



SCOTTISH HOSPITALS INQUIRY

**Hearings Commencing
25 April 2023**

Day 4
Friday 28 April 2023
Ken Hall

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10:00

THE CHAIR: Good morning, both to the legal representatives who are present in the hearing room in Edinburgh and to those who are following proceedings on the live link. This morning we have our next witness, and questioning will be by Mr McClelland, who is supported by Kiera Dargie, who is one of the solicitors of the Inquiry, and I am assisted by Kirsten McMillan, who is another of the solicitors of the Inquiry. I think, Mr McClelland, we are in a position to proceed immediately with Mr Hall. Is that correct?

MR MCCLELLAND: That is right, my Lord, Kenneth Hall.

THE CHAIR: Right. Good morning, Mr Hall.

THE WITNESS: Good morning.

THE CHAIR: As you appreciate, you are about to be asked some questions by Mr McClelland, Junior Counsel to Inquiry, who is sitting opposite you. First, are you prepared to take the oath?

KEN HALL: I am.

Mr KENNETH HALL

Sworn

THE CHAIR: Thank you very much, Mr Hall. Now, you have the

microphone which should pick up what you are saying. Of course, I am a bit deaf. I am always conscious of need to be heard, so maybe speak a bit louder than previously. I am now turning to the room because I think yesterday the amplification may be not what it might have been. I am getting some quite enthusiastic nods of the head. Now, that is your responsibility, Mr Hall; it is our technology. We are trying to address that. I am getting more enthusiastic nods. As I say, although it is our responsibility to get the tech right, and those who are assisting are very aware of that, both myself, addressing and-- Perhaps I could just check with my person who I am getting most information through body language. Am I audible? Okay. As you can see, Mr Hall, I am speaking a little bit louder than I would if I was in normal conversation. So, I appreciate it is difficult. Inevitably, keeping up volume is always a challenge, but anything could do would be gratefully received both by me and the back of the room. So, Mr McClelland?

MR MCCLELLAND: I am not sure if you administered the oath to Mr Hall. I think you were intending to do that and then did not.

THE CHAIR: I am very grateful

to Mr McClelland, but I would have I said that I did administer it. I administered.

MR MCCLELLAND: My apologies.

THE CHAIR Right, okay. That reassures me. So, if we have taken the oath, Mr McClelland.

Questioned by Mr McClelland

Q Could I ask you, please, just to confirm your name?

A Kenneth Hall.

Q Mr Hall, have you supplied the Inquiry with a witness statement?

A I have.

Q Do you have a copy of that in front of you?

A I do, yes.

Q Does that statement set out, fully and truthfully, your evidence on the matters that it addresses?

A It does.

Q Is there anything in it that you think you needs to be changed or corrected?

A No.

Q Are you content that the Inquiry accept that as your evidence.

A Yes.

Q Now, you will appreciate that there are a number of other

matters on which I would like to ask you some questions. Just to put those in context, they begin by asking you about your professional qualifications and experience. Now, you set those out in your statement. Is it correct that you began as an electrical engineer?

A Yes.

Q Then, after that, moved on to become a building services engineer?

A That's correct.

Q Then, once you were a building services engineer, is it correct that you then specialised as a healthcare building services engineer?

A Predominantly in the past 13 years it's been in healthcare.

Q Okay. Now, other witnesses have highlighted that, although mechanical and electrical engineering is a familiar label, with mechanical and electrical bundled together, the individual engineers tend to be either electrical or mechanical, or at least to have a bias towards one or the other. Now, is that the same for you?

A Yeah, I'm not a fully qualified mechanical and an electrical engineer but the job that I do is more about processes so it's not detailed design. I guess my main specialisation would have been, years

ago, to be electrical.

Q Okay. To what extent would you now regard yourself as familiar with the mechanical elements, particularly in the context of hospital ventilation?

A I have a good understanding because, when you were progressing through your career, ultimately you moved into a position where you were maybe leading a team and the team was mechanical and electrical designers early on in my career, and so, by going through that process, you started to understand the other discipline.

Q Okay. So, should we understand that your knowledge of mechanical engineering elements has come from experience sort of on work on the day-to-day job rather than from a formal education and training?

A That's correct.

Q I am going to ask you later on about SHTM 03-01. Is that something that you are familiar with?

A Familiar in the sense I've used it. I'm obviously not a designer with Multiplex. I'm aware of it in the same way I would be aware of a suite of documents.

Q If you could have a quick look, please, at paragraph 5 of your statement. That is bundle 13 at page

237. Sorry, 237, I think there was perhaps a typo. We see, in paragraph 5, some bullet points. You refer there to work on the Queen Elizabeth Hospital and to the Glasgow Royal Infirmary and then to the State Hospital at Carstairs. Are these all of the healthcare projects that you worked on or are they just examples that you have given?

A Obviously, the two large ones were the State Hospital and the Queen Elizabeth, and then I've mentioned a selection of small ward upgrades, but they were small-scale type projects.

Q So, those are projects where you have not necessarily named them in that list.

A Yeah.

Q (To the Chair) My Lord, it has been brought to my attention that the oath may not in fact have been administered at the outset. So, I am not sure if perhaps we want to remedy that just now.

THE CHAIR: Right. It is quite interesting because my recollection was that I at least at least began to administer the oath. Mr Hall, with apologies for any duplication, if this is duplication, what I will do is I will administer the oath again. If I failed to do that, I apologise to you and

everyone else. It is an interesting reflection that I cannot absolutely remember what happened. I certainly thought I started.

Mr KENNETH HALL

Sworn

THE CHAIR: Thank you, Mr Hall. Apologies all around. Mr McClelland.

Questioned by Mr McClelland

(Continued)

Q I am sorry for that interruption too, Mr Hall. Just for the sake of formality, can we take it that everything that you have said prior to that administration of the oath was true and (inaudible) answers?

A That's correct.

Q Those prior healthcare projects that you worked on, what role did you perform on those?

A On the State Hospital, that was with a mechanical and electrical design company, and so I was in charge of a team of mechanical and electrical engineers that were designing the project. Originally it was a revenue type project which moved to a capital funded.

Q Okay. What about the Queen Elizabeth project?

A Queen Elizabeth, that was as kind of more a kind of pre-construction design manager.

Q Okay. You understand then, on both of those projects, your role was that of a mechanical and electrical engineering design manager?

A Yeah.

Q Is that the same role that you carried out on the Sick Kids project?

A That's correct.

Q Did your work on those projects involve responsibility for ventilation systems?

A Could I clarify? When you say responsibility, you mean design responsibility?

Q Well, perhaps the easiest way is for you to tell me what your responsibility was for ventilation systems in those roles.

A Yeah. So, in terms of an MEP design manager, it's about managing a team of designers. Multiplex don't have their own design in-house, so they outsource it. So it was very much about managing an external organisation.

Q Okay. You used the acronym "MEP" there. Just for clarity, could you confirm what MEP stands for?

A Mechanical, electrical and plumbing.

Q To what extent, if at all, in those other roles did you have responsibility for compliance of the ventilation system with NHS guidance, such as SHTMs?

A Could you repeat the question?

Q So, on those other healthcare projects, the ones that you worked on before the Sick Kids, to what extent, if any, did you have responsibility for compliance of ventilation system with NHS guidance, such as SHTMs?

A Well, on the Queen Elizabeth project, it's a similar arrangement where that's an outsourced design company; and with the State Hospital the design responsibility was with the organisation, which I was part of.

Q Okay. So, do you mean by that, on the Queen Elizabeth Hospital, was the responsibility for compliance with the ventilation guidance, does that lie with the external companies, and so was not part of your role?

A Yes. I mean, I think contractually-- I'm not a contract expert, and I'm sure there's some link, but in terms of the actual physical

design, it was outsourced, and that company was responsible for interpreting the standards and the guidance and providing a solution that met the guidance that effectively was the client's requirements.

Q Okay. In your day-to-day work on that project, were you looking out for compliance with guidelines?

A As part of a team we were-- I mean, again, the role is about facilitating; so it's interacting with clients and also with the design team and ensuring the flow of information and the outputs that are required to meet the clients requirements are met. So, you are part of a team, but in terms of specifically looking out for a specific compliance, I didn't see that as part of my role.

Q Was that the same for the other project, the State Hospital project?

A It's quite different in that sense because you're employed as a consulting engineer and the firm's employed as a designer, and so you are responsible for interpretation of the guidance.

Q Okay. Now, you say in your statement that you joined Multiplex in 2011. Is that correct?

A That's correct.

Q Yes. You joined as an

M&E design manager. Is that correct?

A The official title was M&E manager; however, it was more specialising in the pre-construction element rather than the next phase, which is obviously the construction of it.

Q Okay. At a different point in your statement, the label that you use for your role on the Sick Kids project was an "M&E design manager". Are you really meaning the same thing there or is there a difference?

A It's the same role that I performed, it was just if-- you know, the email signature had "M&E Design Manager" on it; so for specific jobs, you might have to do a specific role.

Q You said a little bit a moment ago about what that role of M&E design manager entails. Can you just expand a little bit on that for us, please?

A Yeah. So, effectively Multiplex don't employ designers, they're outsourced, and the main role is about managing an M&E design house and effectively creating a route map which, at this point, we were looking at what we needed to do to get to financial close. So you're looking at, you know, what requirements that the client has and what does the design house need to ensure that they can

then design to the client's requirements. Then it's about communication and interacting between both parties to ensure we meet our obligations.

Q Okay. To what extent would you regard you yourself as having had design responsibilities on the Sick Kids project?

A Myself, as in personal responsibility, or Multiplex?

Q Yes-- No, no, you personally.

A Well, I didn't see it as me personally being responsible, but obviously, as a responsible person, and you're part of an organisation, and you're working as a team, ultimately, we're all responsible to deliver what the client wants.

Q Now, you explain in your statement that you joined the Sick Kids project at the start of the preferred bidder stage. Is that correct?

A That's correct. It was March 2014.

Q So, just to state the obvious, you were not involved in the submission of IHSL's tender?

A No.

Q Or in the competitive dialogue procedure that preceded it?

A No.

Q As far as you know, who

was it that handled the mechanical and electrical engineering parts of IHSL's tender?

A From my understanding, it was led by our partners. So, that was-- Wallace Whittle and Mercury had a large involvement in it at the initial stage, and then working with the Multiplex team.

Q We are concerned in this set of hearings with events up to financial close and the project agreement was concluded. Given, your start date on the project, we are therefore going to focus on the preferred bidder period: from IHSL's appointment as preferred bidder up to financial close. From your perspective, what was the objective of the preferred bidder period?

A My objective was to ensure that by financial close, on the MEP side, that we had created a route map to deliver what was required ultimately for Multiplex to achieve financial close.

Q Okay. If we could perhaps bring up bundle 10, volume 1, page 87. Mr Hall, this is the letter appointing IHSL as the preferred bidder for the project. Is that a document that you have seen before or were familiar with at the time?

A I've not seen that letter

before, no.

Q Okay. If you see after the two paragraphs, A and B, you see that what the letter says there is that, "the Board has approved the recommendation to appoint IHSL as the Preferred Bidder for this project the basis of its Final Tender..." So, you see that? That is just to let you know what this letter is doing. If you move on to page 92, you see there is a schedule to the letter, and it is headed up "Terms of Preferred Bidder Appointment." You see there, in the box beside, 1.1 programme says that, "IHSL will use its best endeavours to diligently progress the Project to Financial Close..." then it gives the date 2 October 2014. Is that consistent with your understanding of what was going on in the preferred bidder period?

A Yeah, my recollection was we were working to September, and that's what I've stated in my statement.

Q The box below that, 1.2, says there that:

"IHSL shall not be permitted to make any amendments to its Final Tender except where provided for within this Preferred Bidder Appointment. IHSL acknowledge and accepts that

the rules of Competitive Dialogue only permit fine tuning and clarification of IHSL's Final Tender at Preferred Bidder stage as opposed to material amendments which may have a commercial impact in relation to IHSL's Final Tender."

Again, did you understand that to be one of the conditions of the preferred bidder stage?

A It wasn't something I had any involvement or detail in.

Q You were not aware of that?

A No.

Q Then, if you go on to page 95, please. There is a section here----

THE CHAIR: Sorry, my fault. I lost concentration for a moment. What you were not aware of, Mr Hall, was?

A Have we got the?

MR MCCLELLAND: Page 92.

THE CHAIR: Still on 1.2?

MR MCCLELLAND: 1.2, that is right.

THE CHAIR: So, as I say, my fault entirely, Mr Hall – what was it that you were not aware of?

A Well, I was asked if I was aware about amendments to final tender and the specifics that are recorded within the document, and I

wasn't aware of the wording----

THE CHAIR: Thank you.

MR MCCLELLAND: I think it is probably my fault then, Mr Hall. I think you have perhaps misunderstood what my question was. What I intended to ask was whether you were aware that it was a condition of the preferred bidder period that the IHSL were not to make amendments to the final tender except in limited circumstances.

A It's not something I can recollect as being at the forefront of my mind.

Q Okay. Now, if we put it the other way perhaps, did you understand that IHSL were free in any respect to part from what they had put into the tender?

A Well, I mean, on a general level, with any contract where you get to preferred bidder stage, my understanding would be you would be enhancing what was already done at the first stage because that's what allowed you to get through. So, on a general level, my understanding would be that in any bid that you weren't wholesale changing, you know, what you've already done,

Q If you move on to page 94, please-- Sorry, my mistake, 95, 4.4, the condition here that relates to the technical schedules says that:

“IHSL shall use its best endeavours to diligently develop the following IHSL technical Schedules of the Final Tender (Bidder B) NPD Project Agreement.”

Then, one of the highlighted sections is part 6, “Construction Matters”, reference there to section 4, the “Project Co Proposals”. Do you see that?

A Yep.

Q Did you understand that that was part of the purpose of the preferred bidder period, to diligently develop the “Project Co Proposals”?

A Yes.

Q Then the final paragraph just at the bottom of the page says:

“These technical Schedules of Final Tender... shall be finalised in conjunction with the Board to ensure that both parties are satisfied that these technical schedules robustly address the Board’s Construction Requirements. This will be a key part of the early stages of the Preferred Bidder Period.”

Again, did you understand that that was part of the function of the preferred bidder period?

A Yes. The BCRs were our key document, and it was one that

I used throughout the preferred bidder stage.

Q If we move on to page 96, see at paragraph 4.6 a reference to the Board’s Construction Requirements. What it says there is, “The Board’s Construction Requirements shall be based upon the version issued by the Board as part of the invitation to Submit Final Tender.” Again, were you aware that those were the Board Construction Requirements that would form the basis of the work in the preferred bidder period?

A I recall that there was various iterations, but I was aware that the BCR document was the one that we had to work to.

Q In the performance of your role, what extent did you need to understand the Board’s Construction Requirements?

A I had to have a good insight and understanding of the BCRs, yes.

Q In particular, the elements that related to the mechanical and electrical engineering elements?

A Yeah, so there was a section 8 which was the mechanical and electrical, and that was a key document for me.

Q Okay. I mean, is it fair to

put it this way, that you needed to understand the Board's requirements for mechanical and electrical engineering matters and to make sure that IHSL's M&E proposals would meet them?

A Yes.

Q Perhaps a daft question, but how did you derive your understanding of the Board's requirements for the M&E elements?

A Well, initially, when I joined the project, obviously our team was quite in place, and-- you know, for instance the synergy between the initial stages to the preferred bidder in terms of, say, our M&E designers, they were ahead of me in terms of the understanding. So, it was all about first of all sitting down with the key people there and getting an understanding of where they saw the project and what they needed. Then, it was very much for me to look at what the key documents were to review and understand. Then, together with our designers, create a kind of route map to get us to financial close in the time period.

Q Okay. So, you referred there to the designers being ahead of you and part of a team that was already in place when you arrived. Was that a reference to Wallace

Whittle?

A Yes.

Q You said that you sat down with them, did they give you a briefing on their understanding of the requirements, or how did that work?

A Yeah, it was very much that I was introducing myself because, you know, I was new to the project, and then I was, I guess, feeding off them and what their understanding was because they had been involved in the initial bid.

Q Did you read the Board's Construction Requirements yourself?

A Yes.

Q Did you read the ISFT and the ITP documentation from the tender period?

A I had the-- There was the initial BCR which had the Environmental Matrix in, I think that appendix C from memory, but-- So, there was that document, and then I had the-- you know, the one for the preferred bidder stage. There were other documents as well in terms of the Hulley & Kirkwood information.

Q Okay. So, when you were talking there about versions, I think you described it as the initial Board's Construction Requirements. By that, do you mean the set that appeared in the tender documentation

issued by the Board?

A Yeah.

Q Okay. Then you also referred to a version for the bidder stage; was that a different set or was it the same set that had been in the tender documents?

A No, it had been upgraded. It was the next revision along, and then that then had a few iterations during the preferred better stage, from memory.

Q Okay, we will come to that element of that later on. That is the Board's Construction Requirements side of things. What about the Project Company's proposals? How did you begin to build up an understanding of those?

A Well, it was very much about a way to develop a route map to get to the financial close position, and so the ultimate aim was the project co's proposals that we would be submitting six months later. So, to me, it was just a process of identifying what we had and what we had to do to achieve financial close position.

Q Did you read IHSL's tender?

A Not fully, no.

Q Did you read the parts that related to mechanical and electrical engineering?

A From memory, not in any great detail, to be honest.

Q So from where did you develop an understanding of how the IHSL team as a whole would meet the Board's Construction Requirements in relation to M&E matters?

A Because I was coming in from it fresh, I was really taking it that, you know, we had the Board's Construction Requirements and then we would then have the dialogue and the discussions to develop effectively what the client's requirements were to ensure that we could deliver our project co proposals in six months' time.

Q And you also referred to some other documents. I think you referred to Hulley & Kirkwood documents. Insofar as they were important documents to your understanding of the requirements at that early stage, can you tell us what those were?

A Yeah, the main one I recall was this kind of thermal report where Hulley & Kirkwood had been engaged to do some work on the Edinburgh Royal Infirmary, where they had issues, and then the ultimate result was that there was a kind of suggestion that there was mixed mode ventilations required, and then there

was strategy document and drawings, which that all formed part of the reference design. As I understood it, that was more indicative but it wasn't mandatory, but it was a useful background to understand what had gone on so far and what really the client's aspirations were.

Q Okay, so you mentioned there the Hulley & Kirkwood thermal report. That's a document that we'll have a look at a bit later on. You also mentioned, I think, a strategy document. Could you say a little bit more about what that was please?

A Yeah, so it was more about the kind of servicing of the building, plant room layouts. It's not unusual in projects; I've seen it before. There's no design responsibility given with it, but it's giving you an indication as to one option that could possibly work for that particular reference design.

Q Okay. You will be aware that one matter of interest to the Inquiry is the compliance of the ventilation system with NHS guidance, and in particular SHTM 03-01. How familiar were you with that guidance when you joined the project?

A Familiar with it in terms of what it was and what it stood for and the layout of the document, yeah.

Q And in your statement you refer to SHTM 03-01 amongst other guidance and what you explain, and I am not putting words in your mouth – I am going to try and just summarise my understanding of it – is that to apply that guidance to any particular healthcare project, there needs to be a process of discussion, judgment and decision making. So that it is not just a matter for engineers, but you need clinical involvement and so on. Is that a fair summary of how you would understand it?

A Yeah.

Q Now, is it always the case that you need to have that process of discussion or are there some parameters or circumstances where the requirements of guidance are actually clear cut?

A In relation to SHTM 03-01?

Q Yes.

A My experience is that the SH 03-01, the starting point is that it is guidance and that's how it was written and, in reality, in that document there can be contradictions: items not aligned, it might be out of date in terms of technology. So, my view is that if you're designing anything and you're relating to that, it's a starting point, not the end point.

Q If we could go, please, to bundle 1 at page 149. This is just to let you see the title page, Mr Hall, of the document that we are looking at. This is “Scottish Health Technical Memorandum 03-01, Ventilation for Healthcare Premises, Part A –Design and validation.” See down at the bottom it is dated February 2014. This would be the version in force at the time you began work in the preferred bidder period.

A Yeah.

Q And if we could go to page 230 please. We see here this is section 7 of the guidance, and it’s headed up, “Specialised ventilation systems.” Just reading from there, it says:

“This section contains design information for a range of healthcare ventilation applications.

The following departments will require a degree of specialised ventilation.”

And then there’s a there’s a long list of departments, and third bullet down says, “critical areas and high-dependency units of any type.” Then below that, “Isolation facilities.” If we move forward, please, to the following page, 231, just at paragraph 7.3, it says:

“Design information for many of these applications given in Appendix 1, Table A1, Appendix 2, and in the following Chapters within this section.

It is not possible within this existing document to give definitive guidance for every healthcare specific ventilation application. Additional detailed guidance may be issued in due course in the form of supplements.”

If we move forward to page 287, we see there, “Appendix 1: Recommended air-change rates.” Would you understand that to be the appendix that was referred to in the paragraphs that we looked at just a moment ago?

A Yeah.

Q And if we look on that table, do we see there that there’s an entry-- the first entry is for “General ward.” Reading along the table, we see that the required or the recommended air changes per hour are 6. Do you see that?

A Yeah.

Q Then two down, we’ve got “Single room.” Again, the recommended air change: 6. There’s also a provision there for pressure arrangements, and would you

understand that to mean balanced or negative in terms the of pressure arrangements?

A For single bed rooms I would understand it balanced or negative, but in a general ward it's not defined.

Q Yes, so in the general ward column, pressure column, we have what might neutrally be described as a hyphen. One interpretation might be that that means negative, but your interpretation is that it means that it is just simply not defined.

A It's not defined, and that's an example of where I've said that the SHTMs are a starting point, and that's where you would then refer to medical colleagues or end users or the clinical team to understand how that ward would operate.

Q Is that your personal interpretation of it or is that a generally accepted interpretation that the pressure requirements for a general ward are undefined?

A That's my understanding.

Q Is it one that, so far as you know, your colleagues in that industry would share, or is there any debate or disagreement about that as far as you are aware?

A To be honest I couldn't--

It's not something I've discussed with colleagues so I couldn't really comment on it, but it does go back to my original point that it's a starting point, and by taking that and going to the clinical team and the end users, it would be clear how that department was going to operate and then it would also be clear as to the pressure regime that should be maintained in it.

Q We have lost the document, I think, but if you could just have that back-- There we go, and if you read a bit further down, do you see an entry for "Critical Care Areas"? It is about eight or nine lines down. We see there that the recommended air change per hour is 10 and the recommended pressure arrangement, positive to 10 pascals. You see that?

A Yeah.

Q Then reading along at the end of the line, there is a comment that says the isolation rooms may be negative pressure. So, do we see there that Critical Care areas have different recommended air change and pressure arrangements from general wards and single rooms?

A Yeah.

Q What is your understanding of the reason for that?

A The reason for it is it's obviously a different department and it

requires a greater air change based on this table, and so the type of patient is obviously more critical than a-- further down, and maybe you would look at a general ward.

Q And what is your understanding of the reason why a critical patient might need different parameters?

A I don't have that expertise to be able to comment on.

Q Are you able to comment on whether it is related to the risk of infection?

A No.

Q One second. If we go to page 232, please, of that document. If we just read from paragraph 7.6 there, it says that:

“The supply of air to a room has four main functions:

- To dilute airborne contamination;
- to control air movement within such that the transfer of airborne contaminants from less clean to cleaner areas is minimized;
- to control the temperature and, if necessary, the humidity of the space;
- to assist the removal of

and dilute waste gases where used.”

Were you aware of that part of the guidance? Not that part of the guidance, the concept that is articulated there.

A I mean, I understand the purpose of a ventilation scheme but, you know, when it starts to go into the technicalities of airborne contamination then my knowledge is limited.

Q Okay, if we go back to the table A1, which is page 287, I think. Now, I'm not an engineer, of course, Mr Hall. Those recommendations that we see there for Critical Care areas, are those not quite clear in the sense that rooms in Critical Care are to have 10 air changes per hour and 10 pascals of positive pressure?

A The table is clear, but it has to be applied to a project, and it needs a wider audience to conclude if, in fact, that is correct. My understanding is that they are recommended air change rates.

Q So the recommendation is 10 air changes per hour?

A The recommendation is 10 air changes per hour but behind that there's a process in my opinion.

Q Just to be clear about it,

are you yourself not sure whether the different air change pressure arrangements for Critical Care are related to the greater need for protection that patients in the Critical Care department have?

A My understanding of infection and how all these different departments interact is limited and I feel that there's other experts out there that would know, and that may well be because my role is not a designer and therefore I don't see that I really need to have that level of expertise.

Q Okay, I hear what you say and I hear you say that you are not a designer and your expertise does not lie in understanding why particular parameters are set, but if I could just press you a little bit on that, just so I can understand what the limit of your knowledge and expertise was: did you understand that Critical Care had different ventilation requirements because the patients who were in there were more vulnerable than a typical patient?

A I understand the terminology Critical Care and I understand that it is a higher risk patient than a normal ward. But I feel that, you know, I'm getting drawn into something that's quite detailed and it's just not something I feel I would need

to know. In a design of a hospital there are a lot of experts who are far more qualified than me and, if there was doubt, that would be the purpose of having them involved.

Q Okay, so if you were on the project and hypothetically somebody was to raise the question of why is it that Critical Care has got these parameters and general ward has different ones, would you seek out advice from somebody else about that or would you be able to answer that question yourself?

A No, I would seek out further advice, and that would be because we outsource our designers and they may well be able to respond to it at a certain level, or we would put it through as an RFI or further clarification in terms of the clinical side of the team.

Q Okay, so if we stand back from all of that and if you are working on a project and you are told that a room is going to be in Critical Care and that it's to comply with SHTM 03-01, would your starting point be that it should have 10 air changes per hour, 10 pascals of positive pressure?

A I mean, my starting point would be what have our designers prepared? And what's their advice?

Q If I can put that question

the other way around, if you are on a project and there is a room in Critical Care where something less than 10 air changes per hour or 10 pascals of positive pressure has been specified, is that something that you would query, or would you just accept it as deliberate choice?

A It feels quite hypothetical the question and it's in what context? You know, how would it have come about? Are we specifically looking at, you know, somebody's flagged an issue with a project room or-- I think it would really be dependent on circumstances at the time.

Q And we see there that the table-- If we could have that document back up on the screen please. The table has entries for general ward, single room. What was your understanding of the difference between the two things?

A General ward having listed the 6 air changes and then the single room as 6 air changes?

Q Yes, so general ward there as the first entry on the table and single room as the third entry. What would you understand to be the difference between those things?

A Well, the single room by its nature is a single bed room, is my understanding, and then the general

ward is obviously more than one single so it could be a four-bed ward, a multi bed ward, but more than one bed basically.

Q Okay, we are finished with that document, thank you, and if we could now look at another document which is in bundle 5, page 376. Now, you see there that this document is titled, "B1 Critical Care Clinical Output Based Specification." Is that a document that you recognise?

A I'm aware of the clinical output based specifications, yeah.

Q Okay, so just let you know what it is, this is part of the project agreement. It's in Schedule Part 6 as part of the Board's Construction Requirement. So do you recall that there are clinical output based specifications for the various departments?

A Yeah, yeah, I had a copy of them.

Q If we just read through that document and go, please, to page 377. I'm just going to read parts from this, Mr Hall. It says:

"This department will provide a comprehensive care service this includes Paediatric Intensive Care (PICU), High Dependency Unit (HDU) and Surgical Neonatal Unit (SNNU)

for children...”

Then a bit further down under the heading “Scope of the Service”:

“The main objective of the department is to provide excellence in medical, nursing and paramedical care to patients who require intensive care and high dependency care.”

And if we read on through that document, page 379, we see there a list of the separate rooms in the department. Is that what you would understand that to be?

A Yeah.

Q So we see there are the headings, “PICU - 8 Beds,” “Low acuity - 6 Beds,” “Neonatal HDU- 4 Cots,” “High Acuity - 6 beds.” Do you understand that to be the bedding requirements of the Board for the Critical Care department?

A Yeah.

Q And do we see there that, below those headings that I have just read out, some of the rooms are identified as isolation cubicles, but the others are not identified as isolation cubicles. Do you see that? Was your understanding that isolation facilities were required and identified in that list by the Board?

A On a general level, yes. I mean, that level of detail was not

something that I was going into.

Q I think you said you were familiar with this document. Had you read it at the time?

A No, it’s not the sort of document from an MEP-- My experience is they’re more reference documents and the output specs are traditionally, in my experience, used at the 1:50s where you would have user groups and the architect and they’re developing 1:50 layouts. It’s more a secondary type document for an MEP engineer.

Q Okay, so when you refer to it as a secondary type document, what do you mean by that? In the particular context of a mechanical and electrical engineer trying to understand what mechanical and electrical systems a health board wants.

A Yeah, so from my point of view, obviously a non-designer, I had these documents to look at if there was an issue and somebody was talking about a department and there might be a-- to check if there was a requirement for that. I think, as a designer, it would become more relevant in developing the MEP design.

Q Okay, so would you regard this as a document of interest for Wallace Whittle, but not one that

you yourself would have to be particularly familiar with?

A Not in the detail, but as a reference document in a suite of documents that you may have to dip in and out at certain times.

Q If we go down to page 388 please. You see a heading there, Mr Hall, “Environmental and Services Requirements.” You see that?

A Yeah.

Q If we go down over the page, page 389, we the fourth bullet point reading from there, it says:

“Flexibility in the use of Critical Care beds for both High Dependency and Intensive Care is key to maintaining efficient use of high specification beds. All three areas must be co-located.” And if you read down another four bullet points, it says that:

“All PICU and HDU bed spaces are required to be of the same specification to allow the greatest flexibility of use.”

Were you aware of those requirements for the Critical Care department?

A Not those specific requirements, no. As I said earlier, that my experience is that type of requirement is getting brought out at these 1:50s with the user groups

reflecting to the main one being the architect at the user group meetings as they develop the architectural layouts.

Q And just in general terms, did you understand that the Board’s expectation was that all of the bed spaces be capable of use for all purposes?

A In reality, no, I wasn’t aware of that.

Q I think actually my question wasn’t very well put. What I mean is were you aware the Board had a requirement that all of these bed spaces be to the same specification to allow the greatest flexibility of use?

A Could I clarify in terms of the same specification – is that the ventilation specification you’re talking about or is it just the bed spaces and whatever is in one bed space is to be the same?

Q Well, you are right to point that out because the paragraph that I referred you to does not say whether it is ventilation specification or any other specification; it just says “specification.” What I am trying to get to is your understanding of the extent to which the Board required all of the bed spaces in Critical Care be of the same specification, whether it is a ventilation specification or anything else. Is that something that you were

aware of?

A It wasn't something that I was considering. In reality, in terms of the environmental, we had the Environmental Matrix that effectively gave the MEP the answers that we needed.

Q So are you saying that-- I think what you said was that, for the designers, the Environmental Matrix was the more important document than the resources we have been looking at just now?

A Yeah, I mean, if there wasn't an Environmental Matrix in place, then the designer would have to go through these in a lot more detail and extract what was required and then a process in place, but then to me it appeared that that work had already been done.

Q Already done and reflected in the Environmental Matrix?

A Environmental Matrix.

Q Okay. We are finished with that document now, thank you. I want to turn now to that question of what you understood about the Environmental Matrix. Again, to save time, I will try to feed back my understanding of what you are saying in your statement. What I have taken from your statement is that, as you understood it, the Board's

requirements for the ventilation system are set out in the Environmental Matrix. Is that your understanding at the time?

A Yes.

Q And that those were fixed requirements unless and until the Board decided that it wanted to change them. Was that your understanding at the time?

A Yes, that's correct.

Q In saying that, you quote two particular parts of the Construction Requirements. If we could just go to the ISFT version of the Board Construction Requirements. These are in bundle 3, page 259. I'm going to this set, Mr Hall, because I understand that this is probably the set that was in place at the start of the preferred bidder period. Does that seem to you to be correct?

A Yeah, that's correct.

Q Okay. So, page 259, this is a section of the Board Construction Requirements at the time, headed up, "NHS Requirements." It reads:

"In addition to the standards listed in paragraph 2.4... unless the Board has expressed elsewhere in the Board's Construction Requirements, a specific and different

requirement, the Facilities shall comply with but not be limited to the provisions of the NHS Requirements as the same may be amended from time to time.”

Then there’s a list of various sources and then, down at (h), HTMs and SHTMs. Do you see that?

A Yeah.

Q Now, was this a paragraph that you thought significant when working out to what degree it was necessary to comply with SHTMs?

A Well, I didn’t specifically go through each one to try and work out. It just seemed obvious to me that the information that we had seemed to tie up in a way that you were being told this is what the Board wants.

Q If we can go to page 339, please. Now, we see at the bottom there, this is section 8 of the Board’s Construction Requirements, and headed up, “Mechanical and Electrical Engineering Requirements.” “Project Co shall provide the Works to comply with the Environmental Matrix.” Now, in coming to your view about the role of the Environmental Matrix, were you relying on what that said there, or was it just the assumption that you made from the existence of the Environmental Matrix that it was

required?

A No. Well, obviously, the original document that I had had the Environmental Matrix as Appendix C in the BCRs. My understanding was the BCR was the key document that we had to comply with. But in addition to that, when you went to see the definition at the front of the document, it defined the Board’s-- I can’t remember the exact wording, but it was the Board’s requirements that it defined, and then the other documents also seemed to align in terms of-- there was the C.A.3 where it said that you had to comply with the Board’s Environmental Matrix and you actually had to confirm that in your tender was what I observed. Then when you looked at the actual-- the other aspects, in terms of, say, the room data sheets, it was actually telling you that you weren’t getting room data sheets but you were getting the Environmental Matrix, and to me that was a key client briefing document. So, the whole thing seemed to tie up and therefore for me it wasn’t a case to then start to go through line by line in the BCR to see HTMs or the other points that were listed.

Q Just to be clear about the different sources you were talking about there, the first was you referred

to a definition, was it the definition of the Environmental Matrix in the Board Construction Requirements that you were talking about?

A Yeah, so at the front there's obviously a series of definitions and one of them defines the Environmental Matrix.

Q Yes. Perhaps just go to that. That is page 246. Is that the definition that you had in mind?

A "...requirements of the Board..." Yeah, that was the one.

Q You see at the end there in brackets, the words, "as varied, amended or supplemented from time to time in accordance with the Project Agreement." To what extent did you understand that the Environmental Matrix was a fluid or changeable document?

A I mean, at the time, it wasn't something I considered. I was basically looking at: what are the client's requirements in terms of the environmental information? And so, because it all tied up, then it seemed straightforward that that's what we would use and that's what we did use.

Q I think in addition to that definition, you also sounded to me like you were referring to some of the tender documents. Is that right?

A Yeah, so there was the--

it was really when I started on the project, some of these items were identified to me and one of them was about the-- that there had been this item in the tender that said that you had to confirm that you were complying with that.

Q You say "complying with that," you mean complying with the----

A With the Board's Environmental Matrix.

Q Okay, and the third source or the third point that you referred to was this thing about not getting room data sheets. What was your understanding there?

A Yeah, so there was no room data sheets for the project; however, there was a series of other documents, and one of them was the Environmental Matrix.

Q Now, you have referred to those, but I think I am right in saying, correct me if I am wrong about this, that you did not read through the tender documents? How did you become aware of these other sources if you did not read the tender documents?

A Yeah, so obviously at the initial stages we are trying to get a grasp of what are the client's requirements and where do we stand, and to be honest, I can't really

remember whether it was a discussion with Wallace Whittle when I was maybe querying it with them to see just what their understanding was, because they'd been involved in the first-- or it was our own team. In my mind, I was checking off how legitimate what you were getting told at the time. So, you know, that was something that when I did see that element, it was a case of that confirmed in my mind that-- it backed up what the things I'd been told, and therefore that's what we should proceed with.

Q Okay, I am not sure I quite followed that. Do you mean that you gleaned an understanding from discussions with Wallace Whittle, and then went back and had a look at the tender documents?

A Yeah. Obviously, we've got the Hulley & Kirkwood documents, a series of documents and I'm doing, what I would call, an audit in my mind to be able to take it forward to get a route map to financial close. You weren't coming from it from a point of view that perhaps you would look at it now. You know, it's a general thing that you're looking at to review, to understand what you have to do. I wasn't looking at things on the basis of challenging anything. It was just about

trying to get a feel for what information we had and what we needed to develop to get to financial close really.

Q We will maybe have a closer look at some of the tender documents a bit later on. Could we go, please, to page 264 of that document on the screen? This is paragraph 2.5 from the Board Construction Requirements, Mr Hall. I am just reading from the second paragraph, it says that:

“Where contradictory standards / advice are apparent within terms of this Section 3 of Schedule Part 6 (*Construction Matters*) and the Appendices then subject to the foregoing paragraph then (1) the most onerous standard / advice shall take precedence and (2) the most recent standard / advice shall take precedence.

When the more onerous requirement is to be used the Board will have the right to decide what constitutes the more onerous requirement.”

And a bit further down, the fifth paragraph:

“In certain instances,

NHS publications include a number of options or alternative solutions. Where the Board has defined their preference specifically, Project Co shall adopt these preferences as a mandatory requirement.”

And then the bottom paragraph:

“For the avoidance of doubt, the Board considers NHS publications reflect minimum standards and any alternatives proposed by Project Co shall provide a similar or enhanced level of service and quality.”

Were those provisions that you were familiar with at the time or not?

A I remember a debate on this on some-- I think it may have been external lighting as the project developed. I can't remember exactly what part in the project it came on, but if the question is in relation to ventilation and the Environmental Matrix-- Is that the question?

Q Yes.

A Yeah.

Q If you were aware of these provisions at the time, did they, and if so, how, influence the way you looked at the Environmental Matrix?

A I mean, it didn't influence

because my understanding was that you had a client's requirement and therefore there was no reason for anybody to then challenge to see if there was a more onerous or a contradictory because, you know, the item in 2.3 on the previous page was telling you that the Board had the alternative and it aligned with the section 8, then that was the document that you would use.

Q Okay. We are finished with that document for the time being. If we can now take a look at the Environmental Matrix from the start of the preferred bidder stage, and that is at bundle 4, page 131. Now, is this a document that you are familiar with?

A Yes, I recall that one.

Q Okay. This is the front page of it. You see it is headed up, “Royal Hospital for Sick Children and Department for Clinical Neurosciences – Edinburgh.” To be clear, my understanding is that this is the version in the ISFT. So, it is the version that existed at the start of the preferred bidder period. We will proceed on that basis, but if there is anything in it that you think that suggests that is not where it is from, then please do let me know. Now we see on the list, there is an index there with a list of department codes, and if you go down that, do you

see that the fifth entry, “B1” and then, “Critical Care / HDU / Neonatal Surgery.” Do you see that?

A Yeah.

Q Did you understand HDU to stand for High Dependency Unit?

A Yeah, I understand HDU. Yeah.

Q That code “B1,” I do not know if you recall that the clinical output specification we looked at a moment ago had that code on it?

A Yeah.

Q So, did you understand that the parameters set out in this document for that department have to meet the requirements of a clinical output specification?

A I’m not sure it’s something I specifically thought about. I mean, the key point I guess to make is that up to financial close, our designers weren’t doing detailed design and therefore, you know, the real detail and the real interrogation to the level of going into each department is probably more at detailed design rather than at up to financial close.

Q Okay. Perhaps not a matter that you thought about at the time, but is it a sensible proposition that insofar as the Environmental Matrix sets out ventilation parameters for Department B1, those should be

parameters which help achieve the objectives set out in the clinical output specification?

A Yeah.

Q If we go on to page 132, please. We see here a list of guidance notes for the Environmental Matrix. Are these guidance notes that you were familiar with at the time?

A Yeah, I was aware of them.

Q Do you see that Guidance Note 1 reads:

“This workbook is prepared for the Reference Design Stage as an easier reference tool to replace ADB RDS M&E Sheets for the Environmental Criteria elements as described on these sheets.”

If we read down to Guidance Note 5, it says:

“Ventilation air change rates and the use of natural ventilation in Patient Areas shall be reviewed throughout the detailed design process to ensure a maximum internal temperature of 25°C is not exceeded [and so on].”

Was that an indication that air change rates were to be subject to

review through the design process?

A It wasn't something that I considered. My interpretation of the guidance notes were that the author had effectively put down his working notes into the document, and from the working notes, that you then had the figures that effectively our designers had to use.

Q So, do we take it from that, that you regarded the room-specific parameters that are set out later in Environmental Matrix as what you had to follow, and these guidance notes were-- well, it was not necessary even to take account of them?

A Perhaps it's strong to say, "not take account of," but the whole essence of an Environmental Matrix is it's meant to make the process easier than having it on room data sheets. So, in my opinion, I guess your aim is to have a document, and typically it's in Excel – the document – and you have the tabs along the bottom and, you know, you're clicking in and out of each department. So sometimes a sort of PDF gives you the impression that it's a manuscript that you're going through. Whereas, you know, the Excel version is that you are clicking into each department, and my assumption is that that's the final

results, that they are meant to be for that department, and that's what has been agreed.

Q Yes, okay, but even looking at it in that way, this Guidance Note 5, even if you take that just as a working note from the author, does that not suggest that air change rates cannot be regarded as settled because they are going to be reviewed throughout the detailed design process?

A It's not really possible to be reviewing ventilation rates during a detailed design phase in my opinion. The process in terms of detailed design is that there are fundamental elements that you have to work through. For financial close, we had to assess the building size, plant room size, corridors, and to be able to do that you needed to find an element of the room parameters in terms of environmental. So, the suggestion that, you know, to do it in detailed design, I struggle to follow.

Q Okay, if we read down then to Guidance Note 15, I am just going to read parts of this, I am not going to read it all. You see there, "**Typical bedroom** – Design Criteria – SHTM 03-01 [and so on]." And below that:

"**HDU** [High

Dependency Unit] **bed areas** – Design Criteria – HBN 57 gives specific guidance as well as SHTM 03-01 – esp Appendix 1 for air change rates – 10ac/hr Supply...”

If we read further down, from the dark text:

“**Critical Care areas** – Design Criteria – SHTM 03-01 – esp Appendix 1 for air change rates – 10ac/hr Supply...”

So, just the first point, when that talks about 10 air changes per hour, that is consistent with Appendix 1 in SHTM 03-01 for Critical Care departments. Is that correct?

A Yeah. Ten air changes.

Q So, that is a statement as one would expect. That is not a statement of a parameter that would surprise a ventilation engineer?

A No.

Q If we go on to the following page, 133, you see at the top it is headed up, “Room Function Reference Sheet.” It says:

“Room Function Reference Sheet.

The following table details reference templates which are used to populate cells

within the environmental matrix. Refer to individual department sheets for individual room environmental conditions.”

What was your understanding of the function of this sheet?

A I was asked when I attended interview, and my view was that it wasn’t something I had any knowledge of. The matrix was really-- The populated figures in each department was my focus.

Q Okay, is this another part of the matrix that you did not think it was necessary to read or understand?

A Yeah, because ultimately you have a document that my understanding was the client’s requirements and therefore there’s no reason to unpick work that somebody else has done. Don’t know how it’s been done, but if it’s been getting told to you that it’s somebody’s requirements and it’s all laid out in tabular form, then my belief was that that’s what we should use.

Q Just because it will relate to something coming later on, if we look down the list of room functions, left-hand column, see about halfway down, there is an entry for “HDU?”

A Yeah.

Q Then, if we just read

across through all the columns, we get to one under the heading of “Ventilation Supply,” you see 10 air changes per hour?

A Yeah.

Q But that is something that you would not have been giving close attention at the time?

A No.

Q If we move on to page 135, please. Do you recognise this as one sheet in the element that sets out parameters for----

A Yeah.

Q -- particular rooms? Is this the part that you were referring to a moment ago when you were describing what you----

A Yeah.

Q -- regarded as the Board’s requirements. Is that correct?

A Yeah.

Q Yes. Do we see in the very left-hand column, and in fact across the top of the page, there is a reference to “B1.” All it says is “B1” in the left-hand column, but the title at the top of the page reads, “B1 – Critical Care...” Have you still got it? I have lost mine. Across the top it says, “B1 – Critical Care / HDU / Neonatal Surgery.”

A My screen’s blank.

Q Oh yes, mine too.

THE CHAIR: I am in the same-- Right.

A It’s back.

MR MCCLELLAND: Okay, we are back. Yes, so this is really just to-- Oh. I wonder, perhaps, my Lord, I note the time----

THE CHAIR: Yes.

MR MCCLELLAND: If we have got the slight technical difficulties, it may be appropriate to take the break just now?

THE CHAIR: Well, we would have taken a coffee break at about half past eleven, so perhaps we could rise for about 15 minutes, and if we can restore the content for the stream. Mr Hall, I hope you have the opportunity of getting a cup of coffee, but we will ask you to go to your witness room.

(Short break)

THE CHAIR: Now, I understand our technical issue has been resolved. Although, as soon as I say that I will probably be proved wrong, but I have every confidence in the people who actually know about these things. Could we ask Mr Hall to rejoin us? (After a pause) Mr McClelland.

MR MCCLELLAND: Thank you. Now, Mr Hall, I hope you will recall that, before we had our little break, we

were looking at this part of the Environmental Matrix. Just to reorientate ourselves, the heading on the top tells us that this page is to do with B1, Critical Care department. Now, if we look to the left-hand column, you see there that, given the department code, B1, you understand that to relate to the Critical Care department?

A Yeah.

Q Then, in the next column, department name, "PICU and HDU's." Do you understand that to be Paediatric Intensive Care Unit and High Dependency Unit?

A Yeah.

Q Yes. In the third column along, if we look down from the top, we have got a section for: "PICU- 8 beds"; "Low Acuity - 6 beds"; "Neonatal HDU - 4 cots"; "High Acuity - 6 beds." Do you understand those to be the bed spaces that the Board wanted to have in the Critical Care department?

A Yeah.

Q If you look to the next column along, we do this section by section, so beside the "PICU - 8 beds" box, we see there that that is further divided down to "Single Bed Isolation Cubicle." The next column along tells us that there is two of those. Then a "Single Bed Cubicle" – tells us that

there are two of those, and then an "Open Plan Bay (4 beds)," of which there is to be one. Again, does that set out what you understood the Board wanted to have in terms of bed spaces in the Critical Care department?

A Yeah.

Q If we read on down for each of the other areas, we see a similar set of details telling us about bed spaces that appear in the Critical Care department. Is that what that shows us?

A Yeah.

Q Was that what you understood at the time back in the preferred bidder period?

A Yeah, I mean, I wasn't obviously doing a forensic analysis of each line and checking it but, loosely, what you've outlined is what my understanding was.

Q Okay. What I am about to try and do may be a little bit difficult, but if we have that document and scroll it along so that-- We will try it first of all so that the left-most column that appears on the screen is the one headed up "Department Sub Group." Can we just zoom out a little bit please and try get more of the-- Again, if we can-- Yes, I think that is going to work for our purposes. So, just by way of example, in that column that is headed

up "Room Name," if we look at the bed spaces, but let us ignore, for the time being, ones that have "isolation" in their name. So we see there the "PICU - 8 beds," there is an entry for a single bed cubicle, for example. Do you see that, Mr Hall?

A Yeah.

Q If we read along that line until we get to the column that is headed up, ventilation supply, we see there an entry for 4 air changes per hour.

A Yeah.

Q I do not think we need to do it for all of them, but if we were to look at all of the bed spaces in the Critical Care department, see that all of them have a ventilation supply air changes per hour of 4? See that?

A Yes.

Q Yes. Is that inconsistent with what appears in the guidance note, the particular Guidance Note 15?

A Yeah, well, we know the guidance says 10.

Q The guidance says 10 air changes per hour and the entries say 4, so you do accept then that there is an inconsistency within the Environmental Matrix itself?

A Yeah.

Q These entries of 4 air changes per hour, do you also accept

that those are inconsistent with what is set out in table A1 of SHTM 03-01?

A Yeah.

Q You do?

A Yeah.

Q While we are here, go a couple of columns along from the one about ventilation supply, you see a column headed up "Relative Pressure."

A Yeah.

Q Just take a moment to look at it. For all of the bed spaces that are not isolation cubicles, we see that the pressure stated there is positive. That is consistent with what table A1, SHTM 03-01 requires for rooms in Critical Care. Is that correct?

A In terms of the pressure?

Q The pressure, the positive pressure arrangement.

A Yeah.

Q Okay. So, would you agree then that there are at least two features here which might be characterised as inconsistencies? First of all, within the Environmental Matrix itself, there is an inconsistency between the guidance notes being 10 air changes per hour for HDU and Critical Care and these particular room entries in Critical Care where 4 air changes per hour is specified. Do you accept---

A Yeah.

Q -- that is an inconsistency? There is also the inconsistency between the Environmental Matrix and SHTM 03-01. Again, that Environmental Matrix here says 4 air changes, Critical Care, but the guidance says 10. Were you aware of those inconsistencies during the preferred bidder period?

A Not for Critical Care.

Q Why not?

A The level of detail that we're talking about there was not something that, personally, I had a requirement to go into.

Q Is it a level of detail that you would have expected your designers to go into at the preferred bidder stage?

A I guess it's difficult to talk for them, but the way that I would use the matrix and how I've outlined earlier, that you're looking into the actual rooms and you're looking to see what's required, if that's what they done also then I wouldn't necessarily expect them to start doing an analytical review of all the different sections to see-- because certainly my understanding was this is what the client wanted, and so, you know, you wouldn't forensically analyse anything that the client was wanting when it's

specific requirements.

Q If you take the document as a whole as stating what the client wants, is there not an inconsistency that has to be resolved before you understand the client's requirements -- between the guidance notes and the room particular details?

A No, because the item in the BCR that said that if there was a specific requirement that the Board had asked for-- I can't remember the exact terminology off the top of my head, but that took precedence. So, you know, that was the overriding requirement, so that was my interpretation of that.

Q Just to be clear, did you take that as justifying taking the room particular parameters over giving priority to them over what was said in the guidance notes?

A Is there two questions here? So, the guidance notes at the front here or do you mean guidance notes as in SHTM?

Q Sorry, I mean the guidance notes in the matrix itself.

A Well, my interpretation of that was that was somebody's workings that had been produced as they developed the matrix. So, in reality, I wasn't that, you know, interested in going through

somebody's workings that they might have had with clinical teams or various meetings that you weren't involved in. You don't know what's been agreed. For me, it was about the specifics in the cells and the room types and what was being asked for.

Q Now, I think your answers have been quite clear that you were not aware of these inconsistencies at the time, but do you accept – just as a matter of generality – that, when an engineer is confronted with an apparent inconsistency between requirements, that the normal judgment would go with the more onerous condition until the matter has been clarified?

A I guess it depends what we're actually talking about.

Q Well, let us say you had been aware that there was discrepancy between one part of the matrix calling for 10 air changes and another calling for 4. Until it had been clarified which of these was actually wanted, would you agree that the normal judgment an engineer would make is to assume the more onerous condition applied?

A Thinking about if it was an engineer when I was an engineer designing and I had two issues that, you know-- a higher or lower figure, I

wouldn't make any assumption; whatever the issue was, I would go to whoever it was and raise it with them and see, "What is it that you actually want?"

Q Now, apart from the entries for the particular rooms on the sheet we are looking at now requiring 4 air changes per hour, is there anything else that, in your view, confirmed that 4 air changes per hour was a conscious and deliberate choice on the part of the Board?

A The main one, I guess, is the sort of general ward bedroom, the single bed room, where I mentioned earlier about the Hulley & Kirkwood analysis reports, the thermal reports, and that the output of that was that it was to be 4 mechanical air changes per hour, so that's one example.

Q Okay. We can maybe just have a look at that document. That is bundle 4, page 184. Now, you see a cover page there headed up with Hulley & Kirkwood's logo and it says "Ward Room Thermal Comfort Analysis February 2012." Is that the report that you had in mind?

A Yeah.

Q And as I understand it, you consider this report to support the view that 4 air changes per hour had been deliberately chosen for single

bed rooms. Is that correct?

A Deliberately? Yeah, my understanding was that there had been work done because of a previous issue on another hospital, and Hulley & Kirkwood must have been engaged to produce these reports to see how-- by various iterations in terms of the airflow and how much, what would be the minimum amount to stop the room overheating was my take on that report. However, I did accept that it was-- that element wasn't mandatory. We were getting this ward information, but it was a useful document to back up the fact that we had 4 air changes in the matrix for the single bed rooms and that-- my take on it was that was the reason.

Q Okay, I think you fairly acknowledged there, I think, that this report you understood to be what the tender documents refer to as a non-mandatory or indicative part of the reference design. Is that correct?

A Yeah.

Q Did you understand the report to offer any support for having 4 air changes per hour in the Critical Care rooms?

A I wasn't looking in any great detail. I wasn't differentiating rooms. It was basically here we had a report, it was a skim through, and it

was-- in my mind, I then was clear that this was the reason why four was being quoted in the Environmental Matrix, but it wasn't then linking it to different departments or anything, it was just a general review and understanding really.

Q Okay. Well, if you look at page 188, just reading from the introduction, it says that:

"This study has been prepared by Jonathan McMillan for Hulley Sim, a sustainable building design simulation division within Hulley & Kirkwood Ltd. The purpose of this study is to:

- determine peak annual internal temperature profiles for typical single ward room accommodation..."

You see there it is focused on typical single ward room accommodation, and then the "Executive Summary", first bullet point:

"The profiles in Simulations 1 & 2 show that the internal temperatures in ward rooms can be maintained at comfortable levels with 4 ACH (air changes per hour) of cooled fresh air supply..."

And so on.

So, that is the point you were making a moment ago, that this report was about how many air changes were needed to achieve particular temperature targets.

A Yeah.

Q Yes, and if we go forward to page 194, please, just reading from the second paragraph:

“As this study concerns the thermal comfort of ward rooms throughout the building, with the aim of verifying that mechanically ventilated and cooled ward rooms have summertime peak temperatures which provides for robust levels of thermal comfort whereby internal temperatures of 25°C or less can be provided throughout summertime months.” It goes on to say:

“A selection of rooms has been chosen to represent the likely worst case combination of;

- Exposure to solar gain
- Density of occupation
- Provision of mechanically supplied cool air.”

So, in other words, the author of the design has focused on those rooms where these particular factors are likely to make it most difficult to achieve the temperature target. Is that

fair?

A Yeah.

Q Is that your understanding of it?

A Yeah.

Q And it goes on to say:

“As such critical care and high dependency type ward rooms which receive air change rates in the region of 10ACH, have not being analysed in this study.” So this report is not about rooms in Critical Care or the High Dependency Unit. Do you agree with that?

A Yeah.

Q And the reason they were excluded from the study was that they are going to get 10 air changes per hour.

A Yeah, I see the statement, yeah.

Q So, in other words, this report does not offer-- whilst it offers support for 4 air changes per hour in a standard single bed room, it does not offer any support for 4 air changes per hour in a Critical Care or High Dependency Unit room. Do you agree with that?

A Yeah.

Q Was that something that you were aware of at the time, back in the preferred bidder period, or is that

something that you are only accepting now?

A Well, the purpose of the report, and certainly from my reading of it, it wasn't a mandatory document. It was for information, and it was informing—well, it informed me that that they did issues in another hospital, and there was work that had been done. So, I wasn't looking at it on the basis of my department. I hadn't been involved in any discussions and, you know, you don't know if there was a suite of these that had been carried out. All it was doing was reinforcing and informing that they had had an issue in the hospital. This is what they wanted to try and capture in the new hospital, and I've seen it as positive because the lessons learned philosophy-- here we are. It's getting applied. So, that was the depth of my review of that document.

Q Okay. I think another factor that you refer to in your statement as lending support to the view that 4 air changes per hour were wanted in single bed rooms was the energy modelling.

A Yeah.

Q Can you just explain what support that gave?

A The support was, in terms of the MEP, it had to be split into

three work streams and one of the work streams was energy, the other one was electrical and the other one was mechanical and, in looking at the energy side, there was a requirement to effectively model the building and its energy use. So, to be able to do that you have to have a series of templates and input parameters that, in effect, simulate how the building may operate, the energy that it would use. In relation to ventilation, Wallace Whittle had developed a template for a single bed room, and that was based on 4 air changes an hour.

Q As far as you know, did the inputs for the energy calculations use a particular parameter for rooms in Critical Care?

A I don't know to that extent; it's a very specialist area, and I think the designers would need to respond to that question.

Q In your statement you refer to figures in section 4.10 of the project company's proposals. Taking full acknowledgement of what you just explained, maybe just have a look at that. This is paper apart to bundle 5. I think there are two papers apart, but this is the bigger paper apart, that one, at page 1549. See, there, that this is "Section 4.10 [The] Sustainability and Energy Model." Was that the

modelling that you had in mind?

A Yeah, so that was the-- What we would call this? A paper output, but with that there is the actual physical model and all the backup that that brings.

Q If we go to page 1566, section 3.14, "Evaluating Energy Use of Space Heating, Cooling," and so on. It's just the final sentence of that paragraph. "The electronic document..." and it gives the name, details, the model inputs, that (inaudible 02:42:28) there about the-- I think you said the physical model, is that what you had in mind?

A "The electronic document..." yeah.

Q If you do not know, do not speculate. I was just trying to track down where we would find the input entries that you were talking about.

A Would it be an appendix to this document?

Q Well, if we move forward to page 1732, which is still in the same part of the project company's proposals, 1732, and this is a list of attachments to that part. You see that these, on the face of it, they look like very large documents.

A Yeah.

Q It says that they were transmitted in electronic format. To

the best of your knowledge, is it in these that we would find the energy inputs that you are talking about?

A Yes, so, I think it could be 5.2: a suite of individual sheets, and you would have a single bed room, and it would memory-- you know, defines what's been agreed in terms of the 4 air changes.

Q And if we could just go to bundle 6, and it is page 322. Just expand that out a bit so we can see it. This is a document from IHSL's tender and, in particular, relating to section C10, which is about the operational energy model input data, and see the heading to the document is "Operational Energy Model Input Data." Is this likely to be the same thing that you were referring to a moment ago, or is this something different?

A No, that's something different.

Q Thank you. So, you have referred, there, to two things in support of 4 air changes per hour being a deliberate choice for single rooms: the Hulley & Kirkwood report for thermal comfort and the inputs into the energy model. Apart from those two things, was there anything else, as far as you can recall, to support the idea that 4 air changes per hour was a

deliberate choice by the Board?

A Well, I can recall the period during financial close where the Environmental Matrix was replayed back to the Board, in that there was dialogue about 4 air changes and 6.

Q Okay, we will come to that. So, that is a third thing. Anything else, so far as you can remember, that supported the idea of four?

A I don't think anything else. I mean, obviously the point is that at that time we weren't challenging four versus six. We understood that that's what was wanted.

THE CHAIR: You said not challenging four over six.

A Yeah.

Q Did you mean to say that? Just so that I understand it, the discussion has been four against ten, but maybe I haven't quite followed that.

MR MACGREGOR: Yes, there is a difference between points, and perhaps it will become apparent, I think, when we go through the discussions with the Board around that time. I hope we will clarify it. Just bear with me a moment, Mr Hall. Now, if we could perhaps have a look at some of the tender documents? Now, I take what you say earlier, Mr Hall, that you were not involved in putting

the tender together, but I'd nonetheless like to put some of it to you. So, first of all, if we could go to bundle 2, page 1054. This is a page from the ITP documents, volume one, and this is an excerpt from that in relation to-- you see down at the bottom of the page there is reference to C8.3?

A Yeah.

Q Do you recognise that as reference to part of the mechanical and electrical engineering elements of the tender?

A Yes, so this C8.3, as I recall, it's where the-- we're using the matrix.

Q Okay, so it would probably help you if I let you read it. If you just read the first part there of C8.3. So, C8.3 is the "Submission Requirement Reference" and the text in the next column is headed up "Submission Requirement." We'll need to see the text on that page and then go over to the next page. Can you just take a moment to read that please, Mr Hall? Can we go onto the next page please? Was that one of the provisions that you referred to earlier on, describing your understanding of what was required of the Environmental Matrix?

A Yes.

Q What did you-- Was this text that you were aware of at the time?

A At the time in terms of----

Q The preferred bidder period?

A Yeah, because that's-- obviously, I had to inform myself of client requirements, etc. This is a comment that I can't quite remember who had said, but this is what formed my opinion that we had the Board's requirements as a document.

Q You see here that this text refers to the Environmental Matrix as a draft. It also provides that bidders can highlight "proposed changes on an exception basis." What did you take from those words?

A I didn't pay attention to what the actual meaning or-- It was more about-- Because when you're picking up a project to run with, you're not looking to find errors or issues that-- You're taking it as face value. So what I concluded from that was that it was consistent with the other things I had, and that's why we proceeded with the matrix.

Q If we go back a page, just look at the paragraph above C8.3, we see that one of the submission requirements for the bidder text there reads:

"The following information should also be provided to help demonstrate the design proposals noted above, including;

- x. An environmental conditions / room provisions matrix for both mechanical and electrical services for each room in the Facilities..."

Did you understand that the bidders were expected to produce an Environmental Matrix of their own?

A I don't really recall reading that information.

Q And if we take those two paragraphs together that we have just looked at, do you agree that they appear to envisage a development of the environmental matrix from one that is contained in the tender document?

A I think both are quite contradictory. In some way, it has to confirm that you have to accept that there may be changes.

Q Did you understand that through the preferred bidder period, at least open to the bidders, that suggest changes to the Environmental Matrix?

A I can't see an instance why you would want to propose changes. I mean, your starting point is you have a client's briefing document.

What you did have was user groups going on, and you were developing a strategy of M&E. So it's quite foreseeable that through those forums there could be change, but I didn't envisage that we would be changing rooms. You might have changes in terms of the schedule of accommodation but changes, as I read this and perceive it is, it's about parameters for each room type, and they've been detailed and have went through a process. To unravel that you would have to go through all the user group, the medical review, the clinical review. There wasn't the time to do that. This was a period of six months, and my experience of trying to get clinical people together and Estates and Infection Control if you wanted to change anything, there just wasn't the time. So, my assumption, rightly or wrongly, was that this is what the client wanted, and we wouldn't change it.

Q I appreciate what you have said already today about not having realised that there were discrepancies within the matrix or discrepancies between the matrix and SHTM 03-01, but if that had been detected in the preferred bidder period, would you have understood it would be open to the bidders to suggest a

change to the Environmental Matrix to bring it into line with the SHTM?

A Well, it would have been done through dialogue. If there had been something specific and it would come out in a meeting-- and a good example is the four and the six. So, where that was raised, we were open and honest about where the four was from and that was then, in my opinion, resolved. So, anything that come up, we would not have made specific changes to those kind of figures. We know how important they are and the process that has to go through to get them.

Q So, that is the ITPD. We will have a look at IHSL's tender document.

That's bundle six, and if we start off at page 3? So, if you see it down at the bottom, Mr Hall, this is headed up "Specification for Ventilation Systems," and it formed part of IHSL's tender. Is this a document you were familiar with?

A I see it's dated 13 January 2014, so it was dated before I joined the project.

Q Yes, but is it a document that you would have familiarised yourself with at the start of the preferred bidder period?

A Not that I can recall.

Q You do not recall, okay. We see, there, a reference which begins “WW”. Would that be a reference to Wallace Whittle?

A Yeah.

Q And then if we move on to the next page, page 4, we see there, “Checked by SMcK”. We can take that to be a reference to Stewart McKechnie?

A McKechnie.

Q I will take you to certain parts of this document, but if you-- having looked at these parts, you still do not remember, let me know. Can we go to page 8 please?

What this says at section 5, heading “Applicable Standards”:

“All elements of the work should be in accordance with the requirements of current legislation, regulations and industry standards unless otherwise stated.

“The Ventilation Systems shall accord with all appropriate Hospital Technical Memoranda.”
Down at the bottom:

“For ventilation/air change rates used in the design, Sub-contractor shall refer to the ADB sheets.”

If we go on to page 13, headed up, “Ventilation Systems.” Just go

down, the fourth paragraph from the bottom:

“Air volumes have been established by consideration of heat gains or losses and also the air change rate necessary for comfort and safety as appropriate for the activity carried out in each area. Relative air pressures between rooms shall be maintained to suit the activity concerned, by design of the supply and extract air volumes, and use of pressure relief equipment where necessary to prevent cross infection or transfer of unpleasant odours between areas, as required by the ADB sheets.

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

So, it carries on. Having looked at those parts, is this-- do you remember now if this is a document earlier with or not?

A I think I might have seen it in another format but, yes, it looks more that it's the, sort of, NBS standard outputs that you would use to

give to a subcontractor.

Q The reason for going to it is that, as far as I can see anyway, there is no reference in it to the Environmental Matrix. This is essentially part of IHSL's tender submission, and the point is really this, that if IHSL at the time saw the Environmental Matrix as mandatory, we do not expect to see it referred to as a source of the standards instead of SHTM 03-01.

A I'm not sure of the purpose of the specification. If that was a specification prepared for-- to procure a subcontractor and that looks like the kind of wording that's getting used, then Environmental Matrix-- I don't think we'd form part of that.

Q Okay, well, if this is not a document that you are terribly familiar with, we should probably leave that there. In that bundle, if we could go to page 252. As you can see down at the bottom, this is section C8 of IHSL's tender. C8, again, is that the reference code for the mechanical and electrical parts of the tender? Is that your recollection?

A Yeah.

Q If we go onto page 254, we see there that C8 is about the "clarity, robustness and quality of M&E engineering design proposals." If we

go to page 262, please, this is just setting out the Board's requirement for this part of the tender:

"Bidders must submit proposals setting out the engineering services design for each element of the scheme in sufficient detail to demonstrate compliance with the Board's Construction Requirements."

So I think we can take that that is what this part of IHSL's tender is (inaudible 03:03.03). We go then to page 303. This is, as I understand it, part of IHSL's tender in relation to this part.

Down at the bottom, we have got a heading: "C8.2 (x) Environmental Conditions Room Matrix":

"The mechanical and electrical services shall be provided in accordance with reference design environmental matrix and we shall provide an addendum matrix for any rooms with an exception basis highlighting any changes at preferred bid stage."

Now, is this a document that you were familiar with at the time? You were not familiar with this?

A No.

Q If I was to suggest to you

that that passage there indicated that IHSL envisaged at least the possibility of making changes to the Environmental Matrix, would you agree with that?

A I mean, it certainly says “highlighting any changes,” it doesn’t say who’s making the changes. It may well have been written on the basis of knowing that you would be developing the design to financial close, that, you know, something may well have come out of the design, probably(? 03:04:32) client driven, probably would have been aware of the schedule of accommodation. It doesn’t say what changes are, but I would say it’s highly unlikely that anybody was going to propose that they would start to change ventilation rates. It doesn’t make any sense to change them.

Q If you go onto the following page----

THE CHAIR: Mr McClelland, again, my fault. Right, I have got the answer to my question, I just had failed to note the page number, but-- I have it there. Sorry.

MR MCCLELLAND: All right, okay. So if you move to the next page, which is 304. This is headed up, “Environmental Conditions”:

“We have followed the reference design and have

utilised the reference design”--

Sorry, I am just reading from the top there:

“We have followed the reference design and have utilised the reference design matrix to compile the room environmental proposal drawing is listed below.”

Followed by a list of drawings, and below that:

“The room temperature set points, air change rate and ands [something is missing there I think] shall be in accordance with SHTM-03...”

In the table below, we see typical rooms and ventilation air change rates are given. We see included in that list: HDU, 10 air changes per hour; and there is also, separately, bedrooms, 4 air changes per hour; multi bed wards, four air changes per hour. Do we see in that table there is a distinction drawn between the air change rates for the High Dependency Unit and for what you might refer to as standard bedding areas.

A Yeah, I suspect that that’s an extract from the Hulley & Kirkwood Environmental Matrix.

Q Okay, but a recognition here in IHSL’s tender of different air change rates, HDU from standard

bedrooms?

A Yeah.

Q Yes. If we go onto the following page, under the heading, “C8.3 Environmental Matrix,” the blue language is the Board’s requirement for this element of the tender, which is the text we have already seen. It says:

“Whilst bidders are required to undertake their own design, the Board has provided a draft Environmental Matrix as part of the ITPD documentation. Bidders must confirm acceptance of the Board’s Environmental Matrix, highlighting any proposed changes on an exception basis.”

Then below that we have the IHSL response on that issue. What they say is:

“As indicated above no changes proposed at this time nor envisaged in the future but we will continue to review and advise back.”

So, I think the first part of that is, listening to what you were saying a moment ago, that as you would see it, there would not be any reason change the environmental parameters. Do we see there that, at least at this stage, an anticipation of at the very least a possibility that the Environmental Matrix would be changed through the

design development process?

A Yeah, I just don’t know

the definition of “changed.” You know, because if you’re adding in room numbers or the schedule of accommodation, my opinion is that that’s not changed to your fundamental parameters that have been defined in terms of the environmental figures.

Q Are you talking there about the type of change where, for example, you are adding in new rooms which were not contemplated at the time original the Environmental---

A Yeah.

Q -- Matrix was prepared?

A Yeah.

Q If it was to be suggested to you that this text here at least envisages the possibility of change to the given parameters for those rooms already in the matrix, do you accept that or would you disagree with that?

A I would disagree, and I think, you know, most engineers if they are given client’s requirement that has all the environmental parameters in it, I can’t understand why that you would want to change them.

Q Even when that wording says – this is the black wording by IHSL:

“As indicated above no changes proposed at this time nor

envisaged in the future but we will continue to review and advise back.”

Does that not indicate that IHSL are going to review what is in the matrix and let the Board know if changes are needed?

A Well, bearing in mind I wasn't involved, I didn't write it and I'm trying to interpret what somebody else has written. If you take that paragraph as a whole and you put yourself into a position that you've got three bidders that want to win a project, client's telling you that you have to agree to the Environmental Matrix, you know, to start to be suggesting that you're going to change it could ultimately mean that you would lose points in terms of a scoring. So, my interpretation of that would be that you wouldn't start to be suggesting things that could ultimately impact on your tender.

Q Just as an aside, Mr Hall, I should explain that when I am putting these documents to you, and the fault will be mine if I am asking the question too vaguely, it does not really matter what your interpretation of the document is. What I am trying to understand is your understanding of the job that was being done during the preferred bidder period. If that makes sense to you.

A Yeah.

Q Your answers have been great. If we could also go to page 323 in that document. This is another part of IHSL's tender submission. It is headed up, "Tender Package – Building Services Deliverables." Again, dated before you joined the project, but presumably this was one of the documents at least available to you. Is it one that you recall?

A I'd need to see the content to try and----

Q Okay, if we maybe just scroll onto the next page, and again the following page. Again. Does any of that look familiar to you?

A It wasn't something I was using on a day-to-day basis. It would have existed in our portfolio specifications.

Q If we just go to page 350, it is simply at paragraph 5.9.7, the heading is "Mechanical Ventilation System," and it says:

“The ventilation systems to the Hospital are designed in accordance with Scottish Health Technical Memorandum SHTM 03-01.”

Was it your understanding that that was the objective of the IHSL design?

A Yeah, but I mean,

obviously we talk about the table at the back of the SHTM, but there are nearly 200 pages in SHTM 03-01. So there's a requirement to comply with that document, putting aside what was in the actual Environmental Matrix. The actual design has been done to the SHTM 03-01 other than, in my understanding, the Environmental Matrix where it didn't apply.

Q Okay, and just trying to draw all of that together, I would suggest to you that it indicates IHSL meant to comply with SHTM 03-01, but also keep the Environmental Matrix under review through the design development process, and it was open to them to suggest changes for compliance with guidance. Does that reflect your understanding of the job you were doing or not?

A It doesn't reflect. In terms of open to offer alternatives and changes, that's not something that I can relate to.

Q There is just another point that I have been asked to put to you, which is in relation to-- If you go to bundle 5, please, at 289. This is my fault, I should have asked you this earlier, Mr Hall. When we looked at, this is back in the Board's Construction Requirements, when we looked at the first sentence there of paragraph 8, it

says, "Project Co shall provide the Works to comply with the Environmental Matrix." That is one of the sources you referred to in your statement----

A Yeah.

Q -- justifying your view of how it was to be treated. If you read the paragraph following that, it says:

"Project Co shall in carrying out the Works apply with the following non-exhaustive list of mechanical and electrical requirements."

If you read down the page, you see that there is a section headed up, "Minimum Engineering Standards." Then going over the page after that list, then a paragraph that reads, "The design of the environmental control system..." Ignore that. Carrying on: "The following as a non-exhaustive list of SHTM's [and so on] applicable to the Facilities," and we see, down at letter (h), SHTM 03-01 appears. Do you see that?

A Yeah.

Q Were you aware of that list of standards to be complied with?

A Yes, I was aware of them, yeah.

Q Did that influence the way that you read the opening sentence of that section 8? In other

words, did you see that list as in any way qualifying the obligation to comply with the Environmental Matrix?

A No, I mean, my understanding at the time was that we had this client briefing document that told us what was required environmentally, the BCR at the Section 2.3 where unless it's something different-- and so on that basis, I didn't see that, you know, that this list of standards would apply to the matrix and what was in the matrix, but obviously, in terms of the nearly 200 pages worth of information in an SHTM, we were complying with on the design. So if, for instance, the bedroom was asking for 4 air changes, then it requires a designer to design a ventilation system, putting aside what the number is to comply with the document. So it's not totally excluding the SHTM and saying we're not doing anything.

Q Yes. Just to make sure I have understood that, you would regard your obligation, your employer's obligation, or IHSL's obligation, as being to comply with SHTM 03-01 except insofar as different parameters are specified in the----

A Yeah.

Q -- Environmental Matrix? Okay, we are finished with that

document now, thank you. I would like to move on now to take a look at what happened to the Environmental Matrix over the preferred bidder period, Mr Hall. If we could just start first of all with Bundle 10, volume 2, page 1302. If we see down at the bottom of the page an email from, I think it is Brian Rutherford to you of 11 June 2014. Do you see that heading?

A Yeah.

Q Who is Brian Rutherford?

A Brian Rutherford is a senior mechanical engineer at Wallace Whittle.

Q Okay. If we could just go down to the next page, please, we can see the text of his email to you. He says:

"Ken,

Our understanding is that Theatres have been confirmed as not requiring humidification.

We are seeking clarification as to whether the humidification is still required within the HDU and the Critical Care Areas."

The subject matter of this particular query is not so much important as who is asking what of whom. So do we see there that Brian Rutherford of Wallace Whittle is asking

you for clarification about whether or not humidification is needed in HDU and Critical Care? That was the purpose of his email.

A Yeah, so the normal procedure was if there were any aspects that required clarification, Wallace Whittle would issue them to us and then we would issue them to the Board to achieve clarification.

Q Okay, and so if we go back a page to 1302, do we see there, about the middle of the page, an email from you to Maureen Brown at Mott MacDonald saying – and copied to Graeme Greer at Mott MacDonald:

“Maureen / Graham

Would it be possible to confirm these requirements for Wallace Whittle, please?”

A Yeah.

Q So that is you effectively passing on the query from Wallace Whittle to the Board? It may sound a daft question, but who in your view is determining whether or not humidification was needed?

A We were asking the Board. It was the Board that were-- confirm. I mean, the background to humidification is that I think it was used years ago and there was a certain type of

gas that could be flammable, and therefore I think that gas is no longer used, and so I think the BCR calls for space for humidification. So, looking at these dates here, that was around the time that Wallace Whittle were assessing spatial requirements in plant rooms and corridors and things, so they're probably linked to that.

Q Okay, and if you just look at the Environmental Matrix from that time, which bundle 4, page 132. If we can expand that text to read it, particularly Guidance Note 15. Do you see there, the fourth paragraph down within Guidance Note 15, “Central AHU plant requires humidification to achieve RH range during winter.” That is in HDU. Then in the Critical Care section of that guidance note, second paragraph again, do we see, “Critical”-- Not sure if everybody else has lost the document, but-- Have you got a document in front of you, Mr Hall?

THE CHAIR: Well, there seems to be a pattern of technical issues approximating what would otherwise be breaks, but before we rise, I think the original plan had been to take a further witness

today, now where are we on that?

MR MCCLELLAND: I think my best judgment is that we probably will not be able to start the other witness today, my Lord.

THE CHAIR: Very well. That is probably as much information as I require it at this stage. I will just proceed on that basis. Mr Hall, we had hoped to conclude your evidence this morning, but we have not done that and therefore I would ask you to come back. When I say come back, come back at two o'clock. We will take what we would have otherwise been taken as a lunch break. So, ladies and gentlemen, we will sit again at two. I appreciate there may be questions as to whether legal representatives wish to require further questioning, but we will deal with that if and when it arises. Mr Greer, who I think was otherwise scheduled for this afternoon, will not be taken this afternoon. We will give you information as to when he will be taken. For the moment, we will rise for lunch.

(Short break)

THE CHAIR: Good afternoon, Mr Hall. We hope we have solved the technical issue over providing you with copy documents on the screen, but should that issue re-emerge, the fall-back plan is to provide it by paper, so you should have that document one way or the other. Mr McClelland.

MR MCCLELLAND: Thank you, my Lord. Do you remember just before lunch, Mr Hall, that we were looking at email exchange in which you had sought clarification from the Board about certain humidification requirements?

A Yeah.

Q If we could have on the screen, please, the Environmental Matrix from the start of the preferred bidder period, which is bundle 4, page 132. Blow that up so we can see it. If you scroll up a little bit so we can see the whole of Guidance Note 15, please? Can we just look slightly further down that so that we can see the whole of Guidance Note 15 on the screen? Thank you. Now, do you see in Guidance Note 15, Mr Hall, about four lines down within the High Dependency Unit section? There's a comment there about, "Central AHU plant requires humidification." Do you see that?

A Yeah.

Q Again, if you look in the Critical Care section, you see a similar comment about humidification. Was it your understanding that the query passed on to the Board about humidification related to those guidance notes?

A I'm not sure if it was the guidance notes or-- We were having weekly workshops and the design intent was getting developed by Wallace Whittle, and I seem to recall there was a discussion about humidification, and I think Wallace Whittle went back to the office to reflect on it, and then this is where the RFI came from.

Q If I maybe put it a slightly different way. Do you understand that the question you put to the Board about humidification covered the same issue as is covered by what is said about humidification in the guidance notes?

A Yes. I can see that now, yeah.

Q Okay, so is it correct, then, to say that this is an example of Wallace Whittle raising a query which relates to Guidance Note 15 of the Environmental Matrix?

A Well, I'm not sure if they took it from there or whether they took it from, you know, the actual guidance.

I'm not sure where they took that from.

Q Certainly, at this stage, there does not appear to have been any request for clarification about the discrepancy that arises from the guidance note, insofar as it talks about 10 air changes per hour in HDU or Critical Care.

A No, because we weren't aware there was a discrepancy, as far as I'm aware.

Q If you could go, please, to bundle 10, volume 2, page 1300. You see two emails here, Mr Hall. The bottom one is from you to Maureen Brown and Graeme Greer, both of Mott MacDonald, I think. Is that correct? Dated 3 July 2014, so a few months into your work on the project. Your email reads:

"Good morning Mo /
Graeme

Stuart has asked if he could have the environmental matrix in excel rather than pdf version to allow to populate the schedule with any changes."

Is "Stuart" there Stuart McKechnie of Wallace Whittle?

A Yeah.

Q Why had Mr McKechnie asked for the Environmental Matrix?

A Well, we knew that there was a requirement to provide the

Environmental Matrix for the financial close, and Wallace Whittle were now getting into a position to allow that process to happen, so the starting point was, obviously, to take the Board's Environmental Matrix in Excel format to allow that process to conclude for the financial close.

Q Your email talks about Mr McKechnie having it to allow-- to populate the schedule with any changes. So was it your expectation that Mr McKechnie would be making changes to the Environmental Matrix?

A Only if changes had come out from the discussions with the Board that required any changes. I mean, at that point, we were obviously working together, the Board and Wallace Whittle and Multiplex, and we were, you know, trying to get all the ducks in a row to deliver what we had. So, at that point, there was no envisaged changes, but we knew, given the experience in hospital work, that could be user group meetings, it could be discussions around the Environmental Matrix that the Board wanted to make changes, it's just-- I think, looking into that, it's not a statement to say, "Provide it so we make changes."

Q So, when you were asking for the Environmental Matrix at

that time, as far as you recall, you did not have any particular changes in mind or even that changes might happen at all. Is that correct?

A I think it was open-minded. It was just, basically, we knew we had an end date. We had to have these documents prepared and ready, and we were using our experience to show that the process was moving in the right direction, but if there had been any changes proposed at that point, they would have been listed or discussed or detailed.

Q If you could go, please, to bundle 13, page 157. This is in the middle of the witness statement to the Inquiry from Graeme Greer of Mott MacDonald, and I am just going to read from what he says at paragraph 79. He says:

"The development of the environmental matrix in the PB to FC phase started with a discussion on transferring the ownership of the environmental matrix to IHSL. I recall being involved in a conversation to the effect that it was now IHSL's EM and was for IHSL to develop, following which on 3 July 2014, IHSL asked for an excel version of the environmental matrix in order that they could develop it in

accordance with their own design.”

That appears to be a reference to the email that we have just looked at. Do you agree or disagree with how Mr Greer describes events?

A Well, the wording used in terms of “transferring the ownership,” I’m not sure who that discussion was with, but it wasn’t with me. Was anything else relevant?

Q He may not have had that discussion with you, but his description of this marking the moment when ownership of the Environmental Matrix transferred over to IHSL, do you agree with that or do you not?

A That the ownership was transferring on 3 July?

Q Yes, the fact you had asked for an excel version of the Environmental Matrix in order to be able to make changes to it, do you agree that that marked the moment when the Environmental Matrix became a document that IHSL were responsible for the contents of?

A No, I don’t agree.

Q You do not agree with that?

A No.

Q What about the statement that part of the purpose of this was to allow IHSL to develop the

Environmental Matrix in accordance with their own design? Is that correct or incorrect?

A I’m just trying to find that.

Q That is just the last sentence.

A Last sentence. “All in all, IHSL produced at least eleven...” Is it that statement?

Q Sorry, that is my mistake. I have turned you to the wrong bit. Sorry, the reason for the confusion is it is the last part of the bit that I have highlighted on my own version.

Actually, from the third line he says:

“I recall being involved in a conversation to the effect that it was now IHSL’s EM and was for IHSL to develop, following which on 3 July 2014, IHSL asked for an excel version of the environmental matrix [it is this last bit that I’m interested in] in order that they could develop it in accordance with their own design.”

Do you agree or disagree with the point of asking for the matrix in excel format so that IHSL could develop it in accordance with their own design?

A Disagree.

Q Disagree with that?

A Yeah.

Q You had raised the possibility of changes to the Environmental Matrix. In what circumstances did you envisage changes might be made to the Environmental Matrix?

A Well, as I've said earlier, we have the issue of our user groups, and if there was any changes with that, if there were any issues coming out of where we were progressing, it's then-- and a good example for it is the actual single bed room and positive or negative pressure. So, a discussion was had on that that maybe I'll come on to it but, ultimately, what was concluded was that the Board's Environmental Matrix was not what they wanted for positive pressure because they wanted negative or balanced. So that's an example of a change that was driven by the Board and the Environmental Matrix was changed.

Q You are describing, there, envisaging changes, as I have understood it, prompted by decision-making on the part of the Board.

A Yeah.

Q Did you, at the time, envisage any circumstances in which changes to the Environmental Matrix would be proposed by IHSL?

A I mean, to be honest, it

wasn't a high-level thought process that, "We need to get this Environmental Matrix to change it." It was simply we knew we had an obligation to, for financial close, have the document as part of a pack, and perhaps as that process progressed there may well be changes, but the definition of changes, I think, can be misunderstood in terms of, as we spoke earlier about, the schedule of accommodation or an additional room added. You're not changing fundamental the requirements that the Board have asked you for per room type on their environmental requirements.

Q Okay. Now, it appears to be the case that sometime between getting the Environmental Matrix in Excel form and October Wallace Whittle produced a version of the Environmental Matrix. If we could go, please, to bundle 4, page 218. Do you recognise this document?

A Yeah.

Q Just explain to us what this document is, please.

A So, effectively, Wallace Whittle took the Hulley and Kirkwood Environmental Matrix and then converted it into a document that we would be submitting at financial close, and then that was then-- it was

labelled as draft, and it was put back to the Board for comment, and the output of that was a range of comments down the left-hand side. With those comments, they were given to Wallace Whittle to then respond to, and they responded to them and then asked for a meeting. I think that was sent back in about the 27 or 28 October, and then we had a meeting the day after, and the purpose was to go through these comments to see where we had to go from there.

Q Okay, so, in this table, do we see the comments from the Board summarised in the left-hand column and then the responses by Wallace Whittle on behalf of IHSL down the right-hand column?

A Yeah.

Q Is that what this shows?

A Yeah.

Q Now, if your understanding at that time was that the Environmental Matrix set out the Board's requirements and was a completed document, what did you make of the fact that the Board had made these technical comments about it?

A Yeah, I mean, I've said in my statement that I thought maybe somebody had reviewed a matrix that perhaps hadn't been involved in the

project. That was my initial thoughts. However, it showed that the document was getting reviewed and so, overall, it was a positive thing and that's what we wanted.

Q Did it indicate to you that the Environmental Matrix might not, after all, set out a finalised set of the Board's requirements?

A Not at that point. Because it's in draft format going back, it's all about the, sort of, "daft laddie" questions and trying to get people's comments to then have dialogue and discussions and see what comments are really material and we need to do something with because you're also expecting somebody to review documents that perhaps don't have the full picture.

Q On any view, we are in the middle of a process here where the Environmental Matrix, sent out with the tender documents, is undergoing a process of review.

A Yeah.

Q If you go over to the second page of that document and you just take the Board's comments – so, that is the left-hand column, 7 and 8 – you just take a moment to read those, please, Mr Hall. Let me know once you have read them.

A Yeah.

Q So, do we see there that the board is raising concerns about the compliance of the Environmental Matrix with SHTM 03-01?

A Well, it's a comment that's detailed which do refer to the SHTM, yes.

Q Yes, they do not just refer to it, but they highlight that the parameters in the Environmental Matrix differ from those recommended by SHTM 03-01. Is that not right?

A Yeah, well, they're doing a comparison between the matrix and the SHTM.

Q Did this suggest that the Board is concerned that the Environmental Matrix might not be compliant with SHTM 03-01? Perhaps more importantly, that they wanted it to comply with SHTM 03-01?

A No, I didn't read it as that. My initial thoughts were, "This is somebody who's reviewed this that doesn't fully understand the Board requirements in terms of what's in the matrix," and sometimes on projects-- you know, back at the office you could give somebody who's not been involved in a project a document to review to see what comes out of their findings, and then you would discuss it through.

Q Okay. We see from this

document-- this is the second and final page of it, and right at the bottom we have got comment number 12. We see that NHSL raise 12 queries in this document. What, if anything, did you take from the fact that the Board had raised these particular queries and no others?

A Well, I guess there was two aspects. One was that it was positive that somebody was reviewing the document and giving comments back, but there was the issue over-- that it was the client's document, but I think, thinking back, it was about, "We've got 12 comments to conclude Environmental Matrix, so let's have a meeting with the Wallace Whittle responses to see if we can get them resolved."

Q What, if anything, did you infer about the Board's attitude to the parts of the Environmental Matrix on which they had not commented?

A I wasn't thinking in any detail. You know, there's a document that has been given that they've reviewed, and so the assumption is it's been reviewed and you have 12 comments. We're working to financial close, so it was all about, "Let's get the 12 comments refined down, and then that then draws a line under the Environmental Matrix."

Q Was there any indication given to you that the review being carried out on the Environmental Matrix by and on behalf of the Board was only a sample review that did not extend to all elements of Environmental Matrix?

A No.

Q In your witness statement, you describe NHSL's technical advisors, Mott MacDonald, as resourcing the project. This is a quote from your statement, "almost like a shadow design team," and the reference for the transcript is paragraph 43 of your statement in bundle 13, page 248. I would just like to clarify this if I can. I think from the use of the word "almost," you do not mean that Mott MacDonald actually were a shadow design team. Is that correct?

A Yeah. If I can just get the item on the screen. Which paragraph is it?

Q It is paragraph 43, I think on page-- it looks like I have possibly got the wrong-- It is page 248, and it is paragraph 43 of your statement. I think that is probably Mr Greer's statement that we have on the screen at the moment. Page 248, Bundle 13, and it is at the top of that page, Mr Hall:

"Mott MacDonald were really the front and centre in their capacity as technical advisors to The Board. They introduced themselves at each of the meetings as technical advisors to the Board. We were liaising with the Board through Mott MacDonald. It was useful that they brought people in who were designers in the relevant workstream, so it was not administrators. The way that they resourced it was almost like a shadow design team."

What I was seeking to clarify, and I think because you used the word "almost like a shadow design team," you do not mean to suggest that they were, in fact, a shadow design team. Is that correct?

A Yeah. So, I mean, the shadow design team is a-- I think it is a defined term in RIBA where a project is led by a contractor in terms of the design, and I've been involved in projects before where the contractor employs their design team, the client has their design team, and then they're called a shadow design team. Their role is all about compliance with the contractor's design, and so my experience of it very much was that you had a project manager, then you

had strands of quite, kind of, senior people who are competent in their discipline, and that's what would shadow you.

Take what we had on this project. We had, for instance, the mechanical and electrical – Wallace Whittle had split it up – energy, electrical, mechanical, and also had architectural, structural, civil, helipad, fire. If you think of an organogram, it's one of those elements all coming in. There was somebody shadowing each package. They were reporting into a project manager. So, on the M&E side, what it felt to me was that when we—so, electrically, we had Willie Stevenson, on energy we had Andrew Holey, and on the mechanical we had Colin Cray, and the workshops that we had, we had to project them all ahead so that those particular specialists came to the meetings, and Wallace Whittle would almost be presenting what they had done, and there was discussion, but it was all positive.

When I use the word “shadow design team,” that's just-- I think the question when I was at the interview was just about relationships with Motts, and that's how I described it. So, I don't know the contractual arrangements. It's just, you know, my observations and feelings based on

my experience in other projects.

Q Okay, but ultimately responsibility for the design rested with IHSL.

A Yeah.

Q If you could go back, please, to the document at bundle 4, page 218-- possibly it is page 219. Looking in particular at the comment at number seven, what it says there is: “Bedrooms 4ac/hr, SHTM says 6ac/hr.” Then, a few lines further down, “Bedrooms stated as positive pressure, SHTM says...” I think we will read that as “balanced or negative pressure.” What bedrooms did you understand those comments to relate to?

A Just a standard bedroom in a ward.

Q Would you accept that the comment was not intended to relate to bedrooms in Critical Care?

A It doesn't mention Critical Care. It's difficult to know.

Q Well, the apparent purpose of the comments is to reflect the requirements of SHTM. Agree with that?

A Yeah.

Q The requirements of SHTM for Critical Care are 10 air changes per hour and positive pressure. Accept that?

A Yeah.

Q So, it would seem on the face of it that these comments are about standard bedrooms, not Critical Care bedrooms?

A Yeah, I can see that.

Q Is that how you understood it at the time?

A I didn't go into in that level of detail. It was more about, "We have 12 comments to resolve, let's get together, talk about it." You know, it's clear obviously that that we're being open and honest, we're taking their comments, and we're responding as to how-- our interpretation of it, but that was very much to then discuss and agree what the concerns were.

Q Okay. If we read the response from Wallace Whittle in the right-hand column, it says:

"The scheme is based on the Reference design throughout which is essentially mixed mode with openable windows and 2/3rds mechanical supply air to all bedrooms."

Reading on a bit, "We have amended the environmental schedule to show

the room being balanced which is provided by the opening window." Now, do we see there that change is being made to the Environmental

Matrix so that it complies SHTM 03-01?

A Based on the client flagging that up as an issue.

Q Yes. We go then to bundle 4, page 220. This is the Environmental Matrix from 31 October 2014. So, it is the one issued by Wallace Whittle at that time, as I understand it, in response to those comments. Do we see from the first page there that the Hulley & Kirkwood logo has gone, first of all?

A Yeah.

Q Is that a change that Wallace Whittle made at that time?

A Yeah. So, looking back, the comments that Wallace Whittle had responded to, I think, were about 27 or 28 October. Then, the next day, we had a meeting to discuss these comments, and then Wallace Whittle went away, based on the discussions and agreement, and then updated this matrix to reflect that.

Q Yes, and the removal of the Hulley & Kirkwood logo, does that reflect the fact that this is no longer regarded as a Hulley & Kirkwood document, but it is actually an IHSL document?

A I didn't pay much attention to-- It was a request by the Board in the left-hand column, one of

the points says to remove it, and therefore, in simplistic terms, Wallace Whittle are doing what they're being told.

Q Okay, and responsibility for correctly implementing the Board's comments, would that rest with IHSL?

A In terms of being asked to remove that, thinking----

Q No, the changes that are made to the Environmental Matrix----

A Environmental Matrix.

Q -- following the comments at the end of October. Responsibility for getting that right, correctly implementing the Board's requirements, would now rest with IHSL?

A Yes.

Q If you go to page 221, please, and down at the bottom of that page, you see Guidance Note 26?

A Yeah.

Q Just take a moment to read that please. Does that relate to the comments made by the Board, the note we looked at a moment ago?

A Yeah, well, based on the comments at the meeting and the 6 versus the 4, our interpretation was that the reference design was the Board's Construction Requirements and that's what was required.

Q This Guidance Note 26

appears in this version but not the earlier version, and what I am just interested in knowing is whether this relates to the comments that the Board had made at the end of October. Is that why this new guidance note appears?

A Yeah, so there were-- I think there might have been three comments added, but-- 24 to 26, but it was about-- After the meeting, Wallace Whittle updated it and what they understood the Board were asking for, and this clarity was added in the single bed room. And if you were to go to the actual bedroom environmentals in the table, you would see that it had been changed to balanced and the 4 air changes remained.

Q If we look back up to Guidance Note 15 please, do we see there that the comments we looked at a moment ago in the earlier version of the matrix about humidification-- do we see that those comments have been changed?

A Yeah, which was based on the RFI request. Again, it's getting, you know, put back to the Board to say, "This is what you've asked for, and we're asking for it to be confirmed that that's what you definitely want," and that's the opportunity to then

confirm or otherwise that it is what they want.

Q So, these two changes we are looking at here, those have been made by Wallace Whittle in response to particular points raised by the Board at the meeting in October?

A Yeah.

Q We might just note while we are here that Guidance Note 15's reference to 10 air changes in High Dependency and Critical Care, those remain in place. Do you see that?

A Yeah.

Q If we go onto page 222, please, this is the "Room Function Reference Sheet," which I think you said earlier was a document you did not pay much attention to. If we look, you will recall that in an earlier version there was an entry here for the High Dependency Unit, but if you look at this version the entry for the High Dependency Unit has been removed. Take it from me, that is the case.

A All right.

Q It does not appear in that list. Can we take it from your earlier answers that that is something you were not aware of at the time?

A Not aware of that.

Q If we go onto page 226, please, and if we could scroll out a little bit so we can read the text. Scroll

in. If we look further down that page a little bit, please, do we see-- Sorry, go back. Sorry, I have lost my bearings. I think if you scroll downwards, yes, go to the bottom of that page-- That is great, thank you. Stop there. You see at the left-hand side, reference B1, PICU and HDU, so that is the Critical Care department?

A Yeah.

Q Okay. If we scroll back up a little bit, up there. That is fine, thank you. If it is possible to scroll out a little bit so we can still read it but we can see more columns-- Okay, this might be a little bit of a challenge. If you take it from me, Mr Hall, that what we see here is that, for bed areas in Critical Care, pressure has been changed from positive to balanced. You may be able to see that if you take a moment or two.

A Uh-huh.

Q You see that?

A Yeah.

Q So, if you take it from me that the pressure requirements for bedded areas in Critical Care in this version are stated as balanced whereas, in the previous version, they were stated as positive, does that accord with your recollection from the time?

A I don't remember to be

honest.

Q Okay, but if the bedded areas in Critical Care had been changed, given a balanced pressure regime, do you agree that that is inconsistent with what SHTM 03-01 requires for rooms in Critical Care?

A Yeah.

Q What SHTM 03-01 requires for Critical Care rooms, generally speaking, is positive pressure, but for isolation rooms it might be negative. Is that right?

A Yeah.

Q Were you aware at the time that the pressure regime for single rooms in Critical Care had been changed in that way?

A I don't have any recollection of it.

Q Just while we are here, we see that the air changes for the bedrooms or the bedded areas in Critical Care remain at 4 air changes per hour. Okay, if we could move now to a different document which is at bundle 4, page 245.

We may be facing a technical challenge. I do not know if we can try again. Just bundle 4, page 245. There we go. That is it. So we see here, Mr Hall, an email from Graeme Greer, Mott MacDonald, 11 November 2014. He is saying, "Dear all, Notes

attached from today's meeting..." If you go down to page 247, please, these are the notes circulated by Mr Greer. Is this a document that you recognise?

A Yeah.

Q Can you explain what that is please?

A That was really the output of the meeting we had on 11 November, I think, whereby, effectively, we'd had the 12 points in the matrix at the previous meetings; that was now down to seven. Conclusion of that was that seven points had to be incorporated into the Environmental Matrix, but there was time pressures because we're trying to get the financial close and the view seemed to be, I recall, that they would be done after financial close.

Q Okay. We do not need to look at it, but take it from me that wording either materially the same or exactly the same as that appears in the reviewable design data schedule of the project agreement.

A Yeah.

Q Does seem right to you? Is that your recollection of what happened?

A Yeah, we had these seven points. My interpretation of it was we'd seven points to conclude

with the matrix. That effectively then meant that we had an Environmental Matrix-- was what the client's requirements were. That was that matter closed. I think the seven points went into-- I think it was part four of the document, and that talks about the seven points to be captured as part of RDD – comments from the Board.

Q RDD, reviewable design data?

A Yeah, so the seven points had to become reviewable design data.

Q If I can attempt to just summarise that back: at the meeting in October-- Sorry, the Board's notes in October had raised about 12 points on the Environmental Matrix, then the meeting on 11 November which boiled those 12 points down to the 7 that are on screen. Is that right?

A Yeah, there was a meeting before then, so the first meeting we had was at the end of October, and then the matrix was updated on the last day of October, I think. Then had a further meeting on the 11th, effectively that-- you know, the matrix that we'd circulated on 31 October that took some of the points on board were then discussed again, and this was the remaining items that had to form part of RDD.

Q Okay, but one point that appears in the October list that does not appear in this list is the one about 6 air changes in bedrooms rather than 4. Do we take it from that that particular issue was resolved?

A Yeah. So, we had the meeting at the end of October. Wallace Whittle outlined the fact that it was the reference design and the client's requirements that required 4, so the matrix wasn't changed and 4 remained, effectively, on the latest Environmental Matrix. So, ultimately, the 4 was what we concluded was what the client required.

Q Okay. What we also see from that list there, it is final bullet point on the list-- Oh no, sorry, that is the wrong one. It is the fourth-bottom comment on that list emerging from the meeting in November, "Detailed proposal awaited on bedroom ventilation to achieve balanced/negative pressure relative to corridor." That is the issue of bedroom pressure. That one remained unresolved as of that date.

A Well, my interpretation of it was because the Environmental Matrix was changed, the original one had positive. Wallace Whittle updated the one for the 31st based on the discussions to balanced. Then the

discussion was, as far as I was concerned, that that was what the Board wanted; they just wanted to ensure what Wallace Whittle had spoke about was in fact what their understanding was, so-- but the matrix was changed to be balanced.

Q If we could move from that to bundle 8, page 64, please, we see at the bottom here an email to you from Liane Edwards-Scott, 19 November 2014. Just explain to us who Liane Edwards-Scott is.

A Liane Edwards-Scott is a Multiplex employee, a design manager.

Q So, this is about a week or so after the meeting, the outcome of which we have just seen. She is saying to you:

“Motts have just informed the HAI scribe that the vent system doesn’t comply with infection control because it relies on the windows being openable- can you shed some light or offer opinion?”

Just briefly, can you explain what that was about?

A Yeah. So, at the time, I was surprised to read this email. You know, the week before, we walked away thinking that we’d had seven points through RDD and it was

resolved, and then I opened this email and find that there was some meeting going on that I didn’t know anything about. Somebody in the meeting was now starting to, you know, say that there was a compliance issue. So, it was a concern given the timescales and the financial close elements. So it wasn’t clear what it was, but then I took the decision to say to Wallace Whittle to bring forward those sketches.

Q Okay, if we look higher up in the document – we will need to straddle the two pages but if we go to page 63 first – you see down at the bottom there an email from you to Stewart McKechnie of Wallace Whittle. What you say is:

“Hi Stewart

Can you treat as priority the bedroom sketches for the vent before the door closes and we have no alternative but to comply with infection control requirements.

Realistically I think we need:

1.0 Interpretation of SHTM for bedrooms

2.0 Air flow movement under a few scenarios, natural vent etc...”

Then over and down the page:

“3.0 And how this impacts

on the adjacent corridor ventilation.

We will need to chat it through internally then table with infection control.”

Can you just explained briefly what you were asking Mr McKechnie to do?

A Basically, the sketches and the discussions that he'd had at the previous meeting on the 11th, effectively I was asking him to pull them together, show really their design based on the reference design that had been worked up for the last nine months, pair it against the SHTMs, and then what I wanted to do was to then table it with whoever it was that was raising it because, typically, what can happen in these type of projects, you have a meeting where somebody says something, and then the next thing it's gospel. So what I wanted to do was, rather than emails or anything, I wanted the sketches prepared, and then I wanted to get whoever it was that was raising the issues to sit down with them, talk it through as to how the reference design had been interpreted, and compare it against the SHTM.

Q Okay. Now, your email refers to this as being an issue of compliance with infection control requirements. You have asked Mr McKechnie for an interpretation of

SHTM. Was there any discussion or understanding around this time that the significance of air pressure for infection control might be different than Critical Care rooms was for standard rooms?

A No, there was no discussion. I mean, the infection control element came from the email from Liane, which was vague. In reality, the whole discussion, track it back to what we had on the screen earlier: it was about the single bed rooms.

Q If we go to the top of page 63, you were not copied in on this email. Stuart McKechnie, I think perhaps the colleagues of his. He says, “Told you wouldn't wait until [RDD]...” and so on. Do you know what he means?

A Well, obviously, I can't speak for him, but my interpretation of that would be the meeting we had on the 11th where they had discussed this particular element, and the agreement was that the sketches wouldn't be needed until after FC – might be that, and so maybe that's maybe RDD in relation to that.

Q Okay. The issue about air pressure carried on and, January 2015, Wallace Whittle sent you an air movement report. If we could just go

to that, please. It is in bundle 8, page 66. Do you remember this report?

A Yeah.

Q Now, what did you take from this report?

A Well, I took it that he had prepared a kind of comparison with the SHTM, he was identifying the reference design type requirement, and then he was giving various options on it.

Q Can I put it this way: did you take it to resolve the query about pressure in single bed rooms?

A Not until we had the discussions. The point was to prepare something to then talk it through with whoever had raised it and to see if it was a genuine concern or if this was going to be acceptable.

Q Okay, if we could take a look at the conclusion, which is page 67. Right, just picking up from the second paragraph there, it says:

“When the windows and trickle vents are utilised for natural ventilation the bedroom pressure is balanced and the corridor becomes negative.

If some of the windows and trickle vents are closed, these bedrooms will become positive and the bedrooms with open windows again will be balanced,

where the corridor is negative.

Should all the bedroom windows and trickle vents be closed, the bedroom pressure is positive and the corridor shall be balanced [and so on] ...

The window trickle vents should be left open when the rooms are occupied, this will ensure that the bedroom pressure is balanced.”

Now, would it be fair to boil all that down to if positive pressure in the bedrooms was to be avoided, windows or trickle vents would have to be left open? Is that your understanding?

A Well, reading both paragraphs, “Should... the bedroom windows and trickle vents be closed, the bedroom pressure is positive... corridor shall be balanced.” So, my understanding was that, by putting 4 into the bedroom, 4 air changes per hour with the windows closed-- and then it was getting extracted through into the en suite at a minimum of 10, I think, then the intention was to have that balanced to the corridor.

Q Okay, did you form any view at the time about whether this report applied to single rooms in the Critical Care department?

A It didn't feature on my radar, Critical Care, because, again,

the key point, I guess, to make here is that detailed design wasn't starting until after financial close.

Q Well, that would be detailed design which, in your understanding, would be based on the parameters in the Environmental Matrix.

A Yeah, so you'd be taking a single bed room for instance, you'd be looking at the Environmental Matrix and you'd be designing to achieve the requirements – so the duct sizing, the grills, everything that you need – but that work wasn't getting done before financial close. It was done after.

Q If we could go, please, to page 78 of bundle 8? We see at the bottom, here, an email from you to Maureen Brown of Mott MacDonald and Janice MacKenzie of NHSL. You are saying, and it is 19 January 2015:

“As per meeting of Tuesday 13.01.15 and our request for clarity on negative / positive pressure regime within the bedrooms, we attach the sketches distributed at the meeting and seek confirmation / acceptance from the NHS review with infection control.”

Can you just explain the purpose of your email please?

A Well, the purpose was

that I was concerned, obviously, when we'd had that email through about the Infection Vontrol element that we had to resolve this because we wouldn't get financial close if we didn't have agreement, and what we were trying to do based on the sketches and the presentation that Wallace Whittle gave-- We're basically saying, in terms of the pressure, is this what you want?

Q Okay, and the reply is above. It appears to be from Maureen Brown at Mott MacDonald to you. She says:

“Hi Ken,

Following your recent RFI, the Board responds as follows:

- The single room with en-suite ventilation design shall comply with the parameters set out in SHTM 03-01.
- The design solution should not rely in any way on opening windows as these will be opened or closed by patient choice.
- The critical factor from SHTM 03-01 for infection control will be

the resultant pressure within the room being balanced with or negative to the corridor.”

Then a comment about isolation room. So, this exchange between you and Maureen Brown talks about bedrooms but, again, does not clarify whether that also includes rooms in Critical Care. Did you consider that the exchange related to such bedrooms, or was it not something that you thought about?

A It wasn't something I thought about.

Q And taking the clarification from the Board, moving forward with it, did you apply that information to rooms in Critical Care, or do you not know?

A At that particular point, or are we talking about after financial closure?

Q Well, at that particular point, first of all.

A I mean, the Environmental Matrix had already been updated by the end of October to show balanced and, therefore, that response confirmed what we had in the Environmental Matrix, so there was really no action.

Q If I could put it to you that

you could take it as confirming what was to happen for standard bedrooms but not for rooms in Critical Care on the basis that the first point is that the ventilation was to comply with the parameters in SHTM 03-01, but balanced pressure in Critical Care bedroom would not be compliant with SHTM 03-01?

A Yeah, I mean, I wasn't looking at it in that level of detail. This was about following through a process that had been raised at the various meetings. The focus was to resolve the single bedrooms.

Q Okay. At the outset of your questions Mr Hall, I said to you that we would be looking at the period up to financial close, and you will be glad to hear that we are now at the point of financial close, so we are nearly there. The financial close occurred in February 2015 when the project agreement was concluded, and it contained a number of provisions about the Environmental Matrix. Just to clarify, I am not going to ask you what the contract means. That is a legal question – ultimately, one for the courts – but what I am interested in is your understanding at that time, that is at the time of financial close, about the status of the Environmental Matrix and what was to happen with it. We have

already seen at an earlier point today the requirement in the construction requirements to comply with the Environmental Matrix. Paragraph 8, do you remember that?

A Yeah.

Q Now, in the contract of financial close, there are at least two qualifications in that regard. First is a derogation from IHSL's obligation to comply with the Environmental Matrix. The second is the Environmental Matrix was reviewable design data. Are those matters that you were aware of?

A The derogation side was a different workstream and, again, that would be my colleague Liane Edwards that would be able to comment on that.

Q Okay, were you aware that there was a derogation from compliance with the Environmental Matrix?

A I think I can recall there was some discussion on it, but because it was a separate workstream and it was dealt with separately, I wasn't really involved in the detail of what was getting discussed.

Q Okay, did the existence of that derogation affect, in any way, how you went about dealing with the Environmental Matrix afterwards?

A Afterwards? After

financial close?

Q After financial close.

A It didn't change-- I mean, my understanding was, even after financial clause, that this was the Board's requirements. We had, I mean, the element about the Environmental Matrix and the seven points. We certainly had seven points to update the Environmental Matrix and that was it resolved, and so my thinking was that's the requirements for the project.

Q Just to make sure I have understood that, you understood the Environmental Matrix set out the ventilation requirements for the project subject to points that had been raised in the reviewable design data schedule about the Environmental Matrix.

A Yeah, so, within the part four, the wording had been that it was to be, you know, these were the Board's comments that had to go through RDD basically, and there is evidence after financial close that shows that I took those seven points and we fed them back to get it closed. So, after we did receive financial close, there is the evidence to show that we're closing that out.

Q Just to-- If you could go please to bundle 5, page 880. You may recognize this Mr Hall. This is

part of schedule 6, the project agreement, part dealing with reviewable design data. We see, there, a list of comments about the Environmental Matrix.

A Yeah.

Q And we will see that what is stated there bears some similarity to the output from the meeting on 11 November. Is that your recollection?

A Yeah.

Q So when you were referring to seven points that were closed out during the reviewable design data process, are those the points that you had in mind?

A They are, yeah.

Q So, just the open question, then, what did you understand to be the extent of the revisals that IHSL had to carry out to the Environmental Matrix through the process of reviewable design data?

A My understanding was that we were to take these seven points and update the Environmental Matrix with it, get the seven points resolved and that was it all concluded.

Q And if I was to put it to you that IHSL had the responsibility to review all of the ventilation parameters in the Environmental Matrix, check all of them for compliance with SHTM 03-01, would that reflect your

understanding of the task or not?

A No.

Q Did you consider that IHSL had that responsibility in relation to any part of the Environmental Matrix?

A No, because it was a client's briefing document that we had to confirm that we were complying with it, so that type of thing did not go through my mind.

Q And what about the parts that were the subject of these comments in the reviewable design data sheet?

A Well, these were comments that the Board were telling us they wanted to be included effectively in their matrix, so it was almost an instruction to include them.

Q And, in addressing those comments, do you accept it was the responsibility of IHL-- or did you understand it was the responsibility of IHL in addressing these comments to comply with SHTMs and so on?

A I think where applicable, because I recall some of these areas-- you know, say the temperature going from 20 to 25, well, in some cases the SHTM is different. So, it was about, again, similar to the 4 air changes or 6 air change debate that, where the client was telling you they wanted this

and it was different to the SHTM, that's what we will give you because it's your requirements.

Q If you take the first bullet point, which is essentially about updating the Environmental Matrix to include rooms that are not in it yet, do you accept or did you understand that it was IHSL's responsibility to make sure those entries complied with HTMs?

A Well, the process was, basically, we have, effectively, the defined list of all the rooms with the environmental parameters. So, the first stage of that would have been: where any were getting added in, do we have it defined? It would simply be populating it with those requirements in any areas that were getting added or changed.

Q Okay, when you say defined are you----

THE CHAIR: I think this is entirely my fault, to get the question correctly, which was: was IHSL under an obligation in relation to the seven points to ensure compliance with, for example, SHTM 03-01? So, I have got the question. My fault entirely. Mr Hall, could you just give me the answer to that?

A Yes, so my understanding was that where the

seven points deviated from the SHTM, for example, and I used one as temperature, then it wouldn't be the SHTM we were complying with, it was an instruction that that's what was being asked for.

Q I may have gotten this wrong. So that would involve an exercise in relation to the seven points, checking what you understood to be NHSL's requirements of what they had asked you to do against any relevant guidance?

A Any relevant guidance or the existing Environmental Matrix that already defined areas and room types.

Q Thank you.

MR MACGREGOR: If we could go, please, to bundle 5, page 14. Mr Hall, I promised you I would not ask you what the contract means, and I stand by that, but I am going to put this particular clause of the project agreement to you. It is going to be clause 7.3.1, but before we go to that, that particular clause refers to something called disclosed data, which is a defined term. I would like you just to answer this question on the assumption that disclosed data includes a version of the Environmental Matrix sent out with the tender documentation. Does that make sense to you?

A Yeah.

Q When we look at this clause, we see the term Disclosure Data, just answer the question on the assumption that the tender version of the Environmental Matrix is included within it. We go to 7.3.1, what it says is:

“Project Co [that is IHSL] acknowledges and confirms that: it has conducted its own analysis and review of the Disclosed Data and has, before the execution of this Agreement, satisfied itself as to the accuracy, completeness and fitness for purpose of any such Disclosed Data upon which it places reliance.”

Did IHSL, as far as you know, carry out such an analysis or review of the Environmental Matrix which was sent out with the tender documents?

A No, because it wouldn't have been possible.

Q Why would it not have been possible?

A Because you've not been party to a group of people that have pulled this matrix together, and so to unpick that to understand why decisions and the reasons for what's contained within that document seems to me to be a very difficult job to do

and one that we couldn't actually try because it would have involved clinicians, user group, Estates, HAI-Scribe, and it just seems a highly unreasonable request.

Q It might be suggested that this clause means that if IHSL elected to use Environmental Matrix parameters sent out with the tender document, that they did so at their own risk; all of those parameters were fit for purpose. To what extent did you understand at the time that that was a risk that IHSL had taken?

A I didn't see that we had taken any risk because it was a client briefing document.

Q Okay, just one final question. You said earlier on that you were not aware in the preferred bidder period of the discrepancies in the Environmental Matrix that we have been discussing today. So, by that I mean differences between 10 air changes, Critical Care and HDU, the guidance notes, guidance notes in the matrix itself, then specification of 4 air changes for rooms in Critical Care. That's the first discrepancy. Second discrepancy is between 4 air changes for each room and 10 air changes required by SHTM 03-01. Is it the case that you remained unaware of those discrepancies up to and

including financial close?

A Yeah, I mean, Critical Care wasn't debated to that level of detail. Wallace Whittle were not carrying out detailed design in these areas until afterwards, and so there was no focus on those individual areas to establish that we did have an issue.

Q Thank you very much, Mr Hall. I do not have any more questions for you, so thank you for your answers. It is possible that others may do, so please just stay where you are for the moment.

THE CHAIR: Mr Hall, what I am going to do is allow about 10 minutes for the legal representative to confirm their positions. We will then resume. I'll find out what the position is, and I will then invite you to join us, either to learn that there are no more questions or to respond to the questions. First of all, I will ask Ms McMillan to take Mr Hall, the witness. All right, we will sit again about half past three.

(Short break)

THE CHAIR: Mr McClelland, as you will have anticipated, has alerted me to what is likely to occur. Mr Barnes, I understand that you, on behalf of IHSL, have proposed a question, which Mr McClelland is

happy to ask.

MR BARNES: Not IHSL.

THE CHAIR: Sorry.

MR BARNES: No, no.

THE CHAIR: Sorry, did I get my acronyms wrong? Well, maybe I better just treble check that I have got the right acronym. So the correct acronym is?

MR BARNES: Lothian Health Board.

THE CHAIR: Right, you are Lothian Health Board, as my crib sheet actually informs me. So, my apologies for that, however, as you understand it, that deals with that. Now, Mr McBrearty, you would wish to insist on your application under Rule 9(4) at least in certain respects. Is that correct? I wonder, can I ask you to come forward to the microphone?

MR MCBREARTY: Yes, my Lord. Mott MacDonald wish to insist on the Rule 9 application, but only in respect of two of the paragraphs of it, those being paragraphs 5.6 and 5.9, the matters contained in there. The essential reason is that it may be said that the points which are touched upon in those paragraphs conflict with the evidence which has been given by Mr Hall regarding his understanding of the Environmental Matrix.

In making the points, my Lord, I

acknowledge entirely that both of those points relate directly to matters which post-date financial close and, of course, I make the application on the plain understanding that we are at a part of the Inquiry which deals only with pre-financial close matters. But the points are insisted on because, to some extent, there is an inevitable crossover to the extent that these two points which are raised in my submission inform, looking backwards, whether Mr Hall's understanding or recollection of what the position was pre-financial close could really have been correct. So, it is really just asking about two later matters in order to try to lend colour to or to assist an understanding of what he is saying about the pre-financial close position.

THE CHAIR: How long do you anticipate taking?

MR MCBREARTY: Ten minutes, perhaps less.

THE CHAIR: Now, I think, if my recollection is correct, the point was made either during or after the previous Edinburgh hearing that it was not fair to witnesses to, first of all, say we are wanting to go up to financial close-- for example, we are dealing with matters up to financial close and then apparently depart from that. Do you have any comment on that?

MR MCBREARTY: Well, I am in your Lordship's hands. I do understand that, and I do understand that that is why Mr McClelland, I think, has been unwilling to ask the questions. I mean, to the extent that it is, the observation I would make is this is very limited matters. We are not going into the detail of it, but it is simply passing points which reflect upon what his understanding was pre-financial close. I do understand it is on the cusp, and of course, if your Lordship takes the decision it is a matter which he would prefer not to be hearing at this stage of it, then that position will be understood and of course respected. So I am really in your Lordship's hands.

THE CHAIR: You are not, of course, being prevented, period. I mean, if I did not allow the application today, you are not being prevented in raising this matter, ensuring that a Mott MacDonald witness is called to make the points and indeed a Multiplex witness, possibly Mr Hall, is made available to respond. Something which I had understood, and maybe I took this from-- well, I can take it from what you have said, is that it can be regarded as a challenge to the witness' credibility. I sort of accept that on one hand as pointing to

allowing the question, but an investigation into credibility is a bit more nuanced than saying, "This happened in 2019, for example, how could you say that in 2015?" Anything further you wish to say?

MR MCBREARTY: I do not think so, my Lord. The only following observation I would make is that, of course, I am aware that perhaps the reason why we have decided to insist on the application is because we are aware that, come the end of this part the Inquiry, parties are being asked to make submissions on everything that has----

THE CHAIR: Yes.

MR MCBREARTY: -- happened up until now. I think as things stand with these two matters outstanding, inevitably, the submissions would be one has to bear in mind that there are these issues which cross over and that may be another way of looking at matters, I understand that. I think that that is really why I am here insisting on it, is to say that inevitably I think that these matters are to be, at some point in the time, taken into account in order to look backwards to what the position was pre-financial close. Other than that, I am in your Lordship's hands.

THE CHAIR: I mean, is it fair of me to cast what you are trying to do--

what you are at least not losing the opportunity of doing, is challenging the sincerity or the coherence of Mr Hall's position on the status of the Environmental Matrix?

MR MCBREARTY: I think coherence would be a fair way of putting it.

THE CHAIR: Sorry?

MR MCBREARTY: Coherence, I think, would be a fair way of putting it. I am not saying that it is necessarily a matter of credibility, because I would not immediately fall into line with saying that it is a matter of his credibility, but coherence----

THE CHAIR: Coherence of thinking rather than----

MR MCBREARTY: -- would be a reasonable way of casting it, I think.

THE CHAIR: Thank you, Mr McBrearty. Now, Ms O'Neill, do I understand that you would wish to be heard on behalf of Multiplex?

MS O'NEILL: Thank you, my Lord. It is a short point. It is the point that your Lordship has already made about fairness to the witness, but also, my Lord, the usefulness of this proposed line of questioning to the Inquiry. As has been explained, my Lord, both questions relate to matters after financial close. The second relates to a letter more than four years

after financial close, a letter written by IHSL and not by Multiplex. My Lord, my short submission is that it is not fair to the witness, who has prepared on the basis that he would be asked questions for the period up to financial close, to be asked questions about a period more than four years after that, in one case.

My Lord, as far as usefulness to the Inquiry is concerned, obviously these two matters are now being taken very discretely out of the much wider context of the facts of the particular periods to which they relate. In my submission, my Lord, there is very limited usefulness to the Inquiry to hear evidence in that way, taken out of context in relation to documents that could well be misconstrued if they were not seen in their proper context. Those, my Lord, were the only points that I sought to make.

THE CHAIR: Thank you very much, Ms O'Neill. As has been explained in the Inquiry's documentation, the strong indication is given that questioning of witnesses is by counsel to the Inquiry. However, in following the Rule 9, and particularly Rule 9(4), of the Inquiries (Scotland) Rules 2007, the Inquiry allows provision for core participants' legal representatives, where they are legally

represented, to question, under fairly strict time limits, witnesses directly. Now, I have an application on behalf of one of the core participants, Mott MacDonald Limited, insisting on two paragraphs of a timeously submitted written application. These are identified by paragraph 5.6 and 5.9 of the application. The purpose of both the identified questions is to challenge the logical coherence of evidence which the witness has given in response to the questioning of the Inquiry's counsel in relation to the status of the Environmental Matrix, to which reference was made in that evidence.

The application is opposed on behalf of Multiplex, another of the core participants. I propose to refuse the application in respect of both questions identified in 5.6 and 5.9. Now this, of course, is without prejudice to exactly the same questions being raised on behalf of Mott MacDonald or addressed by any other core participant at a later oral hearing. The witness will have prepared his evidence on the assurance that he is going to be asked about events no later than financial close of the contract, February 2015. Therefore, as Ms O'Neill reminded me, there is a question of fairness, but perhaps even

more persuasive, or at least more persuasive to me, is a question as to how something as potentially nuanced as the, as it were, intellectual coherence of an apparent position taken in 2019 can be tested? Or rather the intellectual appearance of a position as at February 2014 can be usefully tested by very few questions relating to events which came after. It occurs to me that the exercise might be more complicated than that, and with every respect to Mr McBrearty who presented the application on behalf of Mott MacDonald, I rather doubt that a useful examination of that matter would be achieved in 10 minutes.

So, without prejudice to these questions arising at a later stage and being raised by absolutely anyone who considers they have an interest, I will refuse the application. However, that requires Mr Hall to return to answer the question put forward by Mr Barnes on behalf of NHS Lothian. (After a pause) Mr Hall, what I understand to be a fairly limited additional question or questions from Mr McClelland.

MR MCCLELLAND: Thank you, my Lord.

Questioned by Mr McClelland
(Continued)

Q Mr Hall, we were looking at the period from the start of IHL's appointment as preferred bidder in early 2014 up to financial close, February 2015. We also looked at the Environmental Matrix which had emerged in the tender documents and were available at the start of the preferred bidder period. That particular Environmental Matrix was dated 19 September 2012. So, we have a situation in which the Environmental Matrix from September 2012 extends over a period up to financial close, about two and a half years later, February 2015. Now, the question is based on the proposition that guidance for things like ventilation and so on might evolve as time goes on, and we in fact know that, for example, SHTM 03-01 was issued in one version in February 2013 (inaudible 02:22:34) February 2014. So, in that particular context, the question is: who did you take to be responsible for checking whether or not the Environmental Matrix remained compliant with guidance over that period of time, taking account of the possibility that the guidance might be changing?

A And the time period, could I just clarify that it's up to

financial close, the period----

Q Yes.

A -- from 2012?

Q Yes. So the

Environmental Matrix issued with tender documents dated 19 September 2012. Financial close is achieved February 2015. Who did you think was responsible for making sure that the Environmental Matrix remained compliant with guidance, taking account of the possibility that that guidance might be changing for that two-and-a-half-year period?

A Well, my own thoughts on it-- because obviously it's not something that I was thinking at the time. It's a question I'm being asked now. So it didn't really enter my head at the period that we're talking about, but given it's a client document and it's requirements that the client's wanting, my thoughts would have been that it's the client would be ensuring that their requirements were still up to date as we progressed through the period. There were opportunities to inform us that the requirements were either changing or needed to be updated and that's the reason for the submissions of the document that we spoke about in September.

Q Do you recall that we looked at the clause in the Board's

Construction Requirements addressing the hierarchy of standards? Do you recall that clause?

A Yeah.

Q Do you recall that it provides as follows that, "Where contradictory standards / advice are apparent... most recent standard / advice shall take precedence"? Now, withstanding that clause of the Board's Construction Requirements, would your view be the same or does that make a difference to your answer?

A It doesn't make a difference to my answer because I identified that there was a clause in 2.3 that where the client was asking for something specific or different, then that's what took precedence, in my understanding of the documentation.

Q Thank you very much, Mr Hall. I will just check with the-- Yes, I think we are content with that. Thank you very much.

THE CHAIR: Thank you very much, Mr McClelland, and thank you, Mr Hall. I appreciate giving evidence to the Inquiry involves a lot more than just turning up-- being asked to turn up for the morning and finding that you have been asked to turn up for the day, but it involves a lot of preparation, and I acknowledge that and thank you for that. At least for this hearing, you

have given your evidence and you are free to go. Thank you.

USHER: Please stand.

THE CHAIR: I should have perhaps said that we will see each other again on Tuesday at 10.

16:00

(Session ends)