implementing a peer-checking process followed by a review and approval process, by appropriately competent individuals. If the data were reviewed on multiple levels then the probability of an error going unidentified reduces. Ultimately, if a Health Board has a robust and iterative quality control process in place at each stage of the design, this goes a long way to reducing the potential for an error to go unspotted.

206. I am aware that there has been evidence presented to the Inquiry to suggest that there is the potential for transcription errors in environmental matrices. However, I would stress again that the role of NHS Scotland Assure is to seek

assurance from the Health Board that it has in place appropriate quality control processes to minimise the potential for such errors to occur.

207. During a KSAR, NHS Scotland Assure will consider the tools used by a Health Board in informing their project requirements, including room data sheets and, where provided, environmental matrix type documents. We will identify a core sample for review based on the size and complexity of the facility, with a particular focus on key/critical clinical areas. This will help to inform our more detailed assessment of the technical strategies presented in relation to the other KSAR workbook questions or topics.

208. I have been asked by the Inquiry if I can explain what information is required regarding stakeholder input into ventilation strategies. From a KSAR perspective, NHS Scotland Assure would look to understand how the Health Board had defined the requirements for particular rooms. We would seek assurance from the Health Board that its briefing requirements had been developed relative to the patient cohort and room function and that multi-disciplinary stakeholder input had been provided. Typically, we would expect the clinical and IPC stakeholders to have helped to inform the room briefing requirements, then to see these developed into technical solutions by the design team members (not just from a ventilation perspective, but for other engineering services, architecture, acoustics, fire safety, etc). We would seek assurance that all facets of the design were being developed in a co-ordinated manner and that this could be demonstrated at each stage of a project. As noted previously, this could include the development of ADB into project specific room data sheets or other documents, such as an environmental matrix. The Health Board should be able to provide assurance it has in place a coherent and co-ordinated approach for developing the requirements for the particular space with all relevant stakeholders. The KSAR would also seek assurance that ventilation strategies had been reviewed and approved by the relevant stakeholder groups, such as the Ventilation Safety Group, clinical and IPC colleagues, estates colleagues, and others.

209. I have been asked by the Inquiry whether, where a room function is required, would it be a clinician and / or an IPC professional who would provide input on the patient group and function. I would expect both a clinical representative and an Infection Control professional to be involved in defining requirements. The KSAR workbooks and the types of evidence they call for stress the need for this collaborative approach. The KSAR would, for example, seek assurance that a clinical lead had approved the room requirements, but also seek assurance that IPC had been engaged in the process – this could be in the form of identifying the lead Clinical Consultant and the IPC Doctor/Nurse. A healthcare building is complex.

    It is important that all the stakeholders come together at a point in time to assess the requirements as a collective and not in isolation. That helps make sure that there are no unintended consequences as a result of reaching a decision in isolation.

210. The Inquiry has brought to my attention that the KSAR workbooks state that CELs need to be complied with and that it is mandatory to use the Activity Database. The Inquiry has asked me why is ADB mandatory? I was not involved in the formation of the CEL so I cannot comment on that.

Guidance

211. The Director for NHS Scotland Assure is ultimately responsible for the duties that we discharge. NHS Scotland Assure produces guidance covering many different topics and dependant on the nature of the topic, the formation of individual pieces of guidance will be led by different divisions of NHS Scotland Assure relative to their specialism.

212. In my role as Head of Engineering I manage and direct the production of technical engineering documents within NHS Scotland Assure, for national use. This includes identifying appropriate best practice and priority actions. I look to develop and implement national strategies, guidance and operational policies to ensure that publications are accurate. That work primarily relates

to the SHTMs, with a particular focus on the engineering suite of documents. Those documents in the main pertain to electrical services, water services, ventilation, and medical gas systems. There are also a number of specialist SHTMs including lifts and pressure systems.

213. The Head of Engineering is the corporate record owner for the engineering SHTM guidance within NHS Scotland Assure. NHS Scotland Assure has its own corporate governance protocols for updating guidance, with associated timescales. My role is to make sure that we, as a department, are fulfilling our role in terms of guidance update cycles. In practice, it is my role to co-ordinate the delivery programme to ensure that guidance is updated timeously.

214. The Principal Engineering Managers effectively take on the day-to-day role of managing the actual development of individual pieces of guidance documentation relative to their engineering specialism.

215. NHS Scotland Assure is the primary technical author of the engineering guidance we produce. We maintain overall responsibility for that guidance. Our approach, when it comes to updating engineering guidance, is very much a collaborative one. By way of a particular example of our processes, SHTM 06-01 is for electrical services. The specialist electrical Principal Engineering Manager will oversee the development of that document and I will liaise regarding the programme required. I will also make sure that we are following our own internal governance protocols and working with the NHS Scotland Assure Information Officer, to ensure that we have supporting paperwork in place. We discuss how we are going to engage with the wider stakeholder network and work through the development cycle associated with reviewing, updating, and getting the guidance document approved.

216. NHS Scotland Assure works with the Scottish Engineering Technology and Advisory Group (SETAG) in the production of guidance. Underneath SETAG there are a number of National Advisory Groups. Those groups include the National Water Safety Advisory Group, the National Heating and Ventilation Group, the National Electrical Advisory Group, and the National Medical Gas

Advisory Group. Those are the primary National Advisory Groups that contribute towards the development of guidance. Each of the groups contain subject matter experts from across all the Health Boards in Scotland. That structure makes sure that all the Health Boards have a voice in the development of guidance. The SETAG terms of reference also note “SETAG will be responsible for Health Facilities Scotland’s (HFS) range of operational engineering and technical guidance material, advice, training courses and seminars”.

217. NHS Scotland Assure also works very closely with our devolved nation healthcare colleagues in NHS England, NHS Wales and NHS Northern Ireland. This is to help ensure a unified approach to the production of guidance. Historically, NHS England have typically taken the lead on producing a piece of engineering guidance, which would then be reviewed by NHS Scotland Assure (formerly HFS) and SETAG, to adapt to any specific NHS Scotland requirements. There can be nuances in the production of “local guidance” – for example as a result of Building Regulations in Scotland being different from Building Regulations in England. There are times when Scotland has taken the lead on pieces of guidance. It depends on where we are relative to the guidance document update cycle.

218. When a guidance document is produced in Scotland, NHS Scotland Assure will be responsible for delivery of the programme, supported by SETAG and the National Advisory Groups. We work with the devolved nations to identify, through collective dialogue, any additional expertise that we may require to produce a particular piece of guidance. Our aim is to make sure that the guidance is informed and technically accurate. We take a collaborative approach, which spans across both industry and academia. This may include engagement with research partners, academic partners, and partners from industry, to support the production of a particular guidance document.

219. When producing engineering guidance, NHS Scotland Assure will undertake a scoping exercise in conjunction with Health Boards and other key stakeholders, to identify any areas that need to be changed or clarified within

the guidance. The scoping exercise is important as it allows Health Boards an opportunity to share their knowledge in relation to the guidance's practical application and what they have learned. We sometimes must update guidance to reflect changes in statutory requirements or where new standards have been identified. At other times we require to update guidance where there has been an unintended consequence due to the last piece of guidance.

220. After the scoping exercise is complete, NHS Scotland Assure, in conjunction with SETAG, will assess who is the most appropriate author to write or amend a section. Following the section being drafted or amended, NHS Scotland Assure will then undertake an internal quality assurance process.

221. Through that process we work with colleagues to undertake accessibility checks and review the technical accuracy of the document. The document would then be put to SETAG, the NAGs and the identified stakeholder group for the particular piece of guidance, for review & approval prior to formal publication. It is my role, as Head of Engineering, to make sure that we are following the information governance protocols. As part of that I will review the content of the guidance and provide my feedback.

222. NHS Scotland Assure aims to review each piece of engineering guidance on a five-yearly cycle. That cycle has been significantly impacted due to the COVID response. The availability of stakeholders has been extremely limited. The updates for guidance were delayed when NHS Scotland Assure (formerly HFS), SETAG and the NAGS were focused on the pandemic response. Because of that we worked in conjunction with SETAG and the NAGs on a priority program to try and identify the priority for updating the existing suite of guidance documents. For example, SETAG and the NAGs identified that SHTM 03-01 Ventilation for Healthcare Premises was an immediate priority in 2021. That resulted in an interim version of SHTM 03-01 being published in 2022, with the support of SETAG and the National Heating & Ventilation Safety Advisory Group. Another example of a priority piece of guidance following the pandemic is that NHS Scotland Assure is currently working on SHTM 06-01 "Electrical Services Supply and Distribution". That guidance is

now eight years old. The wiring regulations (BS7671) have been updated and we hope to get a revised SHTM document to reflect these changes out as a priority in 2024.

223. I note that the Inquiry has heard that a lot of guidance, including SHTM-03-01, is open to interpretation. I have been asked if this requirement to comply with the guidance still leaves ambiguity in terms of what is required. My former colleague, Eddie McLaughlin, has previously noted to the Inquiry that compliance with SHTM guidance is not mandatory – I have also explained that within this statement. However, quite often it becomes mandated through a contract. Therefore, ambiguity is removed when the guidance becomes a contractual requirement. We assess the potential for ambiguity during a KSAR by reviewing what the Health Board defines as the requirements for the project. We would assess the standards the Health Board sets for its designers, its contracting partners and anyone else who is involved in the project from a design and construction perspective.

224. Eddie McLaughlin has also said that it is not possible to produce guidance that can cover every particular scenario that may exist. I fully agree with that. There are a huge number of possible scenarios that exist within healthcare buildings and it would simply not be practicable to produce guidance to cover every possible scenario. In the course of a KSAR we will consider how the Health Board has applied the principles of the guidance. We look for any ambiguities, when they were identified and how the Health Board looks to address them. We will assess whether the Health Board has provided assurance that it is achieving its statutory requirements. If, at any point in a KSAR, we discover that something does not comply with the guidance, as currently written, we look to assess how the Health Board provides assurance that the resulting solution has not compromised the safety, risk, or reliability of that particular project.

225. On a project, should a Health Board indicate that extant guidance does not cover a particular situation, we would request assurance from the Health Board as to how it can make that assertion and request detail as to how it

developed its technical proposals. This would also involve consideration as to whether the Health Board contacted NHS Scotland Assure for any clarification on the guidance, whether it sought to meet with the relevant NAG, or whether it considered other guidance that may be applicable to the topic. A review of the project contract is not within the scope of KSAR.

226. I have been asked by the Inquiry what processes are in place at NHS Scotland Assure to assist prospective tenderers to interpret guidance in relation to technical requirements and aspects of hospital builds. There are various mechanisms which Health Boards can use to approach us for support. One of our core functions is to provide Health Boards access to Subject Matter Experts to give support in technical matters of that nature. This function exists regardless of whether a project is going through a KSAR or not.

227. There are opportunities within a KSAR and the NDAP when a Health Board is setting out its briefing requirements where Health Boards can approach NHS Scotland Assure for support in developing them – the responsibility though remains with the Health Board.

228. NHS Scotland Assure aims to provide support to Health Boards and we always encourage a spirit of collaboration with them. The extent of support provided, particularly with respect to engineering services, can be either accessed directly via a Health Board request or via existing technical knowledge sharing platforms. For example, NHS Scotland Assure engineering and ARHAI colleagues attend NAG meetings, which have representation from various colleagues within Health Boards. NHS Scotland Assure also facilitates a Learning Network platform and regularly holds presentations within that forum to support the sharing of knowledge between Health Board colleagues. NHS Scotland Assure also works closely with Health Board colleagues on workforce development, where colleagues look to work with partner organisations, such as NHS National Education for Scotland (NES).

229. I have been asked what plans NHS Scotland Assure has in place to address and overcome issues where published guidance is open to interpretation. In response, I would re-emphasise the processes we have in place currently and how they are designed to provide Health Boards and wider stakeholders with an opportunity to collaborate in the production of guidance. Stakeholders must use the platforms available to them to share learning and to inform the future of guidance. I would also stress that guidance goes through a rigorous quality control process. The process involves the Health Boards and key stakeholders. If a particular individual can demonstrate to us that something can be misinterpreted, or could benefit from further detail, then that is considered by the cohort of subject matter experts that are assembled to create the guidance document. I would also reiterate that it is impracticable for guidance to cover every eventual scenario that may present itself on a project.

230. I have been told that the Inquiry has heard evidence that several parts of published guidance, including SHTM 03-01, are open to interpretation. As noted previously, it is not possible to produce guidance that is applicable to every circumstance. Engineering guidance documents typically frame a set of overarching aims and objectives to be achieved through the design, construction, commissioning, validation and operation of a facility. Sometimes guidance can be explicit if it is linked to a statutory requirement. Legionella and water, for example, have a set of standard tests that must be undertaken. In other cases that is not the case. Guidance should be implemented by appropriately competent people. That should be reinforced by Health Board's governance processes. The KSAR process seeks this assurance.

<u>Authorising Engineer</u>

231. Health Boards may also engage with their Authorising Engineers to support with interpretation of guidance. Typically, they would possess the required knowledge, experience and competence to advise on such matters. They may also be able to provide a Health Board with support in reviewing

competencies of designers and/or contractors in relation to project appointments for their specialist discipline.

Design

232. I have been asked by the Inquiry what guidance is in place for prospective tenderers surrounding the use of the ADB system or its equivalents and how Health Boards can demonstrate, where equivalents are used, that it is of equivalent value. ADB is not something that falls under my core responsibilities. I do not actively provide any training or support around ADB. It would be other colleagues within NHS Scotland Assure who would look after that. Any questions with respect to engineering systems would either come to me or my team.

233. I have been asked by the Inquiry about CEL 19 (2010) and whether that will be updated. I cannot comment on what plans are in place around CEL 19 (2010) and whether it is going to be reconsidered or refreshed. That would be an area that my colleagues in another part of NHS Scotland Assure would be able to answer.

234. I have been asked by the Inquiry what NHS Scotland Assure's position and practice is in relation to RDS produced using ADB and what work is being done to create standard rooms for Scotland. I have responded to the position on ADB earlier in this statement. NHS Scotland Assure in conjunction with the Scottish Property Advisory Group's (SPAG) sub-group Building Design & Construction (BDaC), are looking at repeatable rooms guidance. There is representation on that group from the Engineering and Property & Capital Planning teams of NHS Scotland Assure, in addition to the various Health Boards across Scotland. The production of repeatable rooms is important for a variety of different reasons, including whether it be from a repeatability, construction efficiency or compliance perspective.

235. I have been asked by the Inquiry what role NHS Scotland Assure has at the procurement stage in terms of assessing design and briefings for a project.

The “procurement” stage of a project could mean several different things that range from a health board procuring an external design team, advisor or contractor through to the procurement of equipment, land or other assets. The NDAP and KSAR processes are designed to assess design and briefings for a project (irrespective of the procurement route of a project). This assessment will be based on the design development journey of a project as opposed to being centred solely on procurement.

The Grant Thornton Report

236. I have been asked by the Inquiry about the Grant Thornton report. I was not employed by NHS Scotland Assure at the time of the RHCYP build project and the level of my personal awareness about the Report is limited to recent dialogue with colleagues in NHS Scotland Assure.
My understanding from such dialogue is that NHS Scotland Assure has no record of receiving a copy of the Report out with the course of this Inquiry.

Would KSAR Have Prevented Events Surrounding RHCYP/DCN?

237. I have been asked by the Inquiry whether the KSAR process would have prevented occurrence of the issue of non-compliance with SHTM 03-01 on the RHCYP/DCN project. I would not be willing to say categorically “Yes, it would have.” Although I am aware of some of the learning concerning the RHCYP/DCN project, I was not party to the project at the time. I can, however, explain what NHS Scotland Assure would do now to try and address the emerging learning from that project.

238. NHS Scotland Assure has, through the KSAR process, identified issues with ventilation on projects, including issues with air change rates. Some of those issues are simplistic in nature such as ‘typos’ in documents. Other issues have involved a lack of evidenced discussion and dialogue regarding the patient cohort. I would not wish to be arrogant by saying that we would have prevented what happened in Edinburgh by use of the KSAR process. I am not

party to all the information relating to the Edinburgh project, therefore it is not possible for me to give a definitive yes or no answer.

239. It is worth reiterating that NHS Scotland Assure is not a shadow design team and we are not a checking service. We do not check every line of every calculation or document that is provided to us. We have neither the time nor the resources to do that in our scope of service. We consider, first and foremost, what assurance the Health Board have provided and whether they have robust protocols in place. We look for assurance around how they have assessed the patient cohort and how they have looked at what the actual functional clinical requirements of that space would be, in order to inform an engineering design. We consider if they have a clear and common understanding of that patient cohort and what they are going to require in terms of relevant guidance.

240. As a further example, we might be looking for things like project minutes or decision trees in support of this.

241. I noted earlier in this statement that the KSAR would also be used to look at the scrutiny and the processes that Health Boards have in place in terms of their own checking and validation. As much as it is not within the scope of KSAR to check every single line of a document or to check every line of calculation, it is someone's job to do that within the Health Boards' Project Team. We would be looking for assurance that the Health Board could demonstrate that it had been undertaken. From a quality assurance perspective, a process aligned to the principles of ISO 9001 (a certified quality management process) would be considered good practice. I would expect Health Boards to have some form of a self-check, a peer review, and peer approval. We would be looking for them to evidence this scrutiny, because the more robust that process is, the less likely it is that error will occur.

242. The importance of the initial briefing information must not be underestimated. That is particularly the case around the requirement from a clinical perspective as to what the facility is required to deliver. It is at this point that health boards

and their project teams can identify the appropriate piece of guidance and how the project strategies required to be developed to comply with that guidance. That is where a Health Board can start to tell the story of the evolution of the design briefing information from the early-stage concept design, through to the detailed technical design and then, ultimately, into commissioning. That is why NHS Scotland Assure puts a lot of scrutiny into the briefing process. The more robust Health Boards' processes are, the more likely they are to achieve successful outcomes on their projects.

243. I have been asked by the inquiry if the procedures in place now are likely to eliminate any change that does not comply with guidance unless there is a risk assessment justification. In a high level sense we would look for Health Boards to be able to demonstrate the processes they have in place to prevent such an occurrence from arising. The KSAR workbooks are something a Health Board can use to complement their own processes.

Declaration

244. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry
Witness Statement of
Tracey Gillies

Background

1. My name is Tracey Elizabeth Gillies, and my qualifications MBChB (University of Bristol) 1989.

2. My current role is as the Executive Medical Director in NHS Lothian, a role I have held since the 1st February 2017. In summary, the role of the Executive Medical Director is to provide professional clinical advice to the NHS Lothian Board and Executive Team, along with the Executive Nurse Director, to provide professional leadership for a range of professionals, in my case doctors, dentists, psychologists, pharmacists and healthcare scientists, and to oversee the delivery of a number of functions within the Corporate Management Team.

3. Other than being a NHS Lothian Board member, I had no specific role or responsibility within the RHCYP/DCN Project (the 'Project'). For the first fourteen months of my appointment, I held executive responsibility for Infection, Prevention and Control, but this transferred to the Executive Nurse Director's (Professor Alexander McMahon) portfolio on the 1st April 2018. As regards the decision to delay opening before the move was completed, my role was commensurate with my substantive role rather than an additional one. It fell to all executive members of the management team to ensure that we provided optimum support to ensure suitable modifications to the building were made and to clinical teams to manage the consequences of the delayed opening, and the subsequent phased migration.

4. The involvement of professional leaders from a clinical background is to articulate risks and plans to mitigate such risks, and to support constructive dialogue in exploring options. It can also be to support the development of understanding between those with technical expertise and those who are responsible for clinical and operational practice. A paper provided for the Executive Steering Group dated

9th September 2019, with reference **(A41348198 – Paper for the Executive Steering Group summarising the ventilation issues ad progress made dated 9th September 2019 – Bundle 7 – Vol 3 (of 3) – Page 416)**, is an example of such an attempt at setting out the reasoning behind various technical specifications. It had been subject to detailed comments from those with technical knowledge outside my competence or remit.

5. This paper builds on more detailed work undertaken by the Infection, Prevention and Control Team outlining the risks of Hospital Acquired Infection and takes account of the design of ventilation and its delivery.

Decision to Delay

6. The decision to delay opening the hospital in July 2019 was made by the Scottish Government. I was not involved in any direct discussions between the Chief Executive or other NHS Lothian colleagues and Scottish Government. I was on annual leave from the 2nd to the 5th July and away from Edinburgh, but dialled into conference calls held during that week as I was able to.

7. Information was assessed during that week to consider possibilities to augment the level of ventilation provided to Critical Care areas and whether it would be possible to undertake this with the building partly occupied.

8. The decision to delay required consideration of the facilities remaining in both DCN at the Western General Hospital, and the Royal Hospital for Sick Children in Sciennes, whether any of the risks related to these premises could be adequately mitigated, whether the issue with the critical care ventilation in the new facility could be addressed by a mechanism as yet undecided, and whether the other ventilation rectification work based on the issues identified in the IOM report could be addressed adequately.

9. I do not believe there is any ambiguity about when the critical care ventilation issue, namely the design that did not provide 10 air changes at the requisite pressure regime, was brought to my own attention. That was in a conversation between

Brian Currie and myself immediately before the meeting at 4.30pm on the 1st July. Brian raised this with me in a side room prior to entering the main meeting discussing ventilation, which was primarily focussed on the snagging and rectification of the issues related to the theatre ventilation systems.

10. The email briefing provided to the Chief Executive on behalf of the Nurse Director and myself on the morning of the 1st of July 2019 (reference Documents 7.2_0006 and 7.2_0005) **(A36078221 – Document detailing water and ventilation issues in RHCYP and DCN dated 1st Jully 2019 – Bundle 13 Vol 3 – Page 692)** about the situation states that no written report on the isolation rooms or critical care had been received. Various other emails support the position that there was ongoing work to address issues raised, concentrating on the delivery of ventilation in theatres, but with the expectation of sufficient evidence of progress to support the planned move.

11. The email from myself to Jacquie Campbell (Chief Officer for Acute Services) and Professor Alexander McMahon (Nurse Director) copied to the Chief Executive dates 6 July 2019 with reference **(A40987019 – Email from Tracy Gillies to Jacquie Campbell et al on bed configuration at RHCYP and DCN – Bundle 7 – Vol 3 (of 3) – Page 141)** relates to requests from officials in Scottish Government for an exact timeline about who knew what when came at the end of a week of intense pressure. The executive team had spent two days considering whether this move could occur, and whether rectification of the issues could occur while the building was partly or fully occupied (i.e. actions which would have allowed the move to continue). We were then faced with the need to reverse the planned move, while providing support to staff who understandably wished to be fully briefed about the reasons for the decisions made, all in a context where communication was clearly categorically owned by the Scottish Government. We were instructed not to provide information to staff until Scottish Government had made announcements, and needed to support staff then to undertake a myriad of actions to reinstate care within the existing facilities and re-book appointments etc. This generated a significant level of pressure. While I fully appreciate the need to understand in detail the course of events that had led to this point, (namely the number of air changes in the critical care ventilation not being understood until very

close to the time when the move was due to take place), it felt the more important thing to concentrate on, on the day the e-mail was sent, Saturday 6th July, while preparing for teleconferences with Scottish Government, were the actions to ensure that safe care of patients could continue, and that staff were adequately supported.

Oversight Board/ Executive Steering Group

12. The Scottish Government's Oversight Board was set up to provide assurance to the Scottish Ministers on the work and readiness of the new facilities to open, it involved colleagues from National Services Scotland (NSS) and Scottish Government officials so that the work undertaken could be considered in detail prior to the provision of assurance to the Cabinet Secretary. Susan Goldsmith (NHS Lothian's Director of Finance), Professor Alexander McMahon (NHS Lothian's Nursing Director) and I were members of the Oversight Board. I did not provide any communication or briefing directly to the Cabinet Secretary directly, my communication was always with officials.

13. Overall, the work of the Oversight Board was constructive. Its meetings were preceded by an internal NHS Lothian group (Executive Steering Group) to undertake preparation for discussion of items at the Oversight Board.

14. The Executive Steering Group formed from the Incident Management Team set up in the first week of July, the incident in question being the migration of services to the new hospital and the rectification of ventilation issues. I believe this meeting was renamed as the Executive Steering Group from the beginning of September 2019. Its membership comprised Executive Directors of NHS Lothian, and project team members. It met weekly initially. I brought no specific expertise to the group but undertook to support the work on issues related to water, ventilation and drainage identified in the first NSS review **(A41347576 – NHS Lothian RHCYP & DCN Review dated August 2019 – Bundle 13, Vol 7, Page 1170).** In undertaking this work I relied heavily on the Project Team, and the Infection, Prevention and Control Team, both of whom had detailed technical knowledge which I did not

have. External Technical advisers and Authorising Engineers were also present at a number of the workshops supporting consideration and completion of actions.

15. The main concerns identified were a demonstration that the water system was installed adequately, was being maintained adequately prior to occupation of the building, and that this was understood by Bouygues, the company providing Hard FM services in the building. A number of issues related to the ventilation system and its performance in theatres as well as specifics relating to the air handling units supplying the ventilation were important to address.

16. Mary Morgan was appointed as the Senior Programme Director on 12th September 2019. I had no role in the preparation of the Senior Programme Director's reports so am unable to comment on the Red, Amber, Green status of her reports.

Water

17. We were made aware of issues at the Queen Elizabeth University Hospital (QEUH) in Glasgow through media coverage and informal discussion during the assessment phase of the new building in summer 2019. Comments were made by Health Facilities Scotland colleagues, and by authorising engineers, most particularly regarding the water system. It was apparent that this had influenced the approach being taken by NSS, the separate reports they commissioned from an expert and the content of their report. NHS Lothian undertook actions to address these concerns and these were discussed at the Executive Steering Group and the Oversight Board.

18. The Authorising Engineer for water had made it clear that it is an important lesson to learn that once the water system was filled, outlets should be run regularly to avoid standing water and limit the generation of biofilm. We took specific care to instruct Bouygues (Hard FM Contractor) to provide evidence that this was carried out at the appropriate frequency.

19. We subsequently arranged a discussion meeting with colleagues from NHS Greater Glasgow and Clyde ('NHS GGC') and NHS Lothian, and both Infection Control Teams. It was particularly useful to highlight the approach that they had taken over a number of months in working to assure the quality of the water provided.

20. I recall that regarding the actions following from the review by NSS of the water ventilation and drainage systems, the length of the shower hoses, identified by NSS as a breach of local bylaws, was the most difficult to address and this may have contributed to the status of outstanding actions.

21. I played a contributory role in progressing the actions identified from NSS reviews, of which there were various, to ensure the project facility was considered to be fit for occupation. This was in my role as the Executive Medical Director, and without technical expertise.

22. The NSS Water report was written by NSS and I had no input into that report. My input was into the NHS Lothian response to the NSS report.

NHS Lothian escalation to level four

23. I had no part in the decision to escalate NHS Lothian to level four of the escalation framework. This is a decision entirely remitted to the Scottish Government. I understood this decision to be a consequence of the issues identified with the building.

NHS Scotland Assure

24. I am familiar with NHS Scotland Assure which was formed after 2019 from Health Facilities Scotland and Health Protection Scotland. I have listened to presentations from NHS Scotland Assure about their purpose and function. I have raised questions to ask that increased clarity is brought to the distribution of accountability between individual boards and NHS Scotland Assure, for any future

situations where the suitability or otherwise of a building is subject to review and challenge. That clarity should cover the corporate governance responsibilities of the territorial board and NHS Scotland Assure's role as part of NSS.

SA2 and further delays

25. Given both the complexity of the rectifications to ventilation required and the legal, contractual and commercial issues associated with this, I do not consider it surprising that there was considerable delay to the opening of the hospital.

26. I am not able to pass comment on the conduct of Multiplex other than in meetings on 28th June and 1st July 2019 when they participated constructively in telephone conferences.

27. The Commercial Sub-Group update prepared by Susan Goldsmith on 30 October 2019 with reference **(A34194259 – Oversight Board Papers – 31st October 2019 – Bundle 3 – Page 378)** was not written by me, and I made no significant contribution. It may have been sent to me for comment but I was not involved in its production.

The Royal Hospital for Sick Children (RHSC) / DCN at Western General Hospital

28. I am not aware of any material change that occurred to the fabric or function of the RHSC at Sciennes in the last week of June and July 2019 that would have altered the environment for safe patient care when it was required to continue after July 2019. During July and August 2019 minor upgrading work and decoration was undertaken to restore as much as possible the environment for patients and families. Similar work was undertaken at DCN on the Western General site.

29. The change of ward area between neurosurgery patients and neurology at the DCN at the Western General Hospital continued along with the cessation of in-patient video telemetry work given the existing concerns regarding the water quality for augmented care patients. Neurosurgery major cases remained reduced to five cases per day.

30. I understand the ventilation systems in both hospitals were as the guidance when the buildings were built and commissioned.

Phased migration

31. Decisions about migration were taken by the Scottish Government after receiving assurances from the Oversight Board, and the Senior Programme Director. Factors that required to be taken into account were the impact on services, including identifying which services were able to be moved, and associated impact on existing services on the Little France campus site, together with the impact of the COVID pandemic. Concerns were certainly raised by colleagues principally in anaesthesia and critical care proposing that the Department of Clinical Neurosciences might remain on the Western General campus. This failed to account for the concerns regarding water safety which resulted in reduced clinical activity, and the wider concerns about similar issues in ward 20 (Critical Care at the Western General) whose footprint would require to be reduced in order to address these.

32. While colleagues in clinical practice were concerned about the impact of the move of neurological services, particularly neurosurgery into the critical care areas at the time as the first wave of the pandemic was completing, it was not clear how long the duration of the pandemic would be or the pattern it would follow. Therefore, it was important to progress to move services as critical care numbers fell, prior to the next wave or a deteriorating position related to winter. Phase one of the DCN move consisted of moving those services that could be moved without an impact into critical care as soon as the building was ready for them to occupy.

33. Phase 2 comprised those DCN services who may have required critical care input as this depended on a reduction in COVID activity in critical care at little France.

34. The reason for prioritising the move of DCN was that the position of the works facilitating the occupation of DCN in the new facility meant that this part of the building was ready to occupy and the infrastructure and facilities were considerably

improved compared to those in the old DCN. The areas moved as soon as the areas for them to occupy were ready, and the go ahead was given by the Oversight Board for the move to take place.

35. There were some physical modifications to departments that were carried out reflecting changes in clinical practice during COVID, and which were judged to be important to continue, namely working within rooms with doors in the Emergency Department in the RHCYP. There were some changes to the anaesthetic rota, and cover arrangements required to recognise the subspecialty practice and training needs for individuals working particularly within anaesthesia.

Reflection

36. The actions taken to remedy the defects during this period have been adequate and effective. Additionally, there have been enhancements to the building beyond the additional ventilation works which are beneficial.

37. I believe the hospital is now providing the service it was designed to do, and that all defects have been remedied, and I believe it provides a safe environment for the care of patients and visitors.

38. There are always aspects where one might consider a different course of action but no decisions or actions were undertaken by me individually.

Declaration

39. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

SCOTTISH HOSPITALS INQUIRY

Hearing Commencing 26 February 2024

Witness Bundle

Volume 1

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