Scottish Hospitals Inquiry
Witness Statement of

Edward McLaughlan

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

Witness Notes

Note 1: I have provided a witness statement dated 9 May 2022 to the Scottish Hospitals Inquiry which reflects my knowledge of the general principles of hospital ventilation, technical guidance, Scottish Health Technical Memorandum 00 and 03-01(SHTM 00 and SHTM 03-01), Scottish Health Planning Note 04 (SHPN 04), and documentation for tenderers.

Note 2: Having retired, I no longer have access to NHS NSS records. For this reason, everything below should bear the caveat “to the best of my recollection”. The inquiry team provided me with over 2000 pages of information to refer to for this statement, however for a number of reasons the time available has been insufficient to closely read this quantity of documentation. In an effort to meet the timescale, I have scanned and searched the documents, and whilst I have good confidence that I have picked out all salient information, this is not the level of thoroughness applied to my previous statement above. In addition, I am aware that some of the answers below may not be as full as they would have been if I was still working for NHS NSS and had access to their records. Where my memory of an event is not clear, I have not surmised and have referred the Inquiry to the appropriate written records.

Professional History

1. Please list your professional qualifications, with dates. Please give your chronological professional history, roles held, specialism, etc, and any update since you last spoke to the Inquiry. Please provide an up-to-date CV to assist with answering this question.

A. I retired on 31 March 2023. From 19 April 2022 I was seconded to NHS Lanarkshire to work on the project to replace Monklands hospital and my role was to help the project team to provide assurance of compliance with all appropriate standards and guidance in scope for NHS Scotland Assure. Prior to this date I was an Assistant Director of Health Facilities Scotland, having held that post since 2006. Health Facilities Scotland provides support to the health service in Scotland on matters that relate to the design, operation, maintenance, and disposal of its buildings. It is part of NHS National Services Scotland ("NSS") which is a National Health Board providing support to the NHS in a diverse range of topics. NSS is part of the health service. Since the creation of NHS Scotland Assure in 2020, Health Facilities Scotland is now part of NHS Scotland Assure, which in turn is part of NSS. I led a team of approximately 40 national leads and advisors to deliver a diverse range of services including developing national strategies and change programmes to deliver safe, effective healthcare facilities. I was accountable for various services including estates elements of infection prevention in the built environment, research, statutory compliance, critical engineering services (water systems, ventilation etc), medical device safety and sustainability. To provide perspective on the level of resource available to support NHS boards during the period the Inquiry is considering, i.e. 2009 to 2019, the resource available in engineering has been one member of staff across all health boards. I fulfilled a similar role to this during the 1990s for HFS' predecessor organisations, but not during the period the Inquiry is considering, i.e. 2009 to the present. At this time that role of Principal Engineer was filled by Ian Stewart and then Ian Storrar. Ian Stewart was a temporary member of staff who fulfilled the role between two permanent members of staff; Lex Campbell, who left the role in 2011, and Ian Storrar who came into the role in 2015. I was a member of the directorate management team for NHS Scotland Assure and have played a part in the development of that service from its inception. NHS Scotland Assure was formed to ensure that the buildings NHS Scotland builds and operates are compliant

with appropriate standards and guidance. It was launched in shadow form in late 2019 and full form in Summer 2021. When NHS Scotland Assure launched, Health Facilities Scotland was encompassed in it and therefore my role with Health Facilities Scotland and with NHS Scotland Assure were one and the same thing. Prior to my assistant director role, I was a director of NHS Scotland Property & Environment Forum Executive from 2002 to 2006. This is the organisation that became Health Facilities Scotland. Before this, the same service was called the Healthcare Engineering & Environment Unit, where I was Principal Engineer, providing the Health Service with technical advice on engineering and environment issues. I came to the Health Service from Winton Caledonian, a ventilation and water hygiene consultancy, where I was a Principal Engineer from 1993 to 1995. Prior to that I held posts in the Property Services Agency, which managed the non-health government property portfolio, and in the British Merchant Navy, serving as an engineering officer. I have the following academic qualifications and membership: MBA - Master of Business Administration (1996) BEng (hons)
- Bachelor of Engineering with Honours, Environmental Engineering (1991) CEng - Chartered Engineer (1993) MIHEEM – Member of the Institute of Healthcare Engineering and Estate Management (1996) I have a Bachelor's degree in Environmental Engineering. Environmental in this case refers to the built environment and thus the degree is in building services such as heating, lighting and ventilation. Therefore, I have qualifications relevant to ventilation but I would not class myself as an expert in healthcare ventilation as I have not spent the majority of my career working on this topic.

Involvement with QEUH

2. When did you become involved with issues at QEUH and in what capacity?

A. At any given time, my team would have been involved with multiple issues in multiple health boards. NHS NSS will have records giving exact circumstances and dates, however, all involvement in the issues of relevance to the Inquiry came after NHSGGC started managing these issues. From memory; for the issue of higher

than expected microorganisms in water samples, we were contacted by colleagues in HPS for support in advising NHSGGC in relation to their water systems.

Regarding the advice on Horne Optitherm taps, I think we were invited, along with colleagues from HPS to be part of a group working on options for these already purchased taps in light of recently revised guidance relating to measures to minimise the risk of Pseudomonas contamination. This was the only involvement during the construction phase. For the possibility of Cryptococcus contamination within plant rooms and ventilation systems, I am not sure whether we were contacted by NHSGGC or HPS for support. I can't remember how we were contacted about the move of adult BMTU into QEUH, but the paperwork supplied by the Inquiry involves correspondence and a meeting with Peter Moir. The role of my team, as with all of Health Facilities Scotland, and later, NHS Scotland Assure, was to provide support to health boards across Scotland on Estates and Facilities matters. This was carried out through the production of national guidance, provision of training, and direct advice on request. My role was as Assistant director, with responsibility for Engineering, Sustainability, Decontamination, Medical equipment safety notices, Research and several other issues. In relation to my understanding of the objectives of the Inquiry, the relevant part of my team would be engineering. During the period being considered the staffing was one Principal Engineer, with one additional temporary engineer for part of the time.

3. What was your understanding of the issues?

A. HFS's role was to provide support to Health Boards in relation to estates and facilities, particularly in relation to the interpretation of national guidance. Issue one was, NHS GGC was finding high bacteria counts in water samples. I think they contacted colleagues in HPS, who, when they understood the engineering implications, asked for support from HFS. Issue two related to concerns raised by NHSGGC about the possibility of bird droppings in a ventilation plant room being drawn into the ventilation system and infecting patients and HFS was asked for support by NHS GGC. The third issue would be when we were contacted because NHSGGC had decided to move bone marrow transplant patients into QEUH and were concerned that the design of the building did not provide sufficient space for the necessary ventilation services.

4. What advice and/or action, if any, was given/taken by you

A. Myself and my team attended numerous meetings in relation to issues at QEUH, answered numerous phone enquiries and in some cases, produced written advice. NHSS Assure will have records of any advice given in writing. I do not clearly recall any advice given orally.

5. To whom was any advice given, and was it acted on?

A. In each case, advice will have been given orally to the NHSGGC staff involved. Where advice was given during meetings, this will be minuted and NHSGGC should be able to provide these minutes. Where a report was produced, NSS will have records of the routes of communication. To the best of my knowledge, all relevant information has already been provided to the inquiry.

6. Which issues did the advice and/or action relate to?

A. Any advice given will have related to the issues above. If you would like any information on other issues, please clarify.

Please refer to (A47069198 – Hearing commencing 19 August 2024 - Estates Communications – Bundle 12.)

Adult BMT Unit, Ward 4B - 2015

7. When did you become aware of issues arising in relation to Ward 4B, the Adult BMT Unit? What was your understanding of the issues?

A. The relevant records have already been provided to the Inquiry when I was working for NHS NSS. As I no longer have access to these records, and as my memory would not be sufficiently reliable, I can only rely on the documents provided by the Inquiry, which indicate an email exchange and meeting with Peter Moir of NHS GGC (bundle 12 p744 – 746). I would be happy to do my best to respond to more specific questions.

a) What recommendations, if any, were made by you?

A. After the initial meeting, I asked Colin Clarke, an engineer in my team, to support the board. For the avoidance of confusion, Colin Clarke was employed as an Energy Manager in the Sustainability team, but as a Chartered Electrical Engineer, and given the lack of other resource, he agreed to support this work. NSS will have records of any advice given and these will already have been provided to the inquiry. My memory would not be sufficiently reliable to answer this further, although I would be happy to do my best to respond to more specific questions.

b) What action, if any, was taken by you?

A. Our only action would have been to advise Board staff in relation to their questions.

c) To what extent were the recommendations and/or action effective?

A. HFS has no remit to follow up on the implementation of any advice given as the actions taken are the responsibility of the Health Board.

8. Were you involved in the decision to decant Ward 4B to the Beatson? If so, please give details.

A. This would have been a clinical decision. Whilst HFS advice may have been considered, HFS was not involved in the decision.

Please see (A34466659 – Email Chain from David Wilson, Brookfield Multiplex to Peter Moir, NHS GCC – subject 'QEUH Ward 4B – Services Drawings' dated 24th December 2015 to 13th January 2016 – Bundle 12, page 745)

9. Please give details of the meeting which took place between you and Peter Moir on 23 December 2015.

a) Who organised the meeting?

A. I don't recall, at this remove, how we became involved in the board's considerations of ward 4b. Any relevant paperwork will already have been provided to the Inquiry whilst I was working for NHS NSS. From memory, I was involved in initial

discussions and then asked Colin Clarke from my team to provide support. Colin and I will have discussed the issues and I will have seen any written advice before it was provided. Although I do not have the details in memory, I am likely to be more able to comment when presented with written records.

b) Who was present?

A. Sorry, I don't remember.

c) What was the purpose of the meeting?

A. I think this would have been to discuss the implications for ventilation of the move of adult BMTU into QEUH, but my memory of this is not good.

d) What was discussed?

A. As above.

e) What was proposed and/or agreed?

A. We were asked for support and agreed to help. From the papers supplied by the Inquiry, it appears I agreed to have drawings reviewed. The work of supporting the board in relation to Ward 4b was done by Colin Clarke of my team.

10. Why were you sent the as-built ventilation drawings for Ward 4B?

A. Whilst I don't recall specifically at this time, this is likely to be related to the fact that the ward as built was not intended to house a specialised service such as bone marrow transplant, and as such, the existing ventilation would not be suitable.

11. What did you do on receipt of the drawings?

A. I believe I asked Colin Clarke of my team to review them and support the board.

12. If you examined the as-built ventilation drawings, what conclusions did you draw from them?

A. I don't think I examined them personally, although I am likely to have discussed his findings with Colin Clarke.

13. If another person examined the as-built ventilation drawings, who was that and what information did you receive from them, if any?

A. This is likely to have been Colin Clarke from my team. I remember asking Colin to support the board with this issue, but I am not sure at which point relative to these drawings.

14. What recommendations and/or action did you make/take?

A. I no longer have access to NSS records, however, NSS will have records of any written advice given.

15. To whom were any recommendations made, and were they acted on?

A. NSS will have records of any recommendations made and these are likely to have been supplied already. HFS had no remit to monitor the implementation of any advice given.

16. To what extent were the recommendations and/or action effective?

A. HFS had no remit to monitor the implementation of any recommendations. Responsibility for the management of its facilities lies with the Board, and HFS is a source of advice.

17. When did you become aware that Ward 4B did not comply with SHTM 03-01?

A. SHTMs are guidance and it is for those using the guidance to be able to demonstrate how they achieve appropriate safety. Guidance is not necessarily the only way of achieving safe effective premises and is there to be interpreted in light of the circumstances prevailing. From memory I think I was aware through conversations with colleagues that the board's approach did not follow the guidance completely, however I was not involved in evaluating the safety of the approach taken. I also don't have any records, or recollection, of when I became aware of this; however, this would have been through discussions with Colin Clarke when he was supporting the Board.

18. Would you have expected the design of the ventilation system to comply with SHTM 03-01?

A. For context, SHTMs are not standards, they are guidance. They are intended to support those designing, building and operating healthcare facilities in complying with requirements placed on them by legislation, policy or contracts. In the case of QEUH, I have been told, but have not verified, that they were specified in the contract, which would make them a contractual requirement. Health boards, in my understanding, have an obligation to provide an appropriately safe environment for patients. Following national guidance may be interpreted as a means to achieve this, however, there is no obligation on boards to comply with guidance if they can deliver on their obligations another way. In the case of ward 4B, the construction requirement was not for a bone marrow transplant unit, which to my mind would mean there is no compliance issue in regard to the original construction. I am not aware of the contractual arrangements for the modification to accommodate BMTU, but SHTM 03 01 places no obligation on the health board by itself. The obligations on the health board would have been in relation to Health and Safety legislation in addition to any government requirements. From a Health and Safety law perspective, the guidance might be seen as industry best practice, but this is not my area of expertise.

19. Would you have expected to be told if the ventilation system did not comply with SHTM 03-01?

A. HFS had no remit to police the decisions made by health boards. It would not be unusual for a board not to tell us where a facility did not comply with the guidance, unless they were looking for support on whether the solution chosen provided an appropriate level of safety.

20. To what extent were you aware of discussions around the ventilation specification?

A. I was aware through discussions with my team, supporting the board that the space within the QEUH building was insufficient to contain the ducting required for the air supply advocated by the guidance. Likewise, I understand the plant room did not have sufficient space for the necessary air handling plant. HFS will have advised on the best options for compliance with the intent of the guidance and may have sourced subject matter expertise. HFS had no remit to design, or sign off the solution. It is for those designing the solution to be able to demonstrate that they provided appropriate safety.

21. If you were aware, what were the discussions about?

A. At this point, it is difficult to be precise, however discussions did involve the difficulty in achieving the ventilation rates necessary for the facility in a building not designed to house the plant or ductwork.

22. To what extent were you aware of the ventilation specification for the various wards, following the move to QEUH?

A. Other than the initial request for support, I was one step removed from the discussions and would only have been aware of such details as came up in discussions with my engineer Colin Clarke. I was aware that the space available within QEUH was insufficient to accommodate all the equipment and ductwork to deliver a design compatible with that recommended in the national guidance. I was also aware of discussions around the lack of ventilation in the corridor, and the ceiling vent grilles where piped gases were present.

Emerging issues with the water system – 2018

Please see (A43119719 – Email Chain from Mary Anne Kane, NHS GGC to Ian Storrar, NHS NSS and others – subject 'QEUH & RHC – Water System Test Results' dated 23rd to 24th April 2018 - Bundle 12, p926) and

(A43119657 – Email Chain from Mary Ann Kane, NHS GCC to Edward McLaughlan, NHS NSS AND OTHERS -SUBJECT '[Blocked URL][External to GCC]' Dated 3rd April 2018 - Bundle 12, page 922)

23. What can you tell us about emerging issues with the water system?

a) When did the issues arise?

A. As above, I do not have access to NHS NSS records beyond those supplied to me by the Inquiry, and all relevant information was supplied to the Inquiry when I was with NSS. We were invited, I think through colleagues in HPS, to help support NHS GGC with issues relating to bacterial contamination of the QEUH water system. We attended meetings of the Incident Management Team and the Water Technical group. Representation from HFS was by Ian Storrar, with me covering when Ian wasn't available, or when the situation required. These meetings were minuted and NHS GGC will have supplied minutes to the Inquiry.

b) What was the nature of the issues - specifically what was thought to be wrong with the building system in question?

A. Water tests were showing higher than expected levels of various bacteria in various parts of the system.

c) At what stage did HFS become involved?

A. I don't have this information in my memory, however all relevant documentation has been supplied to the Inquiry. From memory, NHSGGC had been dealing with the high counts and informed HPS, who then involved HFS.

d) What was the nature of the risk posed to patient safety and care?

A. This question is outwith my expertise.

e) Was any action taken sufficient to address the concern?

A. HFS had no remit to monitor the actions taken by any health board. That said, understanding the nature of contamination in a large water system, is complex and multi faceted. I remember various actions, including shock dosing, thermal disinfection of taps, and the incorporation of Chlorine Dioxide dosing into the system.

24. Was HFS involved in any of the following issues:

a) Water temperature: problems with energy plants - hot water temperatures are not high enough to prevent/tackle bacterial growth.

A. I believe Ian Storrar was aware of the issue but I am not sure whether HFS was actually asked for support. Personally, I was aware of an issue, but the board was dealing with it through the contractor. I was not asked for any advice on this to the best of my recollection.

b) Thermal control design system.

A. I don't think I was ever close enough to the debate to have an understanding of the controls. I was however, told about times when the temperature of the water had been significantly below that required.

c) Debris in pipes

A. What we know of this issue is contained in the Water Technical report (HFS Water Management Issues Technical Review – March 2019) (A33448015 – Bundle 7, Document 4, page 70). It appears that the issue of protecting pipework on the construction site was raised repeatedly, possibly indicating poor compliance. The project supervisor would be able to give more detail.

d) Single room design - water outlets increased; flushing regimes; risk of stagnation.

A. What we knew of this issue is contained in the Water Technical report. (A33448015 – Bundle 7, Document 4, page 70)

e) Pipe size and storage volumes; encourages water stagnation

A. HFS had no remit to review the design, just the handover documentation and associated records.

f) Wet rooms and floor levels

A. I was aware of problems with mould, but had no involvement in the issue to the best of my recollection. I think I learned this was an issue from Ian Storrar, who may have had more involvement.

g) Drainage system

A. I am aware only of an issue with the retention of water due to faulty installation of wash hand basin drain seals. To the best of my recollection now, faulty installation of these seals at the outlet of wash basins caused water to collect, presenting a risk of contamination. I understand the manufacturer subsequently changed the design of this outlet.

25. Was HFS involved with Flow straighteners / regulators / tap type?

A. HFS was part of a group evaluating options to deal with already purchased Horne Optitherm taps in light of recent changes in guidance on water systems with respect to colonisation of outlets by Pseudomonas bacteria. I believe Horne's position was that their tap has an outlet fitting which is an integral part of the functioning of the tap, and not a flow straightener.

26. What is your understanding of the use and function of Horne taps?

A. Specifically the Horne Optitherm tap is a thermostatic mixing tap, which minimises the length of pipework at the temperature where legionella bacteria thrive, by moving the mixing function from an upstream valve to the body of the tap. The intention of mixing taps rather than upstream mixing valves is to minimise the risk of bacterial contamination. The design of this tap was slightly unusual, in that the outlet fitting was intended to retain water in the tap to minimise the air water interface, which is the route to contamination in some cases. Whilst this may make some intuitive sense, I don't believe I ever saw evidence of its effectiveness.

a) What concerns were there regarding the Horne taps?

A. Any concerns from HFS (and HPS) will have been minuted in the meetings where the board consulted with a range of advisors to make its decision about using the taps. When NHS GGC identified problems with the water system using these taps, we surveyed other boards in Scotland which had these taps in use. None reported any problems.

b) Were you aware of a meeting in June 2014 where Horne Engineering gave a presentation around why their taps prevented the creation of biofilm, if used properly?

A. I was aware. HFS was represented by Ian Stewart from my team, now sadly deceased. My understanding of the discussions at the time would have come from discussions with Ian Stewart, and subsequently, when the board was dealing with contamination.

c) Do you have any comment to make on Horne Engineering's position?

A. I would be surprised by a claim as bold as "prevent" the creation of biofilm (see the question above), which seems like a tall order. It may be the case that the taps reduced the creation of biofilm. In a subsequent meeting of the water technical group, Horne made a similar presentation to explain the purpose and function of their outlet fitting. I don't think I saw any evidence that the performance of the outlet fitting had been validated from a bacteriological perspective.

d) Did Horne attend a meeting on 6 April 2018 in relation to the taps?

A. I think this may have been the meeting mentioned above, however the meeting was convened by NHS GGC and they will have any records. I did attend a meeting, which I think was the one referred to here, where Horne gave a presentation on their tap.

e) Were you at the meeting? If so, who was present, what was discussed, what was the outcome of the meeting?

A. Assuming this is the meeting mentioned above, I was present. I think the meeting covered a number of issues, with the Horne presentation being one, but I cannot recall what they were, or who was present. Again, NHS GGC should have a record of the meeting.

f) What recommendations were made or advice given? e.g. replacement taps?

A. Any recommendations made will be recorded in the meeting minutes.

g) To what extent was any action taken effective?

A. HFS had no remit to judge the effectiveness of any board's actions.

27. In relation to the water system contamination, how concerned were you, if at all, that it was more widespread than the taps?

A Given the findings in the Water Technical Report (A33448015 – Bundle 7, Document 4, page 70) that the pipework was not fully protected on site; the water system was filled without filtration, and was filled a long time before handover, and the system was disinfected prior to handover to get bacterial counts down to a level to permit handover, I would have seen it as unlikely that contamination was confined to the taps. At this point I can't say how or when I would have communicated that view, but there will be records.

Wards 2A and 2B – The Water Incident 2018

Please see (A43158827 – Email chain from Mary Anne Kane, NHS GGC TO Tom Steele, NHS NSS and others – subject 'IMT WATER INCIDENT RHC, NHSGGC' dated 14th to 16th September 2018 – Bundle 12, p938 to 940)

What can you tell us about the issues in Wards 2A and 2B during 2018, known as the Water Incident?

a) When did the issue arise?

A. Sorry, I don't have access to NSS records, although these have already been passed to the Inquiry. Although I would have been aware of the specific issues relating to wards 2A and 2B the water system serves the whole hospital and I would have been focussed on the system in general. My memory of the specifics in relation to these wards is unfortunately not clear at this point.

b) What was the nature of the issue - specifically what was thought to be wrong with the building system in question?

A. The board was getting higher than expected bacterial counts in water samples at various points in the system.

c) What was the hypothesis?

A. The hypotheses at various times will be recorded in the NHSGGC IMT minutes.

d) At what stage did HFS become involved?

A. Sorry, I don't have access to NSS records, although these have already been passed to the Inquiry. I believe we were asked to become involved by HPS, after the issue had been notified to them.

e) What was the nature of the risk posed to patient safety and care?

A. The answer to this is beyond my competence.

f) What action, if any, was taken?

A. The actions will be recorded in the minutes of NHSGGC's IMT and water technical group.

g) Was any action taken sufficient to address the issue?

A. HFS had no remit to judge this.

<u>The Water Technical Group</u>

Please see (A48808270 – Water Technical Group – Water Review Group Minutes
– Bundle 10, pages 92, 97, 139, 150, 166 to 171)

28. The Water Technical Group (WTG) Sat 2018 and 2019, and you attended several meetings as noted above: -

a) What is the purpose of a WTG?

A. The WTG's purpose will be detailed in NHSGGC records, however it dealt with technical issues, not considered to be suitable for the IMT.

b) What issue/ event prompted the setting up of the WTG, and what was the aim of the WTG?

A. To the best of my recollection the WTG was set up to move detailed technical discussions to a more appropriate group to enable the IMT to more effectively do its work.

c) How did HFS become involved with the WTG?

A. To the best of my recollection, HFS was involved in the IMT before the WTG was set up. Those providing technical advice were asked to serve on the WTG. I'm sorry, I don't recall exactly how this was done, but there will be records detailing this.

d) What was your involvement with the WTG?

A. Support for NHSGGC's WTG was provided primarily by Ian Storrar from my team, with me covering when he wasn't available. That support was on the same basis as any other support for this or any other board; i.e. advice on the interpretation of national guidance and sourcing of suitable expertise.

e) What was the focus of the WTG? What issues came to light?

A. This will be recorded in NHSGGC's minutes.

f) What concerns did the Group have and how did the concerns impact patients?

A. This will be recorded in NHSGGC's minutes. To the best of my understanding, the IMT remained the Board's primary vehicle and the WTG reported to the IMT.

g) What recommendations and/or action were given/taken as a result of HFS involvement?

A. This will be recorded in NHSGGC's minutes.

h) How did clinical staff and estates get along at these meetings?

A. To the best of my recollection, very well. Naturally, when each discipline was discussing the sometimes specialised aspects of their area, there would be limited crossover to other disciplines. That said, beyond the natural tendency to see issues from the perspective of ones area of competence, which is very common, I do not recall much difficulty between disciplines.

29. Was assistance sought from the Water Regulations Advisory Service (WRAS) during this period? If so

a) What assistance was sought?

A. This will be recorded in NHSGGC's minutes, however, I have no recollection of being involved in seeking advice from WRAS.

b) What recommendations were made by WRAS?

A. Any recommendations are likely to have been made in writing and NHS GGC should be able to provide.

c) Were the recommendations implemented. If not, why not?

A. I don't know what recommendations were implemented. HFS had no remit to judge this.

d) To what extent were any actions taken sufficient to address the issue

A. I don't know the sufficiency of any actions. HFS had no remit to judge this.

30. Was any report and/or Action Plan prepared by HFS in relation to the Water Incident? If so,

a) Who prepared the report?

A. During this work NHS GGC asked HFS to review the building handover documentation against what would be expected with regard to national guidance. This review led to the creation of the Water Technical Report (A33448015 – Bundle 7, Document 4, page 70), which the Inquiry has been given. This report was primarily written by Ian Storrar of my team. I reviewed several drafts and discussed it with him before signing off the final draft.

b) What were the report's findings?

A. These are detailed in the Water Technical Report.

c) What recommendations were made, and to whom?

A. These are detailed in the Water Technical Report.

d) Were the recommendations acted upon by NHS GGC?

A. I don't know if the recommendations were acted upon. HFS had no remit to monitor this. There were also recommendations for other parties, including NHS NSS, which did work through an action plan to address the issues identified.

e) If not, do you know why?

A. I have no knowledge of this. HFS did not have a remit to monitor NHSGGC's actions.

f) What was the consequence of recommendations not being acted on, if any?

A. HFS had no remit to judge this.

<u>The DMA Canyon Reports</u>

31. To what extent were you aware, if at all, of the DMA Canyon 2015 report?

A. I think I became aware of both DMA Canyon audit reports through discussions with Ian Storrar during the creation of the Water Technical Report (A33448015 – Bundle 7, Document 4, page 70).

32. To what extent were you aware, if at all, of the DMA Canyon 2017 report?

A. I think I became aware of both DMA Canyon audit reports during the creation of the Water Technical Report.

33. When did you become aware of the reports, who made you aware of them, and did you discuss them with anyone?

A. I think I became aware of both DMA Canyon audit reports during the creation of the Water Technical Report. Ian Storrar and I will have discussed them in broad terms as evidence for the Water Technical report.

34. Do you know why a risk assessment was not carried out prior to handover of the hospital in 2015? Do you have any views as to why this was not carried out?

A. I don't think I had any knowledge of why a risk assessment was not carried out prior to handover. I don't think I was close enough to the decision making to have clarity on why it wasn't carried out.

35. The 2015 Report made various recommendations, do you know whether these were actioned, and when?

A. The Water Technical report says there was no evidence of any action being taken.

36. What are your views on the findings of the 2015 Report? Do you agree or disagree with it? Please explain your rationale.

A. I no longer have access to this report, however, from memory it contained a number of recommendations to address findings in relation to the management and operation of the water system. Many, or most, of these related to deviations from that expected in national guidance. HFS' position at

the time was that the guidance was the accepted general approach of NHS Scotland bodies, having been accepted by the Scottish Engineering Technology Advisory Group (SETAG). Whilst I don't have the report and can't be specific about my views on the specific recommendations, my view generally is that in any case where the guidance, NHS or other, was not followed, those responsible should be able to explain why not, and how an appropriately safe outcome was achieved by the approach taken.

Cryptococcus 2019

Please see (A47175206 – QEUH Cryptococcus Sub-Group Minutes – Bundle 9, pages 5, 12, 16, 19, 25, 30, 71, 85, 95, 130, 141,163.)
Regarding your understanding of Cryptococcus infections at QEUH:

37. What is Cryptococcus?

A. This is beyond my competence.

38. Had you seen or heard of Cryptococcus in a healthcare environment prior to QEUH?

A. No

39. What were the issues with Cryptococcus at QEUH? When and how did you become aware of the issues?

A. My understanding is that Cryptococcus infections were found in patients and an IMT was set up to establish what happened and identify remedial actions. I no longer have access to NHS NSS records, and I am not clear whether we were contacted by NHSGGC or HPS for support, as the ventilation system might be involved.

40. How did HFS become involved with the Cryptococcus Infection Management Team (IMT) Expert Advisory Sub-Group?

A. As I understand it, the acronym IMT stands for Incident Management Team. As I say above, I think we were asked for support by HPS.

41. When did you join the Sub-Group? Discuss your involvement with the Group.

A. I no longer have access to NHS NSS records, and the NHSGGC minutes supplied by the Inquiry don't contain this information; however, from memory, we were invited to support the sub group, chaired by Dr Hood, at or near its inception. Support from HFS was provided primarily by Ian Storrar, with me covering when he wasn't available. When appropriate and available, we were both present.

42. Who were the members of the Cryptococcus IMT Expert Advisory Sub-Group?

A. NHSGGC will have records of this. I don't propose to copy parts of them into this statement.

43. What were the hypotheses regarding the Cryptococcus issue?

A. The hypotheses at each point will be recorded in NHSGGC's minutes, and in the final report.

44. What was your view on the hypotheses?

A. I was advising on specific aspects of the hypotheses, i.e. ventilation guidance. I was content that each hypothesis should be investigated and judged on the merits of the evidence available.

45. What was your hypothesis and the rationale behind it?

A. I was not close enough to the issue to have a personal hypothesis. At all times, I was working on NHSGGC's agreed hypothesis.

46. What recommendations were made and/or actions taken?

A. Any recommendations made will be recorded in NHSGGC's minutes. I have not replicated them here.

47. To what extent were any actions taken sufficient to address the issue?

A. I do not have a view on this. HFS had no remit to judge this.

48. Did the Group come to an agreement regarding the hypotheses surrounding

the Cryptococcus issue?

A. Hypotheses were proposed and investigated. During my involvement, I don't think I encountered significant dissent, however, I am aware there was disagreement in later meetings which I did not attend.

49. If not, why not? What were the consequences of the Group not agreeing?

A. I don't recall significant disagreement in the meetings I attended. I am aware there was disagreement in later meetings when the report was being produced, however I don't have clarity on what the disagreements were or the consequences.

50. Did the Group come to an agreement regarding the actions to be taken?

A. I understand later meetings, where I was not present involved a degree of disagreement, however I am not close enough to the issue to take a view.

51. If not, why not? What were the consequences of the Group not agreeing?

A. I don't have a view on this.

Report from the Cryptococcus Incident Management Team Expert Advisory Sub-Group

(Please see – A39235063 – Report prepared by Cryptococcus Expert Advisory Sub-Group dated 5 April 2022 – Bundle 6, page 1115)

52. Dr John Hood prepared a report concerning Cryptococcus within QEUH. Did you read the report? When did you read the report? What was your understanding of the report's findings?

A. I think I read some early drafts of parts of it, however I was less involved later in the process and I don't recall seeing the final draft. From reading the version supplied by the Inquiry, I do not remember reading this, although I would normally expect to read any report listing me as a member of a group. I note it was published at about the time I was seconded to NHS Lanarkshire.

53. What observations did you make on the report?

A. NHSS Assure and NHSGGC will have records of correspondence on this issue, to which I no longer have access. I believe the HFS / Assure records have been supplied to the Inquiry.

54. Did you agree with the report's findings? If not, why not?

A. I don't think I saw the final draft, or expressed a view.

55. Did HFS agree with the report's findings? If not, why not?

A. I was aware through discussion with Ian Storrar that there was some dissent from within NSS, however, I don't know how much was HPS or HFS, or indeed, how much was shared between the two.

56. What action was taken following the report's findings?

A. I am not aware of what action was taken as HFS had no remit to monitor this.

57. What else could have been done? What could have been done differently? If so, in what way?

A. Given my role in HFS I was not involved in the later meetings and the drafting of the report, and as such, I am not close enough to the issues to have a view on this.

58. What concerns, if any, do you have about the ways matters were dealt with, any action taken, or not taken?

A. Given my role in HFS I was not involved in the later meetings and the drafting of the report, and as such, I am not close enough to the issues to have a view on this.

59. What was your view on the pigeon population on the QEUH/RHC site?

A. This is beyond my competence.

60. What is your view on the pigeon contamination in the plant rooms?

A. I was involved in a visit to a plant room where bird droppings were visible on the plant room floor. There was discussion of the risk of contamination from here being drawn into the ventilation system and thus passed to patient areas. My eventual view on this was that, although there was a spigot at a damper on the upstream side of the air handling unit, any air drawn in here, even if airborne cryptococcus was present in the plant room would likely be small compared to the adjacent air intake, where all the air for the system is drawn from outside. Both the spigot hole and the fresh air intake were upstream of the filtration, which would have had the same effect on both. The filtration incorporated was of a type typically used for ventilation of a general ward, not a ward housing immunosuppressed patient.

Re-design of Ward 2A – 2019 Upgrade Works

61. To what extent, if any, were you involved in the re-design of ward 2A in or around 2019?

A. I don't think I was involved personally. I am not sure if my team provided any advice. If so, NHSS Assure will have records which will already have been supplied to the Inquiry.

62. If you were involved in reviewing the design, why was that?

A. I have no recollection of being involved in this.

63. Why were you reviewing the hospital ward 2A design?

A. I do not think I had any involvement in the review of the design for ward 2a.

64. What recommendations, if any, did you provide regarding the design?

A. I think none.

Documents for the witness Edward McLaughlan

Bundle 12
Bundle 10
Bundle 9
Bundle 7
Bundle 6

1. A47069198 – Hearing commencing 19 August 2024 - Estates Communications – Bundle 12

2. A34466659 – Email Chain from David Wilson, Brookfield Multiplex to Peter Moir, NHS GCC – subject 'QEUH Ward 4B – Services Drawings' dated 24th December 2015 to 13th January 2016 – Bundle 12, page 745

3. A43119719 – Email Chain from Mary Anne Kane, NHS GGC to Ian Storrar, NHS NSS and others – subject 'QEUH & RHC – Water System Test Results' dated 23rd to 24th April 2018 - Bundle 12, p926

4. A43119657 – Email Chain from Mary Ann Kane, NHS GCC to Edward McLaughlan, NHS NSS AND OTHERS -SUBJECT '[Blocked URL][External to GCC]' Dated 3rd April 2018 - Bundle 12, page 922

5. A43158827 – Email chain from Mary Anne Kane, NHS GGC TO Tom Steele, NHS NSS and others – subject 'IMT WATER INCIDENT RHC, NHSGGC' dated 14th to 16th September 2018 – Bundle 12, p938 to 940

6. A48808270 – Water Technical Group – Water Review Group Minutes – Bundle 10, pages 92, 97, 139, 150, 166 to 171)

7. A47175206 – QEUH Cryptococcus Sub-Group Minutes – Bundle 9, pages 5,

12, 16, 19, 25, 30, 71, 85, 95, 130, 141,163

8. A33448015 – HFS Water Management Issues Technical Review – March 2019 – Bundle 7, page 70

9. A39235063 – Report prepared by Cryptococcus Expert Advisory Sub-Group dated 5 April 2022 – Bundle 6, page 11