Scottish Hospitals Inquiry
Witness Statement of Questions and Responses
Professor Tom Steele

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

Personal Details

1. Full name

A Thomas Steele

2. Occupation

A Director of Estates and Facilities

3. Qualification(s)

A HNC Construction Management, PgDip Construction Management, MSc Construction Management with Facilities Management. Fellow of the Royal Institute of Chartered Surveyors (FRICS). Corporate Member of the Chartered Institute of Building (CIOIB).

Professional Background

4. Professional role(s) at NHS GGC

A Director of Estates and Facilities

5. Area(s) of the hospital in which you worked/work.

A All NHS Greater and Glasgow premises.

6. Role and responsibilities within the above area(s)

A Executive responsibility for all estates and facilities services.

Specific role at NHS NSS

7. Describe YOUR role(s) at NHS NSS; job title and responsibilities including day to day responsibilities, and details of staff who reported to you, who you worked alongside and who you reported to. Please fully describe where the role is in the hierarchy of the organisational structure.

A Director of Facilities

The primary purpose of this post is to provide National leadership at a strategic level across NHS Scotland and to the Scottish Government along with support and advice on a diverse and complex range of infection prevention control, effective antimicrobial management, property, facilities management, environmental and capital planning services.

This includes the provision of regular policy advice and guidance to the Scottish Government and Ministers on a wide range of challenging and sensitive issues around the built environment and ensuring the highest levels of patient safety. The role also requires the assurance to Scottish Government and NHS Scotland of the mandatory application of policy, guidance, and legislation. The development of close and effective working relationships with stakeholders with the Scottish Government, NHS Scotland, Academic institutions and 3rd party subject matter specialists

To lead the development, implementation and ongoing management of NHSS Assure to ensure the successful delivery of objectives set by the Scottish Government, the NSS Board and the Strategic Business Unit.

As a member of the PCF Senior Management Team to contribute to the overall strategic objectives, direction and performance of NSS by leading on specific corporate programmes to support NSS in the discharge of its governance responsibilities and the delivery of NSS business.

8. When did you start YOUR role at NHS NSS?

A 1st May 2016 – 30th September 2018

9. What was YOUR involvement with the QEUH/RHC during YOUR time with NHS NSS?

A Some limited personal and team involvement with the “water incident” supporting NHS GGC with technical expertise where possible.

Specific Role(s) at NHS GGC

10. When were you appointed to YOUR role(s)? How did you come to be appointed, who selected you, what was the selection process, did you have previous working relationships with those who selected you?

A Through open competition on NHS Scotland recruitment portal the following were part of the selection panel - Jane Grant, CEO NHS GGC, Calum Campbell, CEO NHS Lanarkshire, Anne McPherson HRD NHS GGC.

For the purposes of the Inquiry, when answering the following questions please answer in the context of YOUR role as Director of Estates and Facilities for the QEUH/RHC, unless it is necessary to refer to YOUR role at Gartnavel to provide a full response.

11. Describe the role of Director of Estates and Facilities.

A As a member of the Corporate Management Team (CMT) and reporting directly to the Chief Executive, the Director of Estates and Facilities plays a key role in the strategic and operational direction of NHS Greater Glasgow and Clyde, with the purpose of delivering high quality, patient focused care within the resources available. The post holder will act as the lead for the Board’s Capital Planning function and the Board’s Property and Disposals Strategy.

The post holder will have responsibility for managing the Board’s procurement function with an emphasis on delivering value for money in compliance with relevant European and national procurement legislation.

The post holder leads on the overall facilities management strategy, policy and project delivery, aligned to the corporate objectives of NHS Greater Glasgow and Clyde. He/she will also ensure that all estates and facilities services are provided in a robust, reliable manner and perform to established quality and safety standards. The post holder will provide a high standard of leadership and guidance to the Directorate management team in delivery of its strategic and operational activities which incorporate:

- Property Strategy development and implementation
- Strategic disposals/acquisitions of land and other assets
- Capital planning.
- Asset Management and Estates Strategy
- Sustainability Strategy and Management
- Strategic and operational direction in relation Fire and Security arrangements of all premises
- Board wide procurement including the development and implementation of the Board's Procurement Strategy and emergent policies.
- Energy Strategy and Management
- Hotel Services (Inc. Catering, domestic, portering, transport, laundry and grounds/gardens)
- Waste management.
- Estates and maintenance management
- Supplies logistics and procurement
- TSSU/Decontamination and regional CSSD
- Health & safety in the built environment
- Operational management of leases/rents and other income generation projects
- Planning and delivery of revenue funded significant projects within the Health and Social Care community.
- Delivery of contracts where the NHS Board is the supplier of Facilities Management services to external organisations.

The Director will work closely with key decision makers in clinical and non-clinical services to identify, recommend, develop, implement, and support cost-effective facilities services for all aspects of the organisation.

This is an Executive post, which interfaces at Board level across the organisation and beyond in the influencing and development of regional and national strategy. This includes ensuring NHS Greater Glasgow and Clyde is represented on national groups and plays an important role in the emerging regional work.

12. What are YOUR duties in this role?

A See JD

13. Who do you report to in this role? Detail superiors/superiors for this role.

A Chief Executive

14. What is YOUR relationship like with YOUR supervisor in this role.

A I have no issues with my supervisor.

15. Provide details of staff who report to you, and you are responsible for in this role, and YOUR relationship with them.

A **2018**

Tom Steele – Director - Estates and Facilities -

- Mary Anne Kane – Associate Director – Estates and Facilities
- William Hunter – General Manager Facilities
- Stephen Wallace – Head of People and Change
- Karen Connelly – General Manager Facilities (South)
- Jonathan Bryden – Head of Finance (Facilities)
- Scott Young – Corporate Lead (Facilities)
- Rosie Cherry – General Manager (Partnerships)
- David Pace – General Manager Facilities (Clyde)
- Alan Gallacher – General Manager (Estates)
- Gordon Beattie – Head of Procurement

- Heather Griffin – General Manager Capital
- Hazel McIntyre – General Manager Capital
- Alan Stewart – Head of Service, Decontamination

2019

- Mary Anne Kane - Assistant Director, Facilities (Clyde)
- William Hunter - Assistant Director, Facilities (South)
- Karen Connelly – Assistant Director, Facilities (North)
- Gerry Cox - Assistant Director, Estates and Property
- Mark Riddell – Head of Operational Estates
- Rose Cherry – Head of Performance and Quality
- Jonathan Bryden - Head of Finance
- Stephen Wallace – Head of People and Change
- Scott Young – Head of Corporate Services
- Gordon Beattie – Head of Procurement
- Christine Lees-Young – Deputy Head of Procurement
- Heather Griffin – General Manager Capital
- Alan Gallacher – General Manager Estates
- Lynsay Gracie – Head of Decontamination

Currently

- William Hunter – Deputy Director Estates and Facilities
- John Donnelly – Programme Director – Major Projects
- Hazel McIntyre – Project Director – Special Projects
- Mark Riddell – Assistant Director Operational Estates
- Gordon Love – Head of Property and Asset Management

Direct line management relationship and excellent working relationship

16. Provide the name and role of any managers you work with. Please provide their job (s) and role responsibilities.

A As above but will have working relationships with many of the E&F management team as well as peer groups.

17. How is work delegated in the Estates team?

A Work will be split between demand driven and planned maintenance for operational estates as well as planned improvements through minor, or major capital teams.

18. How do you keep a record of work delegated?

A Maintenance activity is recorded through FM First CAFM system, or where necessary paper records. Capital schemes will be managed using proprietary project management software.

19. How do you check that the work delegated has been carried out?

A From direct reports on 1:1 basis. Through formal progress reporting and as part of annual Personal Development Plan.

20. Do you or have you previously had any concerns about any member of staff? If so, please describe these concerns. What action, if any, did you take in relation to these concerns?

A No

21. Have you ever had any concerns/ ever raised any concerns regarding management/ managers? If so, please describe these concerns. What action, if any, did you take in relation to these concerns?

A No

22. Describe the interpersonal relationships within the Estates team. How would you describe communication between you and YOUR supervisor(s)/ superior(s)? How would you describe communication to you from those you senior to you/ supervised you?

A Interpersonal relationships and communication within the E&F management team are good, there is a good team ethos. I have a good, open relationship with my line manager.

23. How many occasions, if any, did issues arise caused by misunderstandings or poor communication?

A N/A

24. How many people worked within QEUH hard facilities management when you started? How many people worked within QEUH soft facilities management when you started? Has the number of people working at QEUH change during YOUR time there? If so, how many people changed in soft facilities management? If so, how many people changed in hard facilities management?

A **Soft FM** in 2015: 639, 2023/24 659
Hard FM in 2015: 86, 2023/24 85 + 44 specialist contractors.

25. How do Estates management operate on a daily basis? Is responsibility shared between different teams? If so, to what extent is responsibility shared?

A The estates team are split into different areas of work through formal AP/CP structure, e.g., plumbing, mechanical and electrical engineering.

26. Refer to the Estates Team Bundle, document 29 - Organograms showing the organisational structures within QUEH.

a) Does the organogram match the organisational structures of QEUH?

A No

b) If not, why not?

A This Organogram is a board wide Organogram and is not specific to QEUH.

c) How does the structure and hierarchy operate across the different sectors?

A The structure is now consistent across all sectors.

Training

27. What training had you undertaken for YOUR role(s) in estates?

A Some specific estates training over a number of years but limited whilst in more senior roles.

28. What qualifications did you have for YOUR role(s) in estates?

A See above

29. What experience did you have working in estates prior to the QEUH/RHC? How similar was the industry, role, and responsibilities to YOUR work in QEUH/RHC estates?

A 38 years' experience of working in NHS Scotland in a x3 territorial health boards as well as national role.

30. Did you have any formal training or qualifications in respect of:

a) Water

A No

b) Ventilation

A No

c) Infection Control

A No

If so, please detail above any training and qualifications – when trained? When qualified? Who was the awarding body? Please describe how the training and qualifications applied to YOUR work at QEUH.

A N/A

31. Have you ever had any specific roles or duties in relation to the water systems operation or maintenance within NHS facilities? When did you have these roles and duties?

A No records held of previous awareness. A refresher session in May 2024

32. If you did:

a) What were these responsibilities?

A Duty holder in line with SHTM/HSE guidance

b) What was the purpose of these responsibilities?

A Duty holder overview

c) Were you aware of any specific legal responsibilities/ obligations relating to working with the water systems. If so, please detail.

A COSHH, L8

33. If you did not have any such roles or responsibilities in relation to the water systems operation or maintenance within NHS facilities:

a) Who did?

A N/A

b) What were these responsibilities?

A N/A

c) What did you understand the responsibilities to be?

A N/A

d) Were you aware of any legal obligations/ responsibilities? If so, please detail.

A N/A

34. Have you ever worked on a large-scale water or ventilation system before? If so, when was this? How did this compare to working on QEUH? What was YOUR role and duties?

A Have been responsible for the design, procurement, installation, commissioning and maintenance of varying sized healthcare facilities. None were as large as the QEUH/RHC.

SG Gateway Review Team: January 2008

35. We understand you were involved with the SG Gateway Review Team in relation to the new build, policy and delivery of the Queen Elizabeth University Hospital:

a) What was YOUR understanding of the remit of the SG Gateway Review Team?

A I think Gateway 1 review.

b) What was the extent of YOUR involvement with the Review Team?

A Gateway team member

c) Was any of the Review Team's work evident in the delivery of the QEUH/RHC project?

A I cannot recall, I was not involved with any further Gateway Reviews

d) Was any of YOUR input into the Review Team evident in the way the QEUH/RHC was delivered?

A N/A

e) Was any of the Review Team's work evident in the completed QEUH/RHC?

A N/A

f) Was any of YOUR input into the Review Team evident in the completed QEUH/RHC?

A N/A

g) Was any of the Review Team's work evident in the policy surrounding the delivery and completion of the QEUH/RHC?

A N/A

h) Was any of YOUR input into the Review Team policy discussions evident in the delivery of and/or final QEUH?

A N/A

i) Is there anything else from the SG Gateway Review Team relevant to the work being undertaken by this Inquiry?

A No

Documents, paperwork and processes in place as of 26th January 2015

We know that handover of QEUH occurred on 26th January 2015:

36. What contractual documentation would you expect to see in place at handover?

A All commissioning and validation information for MEP as well as Building Standards Completion Certification.

37. What was YOUR understanding of what contractual documentation was in place at handover? Do you have a view on the adequacy of this?

A From my review of records there is commissioning information, but where required there is no validation records. As built drawings are not universally available. I would consider this to be sub optimal to provide assurance on the performance of the MEP systems as well as having robust accurate records of what has been constructed and installed.

38. We understand you did not take up the role of director of estates and facilities at NHS NSS until May 2016:

a) At the commencement of YOUR role what was YOUR initial instruction in respect of the state of the QEUH/RHC campus?

A On commencement I was aware of a number of ongoing issues with some aspects of the hospitals, such as the DWS system and Ward 4B refit.

b) At the commencement of YOUR role what was YOUR initial instruction in respect of the repairs which had been undertaken and/or required to be undertaken?

A I was not given any instruction on previous repairs.

c) What is the current position regarding outstanding repairs and maintenance?

A The QEUH /RHC along with the GGHB in general operate a planned and re-active maintenance programme utilising internal labour and external contract labour for specialised and specific tasks such as Validation of ventilation systems, lift maintenance, medical gasses, water management and many other functions. There is a significant programme of works associated with the civil litigation case, the estimated rectification costs are c£185M.

d) What relevant paperwork were you provided with relating to the QEUH/RHC Campus?

A None

e) What were YOUR observations in terms of the extent of the remedial work required to the hospital?

A The remedial works were and continue to be extensive across a wide number of areas associated with the structure and fabric. This is disappointing given the hospitals were of recent construction.

f) What were YOUR observations in terms of the team dynamics?

A The team were split across different sectors and did not necessarily work as a cohesive unit. In addition, the team who were responsible for the project management delivery of the hospitals were no longer employed, this created a vacuum for information. There was significant tension in some areas, particularly the operational estates team who were dealing with a wide range of defects/repair requests as well as responding to the emerging hypothesis of the water incident.

39. We understand that you did not commence YOUR role as director of estates and facilities for NHS GGC until October 2018:

a) At the commencement of YOUR role what was YOUR initial instruction in respect of the water system at the QEUH/RHC? Who provided you with this information? Was there an official handover process? If so, who conducted this and was there paperwork involved?

A I did not receive specific instruction in regard to the DWS, see answer above. The instruction to undertake a more in-depth review was given by the NHS Board Chair and CEO. There was no handover process. My instruction was to understand more fully all issues associated with the construction contract/specification and what had been handed over. I then worked with former colleagues in NHS NSS to identify technical consultants who could provide an overview of the issues known at the time and also if there was any likely legal recourse.

b) At the commencement of YOUR role what was YOUR initial instruction in respect of the ventilation system at the QEUH/RHC? Who provided you with this information? Was there an official handover process? If so, who conducted this and was there paperwork involved?

A See above

c) At the commencement of YOUR role what was YOUR initial instruction in respect of the infection control at the QEUH/RHC? Who provided you with this information? Was there an official handover process? If so, who conducted this and was there paperwork involved?

A I was not given any specific instructions about IPC but was aware of some members of the team from attending previous IMT meetings as well as an understanding of critical need for a cohesive and collaborative relationship, which I was familiar with in previous roles.

d) What relevant paperwork were you provided with relating to the operation of facilities and estates at the QEUH/RHC?

A None

Risk Assessments at Occupation:

40. Are you aware that there is a legal requirement to carry out a water risk assessment at the point of occupation?

A Yes

41. Where is this legal requirement set out?

A L8, COSSH

42. Are you aware if such a risk assessment was carried out at the QEUH/RHC?

A Yes, it was carried out by DMA. It was commenced in January 2015 and delivered on 1st May 2015

43. If so, when did you become aware of this risk assessment?

A I became aware of the RA in June 2018

44. What documentation have you seen in relation to this risk assessment?

A I have seen the assessment and have also seen the original quote to procure DMA services to undertake the task.

45. DMA Canyon Reports: Refer to Bundle 6 – Miscellaneous documents – documents 29 and 30.

a. Have you seen these reports before?

A yes

b. Was this the DMA Canyon 2015 report (document 29)?

A Yes

c. When did you first become aware of this report?

A June 2018

d. Who made you aware of this report?

A Ian Storrar HFS.

e. Did you discuss this report with anyone?

A Ian Storrar, Jane Grant CEO

f. Who would have instructed these reports?

A As indicated on the document, it states Ian Powrie commissioned the report

g. What would the cost of such reports be?

A The quote provided by DMA on 15th December 2014 indicates a value of £9800.

h. Who would have signed off on these reports? What would this process look like?

A As indicated on the document, it states Ian Powrie was issued the report in both electronic and hard copy. The report indicates he has acknowledged receipt of the report.

i. Are you aware of why the risk assessment was not undertaken prior to handover in 2015?

A A plan by DMA of how the assessment would be undertaken indicates that the system was not yet ready at 15th December 2014 for the on-site assessment to be undertaken. Further to that, some commissioning documents indicate it was still being balanced and commissioned. If the system was not complete, then an assessment could not be done prior to handover. Technically the site remains in control of the contractor until handover. (26th Jan 2015 was handover)

j. Do you have a view on why this might have happened?

A Technically the site remains in control of the contractor until handover. (26th Jan 2015 was handover)

k. The report makes several recommendations, do you know what was done to follow up on these recommendations between 2015 and 2017?

A From reviewing historical records, it is shown that some maintenance activities and actions in response to the risk assessment were undertaken. There is also evidence that a meeting with DMA and Estates took place in March 2016 to develop an action plan and record what had and had not been done since occupation. Work plans were created to implement a water safety plan and we can evidence task sheets and PPMs from FM First showing at least some tasks were being undertaken.

l. Do you know when the works suggested in the 2015 report were actioned?

A From my review it is clear that some works were actioned during the assessment or soon after it. Some work was being done progressively from the assessment period which can be evidenced by referencing FM First and/or handwritten records from 2015 onwards. However other works were not immediately implemented fully.

m. What is YOUR own view of the findings of the 2015 report? Do you agree with it or not? Explain YOUR rationale.

A I would have no reason to doubt what was within the report, however I was not present and as work had been undertaken prior to my appointment in 2018, it would be difficult to dispute its findings.

n. The report highlights a number of actions required to be taken, are you aware how these actions were managed by estates in advance of the commencement of YOUR role in 2018?

A Only retrospectively through viewing records after my appointment in 2018.

o. What is YOUR view on the adequacy of the management of these actions by Estates?

A Having viewed notes of a meeting with DMA in March 2016 and an audit by the Authorising Engineer which took place in 2017, both would indicate that although some tasks were being undertaken, others had not been actioned and that the record keeping of work being done was an ongoing issue and a more robust management process was required.

p. What was the impact, if any, of the failure to implement the 2015 recommendations on patient safety?

A This is out with my areas of specialism. This may be better addressed by someone from Infection Control

q. DMA Canyon prepared another report in 2017 (document 30). Do you know what works, if any, recommended in the 2015 were carried out prior to the 2017 report?

A With our access to historical records the Board can evidence at least some of the actions from the 2015 report were undertaken. The DMA report was undertaken in September 2017 and an Authorising Engineer Audit Water took place in May 2017. That audit noted poor record keeping while acknowledging work was being done. Some of the issues in the 2015 report e.g. the identification of dead legs were later identified as service connection points for dishwashers or water coolers for example. Other issues such as lower than ideal water return temperatures were actioned almost immediately by raising the calorifier temperatures to 65 degrees.

r. What is YOUR view on the adequacy of those actions carried out by Estates?

A I would say they were inadequate to provide overall assurance on how the system overall was being managed.

s. We understand that Infection Control were only advised about the 2015 DMA Canyon Report in 2018. Do you know why they were not told sooner? What happened?

A I am unaware of why this was the case.

t. Was the approach taken by Estates prior to 2018 compliant with all relevant guidance and legislation at that time?

A Partially, e.g. risk assessments were undertaken, annual AE audits had commenced, some tasks were being completed.

u. Do you have any concerns about the way in which the water system was managed prior to YOUR commencement in 2018?

A It appears to have been poorly managed based on the AE audit which I would have no reason to disagree with.

46. Since commencing YOUR role in 2018 what risk assessments have been undertaken in respect of the water system?

A January 2019 and then Ward 2A/B in 2022. (Probably Covid was the blocker in 2020/21. A further assessment completed in 2023 and issued in 2024.

47. Since commencing YOUR role in 2018 what water maintenance strategies have been put in place? Who is responsible for these?

A There has been a more detailed engagement with external contractors to ensure the Water safety plan/Written scheme is implemented, training is undertaken by staff as required and letters of appointment for specific positions in the plan are issued as required. The water safety plans are reviewed and updated at least annually.

Design Requirements for Specialist Wards

48. What is YOUR experience in design requirements for specialist wards within a hospital?

A These would be directed by referring to guidance that would be relevant to the ward that was being designed.

49. Is there specific guidance relating to these requirements?

A There are documents such as SHTMs, SHPNs, and other guidance documents to which we can refer. NSS hold these and they are freely available as and when required.

50. What might design requirements for specialist wards within a hospital look like?

A It would depend on what the intended function of the specialist ward is intended to be. Access requirements, air changes, filtration standards, room size etc. could all be relevant, air pressure gradients etc. would all need to be considered.

51. Are you aware of what consideration was given to design requirements for specialist wards within the QEUH/RHC?

A I was not part of the Project team but from review there were Clinical Output Specifications issued to the bidders and these formed part of the eventual design and build package.

52. Are you aware of what were the specific design requirements for the specialist wards in the QEUH/RHC?

A Ward 4B QEUH and 2A RHC were required to have a protective environment to the rest of the hospital. Theatres, ITU, PICU, Endoscopy would be critical air systems.

53. Who would have been responsible for ensuring such design requirements were in place?

A My opinion is the building contractor – Brookfield Multiplex.

Asset Tagging

54. Describe and detail asset tagging:

a) What is this?

A Labelling of plant and equipment to allow it to be uniquely identified.

b) Why is this important?

A To allow efficient management of the asset and also to ensure all assets on site are recorded.

c) Who was responsible?

A The contractor

d) What was the impact if this was not done?

A It would be difficult to quickly identify an asset for repair or for a user to report it to the help desk. It would also hinder lifecycle monitoring and trend analysis for fault finding for example.

e) What concerns, if any, did you have about this?

A I had no concerns.

f) Did you escalate these concerns? If not, why not?

N/A

g) Discuss any issues regarding asset tagging and how you managed this?

A N/A

HEPA filters

55. Are you aware if HEPA filters were installed in the relevant rooms at handover (January 2015)?

A I cannot say what was in place in January however prior to patients being placed in ward 4b, I have been advised Hepa filters were present in those rooms. I am also advised that in ward 2a RHC, Hepa filters were fitted in 8 isolation rooms in June 2015 to facilitate the placement of patients in those rooms.

56. What issues, if any, were there with HEPA filters when you commenced YOUR role in Estates in 2018 at the QEUH/RHC?

A None that I was made aware of.

57. What information were you given upon commencing YOUR role about the use of HEPA filters, their installation and any previous issues surrounding their use?

A No specific information. It would be unlikely that I would have a concern about the use of HEPA filters.

58. Were you aware of any historical issues with HEPA filters before you commenced YOUR role in 2018?

A No

a) What would be the impact of HEPA filters not being installed?

A If not installed in an area they should be installed, the quality of air delivered would not be filtered to the required standard and this would have the potential to impact on patient care.

b) What would the potential patient impact of the absence of HEPA filters be?

A If HEPA filtration is a requirement and not present then it has the potential to impact on the air quality provided to the patient which could pose a potential risk to the patient, especially if the patient is neutropenic, immuno-compromised or immuno-suppressed.

59. We know you were responsible for in sourcing HEPA filters in 2019, was there a lack of HEPA filters available?

A I believe this question relates to the HEPA air scrubbers. The issue at the time was, as far as I can recall, around the availability of portable air scrubber machines at the time and not HEPA Filters. These machines are supplied when the filters installed. These were being procured as a supplementary measure and I would be responsible in authorising their procurement but not directly sourcing them.

60. Why were more required?

A These machines as indicated in their name, scrub the air in the room so it is adding an additional level of dilution in the room by scrubbing the air and re-circulating it to the patient areas. Following the IMT in early January and reviews of air sampling reports it was accepted that the portable HEPA Filters gave additional protection to the rooms and corridors within Ward 6A. Other selected wards on level 3, 5 & 7 were also supplied with mobile units once supplies were available. This deployment was directed by IPCT and enabled by the site estates team.

61. Can you explain the circumstances leading up to this?
Refer to IMT Bundle re. HEPA filters: Documents 57 to 69.

A I am unclear as to what is being asked here?

Chilled beams

62. What are chilled beams?

A A chilled beam is a type of radiation/convection HVAC system designed to heat and cool large buildings through the use of water.

63. Have you experience in working with chilled beams?

A Not prior to taking up my post at GG&C

64. Are you aware of any circumstances/environments where chilled beams should not be used?

A From review of the guidance in place at the time of the build, it did not prohibit their use, however I am aware that guidance has now changed, and the preference is that they should only be installed in non-clinical areas.

65. Can you recall any specific events in relation to chilled beams at the QEUH/RHC? For example: Leaking/growth of bacteria
Refer to IMT Bundle to assist.

A I am aware of leaks, one incident specifically related to the dew point issue. I am aware of a water sample taken from a chilled beam system and I am aware of leaks from the pipes due to corrosion in the pipes.
Cleaning of Chilled Beams I am aware that there was an increased programme for cleaning chilled beams.
Air Sampling I am aware clinicians undertook air sampling in rooms where chilled beams were located.
Showers in 6A. I am aware that there were issues with the flooring in some shower rooms in 6A which led to patients being re-located while repairs took place.

SBAR prepared by Dr Christine Peters: Bundle 4, document 37

For each event, please tell us:

a) What was the issue? There was a specific issue which appears to be identified in the document, a failure in the heating caused the heating pipe connections to the chilled beam to contract and cause a dripping effect.

b) The impact on the hospital (include wards/areas) and its patients (if applicable) In the incident referred to, the heating system was restored to its proper operating parameters.

c) Who was involved? It would be reasonable to assume that this would have been undertaken by the operational estates team.

d) What was the escalation process? In this incident, if I am correct in assuming it was this incident, the action would be to contact estates.

e) Were any external organisations approached to support and advise? I am unaware.

f) If so, what was the advice? As above

g) Was there opposing advice and by whom, and what was the advice? As above

h) What remedial action was decided on and who made the decision? As above

i) Was the issue resolved – consider any ongoing aftercare/support/monitoring; I believe, if it is the incident referred to, that the type of flexible hose connecting the LTHW system to the chilled beam was changed from push fit to mechanical connection i.e. compression fitting.

j) Any ongoing concerns witness had herself or others advised her of? I am unaware of what the witnesses concerns were.

k) Was there any documentation referenced during or created after the event. For example, an incident report? I am unsure of any documentation, but it would, I believe be the witnesses responsibility to raise an incident report.

l) Did anyone sign off to say the work had been completed and issue resolved/area safe. As above however I would expect that to have been done.

Write YOUR answers above in the relevant section.

66. At Page 166 of Bundle 4, Dr Peters lists reasons why chilled beams should not be used in neutropenic settings due to the infection risks associated with them, including the build-up of dust and them being a water source from condensation, leaks, and dripping water:
Do you agree with this? If so, can you explain why?

A Yes, I agree, and this is now reflected in the fact that the guidance has now changed to specifically state they should not be used in clinical areas and I would expect us, going forward, to plan around the guidance.

a) If not, can you explain why?

A NA

67. At page 355 of Bundle 1 (IMT), it states you do not believe there is a leak with the chilled beams, this was despite the findings of microbiological testing, eyewitness accounts and photographs by Dr Peters: can you explain YOUR rationale behind this? Did you change YOUR position on this as the incident progressed?

A Initially we had considered the leaks to be caused by a dew-point issue therefore the conclusion would be, in that case, it was a condensation issue rather than a sealed pipe system leak. On review I now believe it would be possible for a leak to occur when heating flow temperature control occurred resulting in lower temperature and a resultant contraction in pipe joints causing a small leak. We did, at this time take pro-active measures to change the connection on the sealed systems from push fit to fully mechanical joints.

Combined Heating and Power Unit

68. Describe the Combined Heating and Power Unit (CHP)

A A turbine that consumes gas to produce electricity in a more cost-efficient manner.

(i) What is the purpose of the CHP?

A As above and to reduce energy costs to the Board.

(ii) What was the condition of the CHP when you commenced YOUR role at QEUH?

A Operational as far as I am aware.

(iii) Were you advised what condition the CHP was before you commenced YOUR role at QEUH/RHC?

A no

(iv) What information do you have to support YOUR view on the CHP's condition?

A NA

69. Are you aware if commissioning and validation of the CHP carried out prior to handover?

A It would be reasonable to assume it was and I could refer to records however I was not in post at handover.

a) What commissioning and validation documentation did you see at the commencement of YOUR role, if any?

A None, it would not be specifically part of my role, I am a director for the whole board, and it would not be realistic to look at the commissioning data for each site.

Refer to Estates team Bundle, document page 90.

b) Who was/is responsible for ensuring that the commissioning and validation documentation was in place?

A The main Contractor will be responsible for ensuring systems are commissioned and the relevant documentation is provided on completion of the works and prior to handover.

c) Where were/are records of the commissioning and validation for the CHP kept?

A They were placed and remain in an on-line portal identified as Zutec.

70. Who was/is responsible for ensuring that the CHP was operating correctly?

A The Contactor would commission it, NHSGG&C would monitor it on a daily basis and undertake operator checks and the system would be maintained under contract.

71. If the CHP was not operating correctly, could this impact patients? If so, how? Refer to Estates Team Bundle, document p101

A The issue referenced in the document which is identified is not related to the CHP however the CHP not operating correctly would, in my opinion, not immediately effect the patients. There are independent heating and electrical systems in place.

72. Are you aware of such historical issues with the CHP either through YOUR role at NHS NSS or through the handover at the commencement of YOUR role as Director of Estates?

A No, as stated, the issue referenced on page 101 is not connected to the CHP so when referring to historical issues in this context, I am unsure what is being referenced.

73. Have any further issues arisen during YOUR time as Director of Estates? If so, please provide details.

A If you are specifically referring to the Energy Centre then not that I am aware of any specific issues. There have been occasions when systems have failed for short periods of time in and the overall performance of the energy centre regarding carbon reduction has not been as expected.

74. Refer to Estates Team Bundle, document 135:

a) Please explain what this email was about.
It appears to be regarding the retention of and the release of money retained which were integral terms of the contract conditions.

b) Was the money released or not?
Unaware if it was released.

Water Guidance and Obligations

75. What guidance applies to water? How did you/others ensure that guidance was complied with? What contractual documents, if any, would you consult to ensure guidance was complied with?

A I was not in post either throughout the contract build or at handover. My understanding is that the contractor was issued with a suite of documents in line with the terms of the contract. I also understand these have been provided to the inquiry.

76. What guidance applied to water at the point of handover? The SHTM 04-01 suite of documents would be in place, there would be British Standards, Health and Safety documents such as L8, Scottish Water Bylaws would also be relevant.

77. What was YOUR initial instruction relating to historical water guidance and obligations upon commencing YOUR role in 2018?

A I was not given a specific instruction regarding water.

a) What was YOUR initial instruction on what measures were taken in relation to compliance with water guidance and obligations at the point of handover? What initial instruction were you given on issues which arose at handover or thereafter up until the point you commenced YOUR role?

A No specific instruction given.

78. Did you have any knowledge of water guidance and obligations at the QEUH/RHC whilst in YOUR role with NHS NSS?

A No although I had a peripheral role in supporting the IMT on the water incident at RHC in March 2018, I was not an expert in water.

79. Who was responsible for ensuring a safe water supply following handover?

A Ultimately Scottish water provide the water to site, Brookfield held responsibility up to the point of handover and then the Estates team moving forward from that point.

80. What is YOUR knowledge and understanding of Health and Safety regulations on control of legionella at the time?

A High level awareness and a knowledge that L8 was the exemplar and supported by other regulations and guidance such as Cosh , SHTMs etc.

81. Are you aware of what legionella training was provided to all maintenance staff, estate officers and contractors? If not, what training would you expect them to have been provided with?

A Not on taking up post however AP Water and CP water training should be given as a minimum to relevant staff and an AE was in place so they would identify these issues at annual audit I would expect.

82. Are you aware of water borne pathogens (other than legionella) training was provided to all maintenance staff, estate officers and contractors? If not, what training would you expect them to have been provided with?

A No I am not aware if it was or whether it existed. The focus of training was generally on Legionella as evidenced in part B of SHTM 04-01 and any subsequent training as identified by the AE or any developing guidance.

83. Do you know who was the Duty holder?

A No however the policy in place at handover and in line with the SHTM 04 01part B indicates that the ultimate duty holder is the Chief Executive

84. Commissioning of water system prior to handover/ patient migration to QEUH:

a) What details, if any, were you provided with relating to the commissioning of the water system upon commencement of YOUR role?

A None

b) Who was or would you expect to be responsible for the water system requirements?

A Ultimately it lies with the Chief Executive however at a local level, the Estates Manager is responsible for the day-to-day maintenance and usually managed through an AP WATER.

c) Are you aware of what checks were carried out to ensure that the water system had been commissioned appropriately? What checks would you have expected to have been undertaken? What information were you provided with about the water commissioning process at the outset of YOUR role? Refer to Estates Team Bundle, document 132.

A I would have expected the water system, and indeed all systems, to have been properly commissioned and validated to the required standard and ideally be independently corroborated. I was not given any specific commissioning information at the start of my role.

d) Do you know which teams (such as infection control) were involved in the water system sign off, who would have signed it off on behalf of those teams?

A I am not aware of who was involved in signing it off as I was not there however reviewing an email exchange, I believe IP had asked Craig Williams of the IC team to sign off the results.

e) Are you aware if L8 testing requirements were complied with?

A I am not aware if this was done however having reviewed document 132 referred to above, it indicates all appropriate checks had been undertaken.

f) Are you aware if there were any legionella concerns at handover? Is so, what was done to deal with these?

A I have read in reports that records indicate some areas were re-disinfected following some positive results from sampling however handover was Jan 26, 2015, so could not definitively say this was the case on that day.

g) Are you aware of any issues with the testing of the water system?

A As above

h) What was YOUR understanding at the time of the SHTM 03-01 guidance in respect of water?

A SHTM 03-01 is a ventilation related document. The issue that connects the ventilation and water is the risk of legionella being transmitted through poor hygiene of air conditioning units.

i) Was the QEUH/ RHC water system SHTM 03-01 compliant at the date of handover – if not, what was outstanding? Who was responsible to ensure that the water system complied with SHTM?

A I have no reason to believe the system was not compliant with the guidance stated.

85. Was a pre-occupation water test done prior to occupation? Refer to Estates Team Bundle, documents 14, 14.1, 14.2:

A From my review of reports I have seen it would appear that water sampling was carried out by the contractor prior to handover and water sampling was carried out by Estates post occupation.

a) Who carried this out?

A Records indicate sampling was done by H&V Commissioning on behalf of Mercury.

b) If this was not done, should it have been done and why?

A NA

c) Consequences of not doing it.

A NA

d) Are you aware of the post occupation water testing regime at QEUH? What was it?

A I am aware there was a testing regime in place.

e) Was this carried out?

A It was managed by on site estates staff.

f) Are you aware of who carried out testing?

A I believe it may have been a combination of party contractors and estates staff.

g) If so, how frequent was testing?

A From review of documentation it appears initial testing was monthly.

h) Did this comply with L8 and SHTM 03-01 guidance? If not, why not?

A I could not say. I am not aware of sampling requirements in SHTM 03-01.

i) What happened to the results?

A On review I understand they were returned initially to the Estates team

j) Where were the results stored?

A I could not say.

k) What action was taken in response to results?

A I could not say as I was not in post at that time.

l) Was there an escalation process?

A As above

Water - Commissioning and Validation (C&V)

86. What commissioning and validation ("C&V") documentation did you see in respect of the pre- handover in 2015 when commencing YOUR role in 2018- who would have had sight of these at the pre-handover in 2015?

A None

87. What was YOUR view on the adequacy of the documentation which you had sight of relating to the pre-handover commissioning and validation?

A I have only seen reference to the commissioning documents in reports provided after I commenced in my role.

88. Where is this commissioning and validation documentation stored generally on the hospital system?

A The information is readily available on Zutec, an online portal

89. What is the purpose of C&V?

A To demonstrate the system has been designed, installed and tested to ensure its safe use for the purpose intended.

90. What are the consequences of it not being carried out?

A There would be a lack of assurance in the system and therefore a potential risk.

91. Were records kept of the cleaning and testing regime? Where were the records kept and what was the retention policy? What concerns, if any, did you have about record keeping and retention?

A The commissioning records and RAMS associated with the disinfection and commissioning of the system are still available. The information is available on Zutec, an online portal. The legal requirement is to retain records for five years however we still have those records.

92. What concerns, if any, would you have If the water system were to have no C&V before handover in 2015?

A It would be concerning that, if this was the case, that the system had not been properly cleaned and tested in line with the contract.

93. Describe the same in respect of verification and the cold-water supply system.

A I was responding previously to the potable water system and not quite sure why Cold Water is identified specifically. All the above answers would still apply.

94. What C&V of the water system was carried out post-handover?

A Some planned maintenance checks were put in place however we are aware that initially some items were not being maintained in line with published guidance.

a) Who was responsible?

A The policy indicates the chain of responsibility and therefore ultimately the Chief Executive who then delegated it via others to local management.

b) How was the C&V recorded?

A The ongoing records were initially recorded on handwritten proformas and electronically in the CAFM system.

c) Any concerns arising from post-handover C&V? If so, why did these concerns arise?

A I did not take up post until 2018 and therefore my first knowledge would be around the review of the 2015 and 2017 RA in my role at HFS.

Water system – general

95. From the information you have been provided with since commencing YOUR role, what testing and maintenance protocols and regimes were in place at handover in 2015? What should have been in place? What remedial actions were taken?

A At handover, handover being January, there is little if any evidence of maintenance being done. A written scheme developed by DMA and based on the SHTM 04-01 part G was provided to the board in support of the pre-occupation risk assessment and would be considered a good exemplar to reference for what should have been in place.

96. What is/was YOUR view on the adequacy of the testing and maintenance protocols and regimes which were in place in 2015?

A On review of documentation I have seen, along with reports, they did not seem adequate.

97. What testing and maintenance protocols and regimes were in place at the point of commencing YOUR role with NHS NSS? What should have been in place? What remedial action was taken?

A I was not involved with NHS GGC at this time so I would not know.

98. What testing and maintenance protocols and regimes were in place at the point of commencing YOUR role as Director of Estates? What should have been in place? What remedial action was taken?

A I started in Oct 2018; we had by then installed POUF in high risk areas. DMA were engaged to assist the operational team on site in undertaking planned maintenance tasks such as flow straightener replacement, servicing of some TMTs and shower head and hose disinfections.
Cold Water Tank cleaning had taken place in June/ July of 2018 and we were also in the process of installing the CL02 system which was not yet fully commissioned.

99. What concerns, if any, were there about the temperature and movement within the water system? How was this recorded and measured? Who was responsible for this?

A Pre-handover, the responsibility for water temperature and movement lay with the contractor. Post-handover and pre-occupation, a flushing regime was implemented. Some low temperatures were recorded in the DMA risk assessment but this was addressed by Estates staff by raising calorifier temperatures to 65 degrees. The temperature of the hot water system is monitored on the BMS and is compliant. There are occasions during unplanned boiler outages where hot water temps may become lower than required or in hot weather that the cold incoming main is slightly elevated. With regard to movement of water, I do not believe there was an issue. Responsibility for day to day management of the water system sits with the Authorised Person Water.

a) At point of handover in 2015

A I do not know.

b) From YOUR time at NHS NSS

A I do not know.

c) From the commencement of YOUR current role?

A I do not know.

100. What concerns, if any, did you have about testing and stagnant water being in the system following testing? Please describe and provide information on how this was dealt with.

A I do not know.

101. At point of handover in 2015

A Not aware

102. From YOUR time at NHS NSS

A Not aware

103. From the commencement of YOUR current role?

A I do not believe that since I have taken on this role that there has been an issue with stagnant water.

104. Did you have any concerns about dead ends in the system?

A By the time I came into post I understand known dead legs to have been removed or been integrated into a flushing regime.

Please describe and provide information on how this was dealt with:

a) At point of handover in 2015

A I do not know.

b) From YOUR time at NHS NSS

A I do not know.

c) From the commencement of YOUR current role?

A Where identified they are either removed or added to the little used outlet register and flushed.

105. To what extent could the water system in QEUH/RHC have been more comprehensive?

A Given the size and complexity of the system, a secondary control measure could have been installed such as chemical dosing with CL02 or a UV system.

106. If the water system as installed had been operated correctly, would it have achieved the system objectives? In YOUR answer set out what the system objectives were and how these were/ could have been met.

A The system objectives were to provide a safe water system at point of use for all users. This is achieved by implementing the written scheme and whilst there were clearly elements of the written scheme that were not being routinely implemented, there is evidence of pro-active and reactive management oversight and intervention which would identify remedial actions and control measures to maintain a compliant environment for the user.

107. Describe any ward/area specific water systems used?

a) Detail the individual ward water specification.

b) What were/ are YOUR thoughts about this?

c) Why, if applicable, did certain wards have different water systems.

d) Was there a standard protocol for sanitising water systems?

A In responding to all of the questions above, I am aware there was a water system for the renal wards however I am advised this was fed from the common storage and then treated prior to going to those patient areas. There was a sprinkler system, a hydrotherapy pool, and other systems identified in the DMA risk assessment. When parts of a system were to be disinfected, a risk assessment and method statement would be provided in advance of the works and this would be agreed by the Estates team and any local clinical staff.

108. To what extent were the standard protocols for sanitising water systems used on a system of the size and complexity of this one?

A The initial disinfection of the full system was undertaken prior to the handover and sampling in January 2015. We now have continuous disinfection, since the CL02 was introduced in late 2018/2019. This was sequentially introduced over a period of time and monitored to evidence its efficacy.

109. Were consultants brought in to advise on sterilisation of the water systems?

a) Who were they?

A CL02 experts, AEs and microbiologists such as Tim Wafer, Dennis Kelly, Susanne Lee and Tom Makin among others were engaged to assist in developing the most appropriate secondary disinfection system for our site

b) Had you worked with them before?

A No

c) Describe and comment on the methodology used.

A The Water Technical Group (WTG) was formed and also included NHS ICDs and NSS staff who assessed all options before finally agreeing on the CL02 installation.

d) Who decided to accept it or not.

A It was accepted by the WTG

e) Did it work?

A Yes

f) What paperwork or records were kept in relation to their installation, maintenance, or flushing?

A Full commissioning records are available and have been provided, a maintenance contract is also in place with the CL02 provider, the system is monitored via the BMS and sampling is done of selected points on an ongoing basis.

g) How were these kept on paper or electronically?

A Initially on paper and then re-created electronically.

h) What equipment for recording work was used by employees doing day to day tasks?

A Work is issued by supervisors to the operators via PDA and recorded on that and the sampling is done using a Kemio palintest kit.

i) How was that then reported back and checked?

A The operator will record the task as complete and record the results of his tests before passing back to the supervisors who log for historical record and trend analysis.

Water Maintenance

110. Explain the cleaning and maintenance of the water system, taps, drains, shower heads etc. When doing so consider:

a) What is the cleaning regime?

A All controls and method statements are in the current written scheme which I believe has been provided to the inquiry.

b) What is the importance of this?

A This is the water safety plan for the site to ensure we remain compliant, we monitor the system and are aware that our control methods are working.

c) What responsibilities do you have as a result of this?

A I am identified as the Duty Holder in the Written Scheme. As well as the Designated Person (Water). I am responsible for ensuring that Estates and Facilities staff, through the general management structure are fully aware of the current statutory and mandatory requirements and standards for the provision and maintenance of safe water systems, ensuring with the Responsible Person (Pseudomonas) that the Water System Safety Policy is regularly reviewed and updated. I am the Co-Chair the NHSGG&C Water

Systems Safety Group. I am responsible for appointing in writing the Responsible Person (Water) at sector level and Deputy Responsible Person(s) (Water) at site level. This shall be the Sector Estates Manager (SEM) and the relevant Site Manager Operational Estates (SMOE)/Site Estates Manager within the Facilities Directorate management structure.

d) What do you do to ensure these responsibilities were executed?

A Annual AE audits, ensure funding is available for training, we have an internal compliance team/Controls Assurance to assist in monitoring our levels of compliance with the written scheme.

e) What issues, if any, do/did you have fulfilling these responsibilities?

A These responsibilities are often delegated to suitably competent colleagues to assist in ensuring we fulfil our obligations.

f) Are you aware if concerns have ever been raised about cleaning practices? IMT bundle, document 22. Detail these concerns.

A I reviewed the document, and it was dated 29 May year which pre-dates my appointment.

g) What, if any, matters regarding the maintenance of the water system were escalated? If so, were they escalated BICC or AICC?

A I was not aware of any issues but perhaps the decision to install CL02 would have been discussed at that group.

h) What is dosing?

A In regard to CL02, it was the continuous injection of a specified volume of chemical into the water system as a secondary method to aid in maintaining the hygiene of the system.

i) Why was chlorine dioxide used in the cleaning regime? IMT bundle, document 30.

A With reference to doc 30, it references that CL02 would be used in November of that year (2018) however as this meeting was in June, it pre-dates my starting date with the Board. I can say the decision to use CL02 was a collective decision taken following meetings involving external water hygiene experts, IPCT members and the Boards' Water Expert Group.

j) Clearing of drains in June 2018 following water incident -relevance and purpose. IMT bundle document 27. Are you aware if the actions taken resolved the issue?

A No

k) IMT bundle, document 38 do you know why expert advice was required?

A No, I believe the suggestion was made in September 2018 and I was not in post at the time of this meeting.

l) What happened in response to concerns about on-going maintenance and cleaning? What further action did you take personally?

A I was not in post at this time however I am aware that ward 2A decanted to ward 6A to allow works on the drains to be undertaken.

m) What further steps could have been undertaken?

A I was not in post however this appears to have been the agreed action at that time as the least risk option.

111. From the point of commencing YOUR role in 2018, what improvement work has been undertaken and why has this been undertaken?

A In ward 2A RHC Sanitary ware has been changed in some areas to include removal of cisterns, a new WHB design has been installed in to minimise the risk of splashing, taps were changed and toilet seats had lids fitted. The taps and showerheads were also fitted with POU Filters.

112. Were you involved in the decision to proceed with a drain survey? If so, can you explain YOUR role in this decision? What was the purpose of the drain survey?

A I was not in post at that time. The purpose, as far as I am aware, was to confirm there were no blockages in the drain system.

113. What were the results of the drain survey?

A I am not aware of any significant functional issues that were found as a result of the survey.

114. Debris, including sponges, were found in the water tanks; what is the significance of this, if any, in relation to the wider issue of water contamination?

A This would suggest that the tanks had not been cleaned since the pre-occupation risk assessment as this debris was identified at that time. I cannot comment on the secondary part of the question.

115. Concerns have been raised regarding the hospital design and the increased risk of water contamination; what is YOUR view on the increased risk of water contamination in relation to the following:

a. Having a single barrier approach water system, resulting in fluctuating water temperatures

A Having a single approach e.g. temperature control, requires the system to be fully functioning at optimum level at all times. In reality, there are always the potential issues of plant failure which can impact on the efficiency and effectiveness of the system.

b. Ensuite bathrooms attached to each room.

A This was, and remains, a Government instruction/recommendation. It leads to significantly increased maintenance activities and FM costs in general and may result in outlets not being used as frequently as they are intended.

c. Overprovision of water outlets leading to sink removals?

A I am not aware of any significant programme of sink removal however given the increased use of hand gel there is a potential that these sinks are little used. There is a further risk that patients and visitors are not aware that such sinks are for clinical use only sinks. I think it would be reasonable to consider this in future designs.

116. How involved were you in the decision to use point of use filters?

A I was not involved with any decision to fit POU's prior to taking up post. I would have some insight in the installation of other outlets as the refurbishment of ward 2A and temporary relocation to ward 6A was ongoing.

117. Who was responsible for the effective management of and installation of the point of use filters?

A Site maintenance team and third-party contractors

118. Did the point of use filters meet the water regulation requirements? Did they have an effective gap between the water level and the filter to prevent contamination?

A There would be instances where this may have been compromised as the issue is in relation to an airgap between outlet and spillover level of sink.

119. Why were the point of use filters not introduced earlier?

A I was not in post however I am aware they were introduced while consideration was given to introducing a secondary control method, i.e. CL02. They are not a stock item in the hospital at the time and adaptors and filters had to be procured.

120. How often were you aware of the filters being changed? Were the manufacturer's recommendations followed?

A The manufacturer recommendations is 31 days and in some cases 62 days. Some filters were changed earlier than the 31 day period and manufacturers recommendations were therefore followed or bettered.

121. How involved were you in decisions relating to water testing?

A I was not involved; this testing regime was generally directed by IPC. Estates also have a sampling programme in the written scheme.

122. If not, who was responsible for these?

A IPC will direct what the labs will be testing for, estates will organise the sampling process.

123. What do you understand about management of water testing? What do you understand about decisions on when water testing should be undertaken?

A Routine testing as per legislation or guidance is regularly undertaken, that is legionellae, pseudomonas, TVC's, e-Coli. In addition, further type specific sampling may be instructed as part of IMT, or PAG.

124. In her statement Dr Teresa Inkster states *'there was a direction from Mary Anne Kane, who was at senior director level, not to give microbiologists access to water testing results'*:

a. What is YOUR reaction to this statement?

A I cannot comment specifically on this as I am unaware of that statement being made.

b. Why did estates direct that microbiologists should not have access to water testing results?

A I refer to my answer above.

c. Have you ever been advised not to contact someone/ not to provide water testing information? If so, when? By whom? and why?

A No

d. Have you ever refused, or directed others to refuse to provide water testing information requested by microbiologists or infection control? If so, why? Provide as much information for YOUR rationale and the consequences of withholding information.

A No, water analysis review would be a key component of assessing the overall hygiene of the system.

e. Provide information on how you dealt with requests for water testing results from microbiologists and infection control - was all the information requested provided? If so, what was provided? If not, why was paperwork not provided?

A I did not receive water testing results and therefore would not receive requests from others to receive them. As far as I am aware, water samples are analysed by laboratory staff and results shared simultaneously with estates and IPC.

f. Who was responsible for dealing with these requests for information?

A My understanding is results would be shared directly with IPC/Micro/Estates from the lab.

g. What was YOUR role in dealing with these requests for information?

A I did not have a role.

h. How were these requests for information managed by YOUR department? What steps did you take?

A I ensured that the site AP (Water) assiduously gathered water results and has catalogued them for a number of years. I did not have to take any steps, the actions were and continue to be done to the highest standards, if fact well beyond guidance standards.

i. What concerns, if any, did you have with how matters were being handled? If so, what steps did you take in response to these concerns?

A I have no concerns on how matters were being handled.

February 2016 – Sinks – Ward 2A

In early 2016 a PAG took place regarding the *'Contamination of aseptic pharmacy unit at RHC water supply with Cuprivadis pauculus'* a subsequent investigation linked the infection to sink within the Aseptic Pharmacy Unit:

125. Are you aware of this incident?

A No, I was not in post.

126. What information were you provided with, if any, in respect of this incident upon commencing YOUR role in 2018?

A None

127. What was YOUR understanding of this incident?

A I was not aware of the incident.

128. Do you recall anyone taking action, if so what, in relation to this incident?

A No

129. Do you recall any further issues in relation to sinks? If so please discuss, confirming YOUR involvement and action taken in response to any issues.

A Other than the sinks being changed in Ward 2A and some trough sinks being removed in other areas, no.

Water incident 2018

130. Walk through the concerns as they emerged in 2017 into 2018 in respect of the water issues, firstly in YOUR role with NHS NSS and then at QEUH. Initially focus on YOUR recollection of events as they happened. In relation to the concerns:

a) When did the concern arise?

A I was not involved in the issue so had no awareness until circa May 2018.

b) Nature of concern?

A We were asked (HFS) via HPS for technical support in relation to the above mentioned incident

c) Possible cause of concern?

A The concern was in relation to the water quality which may have been compromising patient care.

Action taken in response to concern:

d) What actions were taken in response to concern?

A Senior Engineering resource was allocated to supporting HPS/NHS GGC (Ian Storrar)

e) How sufficient were these actions?

A The actions were appropriate and resulted in a full report being published in conjunction with HPS.

131. If you are also able to respond to the questions raised in respect of the IMTs below when considering YOUR recollection of events.

a) Refer to IMT bundle, document 21.

b) Refer to IMT bundle, document 50.

A I do not know.

Taps

132. The use of Horne Taps was discussed in the IMTs relative to the water incident. Refer to IMT Bundle document 18.
Please confirm:

a) YOUR understanding of use of Horne taps.

A The OPTITHERM is a highly specialised thermostatic tap developed principally for clinical and surgical hand decontamination in healthcare applications.

b) Who authorised the use of Horne taps?

A The Horne taps were discussed in detail prior to install in meetings with HFS in 2014 and it was agreed that they could be installed.

c) Why were Horne taps selected?

A Horne taps met the required profile as a suitable tap and were selected early on in the contract. Following meetings with HPS and HFS along with the NWSAG in June 2014, it was agreed to install these taps.

133. Flow straighteners: when did you become aware that they were non-compliant with SHTM 03-01 (should be SHTM 2040?) guidance? Do you know if they were non-compliant at handover?

A I would refer to discussions from meetings with HPS/HFS in June 2014 where the matter was discussed in detail.

134. Were new taps replaced in January 2019? If so, why were they replaced? Was the replacement related to the use of chlorine dioxide?

A Optothermal taps were replaced in ward 2A and 2B RHC with Marwick taps to facilitate ongoing maintenance and was considered to be a better tap.

Water Technical Group

135. The water technical group (WTG) sat between 2018 and 2019. Estates Team Bundle, page 938:

a) What was YOUR impression of the purpose of WTG?

A This group was established to continue to provide an opportunity for collaborative working with multi –disciplinary groups involved in technical and clinical functions. The aim was to ensure continuous improvement and learning and also utilised external expertise as and when required.

b) What is YOUR understanding of the issue/ event prompting the setting up of the WTG?

A As above

c) What was YOUR involvement with the WTG?

A My involvement was peripheral; I would ensure the group was established and had focus on the matters at hand.

d) Detail specific work which you carried out in respect of YOUR involvement with WTG, why did you carry out this work, what was the impact? Estates Team Bundle, page 939

A I would refer you to the document. I was not fully employed by the Board at the time of this document and was only becoming aware of the plans and timescales.

e) Who was in the WTG, what were their names and their roles within WTG?

A I would refer you to the minutes in bundle 10 which lists the attendees at the various group meetings. There were a mix of clinical and technical experts and manager from both within the board and external to the board.

f) What qualifications were required in order to be chair of WTG?

A No specific qualifications, based on technical, clinical and site knowledge. External experts called as and when required.

g) Discuss focus of WTG – what is YOUR impression of the purpose – why was WTG required – what issues came to light as a result and what action was taken. What were the concerns of the WTG and how did this impact on patients?

A This group was established to continue to provide an opportunity for collaborative working with multi –disciplinary groups involved in technical and clinical functions. The aim was to ensure continuous improvement and learning and also utilised external expertise as and when required. This showed a collaborative approach to finding the best solutions to ensure the

staff and patients, and the wider public in general, could be assured that there were no issues with the water quality in the hospital. The makeup of the group ensured there was scrutiny from all professional areas on site.

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

A I did not attend all meetings but do not recall any specific issues or conflicts. I did sense a desire to solve things as a team.

Review of Issues Relating to Hospital Water Systems' Risk Assessment 26th September 2018

Refer to Estates Team Bundle, document 134.

136. Have you seen this document before? Are you aware who commissioned this document? What issues prompted the instruction of this report?

A No, but I understand the CEO - Jane Grant requested the report.

137. What concerns, if any, did you have about the water system?

A Based on discussions with senior technical colleagues within HFS and the emergence of the 2015 and 2017 DMA RAs, it was evident there appeared to be gaps in the management of the water system.

138. When did these concerns arise? Was anyone else concerned? Why?

A June 2018 as a result of the Risk Assessment reports being sent from NHS GGC to NSS. I subsequently met and shared with the CEO of GGC who was unaware of the existence and consequently concerned.

139. What was the impact on patients?

A This is not my area of expertise, and it may be better to ask clinical staff.

140. Did you flag/ raise YOUR concerns with anyone?

A Yes as above

141. What happened in response to the report?

A CEO immediately gathered relevant staff to urgently review the documents and in particular their recommendations to ascertain any gaps that remained.

142. What works, if any, were carried out in response to any findings in this report?

A An action plan was formed to capture the outstanding actions from the 2015 and 2017 Risk assessments.

Tap Water- Ward 3C – 2019—

143. What were the issues in relation to tap water?

A I cannot specifically recall any incident in ward 3C.

144. What was YOUR understanding and involvement with these issues?

A As above

145. What action was taken?

A Response

146. How were matters resolved?

A As above

Dr Susanne Lee

Refer to Estates Bundle, Document 131, Page 930

147. Have you seen this document before?

A Yes

148. Who provided you a copy of this document?

A I do not recall exactly when and who provided me a copy of this report. The document is dated May 2018 and I came into post in October 2018

149. What was YOUR involvement, if any, with Dr Lee?

A None

150. What are YOUR views on the recommendations set out in this action plan?

A From review the recommendations seem to be appropriate.

151. Do you know if these recommendations were followed and to what extent they were implemented?

A The document indicates many were implemented almost immediately and others were part of an action plan either internally or for future projects.

152. Who was responsible for implementing these recommendations?

A For actions directly relating to the site, it would ultimately be the Acting Director of Facilities. However, you can see the document also lists actionees.

Other water incidents

153. What other specific events do you recall in relation to water? Do you have any personal recollection of debris in the water tanks or hearing this from others, if so, please explain:

a) What the issue was.

A There were issues with leaks in potable water systems around the hospital but not more than would normally be expected in a building of this magnitude. There were also leaks in heating and cooling systems in and around patient rooms.

b) The impact on the hospital (include wards/areas) and its patients (if applicable).

A This can result in patients being moved at short notice and temporary loss of facility while repairs are being undertaken.

c) Who was involved.

A Site maintenance, facilities teams, clinical teams and IPCT.

d) What was escalation process.

A This would depend on the specific nature of the issue being presented. Some would require additional controls such as patient movement, others would be a relatively simple fix with minimal disruption.

e) Were any external organisations approached to support and advise.

A No

f) Detail role and function of HPS and HFS, advise if they were involved and any reports prepared by them.

A These organisations were tasked with reviewing the management of the water systems including the actions associated with the Risk Assessment, commissioning and handover information and consequently make recommendations on improving how the system was managed.

g) Detail advice given from external organisations; what was the advice, did you agree with it, how was any advice managed/ communicated with others in YOUR team and YOUR superiors?

A An action plan was issued as a result of the report and actions implemented where possible and noted for further consideration where not.

h) Was there opposing advice and by whom.

A Not aware of any opposing advice.

i) What remedial action was decided on and who made the decision.

A Remedial actions were taken on a case by case basis.

j) Was the issue resolved – consider any ongoing aftercare/support/monitoring.

A As we are referring to many “incidents” of leaks, each would be resolved to allow the system to be put back into service.

k) Detail any ongoing concerns you had, or which you were made aware of.

A there was a concern around the increasing number of sealed system leaks attributed to corrosion of thin wall carbon steel

l) Was there any documentation referenced during or created after the event? i.e. an SBAR/ minutes from a meeting – use the bundle provided to assist.

A I am not aware if this question set refers to a specific incident so my response would be normal recording of issues in the CAFM system or shift reports populated by the Shift Supervisors identifying areas where leaks had occurred.

m) Did anyone sign off to say the work had been completed and issue resolved/area safe?

A All areas would be brought back into use when the repair and any necessary cleaning had been undertaken and clinical staff advised.

154. What were the NHS procedures for raising concerns about water or water infections. Typically, any issues of this nature would be escalated via IPC/Clinical notification. It would be as a result of a failed water sample, air sample or an issue that may considered to be linked to a clinical infection. It could also be reported by the domestic staff or clinical staff during the undertaking of their duties such as witnessing damaged fabric, water leaks etc.

a) How were these dealt with by you?

A I did not deal with these, it would be the operational teams on site however if it was required to be escalated to a higher level, I would be involved in that process as necessary.

b) How was it confirmed they had been dealt with.

A Operational Estates would action these issues and report back to clinical staff when the issue was resolved.

c) Do you recall specific ones and in particular any that gave you concern.

A In ward 6a, we had a leak in a kitchen area which, as a result, meant the whole room was stripped out and effectively re-built.

Ventilation - Commissioning and Validation

155. Describe the commissioning and validation process in respect of the ventilation system in the QEUH/RHC.

A The commissioning of the ventilation system was undertaken by H&V Commissioning. The commissioning of the LTHW system serving AHUS and chilled beams was undertaken by H&V Commissioning. The commissioning of the chilled water system serving AHUS and chilled beams was undertaken by H&V Commissioning. Other specialist companies commissioned BMS alarm systems, insulated ductwork etc. There appears to have been no independent validation carried out.

a) Who was this carried out by?

A Mercury were the main MEP contractor and they sub-contracted commissioning to various companies.

b) Who signed off?

A Mercury/Brookfield were the building contractor, and they would witness testing and balancing and invite along supervisors and/or PMs prior to signing off systems.

c) What commission and validation documentation did you see when you commenced YOUR role in 2018? Did you see any of this documentation as part of YOUR role at NHSS?

A None

i) If not, who would have seen commission and validation documentation?

A Project team and our technical advisors should have seen this but I was not involved at the commissioning or handover period.

ii) Was there anything from the commission and validation documentation that you have seen which has given rise to any concerns? If yes, what are these concerns?

A The fact there was no independent validation of certain systems is an obvious concern.

Ventilation system – general

156. What are thermal wheels?

A They are a heat recovery device.

157. Are you familiar with thermal wheels?

A I have an awareness of their purpose.

158. What is the purpose of thermal wheels in the ventilation system?

A to save energy, the wheel captures heat from the extracted hair and this is then re-filtered back into the supply section of the unit. This reduces the amount of heat required to bring the fresh external air being drawn into the unit up to temperature thus saving on energy costs.

159. What testing and maintenance protocols and regimes were in place for the ventilation system when you commenced YOUR role in 2018?

A A planned maintenance programme for AHUs was in place however annual verification of some critical systems were not being done. AE audits were also taking place annually which indicated that all critical systems had not yet been identified.

160. What testing and maintenance protocols and regimes were in place when you worked with NHS NSS?

A I was not aware of what was specifically in place at QEUH at that time.

161. Are you aware of the testing and maintenance protocols which were in place in 2015?

A I was only aware of what was being done at QEUH/RHC after I had taken up post.

162. What concerns, if any, do you have/did you have relating to the ventilation?

A It is now clear that there were issues with air change rates in some spaces and that systems do not appear to have been validated at handover.

a) What concerns, if any, do you have relating to the water temperature?

A I have currently no concerns with the water temperatures however there were occasions, for short periods of time, temperatures fell below the parameters due to intermittent issues with plant.

b) What concerns, if any, do you have relating to the movement within the water system?

A I have no concerns with the movement of water in the system. Little used outlets are part of management controls of the water system and are flushed in line with the water safety plan.

163. Was it possible to incorporate a comprehensive ventilation system into the QEUH/RHC?

A Yes, at the outset, however I was not involved in the design and decision making processes. The installed system limits, in some areas, the possibility of achieving the recommended air change rates in line with SHTM guidance.

164. Describe any ward/area specific ventilation systems used?

A I cannot generalise a response to this question. Critical systems are identified by the clinical team and the estates team are then advised of these systems. Generally, there are no critical systems identified from level 4 to 11 with the exception some areas on Level 4

165. What are YOUR thoughts about these ventilation systems that were used?

A There are clearly some shortcomings in some of the systems however there is no clear evidence, as far as I know, linking the ventilation system to higher rates of airborne infection in comparison to other hospitals.

166. Refer to Estates Team Bundle, document 136. Explain YOUR involvement here. Explain the concerns regarding latent defects and actions taken.

A I was ensuring the communications sent out on behalf of the Board were properly structured and accurately captured our position. I was communicating with people who had been involved prior to the handover of the buildings and therefore relied upon their gained experience.

Specific events in relation to ventilation system

167. Can you recall any specific events in relation to ventilation?
For example:

a) Issues with the air change rates in Ward 2A.

A I was made aware the air change rates in some rooms were in line with the rest of the hospital i.e. 2.5 to 3 per hour. This was not in line with what was required by SHTM for the patient group in that area.

b) The Ventilation Report

A Response I am aware of 2 reports by Innovated Design solutions in relation to the ventilation systems installed at handover serving Wards 2A and B RHC

c) The Ventilation Group and difficulties establishing this.

A There was no regular group established and it was difficult to ensure those requested to attend would attend in a manner of collaborative participation.

d) Birds Roosting in Plant Rooms

A I am not aware that roosting was taking place in the plantrooms, I am aware there had been birds in the plantroom on occasion and have seen images of the plantrooms evidencing that there had, at some point, been pigeons in the area.

e) Smell of Sewage within Theatres - Refer to IMT Bundle Document 49, page 216.

A Not aware of this however in all likelihood, given the proximity to the water treatment facility, weather conditions etc., it is likely that the odour was drawn from external source.

i. Refer to IMT Bundle Document 50, page 223.

A Response

ii. Refer to IMT Bundle Document 51, page 227.

A Response

iii. Refer to IMT Bundle Document 53, page 237.

A Response

In providing YOUR answer, please tell us:

a) What was the issue?

b) The impact on the hospital (include wards/areas) and its patients (if applicable)

c) Who was involved?

d) What was the escalation process?

e) Were any external organisations approached to support and advise?

f) What was the advice?

g) Was there opposing advice and by whom?

h) What remedial action was decided on and who made the decision?

i) Was the issue resolved – consider any ongoing aftercare/support/monitoring?

j) Any ongoing concerns witness had herself or others advised her of?

k) Was there any documentation referenced during or created after the event. For example, an incident report?

l) Did anyone sign off to say the work had been completed and issue resolved/area safe?

A I am unsure what is being asked however referring to the documents, they are a mix of upgrade works in ward 2a/b on plumbing systems and a discussion on the odour going into theatre. I have no specific comment to make however the issues that were identified were actioned. I would note Dr Inkster's comment on page 224 paragraph 6 would offer some support in my response at Q.165.

168. Since you commenced YOUR role at the QEUH what work has been undertaken in respect of ventilation and why and what work, if any, is outstanding?

A Wards 2A/B have been refitted to meet SHTM standards, feasibility studies have been undertaken to ascertain if the existing ventilation systems can be modified to increase air change rate. The studies have confirmed that the current systems cannot be improved to meet SHMT requirements. All critical air systems have been verified annually. Addition negative pressure isolation rooms have been created and validated appropriately Appropriate Training and system competence programmes have been implemented.

Isolation Rooms

169. Upon commencement of YOUR role in 2018 what information were you given, or documentation did you see relating to isolation rooms and the issues pertaining to them and remedial works carried out/required?

A None

170. Were you aware of issues with isolation rooms during YOUR time at NHS NSS? If so, what did you know? What documentation did you see? What actions were taken?

A No

Pentamidine Rooms

171. Discuss Pentamidine Rooms:

a) What are Pentamidine Rooms?

A I have no specific knowledge of them, but I have been made aware they are a specific type of treatment room.

b) YOUR understanding of the purpose of these rooms?

A These rooms are used to administer a drug in a specific manner to a patient in an isolated protective environment.

c) The guidance applicable to these rooms for water and ventilation?

A I am advised as directed by SHTM0301 that the room should be negative to the corridor or any surrounding space but not advised of any specific water related issues.

d) Were you aware of any issues with the specification of these rooms during 2015?

A No, I was not in post.? Estates Teams Bundle, document 38.

In particular consider any issues with:

i) the air change rates

ii) air pressure Estates team Bundle, document 78.

iii) compliance with guidance

iv) any issue(s) arising from the testing

A I was not in post in 2015 in response to the above questions however I have noted the discussions and subsequent actions that took place in relation to this room.

Ward 4B

172. Refer to Estates Team Bundle document 62:

a) what is this document?

A This document is the document provided by H&V on the re-validation of ward 4B following the installation of solid ceilings in the patient bedrooms in October 2015.

b) have you seen it before? If so, when?

A On viewing the bundle, this was the first time I had seen it.

c) do you know what was the purpose of carrying out a ventilation report in October 2015?

A The purpose was to re-validate the rooms following the removal of the ceiling tile grid from the patient rooms.

d) are you aware of any issues arising from this report?

A I am now aware that IPCT were not satisfied. The result was that further works were eventually instructed to form solid ceilings in the en-suites as well

e) Refer to Estates Team Bundle, document 87 – Do you know why NSS was involved in the issues? I am not aware why Colin Clark who was an Energy Manager, was involved? Actions taken in response, YOUR involvement.

A I had no involvement; I was not in post at NSS at that time

f) What information were you given in respect of this upon commencing YOUR role in 2018?

A None

Decision to close wards 2A/B and move to 6A and 4B

173. Discuss the issues surrounding and leading up to the decant of patients from Ward 2A in 2018. This decision was taken to re-locate the patients in September 2018 and it centred around the need to open the WHB drains in the patient rooms to replace components. This then evolved into a programme of replacing all sanitary appliances and taps in ward 2a RHC.

a) What was the lead up and background to this refer to Estates Team Bundle, document 133.

A Not aware of the detailed background as I did not work at GGC until later that year.

b) What was YOUR involvement?

A No involvement but was made aware as I was just about to move into post.

c) What risk assessment and additional measures were put in place to ensure patient safety?

A I was aware that a significant collaborative review of risks and action plans had taken place to facilitate this move.

d) What concerns, if any, did you have about where the patient cohort was being moved to? If so, why did you have these concerns.

A I had no concerns, the multidisciplinary teams on site had discussed and agreed a plan.

e) Discuss and detail the works done to Ward 2A/B what was required to be done and why, what has been done and when the work was completed. Please include details of YOUR involvement. Reference IMT Bundle to assist.

A The initial work was to replace a drainage component on the WHB. We then expanded this to include the replacement of sanitary appliances and taps. We also installed a satellite CL02 system for ward 2A. This work involved alterations to both the plumbing systems and the room fabric. During the works a review of the ventilation systems performance was instructed and on receipt of this review, further consideration was given to the suitability of the existing ventilation systems for the patient cohorts. As a result, the Board made a decision to fully upgrade the ventilation systems serving wards 2A and 2B RHC.

f) Any other relevant information.

A No

174. Discuss the issues surrounding the ward 2A patients when in occupation of ward 6A. In particular, views you may have in respect of:

a) Chilled beams

A I am aware there were issues with both condensation events and leaks from the closed pipe system in ward 6A during the time the patients occupied this space

b) Gram Negative Bacteraemia

A **N**ot aware.

c) Water filters.

A Point of Use Filters were fitted prior to occupation to outlets.

d) Ventilation,

A The ventilation system was verified to give as much air as possible to the patient room to create a positive pressure cascade. This was supplemented, through time, with portable floor standing HEPA units in the room and ceiling

mounted units in the en-suites which scrubbed the air via a HEPA filter and re-circulated it into the space.

e) issues/ testing/ escalation/ response/ IMTs/SBARs impact on patients

f) Patient communication

g) Internal escalation - HAIIT scoring.

h) External escalation

A Given the level of scrutiny, ongoing IMT, all of the above actively considered and actioned as necessary and reviews and monitoring of those actions would be reviewed at each meeting.

Reports prepared by Innovated Design Solutions October 2018

175. Refer to Bundle 6 – Miscellaneous Documents – Documents 33 and 34. These documents are feasibility studies regarding increasing ventilation air change rates within Wards 2A and 2B by Innovated Design Solutions.

a) Who commissioned these reports?

A Ian Powrie

b) What was the background to these reports being commissioned?

A It was to evaluate the performance of the as built ventilation systems supplying RHC Wards 2AB.

c) Why were these reports commissioned? What issues prompted the instruction of these reports?

A The recognition that the majority of patient bedrooms were “general air systems” and not to a similar standard of the adult ward 4B. I was not aware of any perceived issues with the 8 isolation rooms in ward 2A.

d) What concerns, if any, did you have regarding the ventilation system in Ward 2A?

A On reviewing the report, it was clear the ventilation system did not meet the SHTM guidance for the patient cohort in Ward 2A.

e) When did these concerns arise? Was anyone else in estates concerned? Why?

A It was clear prior to the report that there was a concern and Iain Powrie therefore commissioned this report when the opportunity arose during the decant period.

f) What was the impact on patients?

A Not aware of any impact

g) What concerns were raised with anyone?

A The ventilation standards was raised by the ICD and site maintenance manager (Iain Powrie) who observed from the report that the system was not compliant and notwithstanding the ongoing sanitary and fabric work, now with the knowledge of the system being non-compliant, we could not return the patient group to that environment until improvement works had been considered and implemented.

h) What concerns, if any, did you have regarding the ventilation system in Ward 2B?

A None

i) When did these concerns arise? Was anyone else in estates concerned? Why?

A As above

j) What was the impact on patients?

A Not aware of any detrimental impact

k) What concerns were raised with anyone?

A no

l) What happened in response to these reports?

A As a consequence of the reports, a decision was made to implement changes to the systems serving both Ward 2A and 2B by providing HEPA filtered air to both wards.

m) What matters were escalated arising from these reports? If so, to whom, and if not, why not?

A These reports were discussed at Board level as there were significant issues around continued decant as well as the consequential financial impact of the upgrade works.

n) What works, if any, were carried out in response to any findings in these reports?

A A full re-design of ventilation systems serving Ward2A and B including the provision of duty standby units to add resilience to the unit.

o) What was HFS Involvement with this?

A Initially no formal involvement but had an awareness of the design and the intended works package but were part of the due diligence of bringing the wards back into patient use under direction of CNO office.

176. Iain Powrie sent you a SBAR following the Innovated Designs Solutions report – Refer to Bundle 4, Document 31

a. Do you recall receiving this document?

A Yes

b. What are YOUR views on this document?

A I found it hard to understand that the facility had been brought into use with the ventilation system as described in the document and was disappointed to see what had been provided at the handover stage without re-course. I would be supportive in the recommendations the document offered.

c. What actions were taken?

A The document was taken to executive colleagues to secure funding in resolving the issue as quickly as possible. I also discussed with clinical and service teams to explain the findings and recommendations.

d. What recommendations were carried forward?

A All recommendations were carried forward and ultimately further improvements were undertaken post the invasive survey of as built systems.

e. Who was responsible for these actions?

A I was responsible for creating a team to deliver the project.

Cryptococcus

Refer to the Cryptococcus Bundle to assist.

177. Recall YOUR understanding of the Cryptococcus infections in 2018:

a) What was YOUR impression/reaction upon learning of the presence of cryptococcus in 2018?

A This was the first time I was made aware of such a disease. The team took the matter seriously and were focussed of assisting with possible sources of contamination/exposure.

b) What is Cryptococcus?

A A fungal disease.

c) Had you seen/ heard of Cryptococcus in a healthcare setting prior to QEUH?

A No

d) What were the issues with Cryptococcus at QEUH? When did you first become aware of these issues? What happened in response to these issues?

A In December 2018 I was advised by Dr Inkster at an IMT that there were x2 unusual infections identified and that the usual “carrier” of these infections was birds, namely pigeons and their faeces. A further IMT was established to

assess possible transmission routes. This was immediately focussed on the hospital ventilation systems. I was asked if I thought that there was any way that birds could have access to the hospital ductwork, or if there was any likelihood of a dead bird being within the system pre commissioning. I could not answer the latter but would have expected that all open ends of ductwork would be sealed to prevent contamination throughout the construction period. I stated that it would be unlikely that there would be any opportunity for access when the systems are running as they are sealed.

e) Discuss YOUR involvement at the Cryptococcus IMTs: Refer to IMT Bundle, Documents 55,57,58-69.

A I was a member of the IMT and would co-ordinate any actions associated with E&F as well as providing updates back to executive and where necessary Board meetings.

178. Refer to the Action Plan Pg 264 Bundle 1 IMT:

a. What is this document?

A It is an Action Plan

b. What was its purpose?

A To identify tasks, assign task owners and create a table to monitor those actions at subsequent meetings.

c. What actions were you responsible for and why?

A All Estates and facilities related tasks by delegation to the appropriate team.

d. Did you complete YOUR actions?

A The team completed their actions.

e. Were all the actions in the plan completed?

A All E&F were completed, and I believe all others were completed.

f. How did this contribute overall to the management of the cryptococcus incident?

A IMTs are designed to assess, contain and mitigate. These actions contributed to the collaborative management response of the initial concerns raised in relation to the incident.

179. Discuss YOUR involvement at the Cryptococcus Sub-Group Meetings - actions taken, internal escalation: HPS involvement.

A I was part of the subgroup and was exec lead for estates, but by no means an expert in ventilation. I ensured that we had appropriate technical representation for the site AP's and also engage with other industry partners as well as national agencies. I would ensure that any technical actions required after a meeting were undertaken to inform the various hypothesis that were being developed.

180. What, if any, external reporting occurred?

A There was no external reporting, the work of the group was confidential.

181. PAGs/ IMTs/ AICC and BICC involvement.

A The expert group would report back to the IMT.

182. What steps were taken in response/ precautions put in place?

A Action plans were developed, and the recommendations implemented in appropriate timescales.

a. What were the hypotheses put forward for the cases of cryptococcus? Refer to the cryptococcus bundle.

A See report.

b. Who put these forwards?

A The hypothesis were the collective opinions of the group.

c. Did you agree with these?

A Yes, all hypotheses should be considered and evaluated.

d. What was YOUR own hypothesis regarding the cryptococcus cases?

A I did not have one but considered the ventilation system one as being unlikely at the outset, but more infeasible as further examination took place. I was open to all aspects of how the patients may have been affected.

e. What is the rationale behind YOUR hypothesis?

A From an initial review it seemed unlikely that the system could have been breached given the AHUs in the affected plant room had not been serviced, and that the secondary filters had not been removed over this period. In addition, it seemed unlikely to me that and “contaminated “air would be naturally drawn into the system due to the stack affect within the ductwork.

183. Did you read John Hood’s report?

A Yes

184. When did you read John Hood’s report?

A Throughout its creation, the detailed Minutes and actions created the report findings.

185. What observations, if any, did you make after reading John Hood’s report? What actions were taken following the John Hood report?

A Dr Hood led an open and transparent review of the incident. He considered all options of transmission, and all members were encouraged to participate and evaluate. In addition, he undertook a forensic review of air quality across the hospitals as well as extensive literature reviews of how the disease manifests.

186. What else could have been done? How could matters have been handled differently? What concerns, if any, did you have about how matters were dealt with?

A I believe the action taken was appropriate.

187. What was YOUR view on the pigeon infestation on the QEUH/RHC site?

A I do not agree that there was a pigeon infestation, however there was evidence they had been present in the plant room at some point. Externally, pigeons are ubiquitous in our environment.

188. What is YOUR view on the pigeon contamination in the plant rooms?

A There was evidence of bird faeces in plant room 123, not gross contamination.

189. Who was responsible for clean-up regarding this?

A Site estates team organised a specialist contractor.

190. What actions were taken?

A Clean up where appropriate.

191. Was air sampling of plant rooms undertaken?

A Yes as noted at IMT 17th Jan 2019

Gram Negative Bacteraemia

192. Describe YOUR involvement relating to the Gram Negative Bacteraemia Outbreak –
Refer to IMT Bundle
Refer to IMT Bundle Document 79, page 354.
Refer to IMT Bundle Document 80, page 360.

A I was part of the IMT and co-ordinated actions as necessary for E&F.

193. At the meeting of 14th August 2019 (document 77), the minutes note that you requested an alternative to photographs being sent due to the sensitivity of some of them:

a) What, in YOUR view, was sensitive about these photographs?

A IMT meetings are always predicated by a statement emphasising confidentiality. There had been previous issues where sensitive information had been leaked. The statement therefore was not an attempt to hide information from members but more of an intention to protect information from inappropriate release which may cause unnecessary alarm while the incident was ongoing.

b) Did anyone else hold this view?

A Yes

c) Dr Inkster had stated that it is important to show photographs to help form the group ahead of any decisions being made relevant to patient care: do you agree with this?

A Yes

194. The Inquiry has been advised by some witnesses that they were told not to put things in writing or send emails but rather have discussions, due to this information then being available in permanent form: was the reason behind you asking for photographs not to be sent to avoid a record of them being created? If not, what was the reason behind YOUR request? Please, explain YOUR rationale.

A I have explained above.

195. In the IMT of 13 September 2019 (document 80) you request that they remove reference to mould in previous minutes (document 79)? Can you explain this?

A My recollection on review is that the levels of mould, as confirmed by the lab manager, were within what could be considered a “normal and expected range”.

Dr Teresa Inkster

196. The Inquiry understands from Dr Teresa Inkster that you had a difficult relationship with her and other staff: What is YOUR view on YOUR relationship with Dr Inkster? What is YOUR view on YOUR relationship with other staff?

A I did not consider I had a difficult relationship with Dr. Inkster and I had no issues with my relationship with any other staff. We each had specific roles for specific departments, but our ultimate aim would be to provide a safe environment in a collaborative manner.

197. Dr Inkster has advised the Inquiry that she felt bullied by you, what is YOUR view of this? What is YOUR view on any suggestions that you may have bullied other staff members?

A The Board operates a zero-tolerance approach to such behaviour and until seeing this question, I was unaware of this allegation by either Dr.Inkster or others. I would vehemently deny any suggestion that I bullied either Dr.Inkster or indeed any member of staff and I find the suggestion personally upsetting

and defamatory. Following a visit by HIS to the QEUH I had been advised that Dr Inkster had suggested to an Inspector that I had withheld information and she felt bullied. I was extremely concerned by these comments, but I was never given the opportunity to speak directly with the HIS Inspection Team. I therefore, subsequently had a facilitated meeting which was hosted by Dr Armstrong and Dr De Caestecker. The discussion was wide ranging, but the intent was to address concerns some of which were longstanding that Dr Inkster had as well as improving relationships. To my mind there was no relationship issue, but I agreed to have the meeting. The notes of the meeting are as follows. (Note of Meeting of 14 March 2019)

This meeting took place in the Teaching & Learning Centre, present included Dr Linda De Caestecker, Dr Jennifer Armstrong, Dr Teresa Inkster and Mr Tom Steele.

Dr De Caestecker opened the meeting setting out the key purposes in the background. Dr De Caestecker set out the recent events particularly around a series of Infection Control issues which had led to significant media attention and public concern around Estates & Infection Control. This had led to the Cabinet Secretary asking the HEI team to visit the Queen Elizabeth Campus and carry out a review of Infection Control. The report has highlighted a series of concerns around the relationship between Infection Control and Estates. Since this meeting had been arranged there had also been a media enquiry about allegations of bullying which had not been communicated internally. This meeting provided an opportunity to find out if this allegation was actually the case. The reason for the meeting was to provide a safe place to explore issues between Infection Control and Estates teams and also to ensure that solutions to the issues are developed with an ongoing plan to address them.

Dr De Caestecker invited Dr Inkster to highlight some of her concerns. Dr Inkster set out her.

concerns including: -

1. Infection control teams experienced poor information sharing with Estates staff and there was a need to improve working relationships with estates particularly on the QEUH site. Dr Inkster gave some specific examples around issues in 2017 which were encountered by colleagues when she was on sick leave as well as more recent examples when she has requested reports that have taken time to be shared or information not shared at all .

2. Dr Inkster's view that there needed to be additional cleaning of the vents and chill beams. Dr Inkster described her efforts to establish a ventilation group since commencing the lead ICD role and that she had not been able to progress a respiratory decontamination facility despite escalation. She also highlighted difficulties accessing validation reports for PPVL rooms and the importance of this type of information.

3. During the recent outbreaks there had been a need for timely information in order to address some of the concerns with full list of actions for clinicians. There was a need to speed up the flow of information for example reports on rebalancing ventilation systems which took several weeks to be shared and risk assessments of the water incident in 2015/17. Dr Inkster emphasised the importance of clinicians having confidence in estates teams and that IC and estates work closely together.

Tom Steele then described his experiences in taking over as Director of Facilities and Estates in October 2018. He set out that there had been issues with the cladding, the windows and indeed he had worked on the water issues around the Queen Elizabeth and RHC. Tom also set out some of the issues around Cowlairs and that it has been an extremely busy time in the months since he *took over. Tom had been conscious that there was a need to maintain public confidence within the building and a need to address many of* the challenges and to prioritise many areas for action. Tom was very keen to

work effectively with Infection Control colleagues and to provide all of the information that was required and requested. Tom set out his belief that some of the Incident Management meetings had considerable numbers of people at them which made more focussed actions and information sharing fairly difficult. Dr Inkster agreed with this stating that on occasion there had been multiple members of the estates/facilities teams present along with other staff groups. Tom stated that there was a need for further clarity of roles and responsibilities within the Estates team and this would take time to establish more fully. In addition, Tom highlighted the extensive media enquiries and focused attention together with multiple FOIs which he had been dealing along with all of the Estate issues. This had put significant pressure on many of the teams. Tom was also extremely distressed by some of the allegations which had appeared to have been made and mainly directed at himself and the Estates teams of which he had no knowledge and no ability to counteract them. There had then been further discussions of these allegations at a senior level within NHS Scotland and alluded to in newspaper articles without any recourse or evidence on which to comment or to refute.

The meeting then explored what these allegations were and Dr Inkster was asked about them. Dr Inkster explained that the inspectors wished to explore culture and leadership. She was asked about concerns raised by colleagues in 2017 and about whether she felt supported by infection control , in addition to working relationships with estates colleagues. Dr Inkster detailed her conversation during which there had been a discussion around her assertion that estates colleagues did not commit issues or actions to paper and were not escalating issues. Dr Inkster had taken a reflective note of her interpretation of a conversation with Tom Steele about means of communication. Tom did not agree with Theresa's interpretation that he did not want to put important concerns in writing and stated his desire for honesty and transparency. He explained his reasoning for his response to Theresa that it is often more productive and constructive to have face to face discussion than multiple emails. His view was that it was important to document and detail agreements and be clear about the actions which are

required. Tom had noted that in many of the IMTs this had not been a consistent process or a proactive one resulting in many actions being changed which had been very difficult. Dr Inkster explained that this was often the case in IMTs as hypotheses can change, infection control incidents tend to be evolving. Dr Inkster agreed to share her reflective notes with Tom Steele in order that he could review them and provide a response.

It became very apparent both Teresa Inkster and Tom Steele were very keen to resolve the problems within the Queen Elizabeth & RHC together. Tom agreed with the establishment of the ventilation group which Teresa had suggested in order to address the various issues, not just within the Queen Elizabeth but across the sites. Tom was also keen to work with Theresa to develop dashboards and detail the operating characteristics of the hospital. Tom had asked for a prioritised list which they could jointly work on together.

Actions: -

It was agreed that there was a need for both parties to understand each other more fully and that both within Teresa Inkster and Tom Steele it would be far better for the organisation if they were to work together. To this end it was agreed that there should be one weekly meeting in the first instance with Tom Steele and his deputy together with Teresa Inkster and Sandra Devine to proactively set out all of the issues that are required to be dealt with. It would also send a good leadership message throughout the organisation to strengthen our culture and improve the working relationships at the top and as well as structures and processes.

It was also agreed that there should be joint prioritisation of the issues which were to be addressed and a methodical workplan to ensure that this happens.

Teresa Inkster would share the reflective note with Tom Steele in order to allow him to review it and determine his response.

However, the key issue for the meeting was that there needed to be a productive, trusting and supportive working relationship between the Director of Estates and the Lead Infection Control Doctor in order that they both work directly together to promote patient safety. There had been the opportunity for both Tom Steele and Teresa Inkster to raise any concerns about bullying and these had not been identified between them. They both agreed that there would be no further action on either side and that this was a constructive meeting with a helpful way forward. Of note, Dr Inkster never shared her reflective note, despite requests.

198. Dr Inkster has advised the Inquiry that she believes that information regarding the cryptococcus incident may have been withheld from her by yourself, Estates and Senior Management. What is YOUR view on this? Was information withheld? If so, what information and why?

A Unless you can provide the document, or information, I am alleged to have withheld I cannot comment, however I can say I am not aware of ever withholding documentation in relation to this. I cannot comment on what took place prior to me taking up post in October 2018.

199. Dr Inkster has advised the Inquiry that you would always request a 'pre-meet' in advance of IMTs: Is this correct? Why would you request this?

A This would be normal Management practice and it was not an uncommon arrangement to have a pre-meet. This was to ensure that all previously identified actions had been completed and also to assess any new issues that would have been identified in the intervening period. This would facilitate the meeting flow and minimise the time taken away from other duties. Dr. Inkster was in agreement with this process and attend as Chair.

200. It is Dr Inkster's view that this made things more difficult for her: what is YOUR view on this?

A I disagree, it made the meeting easier.

201. Dr Inkster has advised the Inquiry that she prepared an SBAR on ward 4C which she offered to email to you however you asked her to hand it to you in person and not to email things as this meant, "they were out there". Do you recall this incident? If so, why would you not want the SBAR to be sent to you?

A I do not recall this incident but I am clear that technically sensitive information was being released uncontrolled to the press and politicians. This matter in regard to ward 4C was raised at Ventilation Group meetings in both June and July 2019 and the practicality of achieving the recommendations was noted. This matter is also being investigated by the HSE.

Whistleblowing Process

202. What was YOUR involvement in the whistleblowing process?

A I was asked by William Edwards to attend a meeting with Dr Redding and her associate. The intent of me attending was to explain some of the actions that had been taken in regard to concerns that had been raised prior to me taking up post. The meeting was cordial and I believe that Dr Redding left the meeting with answers to questions that had been outstanding for some time.

203. What was YOUR view on the concerns being raised?

A The concerns related to historical queries, much of which could have been ameliorated had the conversations taken place with the key people.

204. Were you aware of the 27 point action plan put in place following the stage 1 whistleblow?

A Yes

205. Who was responsible for the implementation of this plan?

A Dr Armstrong coordinated the communications, but many actions related to issues with the built environment. As such, any outstanding matters were coordinated through my role.

206. Did you take on any responsibility relating to this plan?

A Yes, I ensured that actions were closed out and that this was known to those who raised the concerns.

Staffing and working environment.

207. What do you know about the staffing levels like in estates at the point of handover? Where did the staff come from – were they mainly transferred from old site?

A From review of records the workforce at the QE campus was created by the amalgamation of staff who were previously working at the hospitals that were closing. I understand that staffing levels for the QEUH/RHC were lower than the demitting hospitals. In 2015 when the QEUH and RHC came online, the site had 86.5 substantive positions covering admin, craftsmen, multi-skilled technicians, supervisors and managers. At the time of opening maintenance of the site was still being established with PPMs being introduced via the FM First team and service contracts via the in-house team along with a number of Contractors from DMA and MMM staff in 2015

208. What have you seen/been told about concerns if any about staffing following handover – to what extent did the staffing levels manage the workload?

A From discussion with estates staff it was clear that the site at the time of handover was extremely busy as an operational hospital as well as having a significant presence of contractors who were dealing with snagging matters. I cannot imagine that the staffing resources and management structure at the time ever really got on top of managing the site and its myriad of demands.

209. Do you know if appropriate training was in place for new and existing staff on using new systems and working within the QEUH? How was it ensures that new and current staff were appropriately trained?

A From review of records, or the lack of, and speaking with staff there would appear to have been a lack of formal training and familiarisation for key staff groups. I am not aware of the training needs analysis that may/should have taken place.

210. Who was responsible for providing staffing? Who was responsible for ensuring staffing was maintained at sufficient levels?

A Appropriate staffing levels will be generated by the planned and reactive maintenance needs of the site. This can be modelled through scheduling of the planned maintenance requirements and a predictive assessment of faults. The estates manager will have site responsibility, but the overall responsibility would have been with the Director of Facilities.

211. When commencing YOUR role what concerns did you have regarding staffing levels?

A Staffing levels appeared to be low across all trade groups given the level of activity on the site. There was a presence of some contractor staff to augment, particularly the specialist areas of maintenance. In addition, there appeared to be a lack of management structure and senior leaders.

212. What was the working environment like when QEUH opened – work life balance/ workplace culture? What issues, if any, are you aware of? What is YOUR experience of this since commencing YOUR role?

A I was not in post when the hospitals opened, however from discussion with staff it appeared to be very busy and often described as “bedlam” of competing demands. The QEUH campus is a large and very complex site that has x4 hospitals operating within it. When I took up post my impressions were that staff across all groups were extremely stressed by the demands of the day to day job as well as the significant scrutiny and media attention that prevailed. My immediate thoughts and priorities were to offer support in

whatever way I could to allow them to operate more effectively. The work life balance for some was completely out of balance and in some ways reinforced the work ethic of many staff who went above and beyond every day. For a period of time there was a high attrition rate of staff combined with a difficulty in recruiting suitably qualified staff. That has taken time to change, but the site now has a stable workforce and strong management team of highly motivated and suitably qualified professionals.

213. What were you told at the commencement of YOUR role in terms of who was on site to manage and assist with carrying out works relating to equipment? How did this assist workload in estates? To what extent, if any, was there a reliance on commercial third parties such as Multiplex when it came to staffing levels?

A I was not told anything in this regard. From early visits to site and speaking with the team it was clear that issues were ongoing with Multiplex and there was a presence of some third-party contractors.

214. Generally – discuss the workplace environment and culture – What concerns, if any, did you have?

A There was significant pressure on the site workforce with an array of general day to day demands as well as high levels of scrutiny, which in turn drove other demands. Regrettably some senior staff chose to leave the organisation. My views on this were that the working conditions became untenable for them, despite my assurance that things would change. I also gave assurance of support in all aspects of their work, staff seemed unable/unwilling to make decisions when clearly, they were best placed to make them.

215. From YOUR initial instruction upon commencing YOUR role, historically were the concerns raised by infection control colleagues regarding the general build of QEUH/RHC taken seriously? What action was taken in response to these concerns, if not already mentioned in YOUR answers? What is the position in respect of this since commencing YOUR role and at present?

A Concerns regarding some design, construction, commissioning and product quality have been ongoing through construction and prior to handover. In the main this has been linked to the ventilation systems and latterly to the DWS. There would appear to have been some difficult relationships between the technical team and IPC, whereby a lack of communication, or ameliorated outcome led to further dissatisfaction, or escalation. My role was to lead the team that dealt with concerns and ensure that we were communicating effectively and providing assurance that any remedial actions were being implemented in a collaborative manner. My priorities were to instil confidence in the hospitals as a place of excellence and build strong cohesive relationships across all areas of the health board. In short, my message to staff is that our role is to serve those that serve others.

216. Is there anything further that you want to add that you feel could be of assistance to the Inquiry?

A Since joining NHS GGC I have experienced the most demanding and paradoxically rewarding challenges of my career, and in particular throughout 2019/20. On hindsight some of this has undoubtedly been detrimental to my overall wellbeing and that of my family. The deliberate actions of others to systematically undermine the efforts of those charged with managing these complex issues was extremely challenging and stressful for many. They did nothing other than to fuel the unfounded concerns of already anxious patients, relatives and staff. In essence, these cynical actions, allied to intense media scrutiny created a working environment that was in effect under siege.

That said, this role has also been the most personally rewarding whilst being able to assess, understand and remediate, where necessary complex issues. The clear direction given to me in late 2018 to engage with specialist technical

consultancy has allowed NHS GGC to fully appreciate the extent of design and construction quality issues of the two hospitals. Since then, the Board has taken swift action to fully understand the issues at hand and take any immediate steps in regard to public safety risk and business continuity whilst longer term improvement plans are being implemented and developed. These remedial actions are likely to take a number of years to complete as well as at significant cost to public funds. These contract defects are being actively pursued, where possible through the Court system.

Given the seriousness and complexity of the matters which this Inquiry is examining and the importance of ensuring that there is public confidence in the hospital, the Board has exhaustively undertaken several internal reviews as well as commissioned a number of independent external reports to fully inform all stakeholders of the facts so far as it has been possible to do so. This included in relation to whether the water and ventilation systems may have caused infections, and I have been reassured that there was not the link between these systems and infections as has been suggested. The learning outcomes of these reports welcomed and have been or will be implemented by NHS GGC and more widely within NHS Scotland.

I continue to work with an outstanding team of highly motivated and committed colleagues across all disciplines who have a common purpose to make things better for our patients, co-workers and instil public confidence in our hospitals. This has been and continues to be a privilege.

I have provided my responses based on my recollection of events and where necessary, the review of documents some of which related to events that occurred prior to my taking up post.

Declaration

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

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

Appendix A

A43255563 – Bundle 1 - Incident Management Team Meeting Minutes (IMT Minutes)
A43299519 – Bundle 4 - NHS Greater Glasgow and Clyde: BAR Documentation
A43293438 – Bundle 6 - Miscellaneous Documents
A47175206 – Bundle 9 - QEUH Cryptococcus Sub-Group Minutes
A47069198 – Bundle 12 - Estates Communications