

Scottish Hospitals Inquiry

Witness Statement of Questions and Responses

Colin George Purdon

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. Colin George Purdon

2 Occupation

A. Head of Estates, NHS Golden Jubilee Hospital

3 Qualification(s)

A. BSc (Hons) Building Surveying

Professional Background

4 Professional role(s) at NHS GGC

A. Senior Estates Manager (Retained Estate) Aug 2015 to Dec 2018 followed by Interim Sector Estates Manager (South Sector) Dec 2018 to Feb 2020

- 5 Area(s) of the hospital in which you worked/work
- A. Queen Elizabeth University Hospital Campus (Retained Estate) followed by whole campus from Dec 2018.
- 6 Role and responsibilities within the above area(s)
- A. I had senior management responsibility for all aspects of scheduled and unscheduled maintenance and repair activities to all building and engineering assets.

Specific Role(s) at NHS GGC

- 7 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. Selection for my initial role at QEUH was by interview in early 2015. Whilst working at the Royal Alexandra Hospital in Paisley I applied for the role of Senior Estates Manager and after my application had been shortlisted I was interviewed by James McFadden, Ian Powrie and a member of the Human Resources team whose name I cannot recall. Of the 3 panel members I had only previously met James McFadden incidentally on a few occasions when we attended the same meetings. I was told initially that I had been unsuccessful in securing the role, and David Bratney was being appointed to the post. A number of weeks later I was contacted by Ian Powrie and informed that an equivalent role was available within the Retained Estate and they would like to offer me this post. I accepted the post and commenced employment at QEUH (Retained Estate) in August 2015. My second role at QEUH was secondment into the vacant post of Sector Estates Manager. The post was vacated by Andy Wilson in late 2018. It was then advertised as a secondment opportunity by Alan Gallacher Head of Corporate Estates. Alan had previously been my line manager during a period of my time based at Royal Alexandra Hospital Paisley where I worked as an Estates Manager. I

registered my interest and was successfully appointed on 3rd Dec 2018 as Interim Sector Estates Manager.

- 8 Go through each of your roles in turn held in Estates at the QEUH: Describe the role.
- A.** Senior Estates Manager (Retained Estate) I was the Senior manager to the Estates Managers and Supervisors responsible for the overall management of day-to-day repair and maintenance activities for all building and engineering elements and grounds. The portfolio of buildings in the retained estate included Podiatry, West MARC, CMB, Office Building, TLC, INS, Neurology, PDRU, Maternity, Labs, and multi storey Car Parks. I had incidental involvement with issues arising in the Adult & Childrens Hospitals as and when I could be of assistance. As Interim Sector Estates Manager I had the same duties and responsibility but for the entire campus including Adult & Childrens Hospitals.
- 9 What were your duties in this role?
- A.** Both roles were similar in duties and differed only in terms of whole or partial responsibility for the site buildings. I led the maintenance team and had management responsibility for maintenance and repair of all assets.
- 10 Who did you report to in this role? Detail superiors/superiors for this role.
- A.** Senior Estates Manager: I reported to the Sector Estates Manager in post at the time. These were initially Ian Powrie followed by Andy Wilson. As Interim Sector Estates Manager I reported to a number of individuals depending on the type and timing of request. These were Alan Gallacher, Karen Connolly, Billy Hunter, Mary-Anne Kane, and Tom Steele.
- 11 What was your relationship like with your supervisor in this role.
- A.** I had good relationships with both Ian and Andy. We had no conflicts and I would carry out instructions as necessary to the best of my ability with the resources I had at my disposal.

- 12 Provide details of staff who reported to you, and you were responsible for in this role, and your relationship with them.
- A.** As Senior Estates Manager for the retained estate I had 1 x Estates Manager, 2 x Co-ordinating Supervisors who reported to me directly. I cannot recall exact numbers of Technician, Building Craft, or Assistant staff who were in post for retained estate at the time.
- 13 Provide the name and role of any managers you worked with. Please provide their job (s) and role responsibilities.
- A.** David Bratney was the Senior Estates Manager for the QEUH Adult & Childrens Hospitals. His role, duties and responsibilities were the same as mine although we covered a different portfolio of buildings on the same campus.
- 14 How was work delegated in the Estates team?
- A.** Work would be delegated to the technicians and trade staff by the coordinating supervisors or Estates Managers.
- 15 How did you keep a record of work delegated?
- A.** The organisation uses a Computer Aided Facilities Management system called FM First. Any work would be delegated to individuals would be done so electronically. The job tickets would be allocated from the software on a desktop PC and transferred over Wi-Fi to the tradespersons mobile phone. A log would be kept of all activities from initial report to completion of every task.
- 16 How did you check that the work delegated had been carried out?
- A.** Checking work was completed was the responsibility of the Estates Managers and Coordinating supervisors.

- 17 Did you have 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 I had no concerns that I felt would require intervention.
- 18 Did you ever have any concerns/ever raise 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 concerns.
- 19 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 who were senior to you/ supervised you?
- A.** Generally I had good working relationships with staff throughout the Estates Team. Communications were often verbal or by email. If I required any clarity I would often ask for this by email so that there was no dubiety. Emails were the preferred method of communication so much so that the number of emails I could receive in a day was unmanageable within a standard working day.
- 20 On how many occasions, if any, did issues arise caused by misunderstandings or poor communication? Please provide details of any such instances.
- A.** I cannot recall any specifics about misunderstandings or incidences of poor communication within the Estate Management department.
- 21 How many people worked within QEUH hard facilities management when you started? How many people worked within QEUH soft facilities management when you started? Did 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. In Hard FM there were approximately 70 people in the organisation. I have no idea how many worked in Soft FM. Yes the number of people working in Hard FM changed during my time. There was an increase in the number of managers and supervisors. I cannot recall exact numbers.

22 How did Estates management operate on a daily basis? Was responsibility shared between different teams? If so, to what extent was responsibility shared?

A. The Estate was split across 2 areas of responsibility and had 2 dedicated teams of managers and trade staff. The split was retained Estate, and Adult & Childrens. Responsibility was shared across the 2 areas where there was high demand, or where a person's knowledge and skills could be of benefit in addressing any particular issue. The Adult & Childrens shift team assumed responsibility for attending to issues across the entire estate out of hours.

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

a) Do the organograms match the organisational structures of QUEH?

A. Yes I believe this matches the organisational structure at QUEH at the time.

b) If not, why not?

A. NA

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

A. I am unable to comment on how they operated across the sectors.

Training

24 What training had you undertaken for your role(s) in estates?

A I have been working in NHS Estates since 1994. Over my career I had undertaken various statutory training courses and also completed an HNC in

Construction Practice in 2004. I completed some further training courses provided by the organisation such as City & Guilds qualifications in Water Systems Management and finally enrolled in a degree course in Building Surveying at GCU in 2012. I completed this course in 2016 during my time at QEUH.

25 What qualifications did you have for your role(s) in estates?

A As stated above.

26 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 I had worked in the NHS since 1994. My first role was as Maintenance Craftsperson in the Dental Hospital from 1994 to 2005. I then moved on to become Estates Officer at RAH Paisley from 2005 to 2014. I spent a further year at RAH as Minor Works Project Manager serving RAH, IRH, and Health Centres within the Clyde Sector. In 2015 I moved to QEUH.

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

a) Water

A Yes City & Guilds in Managing Water Systems circa 2008

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 The training gave me an understanding of how to manage Legionella bacteria in water systems. I had an understanding of what tasks should be performed and what actions should be taken in the event of a positive reading from samples.

28 Did you ever have 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 Yes, as part of my role at RAH as Estates Officer I had operational responsibility for managing the water system maintenance procedures. I also had senior responsibility for retained estate water systems whilst working at QEUH.

29 If you did:

a) What were these responsibilities?

A Ensuring that all water related maintenance tasks were carried out, all sampling was carried out and any positive samples were responded to appropriately.

b) What was the purpose of these responsibilities?

A To ensure that the system remained under control and that legionella bacteria would not be allowed to proliferate.

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

A Yes, It is a legal responsibility to manage water systems in accordance with the HSE ACOP L8 document.

30 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

31 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 Yes, during my time at RAH Paisley.

Documents, Paperwork and Processes in Place as of 26th January 2015

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

32 What contractual documentation would you expect to see in place at such a handover?

A I was not employed at QEUH at this time, although I would expect that a full Operation and Maintenance package (O&M Manuals) would be present. These would contain as built drawings, schematics, commissioning and validation documentation for all systems, test results, manufacturers literature and maintenance recommendations.

a) What contractual documentation did you see upon commencing your role?

A I was not specifically handed or directed to view any documentation, but I asked to be given access to the ZUTEC online portal where all of the relative O&M information was held. The ZUTEC portal held information on the Lab Block building as well as the Adult & Childrens hospitals. As I was responsible for the lab building, I required access to this to view O&M information. I could

view this information when required and familiarise myself with the many assets and systems installed in the buildings. There were no admin restrictions therefore I was also able to freely browse files relating to the Adult & Childrens buildings. I did this on occasion purely out of interest and to aid my understanding of the Adult & Childrens construction.

33 We understand that you did not take up the role of Site Manager Operational Estates until August 2015:

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

A I was placed in charge of the Retained Estate when I took up post. I would occasionally be asked to get involved in issues within the Adult & Childrens hospitals where my knowledge or experience could be useful

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 cannot specifically recall details of any repairs carried out to the adult or children's hospitals since opening in 2015. I was focussed on the maintenance works required in the retained estate

c) What was the position regarding outstanding repairs and maintenance when you left your role in May 2023?

A I departed the QEUH campus in Feb 2020 to take up a post in the Clyde Sector. I had no further involvement in the QEUH after that date.

d) At the commencement of your role, what relevant paperwork were you provided with relating to the QEUH/RHC Campus?

A I had access to all of the historical information that was held in relation to the Retained Estates buildings which consisted of drawings, maintenance records, risk assessments, O&M manuals etc. I was given access to the ZUTEC platform which held O&M information in relation to the Laboratory

medicine block as this was one of the building I had responsibility for. It also contained information on the Adult & Childrens hospital buildings

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

A My observations were that the building stock was of a significant age and as such was going to require a huge amount of investment in order to eliminate the list of backlog maintenance tasks and bring it up to a good condition. Although there was constant repair work going on day-to-day, this was only in an effort to keep the buildings functional. The maintenance budget only allowed for running repairs and not for upgrade or refurbishment

f) Here you state that “the building stock was of a significant age”. The QEUH handover occurred in January 2015 a short while before you started your role, therefore the buildings would have been new, can you please clarify your response.

A The building stock I am referring to is within the retained estates which consists of many older buildings from the original Sothorn General Hospital site. These dated back to 1900 onwards. Those are the buildings that were within my remit. I was not fully informed or involved in any remedial works being carried out on the more recent Adult & Childrens hospitals.

g) What were your observations in terms of the extent of the remedial work required to the new hospital buildings when you commenced your role?

A I cannot recall making any observations as I was not directly involved in planning or managing any of the remedial or defect works in the new buildings. I was only aware of the vague detail of any issues that would be mentioned in passing discussions with my colleagues who were more directly involved in the Adult & Childrens hospitals. From memory it was some time in 2017 I became involved in investigating issues related to spontaneous glass failures on the façade as it was thought my knowledge could be useful.

- h) What were your observations in terms of the team dynamics?
- A** I felt the team were working well together. They were always very busy and could rely on each other. The volume of work they got through on a daily basis was significant, but the demand was always greater. This led to some members of staff becoming tired and burnt out as the workload was often unmanageable.
- 34 We understand that you did not commence your role in estates until August 2015, consider the following questions in respect of the commencement of each of your roles held in estates:
- 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** As Senior Estates Manager (Retained Estate) I had no direct remit over the water system within the QEUH/RHC Adult & Childrens hospital buildings, therefore I did not receive any information, handover, or paperwork. When I commenced my role as Interim Sector Estates Manager I assumed overall responsibility for managing all assets and systems with the QEUH Campus. There was no official handover process at the time and no paperwork was involved. I had worked closely with Andy Wilson during his tenure at QEUH and therefore was able to access documentation he had set aside for me on the department hard drive.
- 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** As Senior Estates Manager (Retained Estate) I had no remit over the ventilation system in QEUH/RHC. When I commenced my role as Interim Sector Estates Manager I assumed responsibility for managing all assets and

systems across the QEUH Campus. There was no official handover process and no paperwork was involved.

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 At commencement both of my roles at QEUH/RHC I was not given any formal instruction in relation to infection control. It was widely accepted that any works carried out within the property would require to be done under HAISCRIBE control measures. This knowledge predated my time at QEUH. I was already aware of the requirements from my time within the Clyde Sector

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

A I was given access via username and password to the ZUTEC platform which stored all of the Operation and Maintenance information that had been submitted by Brookfield Multiplex at the time

Risk Assessments at Occupation

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

A Yes

36 Where is this legal requirement set out?

A The legal requirement is set out in HSE ACOP L8 and relates to carrying out a legionella risk assessment on water systems

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

A Yes

- 38 If so, when did you become aware of this risk assessment?
- A** I am unsure of exactly when I was first aware of the existence of the QEUH/RHC Water Risk Assessment. I would estimate it was some time in 2016
- 39 What documentation have you seen in relation to this risk assessment?
- A** I have seen the pre-occupancy risk assessment (2015) and the updated version from 2018
- 40 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** I am unsure of exactly when I first saw this. I would estimate that it was some time in 2016
- d) In 2016 what were the circumstances in which you first viewed the DMA Canyon report? Who showed this to you?
- A** I cannot recall the exact date or location or who provided me with a copy. At that time I was only given it for information purposes. I do not believe there were any responsibilities placed upon me to action the document. I cannot recall whether I received it as an email attachment or whether it was a hard copy.
- e) Who made you aware of this report?
- A** I cannot recall

f) Did you discuss this report with anyone?

A Initially I did not discuss this report with anyone as it did not relate to any of the building within my remit at the time.

g) Who would have instructed these reports?

A Yes had I been in that position I would have instructed a similar risk assessment to be carried out.

h) What would the cost of such reports be?

A I would approximate circa £5,000

i) Who would have signed off on these reports? What would this process look like?

A Normally the person commissioning the report would sign off on it. The process would normally consist of a post risk assessment meeting with the consultant who carried out the assessment to discuss the content and highlight any concerns or clarify any points. An action plan would normally be created and issued to a member of the management team to implement

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

A No

k) Do you have a view on why this might have happened?

A No

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

A I am not aware of what was done in relation to the recommendations between 2015 and 2017

m) Do you know if/when the works suggested in the 2015 report were actioned?

A The works identified were completed. I am unable to state exactly when each of the individual actions were completed

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

A My view would be that the findings are the opinion of a qualified Risk Assessor. The purpose of outsourcing this type of specialist service is to ensure that it results in the creation of a suitable and sufficient document

o) At the time of learning of the DMA Reports what was your impression of the extent to which the points raised in them had been addressed?

A I cannot specifically recall what conclusions, if any, I had drawn about the content of the report on my first viewing in 2016. The buildings within the report were not within my area of responsibility therefore I did not spend much time assessing the content. At that time it was unclear which points had already been addressed or if any were still outstanding, nor did I know who had been given the responsibility of ensuring that the actions were addressed. Once the 2018 report was sent to me and I was asked to become involved in resolving the water contamination issue, I reviewed the reports in greater detail. At that time I could not determine which action points were still to be addressed. Shortly afterwards a programme of work was commenced to check and confirm the status of each point and ensure all were closed out and evidenced as such.

p) The 2015 report highlights a number of actions required to be taken, are you aware how these actions were managed by estates? If so, please provide details of the management of the recommended actions.

A I subsequently became involved in this process some time in mid-2018. At this point the actions were transferred into an action tracker and followed through to completion. Evidence of the completion including photographs, temperature readings etc were also attached to the tracker

q) Can you please advise regarding the circumstances around you becoming involved in the process in 2018 and who asked you to become involved?

A After the document was shared with me it was also raised at either an IMT meeting or Water Technical Sub Group Meeting, I cannot recall exactly. The document was tabled and myself and others were tasked with investigating which of the actions had been completed, and also to ensure that completed actions could be evidenced. I cannot recall specifically who asked me to become involved in this task.

r) 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 I am unable to confirm how many of the works from the 2015 report were carried out prior to the 2017 report.

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

A I am unable to state what the impact on patient safety would have been

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

A I have no knowledge of why they were not told about this report until 2018.

u) The Inquiry understands a copy of the 2017 report was emailed to you in April 2018. Do you remember receiving this report? Did you discuss the report with anyone? What actions did you or other take in relation to the report's recommendations?

A Yes I recall being sent the report. I am sure I discussed the report with Mary-Anne Kane, Ian Powrie and Alan Gallacher in order to determine how the actions would be addressed

v) Was the approach taken by Estates compliant with all relevant guidance and legislation at that time?

A Yes I believe that in addressing the actions within the report they were done in accordance with relevant guidance and legislation

w) Do you have any concerns about the way in which the water system was managed?

A At that time my thoughts were that the Estates department was not adequately resourced to carry out all of the related maintenance activities. There were not enough staff available to perform the tasks and there were no planned maintenance tasks programmed into the CaFM (FM First) system. There were no clear lines of responsibility within the management and supervisory chain. As I recall, at the time there were no Authorised Persons or Competent Person appointed

41 What risk assessments have been undertaken in respect of the water system since the DMA Canyon Reports? Please provide details.

A I cannot recall exactly when but I am sure DMA Canyon updated the 2017 risk assessment during 2019

42 Following the DMA Canyon Reports, what water maintenance strategies have since been put in place? Who is/was responsible for these? Please provide details of any applicable strategies which were put in place.

A I became involved in this incident circa April 2018. Although the Adult & Childrens hospitals were not within my remit, I was asked to step in and help out as much as I could. From there I assisted Ian Powrie and the rest of the management team in responding to the water system contamination issue. In 2018 I re-drafted the Written Scheme document which details the strategy for managing the water system

Design Requirements for Specialist Wards

43 What is your experience in design requirements for specialist wards within a hospital?

A I do not have experience in designing specialist wards

44 Is there specific guidance relating to these requirements? Please provide relevant details.

A Yes, there are specific Health Building Notes relating to the designs for a range of specialist clinical environments

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

A The design requirements would take into consideration, the type of patient cohort and what their particular needs would be. The facility would be designed around those needs in order to provide the most suitable environment for specialist patient care. This would be in accordance with the relevant Health Building Notes and extant guidance. It is possible that deviation from the design can be accommodated via a derogation agreement but this must be risk assessed and agreed with the relevant stakeholders

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

A No I was not involved with the design team.

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

A No I was not involved at the design stage.

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

A I do not know who was responsible.

Asset Tagging

49 Describe and detail asset tagging:

a) What is this?

A This is the process by which each individual item/asset is given a unique ID number, QR code or barcode. A label with the tag number or code should be securely fixed to the asset

b) Why is this important?

A It is important in order to trace the lifecycle and history of each asset. This allows for all relative information on the item to be linked, such as manufacturers literature or maintenance history

c) Who was responsible?

A I do not know who was given this responsibility at QEUH.

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

A This can lead to delays in identifying the correct maintenance procedures for individual assets or lead to the incorrect asset being maintained.

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

A I cannot recall any concerns I had.

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

A I cannot recall

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

A I cannot recall.

HEPA Filters

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

A I am not aware

51 What issues, if any, were there with HEPA filters when you commenced your role in Estates in 2015 at the QEUH/RHC?

A I was not aware of issues relating to HEPA filters on commencement of my role in 2015.

52 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 I don't recall any relative information being shared with me at that time.

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

A If HEPA filters are not installed the air entering the room is not filtered to the appropriate standard, therefore the air could contain contaminants which would infiltrate the room

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

A There could be a significant health risk to patients in particular if they are in protective isolation due to suppressed or compromised immunity

53 Refer to IMT Bundle – **Document 58**

There are discussions here about sourcing HEPA filters: why was there a lack of HEPA filters?

A The type of HEPA filtered unit discussed here is a mobile unit. These are not an item that would normally be kept in stock. There were a very limited number on site at the time of this incident. I was asked to source more units so that they could be deployed in locations throughout the ward

54 Why were they required?

A These were requested by the IMT as a contingency/control measure in an effort to scrub the air in the room and capture any contaminants in the integral HEPA filter

55 Can you explain the circumstances leading up to this?

Refer to IMT Bundle re. HEPA filters: Documents 57 to 69

A It was felt by the IMT that due to the apparent sample results, the deployment of mobile HEPA units could help control and mitigate the risk of patient infection from airborne contaminants

56 **Refer to Document 59:**

This states that particle counts in Ward 6A came back higher than expected especially with the HEPA filter at maximum, as a result of mould in the showers and water leaking:

a) How effective are HEPA filters in managing infection control?

A I was not party to any research literature on the topic and i do not feel I have sufficient expertise to comment on how effective the HEPA filter in question is at managing infection control

b) What, if anything, was being done to address the issue of mould and leaks in the showers?

A Where mould and leaks were present in shower areas we would schedule repairs to be carried out which involved replacing the wall and flooring vinyl, and resealing the area to make it water resistant

c) Who was responsible for the maintenance and upkeep of the showers? when were these issues actioned? If they were not actioned, why not?

A The Estates Department are responsible for the upkeep of the showers. These issues were actioned at the first opportunity as soon as they were reported to Estates. This was sometimes challenging due to patient activity and inability to access the rooms to carry out the necessary repairs

Chilled Beams

57 What are chilled beams?

A A chilled beam is a ceiling mounted unit which provides heating or cooling to a room by means of blowing air over the heating and cooling coils within the unit

58 Do you have experience of working with chilled beams?

A Before working at QEUH I had very limited experience with chilled beams but subsequently built on my experience during that period

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

A No. At the time I worked at QEUH I do not recall any guidance that placed limitations on where chilled beams could be used

60 Can you recall any specific events in relation to chilled beams at the QEUH/RHC?

Refer to IMT Bundle to assist

A Yes. The cleaning process for the chilled beams was problematic both in terms of accessing the rooms to carry out the cleaning procedure and having the sufficient resource available to keep up with the demand. There were also incidents when the pipework connecting the chilled beam to the chilled water was subject to failure and would leak into the room. There was concern that the water leaking from the pipework could contain bacteria as it was on a closed loop system, therefore sampling was carried out to establish if bacteria was present. During periods of high humidity there were instances where condensation would form on the cooling coils of the chilled beam which would lead to droplets of water entering the patients rooms

For example: condensation/leaking/growth of bacteria/mould

Cleaning of Chilled Beams

Air Sampling/water sampling

Showers in 6A

Action Plan

Patient Placement

Biocide Dosing

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

For each event 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) If so, what was the advice?
- g) Was there opposing advice and by whom, and what was the advice?
- 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 the witness had himself or others advised him 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.

Write your answers above in the relevant section.

- 61 **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 their being a water source from condensation, leaks, and dripping water:

Do you agree with this? If so, can you explain why?

If not, can you explain why?

- A** I also became aware of the problems associated with chilled beams during my time working at QEUH and whilst I have no medical qualifications, from a common sense approach I would agree with Dr Peters assessment and comments on why they should not be used in neutropenic settings. I am aware that Neutropenic patients are susceptible to infection therefore every possible measure should be taken to ensure the treatment environment is kept free of contaminants

Combined Heating and Power Unit

- 62 Describe the Combined Heating and Power Unit (CHP)

- A** The CHP is a dual fuel engine capable of running on diesel or natural gas. The QEUH Energy Centre houses 3 such units on the ground floor which are situated within acoustic shipping containers

- a) What is the purpose of the CHP?

- A** When running this generates heat which is used to heat domestic hot water of the building heating system water. It also powers a generator which feeds electricity in the national grid

- b) What condition was the CHP in when you commenced your role at QEUH?

- A** As far as I am aware the CHP's were running and in service when I commenced in 2015

c) Were you advised of the condition of the CHP at handover?

A No

d) What information do you have to support your view on the CHP's condition?

A None

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

A I am not aware

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

A None

Refer to **Estates team Bundle, document 90**

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

A I do not know who was responsible for this commissioning information.

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

A I cannot recall

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

A The Estates department were able to monitor the operation of the CHP but it was managed by an external service provider. I cannot recall the name of the company. They were responsible for running and maintaining the CHP equipment

65 If the CHP was not operating correctly, could this impact patients? If so, how?
Refer to

A In my view no. The CHP not operating correctly would not directly impact patients as there are 7 gas fired medium temperature hot water boilers in the building which are capable of providing sufficient heat to the building.

66 Are you aware of any historical issues with the CHP throughout your time within your roles in estates?

A Yes. There was a technical issue with the control of return temperature to the CHP engines. They were only able to run if the return temperature was below 74 deg C. If the temperature rose above 74 deg C a diverter valve would open routing hot water to heat rejection units on the roof of the energy centre in order to avoid shutdown on high temperature

67 Have any further issues arisen during your time in estates? If so, please provide details.

A I am not aware of any further issues

Water Guidance and Obligations

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

A HSE ACOP L8 The control of Legionella in water systems is the legal instrument referred to by all NHS estates teams. The Health Technical Memorandum SHTM 04-01 suite of documents are used as specific guidance for health care properties. I would consult these documents for compliance

- 69 What was your initial instruction relating to historical water guidance and obligations upon commencing your role(s) within estates?
- A** I was not given any instruction in relation to historical water guidance. I would refer to the current guidance in all instances.
- 70 Who was responsible for ensuring a safe water supply following handover?
- A** I do not know who was deemed responsible.
- 71 What was your knowledge and understanding of the Health and Safety regulations on control of Legionella at the time of handover?
- A** I was not present at the date of handover but had a good understanding of HSE ACOP L8 on commencement of my role.
- 72 Are you aware of what, if any, 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** On commencement of my role I would expect all estates staff and contractors involved in the maintenance of the water system to have Legionella awareness training as a minimum
- 73 Are you aware of what, if any, water borne pathogens (other than Legionella) training was provided to maintenance staff, estate officers and contractors? If not, what training would you expect them to have been provided with?
- A** I am not aware of any training being provided in relation to any other water borne pathogens.
- 74 Do you know who was the Dutyholder at the time of handover? Are you aware of the role/responsibilities of the Dutyholder?
- A** I do not know who the dutyholder was at time of handover. I am aware of the responsibilities of the duty holder.

75 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 I was not provided with any commissioning details on commencement of my role.

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

A I am unable to answer

c) Are you aware of what, if any, 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(s)? Refer to **Estates Team Bundle, document 132**.

A I am not aware of what checks were carried out to ensure the systems were commissioned appropriately. I would expect that a number of individuals with the necessary knowledge and experience in commissioning water systems would have reviewed the contractors commissioning information and satisfied themselves that it had been carried out appropriately. I would also expect that they would review the circulation hot water temperatures for each circuit, return temperatures to the calorifiers, disinfection and cleaning certificates and any sampling results to confirm the system was clean and free of bacteria. I was not specifically provided with any such information at the outset of my role

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

A I don't know

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

A I don't know

f) Are you aware if there were any Legionella concerns at handover? If so, what were the nature of any such concerns, and what, if anything, was done to deal with these concerns?

A I don't know

g) Are you aware of any issues with the testing of the water system? Please provide details of any such issues.

A I don't know

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

A SHTM 03-01 does not relate to water systems. SHTM 04-01 relates to water guidance. My understanding of SHTM 04-01 is good

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? What, if any, actions were taken to ensure compliance?

A I cannot comment as I was not present at date of handover.

76 Was a pre-occupation water test carried prior to occupation? Refer to **Estates Team Bundle, documents 14, 14.1, 14.2:**

A I cannot comment as I was not present at this time.

a) Who carried this out?

A I don't know

b) What was the result of the test?

A I don't know

- c) If this was not done, should it have been done and why?
A Unable to answer. I am unsure of what is meant by a pre-occupation water test.
- d) What are the consequences of not carrying out such a test.
A Unable to answer
- e) Are you aware of the post occupation water testing regime at QEUH? What was it?
A No. I don't know
- f) Was this carried out?
A I don't know
- g) Are you aware of who carried out testing?
A No
- h) If so, how frequent was testing carried out?
A I don't know
- i) Did any such testing comply with L8 and SHTM 03-01 guidance? If not, why not?
A I don't know
- j) What happened to the results?
A I don't know
- k) Where were the results stored?
A I don't know
- l) What, if any, action was taken in response to results?
A I don't know

m) Was there an escalation process? Please provide details.

A I don't know

Water - Commissioning and Validation (C&V)

77 What commissioning and validation documentation did you see in respect of the pre- handover in 2015 when commencing your role? Who would have had sight of any such documentation at the pre-handover in 2015?

A I didn't see anything as I wasn't there pre-handover. I don't know.

78 Where is the commissioning and validation documentation ("C&V") stored generally on the hospital system?

A C&V information would normally either be stored on the ZUTEC web platform in relation to the Adult & Childrens hospital, or on the GG&C Shared Drive

79 What is the purpose of C&V?

A The C&V process provides evidence that the mechanical aspects of the building are performing as per the design intent

80 What are the consequences of it not being carried out?

A If this were not carried out you would be unable to verify that the building is performing as designed

81 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 It is normal practice to keep records of every maintenance activity, The retention policy is 5 years. I don't recall that I had any concerns about record keeping or retention

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

A I would be very concerned if there were no C&V records. From a professional perspective, this would leave me with no evidence that the building water system had been designed, built and commissioned and disinfected correctly. This would make it very difficult to maintain going forward

a) Can you please clarify whether you had any knowledge as to whether commissioning and validation had taken place? Please explain your answer.

A At the time I did not have any knowledge of the existence of C&V records for the adult & children's hospitals as these buildings were not within my remit. As I was not present on site in early 2015 I was not involved in the commissioning and handover process of the building. By the time I took up post on site the building was fully occupied and operational. I had no reason to doubt that the building would not have been properly commissioned, therefore naturally assumed that others would have overseen the process.

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

A Regardless of whether this pertained to the hot or cold water system my concerns would be the same. The lack of evidence would make maintaining the systems very difficult if there is no data to prove that they were performing as per design from the outset

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

A I don't know

a) Who was responsible?

A I don't know

b) How was the C&V recorded?

A I don't know

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

A I don't know

Water System – General

85 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? When were any such remedial actions taken? By whom were any such remedial actions ordered?

A I was not on site. Don't know

86 What testing and maintenance protocols and regimes were in place at the point of commencing your role(s) within estates? What should have been in place? What remedial action was taken? When were any such remedial actions taken? By whom were any such remedial actions ordered?

A I cannot recall exactly what protocols were in place. The regime that should have been in place would be as defined in the written scheme for maintaining the water system such as regular temperature monitoring, water tank inspections, sampling where required, and shower head disinfection or exchange. Remedial action should be taken where any of the above are out of spec. Normally there is a standard response to address such actions and record the outcome

87 What concerns, if any, were there about the temperature and movement within the water system? Please provide details of any such concerns. How were these concerns recorded and measured? Who was responsible for this?

a) At point of handover in 2015

A I cannot answer

b) From the commencement of your role(s) within estates?

A No concerns were conveyed to me at that point

88 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) At point of handover in 2015

A I cannot answer

b) From the commencement of your role(s) within estates?

A I was not aware of any concerns

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

A No

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

a) At point of handover in 2015

A NA

b) From the commencement of your role(s) within estates?

A NA

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

A I am unable to answer

91 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 I was not involved in the design of this particular system so unable to state what the system objectives were

- 92 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?
- 93 To what extent were the standard protocols for sanitising water systems used on a system of the size and complexity of this one?
- A** Standard protocols for sanitising or disinfecting a water system are normally broken into sections. If any part of the system required disinfection it would be isolated and done in such a manner that it would not affect other parts of the system. The system is too large and complex to disinfect at once. The only way to do this would be to install background dosing such as the chlorine dioxide dosing system that has been installed retrospectively
- 94 Were consultants brought in to advise on sterilisation of the water systems?
- a) Who were they?
 - b) When were they brought in?
 - c) Had you worked with them before?
 - d) Describe and comment on the methodology used.
 - e) Who decided to accept it or not.
 - f) Did it work?
 - g) What paperwork or records were kept in relation to their installation, maintenance, or flushing?
 - h) Were these kept on paper or electronically?
 - i) What equipment was used for recording work by employees doing day to day tasks?
 - j) How was the work carried out reported back and checked? By whom was it checked?
- A** As far as I can recollect, the consultants brought in to advise on sterilising the water system were Dennis Kelly, Dr Tom Makin, and Tim Wafer. I cannot

recall exactly when they became involved but it was circa May 2018. This was approximately the time the Water Technical Group was formed. I had only worked with Dennis Kelly before as he was the GG&C Authorising Engineer. The methodology used was devised by the Water Technical Group all aspects and intricacies of the system were examined and the most appropriate method of disinfection was devised. The decision to proceed with the method was granted by the WTG. Once the chlorine dioxide system was in place and established it appeared to be very effective. As far as I recall there were comprehensive maintenance records kept for the operation of the system. This would be a combination of paper and electronic records. The FM First CaFM system was used to record day to day work. The work would have been checked by the appointed Authorised Persons at the time

Water Maintenance

95 What was your involvement in relation to the discovery and build-up of biofilm in the water system? What actions were taken to address this? Who was responsible for carrying out these actions?

A I was involved in this incident from approx. April 2018. The actions to address the biofilm issue were jointly agreed between the members of the Water Technical Group. The actions were delegated to various members of the group and also to members of the maintenance management team

96 Were you involved in the swabbing/sampling of the biofilm/drains/water system? If so, who instructed you to do this, and what were the results?

A I was present when swabbing was carried out but was not directly involved. The swabbing was always carried out by a microbiologist as far as I recall. There were many results that were positive for bacteria

- 97 Explain the cleaning and maintenance of the water system, taps, drains, shower heads etc. When doing so consider:
- a) What was the cleaning regime?
A There is no standard cleaning schedule for the water system, taps, or drains. Shower heads and hoses are normally disinfected every 3 months
 - b) What was the importance of this?
A To descale if required and ensure any build-up of bacteria or biofilm is eliminated
 - c) What responsibilities did you have as a result of this?
A To ensure it was scheduled and completed within the buildings of the retained estate
 - d) What did you do to ensure these responsibilities were executed?
A Engaged a specialist contractor to do the work.
 - e) What issues, if any, did you have in fulfilling these responsibilities?
A None
 - f) Are you aware if concerns were raised about cleaning practices? **IMT bundle, document 22.** Detail these concerns.
A I was not aware of any cleaning concerns as referred to in document 22
 - g) What, if any, matters regarding the maintenance of the water system were escalated? If so, were they escalated BICC or AICC? Who were they escalated to? What was the outcome of any such escalation?
A I am not aware of any concerns being raised with AICC or BICC
 - h) What is dosing?
 - i) When was any dosing carried out to the water system?
 - j) Why was any such dosing carried out?

- k) What was the result of any such dosing?
- l) Why was chlorine dioxide used in the cleaning regime? **IMT bundle, document 30.**
- A** For questions (h – l), I believe the term dosing being referred to in Document 30 relates to the proposal to implement background dosing of chlorine dioxide to the whole water system of the Adult & Childrens hospitals. This took some time to install and commission. I cannot recall exactly when it went live. This was installed to eliminate any bacteria or biofilm from the water system. The dosing was successful but took some time to establish
- m) **Refer to Estates Bundle pg. 919** – what was this email about?
- n) Are you aware why routine drain cleaning was not carried out?
- o) Was this normal practice for a building/property of this size?
- p) Clearing of drains in June 2018 following water incident. What was the relevance and purpose of this? **IMT bundle document 27.**
- q) Are you aware if the actions taken resolved the issue? **IMT bundle, document 38**
- r) Do you know why expert advice was required?
- A** For questions (m – r), The email on page 919 is in reference to the hypothesis that the drains may be the source of the bacteria linked to infections. Drain cleaning is not routinely carried out as there is normally no requirement and is not covered by any guidance. The cleaning of drains commenced at this time as an instruction was issued by the IMT to carry it out in specific wards. The cleaning was completed but I cannot recall if it was deemed to have resolved the issue. The expert advice sought was in relation to the installation of drainage pipework. The specialist was a building contractor who have experience in installing drainage systems. They were asked to survey the system and identify any potential defects
- s) What happened in response to concerns about on-going maintenance and cleaning? What further action did you take personally?
- A** I cannot recall

t) What, if any, further steps should have been undertaken? Why?

A I don't know

98 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 As I recall I was asked for my opinion. The purpose of the survey was to identify any defects or poor workmanship

99 What were the results of the drain survey?

A I cannot recall exactly but I do not remember any major defects being identified

100 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 No foreign objects should be left in water tanks. They should be cleaned and disinfected before being put back into service. Debris can be considered a contaminant and can contribute to the growth of biofilm and bacteria.

101 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 I do not know

b) Ensuite bathrooms attached to each room

A I have no opinion

c) Overprovision of water outlets leading to sink removals?

A I have no opinion

- 102 How involved were you in the decision to use point of use filters?
- A** I was involved via the IMT meetings but was only there to feedback or accept any actions for Estates to carry out. The decision to use filters was based on clinical risk
- 103 Who was responsible for the effective management of and installation of the point of use filters?
- A** Various members of the estates management team were responsible
- 104 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** Yes as far as I recall
- 105 Why were the point of use filters not introduced earlier?
- A** They were never requested to be used earlier
- 106 How often were you aware of the filters being changed? Were the manufacturer's recommendations followed?
- A** They were changed after either 31 or 62 days depending on the filter design limitations. Some were changed before they reached the time limit. The manufacturers recommendation were always followed although there were a few occasions where the filters went beyond the time limit
- 107 How involved were you in decisions relating to water testing?
- A** I was involved via the IMT meetings. I was normally in receipt of requests to carry out testing in specific locations
- 108 If not, who was responsible for these?
- A** NA

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

A Decisions on testing were always issued by the IMT

110 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 am not aware of this

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

A I would disagree with this. As far as I recall all sample results were emailed to a group of recipients including Dr Inkster

c) Can you please explain why you disagree with this and provide justification for your response.

A I disagree due to the fact that microbiological sampling is always directed or requested by the microbiologists. It is my belief that the laboratory carrying out the analysis would always, by default, report the results directly back to the microbiologists. The microbiologist have the necessary knowledge and experience to analyse the results and form a conclusion as to any cause or source. It would not make sense to deny access to this information.

d) Have you ever been advised not to contact someone/ not to provide water testing information? If so, when? By whom? And why?

A No

e) 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

f) 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 If microbiologists request sampling be carried out we would arrange this as soon as possible in all cases. All sample results were shared with microbiologists as far as I recall

g) Can you please explain your answer and provide detail to justify your response.

A If a request to carry out sampling was received from any member of the Infection Control Team, a member of Estates would arrange to have the samples taken by a specialist contractor. The specialist contractor would obtain the samples in the appropriate manner and transport them either to a private lab, or to the GRI Water lab for analysis. If the analysis was carried out at a private lab, the results would be emailed directly to the specialist contractor, who would then forward them to a standard group of names on a distribution list which would always include those from the Infection Control Team who had requested the sampling. If analysis was carried out at GRI Water Lab the results would be emailed directly to a distribution list containing the addresses of the Infection Control members requesting the samples and the Infection Control Doctor or Consultant Microbiologist. As stated above, The microbiologists have the necessary knowledge and experience to analyse the results and form a conclusion as to any cause or source. It would not make sense to deny access to this information. As far as I can recall the lab carrying out the analysis of samples would share the results with the microbiologists as soon as they were available.

- h) Who was responsible for dealing with these requests for information?
A These requests could be issued to any individual in the estates management team
- i) What was your role in dealing with these requests for information?
A I had no specific role but would always carry out the instructions in the request and share the results
- j) How were these requests for information managed by estates? What steps did you take?
A Normally they would be issued at an IMT or via an email
- k) 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 had no concerns

February 2016 – Sinks – Ward 2A

In early 2016 a PAG took place regarding the '*Contamination of aseptic pharmacy unit at RHC water supply with Cupriavidus pauculus*' (**Bundle 2, document 3**), a subsequent investigation linked the infection to sink within the Aseptic Pharmacy Unit:

- 111 Are you aware of this incident? If so, when did you become aware of it? How did you become aware of it?
A I am not aware of this
- 112 What information, if any, were you provided with in respect of this incident? When were you provided with any such information?
A None

113 What was your understanding of this incident?

A I had no involvement

114 What, if any, action was taken in relation to this incident? By whom was it taken? When?

A I don't know

115 Do you recall any further issues in relation to sinks? If so please discuss, describing your involvement and any action taken in response to any issues.

A No

Water Incident 2018

116 Please provide details of the concerns as they emerged in 2017 into 2018 in respect of the water issues. Initially focus on your recollection of events as they happened. In relation to the concerns:

The following IMTs have been highlighted to assist with this: **IMT Bundle Documents 16-18, 21,24, 26-29, 31-32**. If you are also able to respond to the questions raised in respect of the IMTs below when considering your recollection of events.

a) When did the concern arise?

A To the best of my recollection the concerns were first raised early in 2018 sometime around February or March.

b) Nature of concerns?

A The concern was that a patient had become infected and a possible source was the water system.

c) Possible cause of concerns?

A If the water system was contaminated with bacteria then there could have been wider implications across the hospital due to the complex nature of the water storage and distribution system.

- d) What actions were taken in response to the concerns?
- A** The concerns were raised by Infection Control and sampling was requested to identify if the bacteria was in fact in the water system. Once it was confirmed an IMT was convened to discuss hypotheses and create a plan to address the issue. There were many actions that stemmed from the IMT all of which will be detailed in the IMT minutes.
- e) In your view, how sufficient were these actions?
- A** In my view everything that could be done was being done. The actions were varied took a significant amount of time to be completed but ultimately the issue was resolved and improvement measures were put in place to closely monitor and control water quality.

In Summary: I cannot recall exactly when concerns emerged. I became involved at the request of Alan Gallacher Head of Corporate Estates, circa March 2018. I was asked to become involved and assist with resolving the issue. The concern I was made aware of was that there was *Cupriavidus* bacteria in the water system. Thereafter I was asked to attend IMT meetings. I had never heard of the bacteria before and had no idea what actions would be required to disinfect the system therefore relied upon the collective expertise attending the IMT to devise the best possible approach to dealing with the problem.

Taps

- 117 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 and function of Horne taps.
- A** The particular model of Horne taps used in the QEUH were designed for clinical settings. They are thermostatic mixer taps which blend water from both hot and cold systems to control the outlet temperature to 41 deg C

b) Who authorised the use of Horne taps? Where were Horne taps used?

A I do not know who selected the Horne taps. They were used throughout the Adult and Childrens hospitals

c) Why were Horne taps selected?

A I don't know

118 Refer to Bundle 10 document 1:

a) What was the purpose of this meeting?

A The WTG meetings were a sub group of the IMT. The WTG was specifically set up to focus on addressing issues associates with the water system

b) How did this meeting come about?

A It was instructed by the IMT

c) Did you have or express any concerns in terms of the discussions which took place and the use of Horne taps?

A I don't recall if I had any express concerns with the Horne tap

d) What actions were taken following this meeting? Were these completed?

A I believe all of the actions for the WTG were completed

e) Did the follow-up meeting with the Horne representatives occur? If so, what were the outcomes of that meeting?

A I cannot recall a meeting with the Horne representatives

119 Flow straighteners: when did you become aware that they were non-compliant with SHTM 03-01 guidance? Do you know if they were non-compliant at handover?

A SHTM 03-01 relates to ventilation systems. SHTM 04-01 is the guidance for water systems. Although there were numerous discussions about flow

straighteners I cannot recall specifically that they were non-compliant or the reason that they would not be recommended

120 Were new taps replaced in January 2019? If so, why were they replaced? Where were they replaced? What were they replaced with? Was the replacement related to the use of chlorine dioxide?

A Yes taps were being replaced with a model from another manufacturer. It was Armitage Shanks Markwick sequential mixer taps. I cannot recall exactly where the replacement programme started and ended but it was widespread across the hospitals

Water Technical Group

121 The water technical group (WTG) sat between 2018 and 2019. **Refer to Bundle 10**

a) What was the purpose of WTG?

A The WTG meetings were a sub group of the IMT. The WTG was specifically set up to focus on addressing issues associates with the water system

b) What issue/ event prompted the setting up of the WTG?

A It was requested via the Water Incident IMT

c) What was your involvement with the WTG?

A I represented Operational Estates and participated in carrying out instructions that would assist the group in researching and addressing water related issues

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?

A I arranged the fitting and testing of Point of Use filters, sampling of water across the adult and children's hospitals, collection of water temperature records

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

A The names and roles of all involved are detailed in the minutes within Bundle 10

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

A I don't believe there was a criteria set. It tended to be the most senior manager present

g) Discuss the focus of the WTG. What was the purpose? Why was the 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 Already answered in Question 119 above

h) How did clinical staff and estates get along at these meetings? What, if any, were the points of contention between these groups?

A Relationships were good as we were all focussed on the same goal. I do not recall any points of contention

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

Refer to Estates Team Bundle, document 134.

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

A I do not recall seeing this document

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

A None

124 When did these concerns arise? Was anyone else concerned? Who? Why?

A NA

125 What was the impact of this on patients?

A NA

126 Did you flag/ raise your concerns with anyone? Who? When?

A I cannot recall raising any particular concerns

127 What happened in response to the report?

A I don't know

128 What works, if any, were carried out in response to any findings in this report?
What was the result of any such works?

A I don't know

Tap Water- Ward 3C – 2019

129 What were the issues in relation to tap water in Ward 3C?

A I cannot recall the specific issue in Ward 3C

130 What was your understanding and involvement with these issues?

A I cannot recall

131 What action was taken?

A I cannot recall

132 How were matters resolved?

A I can't recall

Dr Susanne Lee

Refer to Estates Bundle, Document 131, Page 930

133 Have you seen this document before?

A I cannot recall seeing this document

134 Who provided you a copy of this document?

A I don't know

135 What was your involvement, if any, with Dr Lee?

A I was present when Dr Lees was on site. I was present at the meeting where she gave feedback on her findings

136 What are your views on the recommendations set out in this action plan?

A The recommendations seem reasonable given the issues that were being dealt with.

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

A I cannot recall

138 Who was responsible for implementing these recommendations?

A Each of the recommendations have been assigned an owner. I don't recall being directly involved in implementation

Other Water Incidents

139 What other specific events do you recall in relation to water? Do you have any recollection of debris in the water tanks? **Refer to IMT Bundle, Document 45 as starting point.**

If so, please explain:

- a) What the issue was;
- b) The impact on the hospital (include wards/areas) and its patients (if applicable)
- c) Who was involved;
- d) What was escalation process;
- e) What was the result of any escalation;
- f) Were any external organisations approached to support and advise;
- g) Detail the role and function of HPS and HFS, advise if they were involved and any reports prepared by them;
- h) 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?;
- i) Was there opposing advice and by whom;
- j) What remedial action was decided on and who made the decision;
- k) Was the issue resolved – consider any ongoing aftercare/support/monitoring;
- l) Detail any ongoing concerns you had, or which you were made aware of;
- m) 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.
- n) Did anyone sign off to say the work had been completed and issue resolved/area safe? If so, who signed off on the work?

A Yes I recall debris being found in the water tanks. There was the remains of a cleaning sponge and what appeared to be stones/course aggregate in one of the raw water tanks. These tanks receive incoming mains water and store it before it goes through the filtration plant. I do not recall debris being found in the main water tanks downstream of the filtration. There was no direct impact on the wards as I recall due to the arrangement of the water tanks. They are

designed to be duty and stand-by therefore 1 of the pair can be taken offline for maintenance whilst the other tank remains in service. The debris was found during a clean and disinfection of the tanks. This process was carried out by DMA Canyon and the discovery of debris was brought to my attention immediately by one of the DMA operatives. As I recall I immediately raised this with Ian Powrie and with the WTG. As the cleaning and disinfection process was already in progress I don't recall if there were any other actions deemed necessary to resolve. I took photographs of the items found and shared these with the WTG for discussion. It was believed they may have been there since pre-handover. HFS and HPS were involved in the discussion as they were members of the WTG

140 What were the NHS procedures for raising concerns about water or water infections?

a) How were these dealt with by you?

A Normally any issues or concerns around the water system would be referred to infection control for advice. A joint approach would be devised in order to deal with the issue. This was the practice I would normally follow

b) How was it confirmed that they had been dealt with?

A Usually there would be a sampling protocol put in place to identify the extent of any problem and confirm it had been successfully resolved. Infection control would normally require that 3 successive samples were returned as "not detected" to confirm the issue was closed

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

A Other than the issue above I cannot recall anything specific. It is not uncommon to find bacteria in water systems. On every occasion I can recall these were successfully resolved using the advice of infection control

Ventilation - Commissioning and Validation

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

A I was not involved in this process

a) Who was this carried out by?

A I don't know

b) Who signed off?

A I don't know

c) What commission and validation documentation did you see when you commenced your role(s) in estates?

A None

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

A I don't know

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

A No. I did not review any of the commissioning or validation information for the adult and children's hospitals. I do not recall seeing any information that would have given me any concerns.

Ventilation System – General

142 What are thermal wheels?

A Thermal wheels are heat recovery devices installed in air handling units

- 143 Are you familiar with thermal wheels?
- A** Yes I know what they are
- 144 What is the purpose of thermal wheels in the ventilation system?
- A** The purpose is to recover heat energy from the extracted air and re-insert it into the supply air to conserve energy.
- 145 What testing and maintenance protocols and regimes were in place for the ventilation system when you commenced your role(s) in estates?
- A** I cannot recall
- 146 Are you aware of the testing and maintenance protocols which were in place at handover in 2015?
- A** No
- 147 What concerns, if any, did you have relating to the ventilation? What concerns, if any, do you have relating to the water temperature? What concerns, if any, did you have relating to the movement within the water system?
- A** No concerns
- 148 Was it possible to incorporate a comprehensive ventilation system into the QEUH/RHC?
- A** I was not involved in the design.
- 149 Describe any ward/area specific ventilation systems used?
- A** I cannot recall which systems were installed in each location.
- 150 What are your thoughts about these ventilation systems that were used?
- A** I don't know

Specific Events in Relation to the Ventilation System

151 Can you recall any specific events in relation to ventilation?

For example:

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

A I cannot recall the details of this

b) The Ventilation Report

A I am unsure what this refers to

c) The Ventilation Group and difficulties establishing this

A I am unsure of what this refers to.

d) Birds Roosting in Plant Rooms

A I recall the concerns about birds roosting in plant rooms. There was a suggestion that pigeon faeces might be the cause of Cryptococcus being present in the air which had been identified in patient infections. It was thought that this may have got into the ventilation systems from the plant rooms on level 12. This could have an impact on patients with compromised immunity. An IMT was convened to look into the issue led by Dr Inkster. The minutes of those meetings will indicate who was involved. All issues were escalated through the IMT. The incumbent pest control contractor was engaged to assist in identifying and rectifying any pigeon ingress or fouling issues. Over the coming months a specialist group (Cryptococcus Expert Advisory Group) was formed consisting of myself, Dr John Hood, Tom Steel, Ian Powrie, Dr Peter Hoffman, Darryl Conner, Sandra Devine. The group were tasked with looking at every hypothesis and find solutions to any related issues

e) Smell of Sewage within Theatres and remedial works

A Yes this was common as the hospital is in close proximity to a water treatment plant.

f) Can you please provide your understanding of ward 2A ventilation requirements? What actions were taken in respect of ventilation in response to the cryptococcus case?

In providing your answer please tell us:

i. What was the issue?

A It was believed that infections in patients could have been caused by contamination in the ventilation system due to Cryptococcus from pigeon fouling in the plantrooms. An investigation would need to be undertaken to establish if this was the cause or if there was some other explanation.

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

A I am unable to list the full impact on the hospital but generally this resulted in patients from Ward 2A Childrens ward being moved to Ward 6A in the Adults hospital.

iii. Who was involved?

A There were many people from many different departments but overall they were the members of the IMT meetings including the all of the management structure within the Estates Department.

iv. What was the escalation process?

A As far as I recall, the issue was escalated by Infection Control and brought to the attention of Estates to carry out checks within plantrooms to establish the presence and extent of pigeon fouling and whether it was possible this could be drawn into the ventilation system. Further escalation was via the IMT meetings.

v. What was the result of any escalation?

A I cannot recall specifics but all escalations will be evident in the minutes of the IMT meetings.

- vi. Were any external organisations approached to support and advise?
A Yes.
- vii. What was the advice?
A There were many different recommendations made to aid in investigating and resolving the issue. I cannot recall specifics but all information on this will be documented in the IMT or Cryptococcus Expert Group meeting minutes.
- viii. Was there opposing advice and by whom?
A I cannot recall.
- ix. What remedial action was decided on and who made the decision?
A All decisions on remedial action were made collectively at the IMT meetings.
- x. Was the issue resolved – consider any ongoing aftercare/support/monitoring?
A The full resolution to the issue was in a redesign of the ventilation system serving Ward 2A in the children's hospital. This work was still ongoing when I left the QEUH.
- xi. Any ongoing concerns witness had himself or others advised him of?
A No. None that I can recall.
- xii. Was there any documentation referenced during or created after the event?
For example an incident report?
A The chair of the Cryptococcus Expert Group, Dr John Hood, produced a report detailing the investigation.
- xiii. Did anyone sign off to say the work had been completed and issue resolved/area safe? If so, who signed off on the work?
A I don't know.
Write your answers in the relevant answer boxes above.

152 Throughout your time at the QEUH, what work was undertaken in respect of ventilation and why?

A I cannot accurately recall all work carried out or the reasons for this.

153 What work, if any, was outstanding when you left in May 2023?

A I cannot recall. I left the QEUH in Feb 2020 to work in the Clyde sector. I finally left GG&C in May 2023.

Isolation Rooms

154 Upon commencement of your role(s) in estates, 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

Pentamidine Rooms

155 Discuss Pentamidine Rooms:

a) What are Pentamidine Rooms?

A I don't know I was not involved in this work

b) Your understanding of the purpose of these rooms?

A I don't know

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

A I don't know

- d) Were you aware of any issues with the specification of these rooms in 2015?
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 don't know

Ward 4B

157 Refer to **Estates Team Bundle document 62:**

- a) what is this document?

A This appears to be a report on the ventilation system serving Ward 4B in the Adult Hospital.

- b) Have you seen it before? If so, when?

A No

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

A No

- d) Are you aware of any issues arising from this report? What, if any, actions were taken following this report? By whom were these actions ordered? By whom were they carried out? What was the result of any such actions being undertaken?

A No

- e) Refer to **Estates Team Bundle, document 87** – Do you know why NSS was involved in the issues? Actions taken in response, your involvement.
- A** I don't know. I was not involved in this issue.

Decision to Close wards 2A/B and Move to 6A and 4B

158 Discuss the issues surrounding and leading up to the decant of patients from Ward 2A in 2018.

a) What was the lead up and background?

A As I recall there were patient infection suspected to be linked to bacteria in the water system. After a decision taken by the IMT the patients were to be transferred to Wards 4b and 6a whilst remedial work was carried out.

b) What was your involvement?

A I was asked to look into the issue and assist in any way I could. The Adult & Childrens hospitals were not within my remit at the time but I was happy to get involved and assist my colleagues. I attended many of the IMT meetings and took a number of actions in preparation of the moves to Ward 4b and 6a

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

A I cannot recall

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 didn't have an opinion on the patient cohorts. I left those decisions to the clinical experts and focussed on estates participation in addressing actions

e) Discuss and detail the works done to Ward 2A/B. What was required to be done and why? What was done and when was the work completed? Please include details of your involvement. **Reference IMT Bundle to assist.**

A There was a lot of work going on at the time. I cannot specifically recall all of the works done to Ward 2A/B but it involved changing toilet seats, flush mechanisms, taps, shower enclosures. The list of work required grew almost daily and resulted in the team from Capital Projects becoming involved and taking over

f) Any other relevant information.

A None

159 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

b) Gram Negative Bacteraemia

c) Water filters

d) Ventilation

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

f) Patient communication

g) Internal escalation - HAIT scoring

h) External escalation

A The decision to move patients from Ward 2A to 6A was made by the clinical team attending the IMT. A list of works in preparation for the move was drawn up and carried out by the estates team

Reports Prepared by Innovated Design Solutions October 2018

190 **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 I remember when IDS were approached to conduct the report but cannot recall exactly when or who commissioned it
- b) What was the background to these reports being commissioned?
A I cannot recall accurately
- c) Why were these reports commissioned? What issues prompted the instruction of these reports?
A I cannot recall
- d) Who were these reports shared with?
A I believe the reports were shared with the members of the IMT and Infection Control
- e) What concerns, if any, did you have regarding the ventilation system in Ward 2A?
A I cannot recall
- f) When did these concerns arise? Was anyone else in estates concerned? Why?
A I don't know as I was not directly involved in ventilation at that time.
- g) What was the impact on patients?
A I don't know
- h) What concerns were raised? By whom were they raised? With whom were they raised?
A I don't know

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

A I can't recall

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

A NA

k) What was the impact on patients?

A NA

l) What concerns were raised? By whom were they raised? With whom were they raised?

A I can't recall

m) What happened in response to these reports?

A I cannot recall exactly what happened once the reports were received.

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

A I cannot recall

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

A I believe there were significant works carried out to reconfigure the ventilation system but was not involved directly so cannot provide specific details

p) What was HFS Involvement with this?

A I don't know

191 Iain Powrie prepared a SBAR following the Innovated Designs Solutions report – **Refer to Bundle 4, Document 31**

a) Do you recall seeing this document?

A Yes I recall seeing this document

b) If so, what are your views on this document?

A I tend to agree with the contents and concerns raised in the document.

c) Who was this SBAR shared with?

A I cannot recall who else in addition to Tom Steele

d) What actions were taken as a result of the SBAR?

A I believe this document triggered the major work that was carried out in Ward 2A.

e) What recommendations were carried forward?

A I cannot recall exactly

f) Who was responsible for these actions?

A I believe this was handed over the Capital Planning to carry out the major works to resolve.

Cryptococcus

Refer to the Cryptococcus Bundle to assist.

192 Recall your understanding of the Cryptococcus infections in 2018:

a) What is Cryptococcus?

A It is a fungus.

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

A No

c) 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 I first became aware of Cryptococcus in late December 2018 when it was raised by Dr Inkster. It was thought that the fungus was present in the hospital and we were asked to inspect the plant rooms on Level 12 and the ventilation system. I cannot recollect all of the action that were instructed but they are all documented in the minutes of IMT meetings

d) Discuss your involvement at the Cryptococcus **IMTs: Refer to IMT Bundle, Documents 55-64, 66-70**

A I was involved in each of the IMT meetings in response to this issue. I arranged for many of the actions requested at the IMT meetings to be carried out. This included cleaning of plant rooms and ledges, fitting bird deterrent netting or spikes, procuring portable HEPA filter units, and arranging repairs to any rooms within the ward areas

193 Refer to the **Action Plans Pg 260, 264, 314 of Bundle 1 IMT:**

a) What is this document?

A These are action plans generated from the discussions during the IMT meetings.

b) What was its purpose?

A It was used as a summary of the actions drawn down from the minutes.

c) What actions were you responsible for and why?

A I was responsible for taking forward any action on Estates behalf.

d) Did you complete your actions?

A Yes

e) Were all the actions in the plan completed?

A Yes as far as I recall I completed all actions.

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

A I cannot state whether the actions I took forward made the environment safer. It was what I was instructed to do by the IMT so I completed them as quickly as possible and to the best of my ability

194 Refer to page 289, which states that you had been contacted by a member of facilities who believed they had been put at risk while carrying out vent cleaning:

a) How did this situation come about?

A I cannot recall this communication or the member of staff involved.

b) Was it resolved? If so, how?

A I cannot recall how this was resolved.

c) You state you cannot recall this communication. How might a member of staff be put at risk from cleaning vents? Was this a common concern amongst staff? Why would occupational health be contacted? Would there be a record of the details of this incident?

A I can only assume that the staff member felt that they had been put at risk either due to fall from working at height, a manual handling issue leading to injury or a perceived infection issue due to exposure to dust or contaminants whilst cleaning the vent grilles. Occupational health are normally contacted to address any concerns about staff health in the workplace. If this was an incident or accident it is likely it would have been recorded on the DATIX system.

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

A I was asked to become a member of the Cryptococcus sub group in order to focus on any estates related actions and report on their progress and completion. We were also tasked with working through the hypotheses and produce a report detailing any findings

196 What, if any, external reporting occurred?

A I don't recall that the group reported externally. We did commission some external specialists to provide specific reports to feed into the sub group such as carrying out a study of airflow patterns around the helipad to determine if this would have an effect on the ventilation system

197 PAGs/ IMTs/ AICC and BICC involvement.

A The sub group was made up of members of HPS, NHS and HPS. The group regularly reported into the IMT

198 What steps were taken in response/ precautions put in place?

A I cannot recall all of the measures taken but they will be recorded in the minutes of meetings

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

A The hypotheses were: 1. Fungal spores were entering the ventilation systems from pigeon faeces in the plant rooms. 2. Fungal spores were being drawn into the ventilation system from outside air. 3. Helicopter downwash during landing releases spores into the air and are drawn into the ventilation system

b) Who put these hypotheses forward?

A These were collectively discussed at the sub group meetings. I cannot recall who suggested them

c) Did you agree with them?

A I thought all were feasible and kept an open mind whilst involved in the investigation of each

d) What was your own hypothesis regarding the cryptococcus cases?

A I had no expertise in the area therefore had not formed my own hypothesis. I committed to investigating the hypotheses suggested by the microbiologists

e) What is the rationale behind your hypothesis?

A None

199 Did you read John Hood's report?

A Yes I read through the report a number of times when it was in draft form and the completed version.

200 When did you read John Hood's report?

A I cannot recall exactly.

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

A I was a member of the Cryptococcus Sub group so I was aware of the content within the report. Each of the issues looked at were investigated and dealt with as soon as possible. I cannot comment on what further actions were completed as I had moved on to the Clyde Sector by the time the report was finalised

202 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 don't think anything else could have been done or anything could have been handled differently

- 203 What was your view on the pigeon infestation on the QEUH/RHC site?
- A** I would not use the word infestation to describe what I observed. Numbers of birds in comparison to the size of area in question was very low. Infestation tends to give the impression that there were significant numbers of birds in the plant room and this was not the case
- 204 What is your view on the pigeon contamination in the plant rooms?
- A** The accumulations of contamination were sporadic. My observation were that there was not widespread and significant contamination. It did not appear that the problem was out of control
- 205 Who was responsible for pest control/ clean up regarding this?
- A** The Estates team were responsible for cleaning up this area. I led on most of the work instruction and liaison with pest control contractors
- 206 What actions were taken?
- A** A thorough inspection and cleaning of all areas of the plant rooms was instructed. This involved checking high and low to remove and sanitise any signs of bird activity, ingress points, and fouling
- 207 Was air sampling/testing of plant rooms undertaken?
- A** Yes this was carried out.

Refer to Document **A38240772 - NHS - Colin Purdon - Pest Control and Housekeeping Inspection - QEUH - 24.12 details - Objective ECM (scotland.gov.uk)**

- 208 When and why did you instruct GP Environmental? What did you instruct them to do? Who knew about this inspection?
- A** This work was actually instructed by Scott Macer, Duty Estates Manager who was on duty over the weekend of 21st to 23rd Dec 2018. My name appeared on the report as I was the Sector Estates Manager at the time and the report was to be issued to me on completion. As I recall Scott was asked by Tom

Steele to bring GP Environmental in over the weekend to carry out the survey in response to the suspected link to Cryptococcus infections from pigeon faeces

209 The report by GP Environmental states that the works took place over several days and daily reports were left with the estates department. Do you remember receiving these daily reports? If not, who would have received these reports?

A I do not recall receiving the daily reports. These would have been left at the end of each working day with the Duty Estates Manager

210 Was a record of these reports shared with anyone?

A It is my opinion that the content of these reports would have been transferred into the above report A38240772 as an overall summary

211 Was a record kept of these reports? If so, where was it kept?

A I don't know

212 Who did you share this report and its recommendations with?

A I cannot recall who this was shared with. I undoubtedly would have shared it with the senior management and directors at the time

213 What actions were taken following this report?

A All of the recommendations were actioned and also the thorough cleaning and sanitation of the plant rooms across the adult and children's hospitals was carried out as a direct result of this report

214 In her statement, Dr Inkster advises that she only became aware of this report in August 2019 and that this was an issue which had not been volunteered in IMTs or appeared on the estates spreadsheet. What is your view on this? Why was it not discussed at IMTs? Why was it not on the estate's spreadsheet?

A I was not aware that it had not been shared with Dr Inkster. In my recollection of the discussions at IMT meetings about the ongoing actions in the plant rooms in relation to the report led me to believe that everyone was aware of what needed to be done from the findings of the report

Gram Negative Bacteraemia

215 Describe your involvement relating to the Gram Negative Bacteraemia Outbreak –

Refer to IMT Bundle Documents 77-88, 90, 92-93, 103

A As the Interim Sector Estates Manager at the time my role in relation to the bacteraemia cases was to coordinate the estates response as directed by the IMT group. I would take actions identified at the IMT meetings and carry them out so that information and findings could be fed back into the IMT in order to try and identify the source of the infections. There were a number of hypotheses therefore I was asked to instruct tasks such as sampling, filter fitting, exchange of toilet seats, dosing of the chilled water system and heating system water, change fittings on chilled beams

216 **Refer to document A41519666 (IMT Action List 19.06.2019 details - Objective ECM (scotland.gov.uk))**

Discuss the mycobacterium chelonae incident and your involvement. Discuss the actions allocated to you from this list, following the **IMT of 19.06.2019 (Document 72)**. Were they completed? When were they completed? What follow-up, if any, occurred?

A My involvement was to coordinate the estates response to the actions allocated to the department from the IMTs. Apply POUFs to theatres outlets:

This was an instruction to fit Point of Use Filters to all taps throughout the theatre suite. Check water cooler removed from 6A staff room: This was an instruction to double check that a water cooler/dispenser had been removed from the staff room to prevent it being used to give water to patients in advertently. Carry out water testing in ward 6A pre and post POUFs (incl showers) and in theatres pre POUF application: This was an instruction to ensure sampling was carried out. To the best of my recollection this was to prove the efficacy of the filters and ensure they were performing as per their design i.e. filtering out all bacteria. Water testing to be undertaken on outlets identified from timeline which currently have no filters: This was to carry out further sampling of outlets without filters fitted. Obtain Information from PAL to ensure that POUF are effective against Mycobacteria: I liaises with the filter manufacturer (PALL Europe) to ensure that the filters were designed to filter out mycobacterium. As far as I recall this was confirmed that they were able to filter mycobacterium. Compile report of water sampling results across RHC site to establish extent of M. Chelonae within water supply: This was an instruction to check and collate the water sampling results previously received to identify where it had been detected previously. I cannot recall the details of the report

Whistleblowing Process

217 When did you first become aware of concerns being expressed by clinicians regarding the environment? In your view, were these concerns taken seriously?

A I cannot recall

218 What was your involvement, if any, in the whistleblowing process?

A None

219 What was your view on the concerns being raised?

A I do not recall what concerns were raised in whistleblowing

220 Were you aware of the 27-point action plan implemented following the whistle blow meeting of 4th October 2017? **See document A38759270 - Action Plan arising in response to SBAR dated 3 October 2017 details - Objective ECM (scotland.gov.uk)**

A No

221 Who was responsible for the implementation of this plan?

A I don't know

222 Did you take on any responsibility relating to this plan?

A I don't believe so.

223 What is your view of this plan and the proposed actions? Are you aware if they were completed?

A I was not involved and I am not aware of the details or if the actions were completed.

Staffing and Working Environment

224 What do you know about the staffing levels in estates at the point of handover? Where did the staff come from? Were they mainly transferred from the old site?

A I cannot comment on the levels of staff at handover as I was not onsite until August 2015. As far as I recall the estates staff were transferred to the new QEUH campus from the hospitals that had closed across the city as a result of the QEUH development. Some staff from the Southern General Hospital were also retained.

- 225 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** My opinion on staffing levels was that it was hugely challenging to manage the workload imposed on estates with the limited resource we had. The volume of work being created was very high and the demand and expectations on how quickly tasks or repairs should be carried out was unrealistic. The managers were subjected to higher than normal stress levels due to the pressure to deliver.
- 226 Do you know if appropriate training was in place for new and existing staff on using the new systems and working within the QEUH? How was it ensured that new and current staff were appropriately trained?
- A** Training on new systems was carried out in handover sessions. This would involve a number of estates staff receiving demonstrations of how plant or systems operated. These were normally short familiarisation sessions given by contractors, sub-contractors and installers of the equipment or systems. These sessions were normally documented to record attendance.
- 227 Who was responsible for providing staffing? Who was responsible for ensuring staffing was maintained at sufficient levels?
- A** My only recollection on the provision of staffing was that prior to the opening of the QEUH campus, Ian Powrie had created a proposal to indicate the number of staff and skill mix that would be required in order to meet the maintenance demands. I recall speaking to Ian about this and he informed me that the funding provided was not enough to match his proposal
- 228 When commencing your role(s), what concerns did you have regarding staffing levels?
- A** It became almost immediately apparent to me that staffing levels were not sufficient. There were not enough tradespersons or manager to cope with the workload. The stress levels were high and almost every member of the team were working longer hours that they were contracted for. Personally I was

consistently working 10 hour days Monday to Friday in an attempt to keep up with my own workload. The other managers were similarly committed

229 What was the working environment like when QEUH opened – work life balance/ workplace culture? What issues, if any, were you aware of? What was your experience of this?

A The work/life balance was poor. As stated above, I was personally working 50 hours per week for the 4 and a half years I was based on the site. There were high levels of stress and a number of managers were emotionally drained by the constant demands of the job

230 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 don't recall being told about who was onsite to assist Estates with work relating to equipment. It is common for Estates Management to have reliance on external contractor to carry out a lot of works and repairs. This was necessary as the estates labour resource was insufficient to cope with all of the demands.

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

A My main concerns were that it was a stressful environment and this was detrimental to the wellbeing of the staff and in particular managers and supervisors. Demands and expectations were high and priorities were always conflicting.

a) You speak about concerns which you had regarding staff levels/resourcing difficulties, did these result in difficulties for Estates staff in respect of carrying out their duties to the standards you would expect?

A I would say that the Estates staff always strived to do their best at all times. The workload was very high volume and staff were often unable to keep up with the demand. Managers including myself were working additional unpaid hours in order to try and meet the demand but it was very difficult to keep up. There was a limit to how much work we could delegate to the team members as they were always under pressure. It was clear that we required more staff but under tight budgetary constraints it was unlikely we would be able to expand the team.

b) How would these resourcing difficulties which you have mentioned manifest themselves?

A The workload had to be prioritised constantly in order to ensure any critical issues were addressed immediately. This meant that most of the day to day repair requests would have significant delays in being addressed. The backlog of work continued to grow throughout my time at the site.

232 In your view, 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 Yes in my experience and during my time there, all concerns raised by Infection control were taken seriously. All matters highlighted at IMT meetings were thoroughly investigated and as far as I know all were acted upon

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

A I have nothing further to add.

Declaration

234 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.

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

Appendix A

A38759270 – Action Plan arising in response to SBAR dated 3 October 2017

A41519666 – IMT Action List 19.06.2019

A38240772 – NHS – Colin Purdon – Pest Control and Housekeeping Inspection
QUEH – 24.12

A43255563 – Bundle 1 – Incident Management Team Meeting Minutes (IMT
Minutes)

A43144419 – Bundle 2 – Problem Assessment Group Meeting Minutes (PAG
Minutes)

A43299519 – Bundle 4 – NHS Greater Glasgow and Clyde: SBAR Documentation

A43293438 – Bundle 6 – Miscellaneous documents

A47175206 – Bundle 9 – QEUH Cryptococcus Sub-Group Minutes

A47395429 – Bundle 10 – Water Technical Group / Water Review Group Minutes

A47069198 – Bundle 12 – Estates Communications