SCOTTISH HOSPITALS INQUIRY

Hearings Commencing
26 February 2023

Day 1
Monday, 26 February 2024
Ronnie Henderson
Janice MacKenzie

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10:03

THE CHAIR: Good morning, and welcome to those who are present in the Inquiry's hearing room in Edinburgh and to those who are following proceedings on our YouTube link. Today is the first day of our hearing in relation to the Royal Hospital for Children & Young People in Edinburgh and the Department of Neurosciences.

If I can say a few words on housekeeping before we begin today's evidence. We are sitting this week and we plan to sit next week. That is the week of 4 March and then the week of 11 March, although we will not be sitting on the Mondays of these weeks. We have available the week afterwards if we require it. As you will understand, although we have a timetable or, as it were, a draft timetable for witnesses, it may be that that requires to be changed or to accommodate the length of time that the evidence takes. Now, as you are aware, the questioning in this Inquiry, as is usual in inquiries, will be led by counsel to the Inquiry, John MacGregor KC. That of course is subject to the provisions of the Inquiry rules and in particular Rule 9.

Now, I am aware that there have been some Rule 9 applications lodged

with the Inquiry. Whether these will be insisted upon, we will see in due course. The plan would be to invite Mr MacGregor to lead his witnesses. At the end of their evidence, the opportunity will be given to legal representatives to consider whether they wish to apply to ask questions of witnesses, and in that event I would ask you, first of all, to discuss the matter with Mr MacGregor, and if matters cannot be resolved then I will listen to any application that may be made for legal representatives to question witnesses.

I issued a procedure direction in relation to closing statements which I would hope that core participants received on Friday of last week. We may have the occasion to look at that again but, broadly speaking, I will be inviting written submissions first from counsel to the Inquiry and then from legal representatives of core participants, with provision after that for oral submissions on a week in June. Can I just say, as a matter of housekeeping, when it comes to written statements, it is convenient that they be in a Word format, which is easier for the-- well, quite frankly, easier for me to deal with.

That, I think, is all I have to say in relation to housekeeping, although I

have been told to warn everybody that there may be roadworks being carried on in the street. Now, obviously, that is not something which we have any control over. I hope it should not be disruptive, but I have been asked to draw it to people's attention. Now, I think that is probably the preliminary matters. Mr MacGregor, will I hand over to you?

MR MACGREGOR: Thank you, Lord Brodie. There is just perhaps the introductory remarks from myself. The first would be on some additional statements. The second would be to clarify document bundles and witness statements, and then thirdly, just some observations on timetabling. In relation to additional statements, the Inquiry has received a supplementary statement by the former cabinet secretary, Ms Jeane Freeman, that addresses her knowledge of emerging issues at the Queen Elizabeth Hospital in Glasgow at the time the Inquiry is considering issues emerging on the Royal Hospital for Children & Young People. The statement addresses matters relating to the Queen Elizabeth University Hospital at a relatively high level of generality, and my understanding is that the Inquiry will explore those issues in greater depth at hearings reserved for the

Queen Elizabeth University Hospital. So it would not be my intention at this hearing to explore the issues set out in that supplementary statement at great length.

There is a second supplementary statement from Mr Greer that was provided by (inaudible) Mott MacDonald. That is in short order, and I do not anticipate it taking any significant time to deal with at the hearings. The third issue to raise is not actually a witness statement but it is a paper that has been provided by two individuals, Mr Stuart Brown and Mr Michael Ralph. That has been helpfully provided by NHS NSS, and it seeks to address some of the issues that may have been covered by Mr Storer if he had been in a position to provide a witness statement and to give evidence to the Inquiry.

The authors of that paper are available to give evidence in the Friday of week three if required, but certainly subject to your Lordship's views and any observations from core participants. I consider that paper to be self-explanatory and there is not anything that I would want to ask either of the authors. If I could perhaps ask any core participant who takes a different view if they could communicate that issue and perhaps

by close of business tomorrow to a member of the Inquiry team, simply so that if Mr Brown and Mr Ralph do need to attend to give oral evidence that they can be given advanced notice of that.

The second issue would just really be to clarify the bundles and witness statements that are in place at the moment. Thirteen bundles of documents have been produced by the Inquiry team and three bundles of witness statements. I understand that there will be a volume 10, subject to redactions, that will be available today and there may be a possible volume 11 with some miscellaneous material, but I will update core participants on that in due course. The intention is that the additional witness statements that I have just addressed your Lordship on will be made available in a consolidated bundle 4 of witness statements in due course.

THE CHAIR: So, these supplementary statements, as you understand it, Mr MacGregor, have not as yet been made available to----

MR MACGREGOR: My understanding is that they have been made available to core participants, but they are not made up into a bundle yet.

THE CHAIR: Right.

MR MACGREGOR: The final issue would really just be to pick up on the timetabling point that your Lordship has already alluded to. I am confident that we will complete the oral evidence within three weeks. We have the Mondays reserved of weeks two and three if required and a fourth week if that is indeed necessary. Mr McClelland and myself will do our very best not to inconvenience witnesses, but the reality is that some witnesses may be called on different days to the days set out in the indicative timetable. I think, in terms of issues for this week, perhaps one issue to flag is that Mr McClelland will be dealing with Mr McKechnie's evidence on Thursday. He does not anticipate that that will take the full day, so there may be a possibility to bring forward the evidence of Ms Sarah Jane Sutherland to the Thursday afternoon but, again, I think that is an issue that we can just keep under review and I will update your Lordship on as matters progress. That would be all the introductory remarks from myself, and the first witness today would be Mr Ronald Henderson.

THE CHAIR: Thank you, Mr MacGregor. What I perhaps should have said is that as with previous hearings, I would propose to sit

between ten in the morning and take a lunch break at one o'clock, having broken for coffee about half past eleven and sit between two and four in the afternoon. But as you will appreciate, these are not absolutely fixed periods and if it is convenient to go on beyond four o'clock, within reason, I would anticipate doing that if that allowed us to finish a witness. Now, before I ask Mr Henderson to be brought in, is there anything that arises? I am taking that as a no. Thank you. We could bring in Mr Henderson. Please sit down, Mr Henderson.

THE WITNESS: Thank you. Sure.

THE CHAIR: Now, as you understand, you are about to be asked questions by Mr MacGregor, who is sitting opposite you, but first of all, I think you are prepared to affirm?

THE WITNESS: Yes.

THE CHAIR: Just sitting there, would you repeat these words after me?

Mr Ronnie Henderson

Affirmed

THE CHAIR: Thank you very much, Mr Henderson. Now, just a few words of introduction. We are sitting

this morning until lunch at one o'clock, but before then I would plan to take a break in the middle of the morning when people can take coffee. But if at any stage you want to take a break for whatever reason, and you do not need to explain it, just give me an indication and we will break. Matters are, in that sense, under your control. The other thing I would ask is that you have a microphone in front of you, and it should not be necessary to sort of lean over it, but perhaps if you speak a little slower and a little louder, somewhat as I am trying to do myself, that would be helpful partly because, to be frank, I am hard of hearing but people want to hear you in the whole of the room. So maybe a little, as I say, a little slower, a little louder than you would speak in normal conversation.

A Okay. (Inaudible).

THE CHAIR: Thank you, Mr Henderson. Mr MacGregor?

Questioned by Mr MacGregor

Q You are Mr Ronald Henderson. Is that correct?

A That's correct, yeah.

Q And you have provided a witness statement to the Inquiry, which just for the benefit of core participants will be found at pages 272-311 of

volume 3 of the bundle of witness statements. Mr Henderson, the content of your witness statement will form part of your evidence to the Inquiry, and I am also going to ask you some questions today. If at any point you want to refer to your statement, please do just let me know. If there is any particular documents I want to take you to, they should come up on the big screen in front of you. If for any reason you cannot see the documents, if you just let me know, we will manage to hopefully work a way round that.

A Thank you.

Q If I could just begin by asking you some questions about your qualifications and career. They are addressed in your statement, but just by way of summary, you joined NHS Lothian in 1995 as a maintenance electrician. Is that correct?

A That's correct, yes.

Q And then you had various promotions, and in 2002 you became an Estates officer. Is that correct?

A Yes, correct. Yeah.

Q And you tell us that you had responsibility for the Estates function at the Royal Victoria Hospital and parts of the Western General?

A That's correct.

Q So if you just perhaps explain, what were you doing in your role as Estates officer from 2002 onwards?

A It was basically to manage the maintenance function and hard FM, some minor works, types like that, at the areas under my management control, basically. Some of that would be in engineering-- mechanical engineering services, some of it would be electrical engineering services, and also I had overall responsibility for the other trades: joinery, plumbing, maintenance assistance as well. So managing the workload, managing minor works, managing the liaison with the clinical staff in the hospital and just ensuring that everything was maintained as per the planned preventative maintenance schedules and any reactive maintenance that was needed to be done.

Q So, you covered quite a lot there. So one of the terms you used was "hard FM."

A Yes.

Q For those of us that don not work in it, what do you mean by hard FM?

A Hard FM, generally, is a term that's-- it's a fairly recent term, sort of, essentially to describe

maintenance function, basically. Hard FM would be the elements of engineering, infrastructure, built environment that aren't covered by soft FM, which is things like cleaning, catering, portering, security; these are soft FM functions traditionally. So hard FM would be engineering and built environment.

Q So from the list of issues that you have reeled off there from responsibility for cleaning, engineering aspects, it sounds like you had a very wide remit in your role as Estates officer----

A Sorry, just to be clear, cleaning was under soft FM. Hard FM was the maintenance of the built environment and the engineering infrastructure within the buildings and any minor works, project works types, things like that as well.

Q So is that the demarcation between soft and hard, effectively?

A Yeah. Yeah, pretty much, yeah.

Q Okay, and you were on the hard FM side?

A Yes.

Q Your current role is senior capital programme manager for NHS Lothian, and you have held that role since 2021. Is that correct?

A Yes, that is correct, yeah.

Q What does your role as senior capital programme manager involve?

A Although that title covers quite a few of my colleagues' roles as well, they're more of a kind of project management type role. Mine was as a technical capital programme manager to support the three-- or the (inaudible) three major projects that were going to be happening in the next few years in Lothian. That was basically to review technical information to support the project management that went into projects with technical assistance, and to take some of the things forward to contractors, authorised engineers. So it was more a kind of coordination and assisting role, if you like, within the projects, but it was to manage that function across all three projects.

Q Okay, just again, so I understand your roles at various points in time, the Inquiry is interested in the project that became the Royal Hospital for Children & Young People, which is approximately 2005 to 2021.

A Yeah.

Q You tell us that you come into the project in around about 2016 in your statement. So when you come in, you are still in the Estates officer function, as opposed to this more

senior role as a senior capital programme manager.

A That's correct, yes. That's correct.

Q And, again, if I could just ask you to have your statement in front of you, so that is within witness bundle 3 at page 282, and if we could look to paragraph 11. Page 282 of bundle 3, and if we can zoom in on paragraph 11, you see you begin by stating, "I'm not an expert or specialist in any area." Do you see that?

A Yes, I do, yeah.

Q So, should the Inquiry understand-- You go on to say that you are an experienced maintenance manager with an electrical background and that you hold mechanical engineering qualifications as well as a master's in facilities management, but am I right in thinking you are not saying that you are an expert in any one particular area or discipline?

A No, that's correct. I'm not an expert. As I described earlier, my role encompassed all trades – engineering, electrical, plumbing, joinery, maintenance, whatever – but I'm not an expert in either of them. I didn't class myself as an expert, really.

Q Presumably throughout the varied career that you tell us about within your statement, you have

learned bits and pieces about a very large number of disciplines, and is that really what you need to have to be an effective Estates officer?

A Yeah, I mean, I have got electrical qualifications, I've got mechanical qualifications and I have got a facilities management master's degree as well, so I have got the qualifications that supported the role that I undertook for NHS Lothian at that time and currently.

Q Okay. So an all-round skill set but no particular one niche specialism.

A Correct, yes.

Q Thank you, and just while we have got your witness statement up, if we can look down to paragraph 12, please, at the bottom of the page. You say:

"My competency in regards to ventilation includes knowledge pertaining to air change rates and pressure cascades as they relate to SHTM 03-01."

Do you see that?

A Yeah, I do, yes.

Q Whenever you say you have got a competency, should the Inquiry understand that you had a general knowledge of SHTM 03-01 or did you have a particular specialism in SHTM 03-01?

A It was general. General. One of the areas where I was managing (inaudible) theatres, so I had to be aware of the SHTM for the theatres.

Q So in terms of your role as an Estates officer, you would have to have a good solid working knowledge of SHTM 03-01, but you are not saying that you are someone who has an absolute expertise within the contents of SHTM 03-01.

A Correct. Correct.

Q So in terms of your role as Estates officer, if you had to deal with a highly technical, highly specialist issue relating to SHTM 03-01, who are you looking to for advice and assistance?

A If it was a very contained issue, it would probably be within colleagues or peers. If I need to go beyond that, it would perhaps be HFS, or if it was a design issue or an issue relating to an installation or a process or something new that was coming onto site, it would probably be the M&E design team that I would look to, to design it and to get it installed and commissioned.

Q Okay. So if you had an issue relating to ventilation relating to SHTM 03-01, if it is a basic, simple issue, you could deal with that yourself. Is that correct?

A Yeah. Amongst our peers, yeah.

Q And if it is slightly more complicated, you said you might get in touch with HFS. Is that Health Facilities Scotland?

A Yes, it is. Yes.

Q So, again, if we are just thinking-- We are not thinking at the minute about NHS Scotland Assure or anything like that. We are talking about Health Facilities Scotland. Who or what was Health Facilities Scotland and what did they do?

A They were basically a central resource for advice, producing documents. They produced the guidance documents that we were using. They were also a resource for assistance on an ad hoc basis if you needed it. They had various seminars and functions and training that you could go on, and also, as I say, they were just a sounding board for anything that didn't quite fit with what you were expecting it to, and then in anything beyond that it was the designers you would rely on.

Q So you could contact HFS if you needed to ask them. They produced the guidance and presumably they are either at the end of the phone or email that you can get

in contact with them.

A Yes.

Q But you also said if it was more complicated than that, you would be looking to-- I think you said the M&E engineers or M&E designers. I'm not sure if I picked you up correctly.

A Yes, M&E designs. There's basically a means by which HFS write a contract for various M&E design consultants and you go into that framework and you would be able to either-- have free bid for it, or if it's a smaller project you could just call them off. So we would go to an M&E design consultancy to design the installation for us if it was more complicated than we could do with ourselves.

Q Thank you. If I could ask you to just have in front of you, please, within bundle 1, page 1035, that should be Scottish Health Technical Memorandum 03-01.

A Yes.

Q Do you see that?

A Yes.

Q And we see in the bottom right-hand corner that is the February 2014 version. Is this something in the period that you were working on the-- I will just call the Royal Hospital for Children & Young People and the Department of Clinical Neurosciences, "the project." So if I'm referring to the project, that is what I'm referring to. When you are working on the project, is this a document that you were considering that is relevant to the project?

A Yes.

Q Okay. And, again, should we understand from what you have told the Inquiry previously, this is a document that you have got a solid working knowledge of as an Estates officer?

A Yes, I have a working knowledge of it, yes.

Q Okay. So, if we could just look down within the bundle to page 1041. See at the top, it states:

"Engineering Scottish Health Technical Memoranda (SHTMs) give comprehensive advice and guidance on the design, installation and operation of specialised building and engineering technology used in the delivery of healthcare." Do you see that?

A Yes.

Q So that is what the guidance is about. We then move to the second paragraph:

"The focus of Scottish Health Technical Memorandum guidance remains on healthcare-specific elements of standards, policies and up-to-date established

best practice."

Do you see that?

A Yes.

Q So, again, should the Inquiry understand that what this document is seeking to set out is the NHS's view of what the best practice would be for ventilation standards?

A Yes. Yes, it's guidance specific to the NHS.

Q Okay, and then still within that document on page 1041, if we look to the third paragraph, just the final three lines, again, it's described as "best practice engineering standards and policy to enable management of this duty of care". You see that?

A Yeah.

Q Then if we skip the next paragraph, the penultimate paragraph states:

"Healthcare-specific technical engineering guidance is a vital tool in the safe and efficient operation of healthcare facilities."

A Could you please scroll up a little bit to the bottom (inaudible)? Thanks. Yeah.

Q You see that? So it is:

"Healthcare-specific technical engineering guidance is a vital tool in the safe and efficient operation of healthcare facilities. Scottish Health Technical Memorandum guidance is the main source of specific healthcare-related guidance for estates and facilities professionals."

Do you see that?

A Yes.

Q So, again, should the Inquiry understand that really what this document is communicating to someone like yourself in an Estates officer role is how you go about providing a safe ventilation system in a hospital?

A Yes, it is, yeah.

Q We will come on and look at a lot of the specifics about the project in due course, but just while we are thinking about this guidance being related to safety, did yourself or anyone you knew within NHS Lothian ever consciously express a desire during the project to have a ventilation system with lower parameters than those set out in this guidance document?

A No.

Q Did you or anyone that you worked with on the project ever knowingly agree to any derogation from this guidance in relation to Critical Care rooms in the hospital?

A No.

Q Would you ever advised

that any such derogation had been agreed?

A No.

Q If I can ask you to keep the guidance up, so we are still within in bundle 1, and if we could look to page 1050, please, and if we could zoom in, please, at page 1050 at paragraph 1.37. I think we are on 1058. We should be on 1050, paragraph 1.37. Would you zoom in on paragraph 1.37, please? Do you see? It states:

"In assessing the need for more specialised ventilation and the standards desired for patient care, managers will need to be guided by their medical colleagues and by information published by Health Facilities Scotland."

Do you see that?

A Yes, I do, yeah.

Q So if we take that in stages, presumably this is what you are talking about, in terms of, if you have got a problem you can phone up Health Facilities Scotland and ask them for the answer.

A Yes.

Q I would be interested in your views-- In the first section, it says:

"In assessing the need for more specialised ventilation and the standards desired for patient care, managers will need to be guided by their medical colleagues."

So how much reliance are you placing as an Estates officer on what you are told by clinical colleagues in a project?

A On this specific project or previously?

Q Let us just talk about the generality and then we will go on to the specifics.

A Generality. What you would need to start this process off would be, what are the clinical requirements of the room? In this project there was a clinical output spec, but in normal terms it would just be a description of the activities carried out. From that, then, you would assess whether it would need general ventilation, what kind of pressure regime it would require – sometimes it would be negative pressure sometimes balanced, sometimes positive – and then you would go to the next stage of, does it require specialised ventilation or not to do this, to be in the room safely with ventilation?

Q Okay. So whenever you are thinking about the ventilation system, whoever has responsibility for the guidance needs to be speaking to the clinicians to understand their

clinical needs.

A Yes.

Q Okay. What happens if you get to a situation where there is a conflict between what the clinicians want to do and what the guidance says?

A The clinical need would always-- If there was a specific reason for it, it would always override the requirement of the guidance, but what you would then do is you would seek to derogate or deviate from the guidance in a formal manner with everyone's agreement, and that wouldn't just be the clinicians deciding or me deciding; it would be a wider body of people, including maybe a referral to HFS to give a final decision and say, "Look, is this appropriate for this environment?"

Q Again, I am interested in the period up to 2021. You talk about a derogation from guidance.

A Yes.

Q Was there a formalised document that had been produced by HFS or Scottish Government that you as an Estates officer could simply pick off the shelf if you were wanting to do a derogation?

A No, no. It varied by project and by contract type as well. It had influences.

Q Do you think that lack of an established procedure was potentially problematic?

A It could have been. I don't know specifically if it would have helped in this case, but it could be problematic for other things that we did eventually derogate from.

Q But, presumably, if we just stand back from the detail, if there is no centralised guidance, different health boards could be doing different things in terms of derogations.

A Correct, yes.

Q And at this stage, no centralised guidance in relation to which disciplines would have to be involved in that decision-making process for a derogation.

A The guidance contained in this document here does tell you who you should be speaking to, but there's not a formal process for establishing a derogation and----

Q So, loose guidance in terms of who you need to speak to, which disciplines on a project, but nothing absolutely specific about who needs to be involved in a derogation or how that would be documented.

A Correct.

Q If we could look on, still within bundle 1, please, to page 1058 and paragraph 2.19. So you see

paragraph 2.19, Table A1 provides recommended air change rates, temperatures and pressures for general areas that require mechanical ventilation in healthcare buildings. Do you see that?

A Yes. Yes.

Q And then if we move on to page 1116, at paragraph 7.2, it states, "The following departments will require a degree of specialist ventilation." And then if we look down to the third and fourth bullet points, you see it states, "Critical areas and high dependency units of any type," and then the next bullet point says, "Isolation facilities." Did you understand that there was a difference between critical areas and high dependency units and isolation facilities?

A Yes.

Q Can you just explain again your understanding of what is the difference for an Estates officer in relation to these two areas?

A It's more a clinical thing, but isolation facilities are rooms that have a very contained environment. They have no air coming out or going in, in theory, so that it's an entirely protected environment, whereas-- And by "no air coming out", I mean no escaping air. They obviously have the ventilation that the room requires. But normal Critical Care bedrooms-- I'm calling them normal because they're not normal, but Critical Care spaces and high dependency spaces are bed spaces where there's less of a requirement to fully isolate the patient but still have a higher degree of care than you would in a normal bed in a normal ward.

Q So your understanding as an Estates officer is that there is specific regimes for Critical Care and specific regimes for isolation facilities?

A Yes.

Q Thank you. If we could look on, please, to page 1119 and to paragraph 7.13, which states:

"Air change rates are given in table A1. These figures have been found to give sufficient dilution of airborne contaminants provided the mixing of room air is reasonably uniform."

Do you see that?

A Yes.

Q So if you want to know what the sufficient dilution of airborne contaminants is, you look to the guidance that's included in Table A1.

A I think it would be more simplistic for us, and as Estates people, we'd be just looking to see, what does this room require? Rather

than think of what it's required for, we'd be looking to see what the guidance says it needs to be.

THE CHAIR: Mr Henderson, giving evidence is very difficult if you have not done it before, or even if you have done it before. Could I ask you to bear in mind what I said about speed as well as volume? I am not taking a verbatim note, but I am very interested, but I am taking a note, and I am very interested in what you have to say. If you go too fast, there is a risk that I miss something important.

A Apologies, your Lordship (inaudible).

Q I am very conscious that it is very difficult, and witnesses find this-- You know, it is difficult not to speak in the way you normally speak, but a bit slower would be helpful to me.

A So just for clarity, then, what we would normally do is look at that table for the air change rates for the room that we were designing or working to.

UNKNOWN SPEAKER: Sorry, can we take a break for two minutes? I need to-- There are some technical issues.

THE CHAIR: Oh, right.

UNKNOWN SPEAKER: Sorry.

THE CHAIR: Yes, we have not managed much more than half an hour

when there is a technical issue. So, should we take a formal break?

UNKNOWN SPEAKER: Yes, please.

THE CHAIR: Right. Okay. Sorry about this, Mr Henderson. First of all, you will be taken to the witness room. Sorry about this, but then----

(Short break)

THE CHAIR: Well, my apologies for that break. The problem related to our ability to live stream on YouTube. If this problem re-emerges, what I am proposing to do is we continue recording, and with transmission being available, I suppose the expression is "catch up." Well, shall we invite Mr Henderson to rejoin us? I am sorry about that, Mr Henderson. Technical difficulties which I hope will not be repeated. Mr McGregor?

MR MACGREGOR: Thank you. I think, Mr Henderson, just before the break we were looking at SHTM 03-01, so we were in bundle 1, page 1119, and we have just been looking at paragraph 7.13 in relation to Table A1. I think you just were about to go on and explain what your understanding of what Table A1 was for you as an Estates officer?

A Yes, it's the table we

would refer to when we were looking at what should the air change rates be in this room. For example, if we were refurbishing a ward or refurbishing an area, we would look at that to see what the air change rates should be for that area.

Q If we could look on to page 1159 please, and to paragraphs 8.64 and 8.65. I will not read these out, but these are paragraphs that you are familiar with in relation to a validation report?

A Yes.

Q Now, the Inquiry has considered before the concepts of commissioning and validation, but can you just explain what was your understanding of what a validation report was?

A A validation report is basically a report that concludes that the entire system, from air intake to air extract, and the environment that that system is serving, is suitable and sufficient and will basically meet its needs and be fit for purpose.

Q So, you would get a short report, effectively saying that the system is going to be fit for purpose and only require routine maintenance?

A Yes.

Q Now, if you were engaging on a project for NHS Lothian, would that be a report that is produced by the contractor, or would you get an independent individual in to complete the validation report?

A If it's okay, can I refer to my experience in this kind of situation?

Q Please do.

A As a maintenance manager, it would tend to be systems that were already installed. So, we would be getting the annual verification done by an independent contractor and that would come to me, or one of my colleagues, as a report. It wouldn't always be in the format that-- and I think we'll go into this probably, in the format that we're going to discuss today, but it would give you the information required to conclude that the system still met its needs, and it was fit for purpose with ongoing maintenance.

Q Okay. So, in terms of ongoing maintenance, every year the authorising engineer comes in and gives you some form of report. What about if you are dealing with a new build facility, or a refurbishment?

A Again, it would-- for me-- for this instance here, it would depend on the type of procurement method of the contract. This is a building built by, and owned effectively by, a special purpose vehicle. They continue, they

carry on at the moment doing the annual verifications for the specialised ventilation systems, and I probably-- that probably played into my discussions with my IPC colleagues about who should be doing the annual-- doing the initial validation, but it would be concluded eventually and procured an independent authorising engineer to do that for us.

Q Again, just so I am understanding a matter of generality, if it is, say, a public/private partnership that a health board is involved in, you would not necessarily see it as your responsibility as an Estates officer to get an independent validation report produced?

A No, no, I hadn't come across this situation before, so I'm not saying-- but in a normal one, in a traditionally procured contract, we would-- we would go to the independent and get it (inaudible).

Q So, if it was a standard design and build contract, you would look to the contractor to provide the validation?

A No, no, no, we would-- NHS Lothian.

Q NHS Lothian would provide that independent validation report on a design and build contract?

A Yes, they would, but after

the conclusion of the----

Q So, design and build contract, independent validation done by the health board.

A Yeah.

Q And I think you were saying really, in terms of public/private partnerships, you did not really have any prior experience before the project----

A Yeah.

Q -- and you were not really sure what should happen.

A Yeah.

Q Thank you. If we could just look on within the guidance to p.1173, please, and this is, I think, the Appendix A1 that we have looked at in terms of the guidance. There are various boxes. It starts with "General Ward." We could perhaps just zoom in and look. There are perhaps four to look at, it begins with "Ward Isolation room." There is, "Ward Isolation room, Infectious Disease ISO room, Neutropenic ward," and then, "Critical Care Areas," do you see that?

A Yes.

Q Again, I think you have already told us in your evidence that you saw a distinction between Critical Care areas and requirements for isolation rooms.

A Yes.

Q And are you drawing that from what is stated within this table?

A Yes, partly, and partly my knowledge of the clinical activities, or my kind of partial knowledge of them, but ward isolation room is an isolation room – and it could be in any ward, it could be a general ward, it could be a critical care ward, neutropenic ward – and then the Critical Care areas are the areas within Critical Care as a whole.

Q So, again, just so I am understanding this, if we then think to the project – and we will come on and look at this in more detail – you would be proceeding on the basis that for all critical care areas, there is going to be 10 air changes per hour and 10 pascals of positive pressure.

A Yes.

Q Is that correct?

A Yes.

Q Do you ever recall during the time you were working on the project, anyone ever telling you that 10 air changes per hour and 10 pascals of positive pressure would only be provided in isolation rooms, and isolation rooms in Critical Care? It would not be provided for all Critical Care areas?

A No, don't ever recall anyone telling me that.

Q And if that had ever been raised, to say you do not need 10 air changes per hour and 10 pascals of positive pressure for all Critical Care areas, what would your reaction have been?

A I would-- My reaction would be to discuss with our technical advisors the implications of that, and for me, that would be a non-compliance with the guidance.

Q In very simple terms, would that be a red flag for you as an Estates officer?

A If it was brought to my attention in that way, yes.

Q Now, I think at this point I want to look at just a couple of project-specific documents, just while we are talking about Critical Care areas and isolation rooms. At some point during the project, did you become aware of the Environmental Matrix and the requirements of the guidance notes within the Environmental Matrix?

A I didn't become aware of the guidance notes until after the issue presented itself----

Q Right.

A But I was aware of the Environmental Matrix throughout my time in the project.

Q So aware of the Environmental Matrix throughout. I am

going to come on and look at the guidance notes issues with you, but there comes a point in the project whereby there are problems, and you start looking at things like the Environmental Matrix in greater detail. Is that right?

A Yes, yes, correct.

Q So, if we look at one iteration of the Environmental Matrix, if we could look to bundle 13, and to volume 5, and if we could go to page 922 first, please. So the Environmental Matrix, it starts on page 921 but the only point I want to take you to is on page 922, and it is right down at the very bottom. The penultimate entry says, "Critical care areas." If we could zoom in on that, just three lines up from the bottom.

A Yeah, I can see that okay, thanks.

THE CHAIR: Thank you.

MR MACGREGOR: The print is quite small, but can you read that okay?

A I can read that, yeah. I can read that fine, thank you.

Q So we see here a guidance note, Guidance Note 15, and for Critical Care areas, it says:

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

Do you see that?

A Yes.

Q So, again, just so I am understanding things, would that be, in your view, a standard interpretation of Table A1 that we have just looked at being translated into the Environmental Matrix?

A Yes.

Q If we then look on within bundle 13, volume 5, firstly to page 959, this is an iteration of the Environmental Matrix from 26 November 2015, and if we could look down to p.961, please. Again, we will see Environmental Matrix guidance notes. If we could look down for Guidance Note 15, and again look at the Critical Care areas, and just as we are doing that, you see that there is some red text being marked up in the guidance notes. Do you see that?

A I do see that, yes.

Q We do not see any red text being marked up in the Critical Care areas. Do you see that?

A That's correct, yeah. I see that.

Q In this iteration of the Environmental Matrix, it says:

"Critical Care areas – Design Criteria – SHTM 03-01 – Appendix 1 for air change rates – 10

ac/hr Supply for isolation cubicles."
Do you see that?

A I do, yeah.

Q Okay. You tell us within your statement that this was never highlighted in red or drawn to your attention when you were working on the project. Is that correct?

A That's correct, yeah.

Q Can you just explain for those of us that do not work in the space, what is the significance of the change that we see in that guidance note? What would it be telling someone who has knowledge in this area?

A Well, what that would do is it would say that the designers intended only to provide that air change rate to rooms that were classed as isolation rooms. It also is referring to SHTM 03-01 for that guidance, but that's not the appropriate guidance for isolation rooms. So, again, it's a change that significantly reduces the number of rooms that would require 10 air changes in Critical Care, and only focuses on isolation rooms.

Q So, again, just so I am understanding things, the first iteration of Guidance Note 15 we looked at, your view as an Estates officer would be that is what you understand to be a traditional interpretation of Table A1 for Critical Care areas. Is that right?

A That's correct, yeah.

Q Then what we now see in relation to Critical Care areas simply being 10 air changes per hour supply for isolation cubicles, is that a different interpretation to what your interpretation of Table A1 would be?

A Yes.

Q If that change had been drawn to your attention while you were working on the project, what if anything would you have done?

A I would-- I would-- Well, again, as I say, we didn't deal-- I didn't deal with the guidance notes until after the incident, but I would say that had it been brought to my attention, I would query why that change has occurred. The wording is still the same for HDU areas, which is a part of Critical Care, so why has that specific change occurred in that part of the text? And it would-- For me, it would raise a concern that they weren't providing the correct air changes in the entire department.

Q You said in your evidence there, you were not the person who was really responsible for checking if there has been changes made to the matrix, and the guidance notes in particular.

A Yeah.

Q Okay. Who within NHS Lothian-- or outwith NHS Lothian, but who on the NHS Lothian side of the project would have had that responsibility?

A The primary reviewers would be Mott MacDonald Limited, and they would have advised me, or advised the clinical-- or the project team, of any issues they found within the matrix.

Q Your assumption was that any changes that are being made like this, Mott MacDonald are reviewing them on behalf of NHS Lothian. Is that right?

A Yeah, but we've got the protocol in place that they should have been flagged as well.

Q Okay. So, there is the protocol that if any changes are being made by the project company, they should be flagged?

A Yeah.

Q But your understanding was also that Mott Macdonald were reviewing them on behalf of NHS Lothian?

A Yes, that's correct, yeah.

Q Again, just for completeness, the Inquiry has considered this before, but Mott Macdonald were, I think, the lead technical advisors to NHS Lothian during the project.

A That's correct.

Q Okay. Within your witness statement, I will not put the reference up, but you describe the fact that this change to guidance note was not raised with NHS Lothian, you described that as "disappointing." Could you just explain what you mean by that?

A Well, again, I think it's as you alluded to, that had they raised that at the time, that would have been the-- I mean, this was only version two, I think, of the matrix, which was immediately after financial close and before my time on the project, but had they raised that at the time with Mott Macdonald, there may have been a different outcome. So I can only assume that that perhaps contributed towards the final result.

Q Again, this might be quite important for the Chair, but just to understand matters, we have changes made to Guidance Note 15----

A Yeah.

Q -- not highlighted in red. Your evidence to the Inquiry is that had this been flagged in red and had it been raised with you by Mott MacDonald----

A Yeah.

Q -- you think this is an issue that could have been spotted early on in the project?

A Yes.

Q Thank you. You mentioned that you had an awareness of the Environmental Matrix while you were working on the project. Now, it is fair to say that the status of that document is a matter of controversy between various core participants, but while you were working on the project, did IHSL, Multiplex, or TÜV SÜD ever describe-- in any correspondence or discussions you were involved in, did they ever describe the Environmental Matrix as being a "fixed brief" given to them by NHS Lothian?

A No.

Q Was your understanding that it was a fixed brief given by NHS Lothian?

A No.

Q Okay. Again, you might not be able to help us in this, but if it was a fixed brief, how could it be that changes are being made by IHSL or their contractors without the knowledge or approval of NHS Lothian?

A That's-- That's (inaudible), because if that was a fixed brief, then they shouldn't be coming back to us with any changes to the

document, if that is fixed.

Q Thank you. I would like to move on and just look at another piece of guidance. If we could go to bundle 13, volume 3, page 464, please. This is a document called, "SHFN 30, Part B: HAI-SCRIBE; Implementation Strategy and Assessment Process." Do you see that?

A Yes.

Q Is that a document that you were familiar with whenever you were working in your role as an Estates officer?

A Yes, I was aware of the document, but only in parts, hopefully.

Q So when you say you are aware of the document in parts, can you just explain, firstly, what the document is?

A Well, it's the Infection Control implementation for assessing the built environment. So, it's-- How we would use it would have been to use it as a tool to examine a project at each various stage to fill in-- to ensure that we were building it to standard----

THE CHAIR: Sorry, Mr Henderson, entirely my fault. I failed to hear the beginning of your answer to the question. You are being asked to explain, from your perspective, what SHFN 30 is. Could I just ask you to

repeat?

A Yeah, it's basically a document that we use as a tool to fill in various elements of it at each stage of the project to ensure that we're complying with Infection Control standards in the document.

THE CHAIR: Thank you.

MR MACGREGOR: So, this is a document which you as an Estates officer are using as a tool as part of your job?

A Yes.

Q Thank you. If we could look on to p.468, please. You see the first full paragraph there:

"Scrutiny of this guidance will highlight the frequent use of the word 'Partnership.' Successful use of HAI-SCRIBE requires participation and cooperation particularly between Estates & Facility staff and Infection Prevention and Control Teams.

To manage or mitigate the risks highlighted through the use of HAI-SCRIBE requires knowledge from many sources. However, it is not expected that any group will possess full knowledge or experience of another's discipline. It is expected, therefore, that there will be an ongoing liaison during each stage of development where appropriate specialist knowledge from all sources

of relevant expertise can be derived and incorporated into the project briefing, contract conditions, specification, and quality control of construction and maintenance."

Do you see that?

A I do see that, yeah.

Q Can you just explain in practical terms, what does that concept of "partnership" working really mean in relation to Infection Prevention and Control in the built environment?

A What that would mean is that you would use the pro forma tools within the document to collaboratively agree the mitigations against each of the tasks or highlights in each of the sections, and that should then fulfil the requirements of the preceding paragraphs and text to say-- This is basically a tool, as I say, to use to get to a point where you're----

Q And, again, in simple terms, is it saying you need lots of people from lots of different disciplines to make sure you build a safe hospital?

A Yes.

Q Thank you. If we could look on to page 469, please, and to the note section in the box, second line down, it states:

"It is intended as a point of

reference for healthcare estates and facility managers, designers, project managers, contractors, engineers, surveyors, health planners, and Infection Prevention and Control teams working on healthcare estate new build and refurbishment projects."

Do you see that?

A Yes.

Q So, again, it is not just saying this is a document aimed at clinicians or Infection Prevention and Control. It is also directed to other disciplines such as Estates and engineers.

A Yes.

Q Thank you. If we could look on to page 470, please, and to paragraph 1.4. Four lines down in paragraph 1.4, you see a sentence beginning, "For HAIs to be reduced." So, I think that is:

"For [healthcare-acquired infections] to be reduced, it is imperative that infection prevention and control measures are 'designed-in' and IPC risks are 'designed-out' at the very outset of the planning and design stages of a healthcare facility and the input continues up to, into and beyond the final build stage."

Do you see that?

A Yes.

Q And then paragraph 1.5:

"To achieve this, it is necessary that designers, architects, engineers, facility managers and planners work in collaborative partnership with IPC teams, healthcare staff and the users to deliver facilities in which IPC needs have been anticipated, planned … and met."

Do you see that?

A Yes.

Q So, again, this is just back to once again reiterating this concept of a partnership approach to avoid healthcare-acquired infections?

A Yes.

Q Thank you. If we look over the page onto page 471. Paragraph 1.6, we will see the stages of the development. So, stage 1 is the proposed site for the development; then you do a review at stage 2, the design and planning; stage 3, construction and refurbishment; and then stage 4, "Pre-handover check, ongoing maintenance and feedback."

A Yes.

Q Again, we will come on and look at the HAI-SCRIBE for the project in greater detail, but am I right in understanding that there was not a stage 4 HAI-SCRIBE done before the hospital was handed over to NHS Lothian?

A That's correct.

Q Why not?

A The issue was at the time-- was that the hospital had not been fully completed construction-wise. We were then turning it into, as I understand it, a supplemental agreement to conclude the work that needed to be done, but part of that-- and I'm not probably the person to answer this, but part of that, I believe, was that we had to have the hospital handed over to allow the contractor to complete the project.

Q I think you fairly say in your statement that that was not your decision to make.

A Yeah. It wasn't, no.

Q But from your knowledge of SHTM, HAI-SCRIBE, which says that you should be doing a stage 4 check before handover, should the Inquiry understand that what happened on the project was not in compliance with the guidance we are looking at?

A Technically, it wouldn't be in compliance, no.

Q I would like to look back to a previous set of the SHFN guidance. So still within bundle 13, volume 3, if we could go to page 554, please. So, you will see there, this is, "Scottish Health Facilities Note 30, Version 3, Infection Control in the Built Environment: Design and Planning." Bottom right-hand corner, this is the guidance from June 2007.

A Yes.

Q So, we have looked at the 2014 guidance, which is really relevant to the project but presumably if you have worked as an Estates officer from 2002, you would have been familiar with the previous iterations of this guidance.

A Yes.

Q Okay. If we look to page 563, paragraph 2.10, about five or six lines up from the bottom of paragraph 2.10, it states:

"It is therefore intended as a first point of reference on prevention and control of infection for healthcare estates and facilities managers, architects, builders, engineers, surveyors, health planners and Infection Control teams working on healthcare estate new build and refurbishment projects."

Do you see that?

A Yes.

Q So, is that effectively-- this partnership concept has existed at least since 2007?

A Yeah.

Q And if we look onto page 564, paragraph 2.15, the final sentence there, three lines up

beginning, it states:

"Much of the solution to the existing HAI problem lies in the effective dissemination and implementation of existing knowledge to all involved, in a logical accessible form."

Do you see that?

A I see that, yes.

Q So, in many ways, if we just stand back from that, is that simply saying that you need a lot of disciplines, and people do not know what they do not know, so you all need to be talking to each other to make sure that you manage healthcare - acquired infections?

A Yes, that's correct. Yeah.

Q And was that well understood as at 2007 in the Estates community?

A Yeah. If I talked to them on experience-- what we'd normally do is we would sit down initially with Infection Control and fill in what we could, and then it would be a round-the-table meeting depending on the complexity of the work to discuss with clinical colleagues and others. But, yes, a partnership approach to fill in the required information for all the----

Q Okay, and then if we look on within the guidance to page 568, please, paragraph 3.10, which states:

"It is important to consider certain issues before construction work commences, including [and then if we look to the fourth bullet point there, it says] the air flow and pressure differentials in the area (differentials may be varied by external wind strength and direction)."

And then the next bullet point:

"The susceptibility of the occupants to infection, e.g. through respiratory problems, immunocompromised or intensive care for patients."

Do you see that?

A Yes.

Q So, even before you get to breaking ground, these are the types of things that you should be considering for a major hospital project.

A Yes.

Q If we look on to page 573, please, section 5, which is risk management, and there is a subheading, "Identifying risk," and if we could look to paragraph 5.3. 5.3 says:

"To avoid mistakes and pitfalls the Project Team must consider issues including: [first bullet point] how will the product, equipment, room or clinic be used?"

Do you see that?

A Yes.

Q So, again, this is the whole project team that should be thinking about this issue, not just Infection Prevention and Control, Estates, engineers. Everyone needs to have this on their radar. Is that correct?

A Yes.

Q Then if we look to the second last bullet point:

"What are the standards and guidelines from architectural and engineering bodies, government departments and accrediting agencies?"

Do you see that?

A Yes.

Q Okay. So, again, should the Inquiry understand that what the 2007 guidance was telling you was that the whole project team really has to have some knowledge of standards and guidelines issued by engineering bodies, government departments and accrediting agencies?

A Yes.

Q Thank you. If you look over the page onto page 574, we will see there is a "Common error" section. Now, that disappears from the 2014 guidance but common errors that have been identified by 2007, paragraph 5.5:

"Common errors in design and construction (adapted from Carter and Barr, 1997) due to inept or non-existent risk management include…"

And then do you see the second bullet point there says, "…incorrect air turnover and airflow patterns"?

A Yeah, I see it.

Q So, a common error that you can get wrong in a hospital project is your air turnover and airflow patterns?

A Yeah.

Q And did you understand that when you were working on the project?

A To be fair, I wouldn't recognise that page. We've been using that, as I say, as a tool which was-- there's pro forma sheets that we would use to fill in, in collaboration with the project team with our Infection Control colleagues, and that would be done collaboratively. That task itself should mitigate any issues that are in the regular text of the document.

Q If we just stand back and, again, we will come on and look at the detail but one of the issues that the Inquiry has got to look at is the fact that there were incorrect air change rates and incorrect pressure cascades in Critical Care rooms, and that seems

to have been a warning that was issued to everyone that is getting the HAI-SCRIBE guidance from at least 2007 onwards. How did that happen in the project?

A I can't speak for how it happened, and my apologies, but these documents-- this part of the SCRIBE would been done before I started on the project, so I can't speak for how that happened on the project at all.

Q Okay. Do you think-- Whenever we are looking at this particular project, did the errors in relation to air changes and pressure cascades, did that result from non-existent risk management?

A I couldn't-- It was all before the time I started on the project. I couldn't really comment on that.

Q Okay. I wanted to move on-- We have looked at the general guidance, and I want to now look at some of the specifics of the project whenever you were working on it, and I am going to look at four phases really just to follow the chronology through. So, firstly, to look at the point from when the contract signed up to Settlement Agreement 1, okay?

A Yeah.

Q After that, to look at Settlement Agreement 1 itself, then to consider your involvement in the IOM Limited reports and then finally to consider high value change notice 107 and the period that follows thereafter. So we will just follow things sequentially through. So, in the period after the contract is signed, what is your role? What are you doing?

A Well, I was brought on in August 2016 as the commissioning manager of hard FM, and the main part of my role was to ready the spaces in the hospital that we would be occupying as NHS Lothian hard FM, and the activities that we would be doing as NHS Lothian hard FM within the site once it was operational, and to agree manpower, budgets and preventive maintenance, all of these types of things. That was the primary role. The secondary role was to review RDD as it came in if I was-- if I had time to do that, bearing in mind that (inaudible) were the primary reviewers, but I was able to-- using my own experience to review documents and comment on them as and where I could.

Q You mentioned that you would be involved in RDD, Reviewable Design Data, but you said if you had time. Was that one of your core functions or was it something you helped out with?

A It became a core function due to the volume of RDD, but my principal role was to, as I say, ready the hospital and the existing Estates workforce at the Royal Children's Hospital to come to site.

Q Okay. So, 2016, when you come into the project, you are anticipating not having much to do with the reviewable design data process, but you become more involved as the project goes on?

A Yeah.

Q Okay, and you say you were not the primary reviewer of reviewable design data. Who, or which entity, were the primary reviewers?

A That would be MML, Mott MacDonald.

Q Mott MacDonald. So, your understanding working on the project is if there is reviewable design data coming in to be reviewed, it is the lead technical advisors, Mott MacDonald, that are taking that role?

A Yeah, and they manage the process as well on behalf of NHS Lothian.

Q Brian Currie is working on the project. What is his role at this time?

A He's project director, and he's just overseeing everything, all

elements of the project teams. There was a commissioning manager-- a lead commissioning manager, Jackie Sansbury, and underneath her, sat the commissioning managers, and that was my area. But then Brian had the technical advisor team, he also had project managers working underneath him directly. So then the two parts of that came together under Brian.

Q Okay, and Janice MacKenzie, was she someone that you worked with in the project?

A Yes.

Q What was her role?

A She was clinical director.

Q And what did that involve?

A She was the kind of lead on the clinical side. She was a clinical lead, effectively, for the project and under her, again, as I say, sat the individual commissioning managers with the specific clinical specialties.

Q Okay. Now, you have talked a little bit about Mott MacDonald and their role that they are leading, and the reviewable design data.

A Yeah.

Q But what is your understanding of Mott MacDonald's role in the project when you came into it?

A As far as I was aware,

they had a project management element. They also had the lead technical advisor element. They had a team of technical people who would review elements of the design. What Mott MacDonald and what others had said to me when they came on-- This was a PFI/PPP project. The design responsibility sits entirely with the-- Project Co, and what they were doing as reviewers was reviewing for operational functionality, along with the clinical teams. In other words, ensuring that the spaces, once they were finished, met the requirements of the clinical activity that was taking place in that room, rather than the engineering element.

Q When you are talking about operational functionality, you are talking about things like clinical adjacencies. Is that correct?

A Clinical adjacencies, where things were in the room, where the clinical team needed them, where the-- things like ventilation, the ventilation grills directly above the patient head, causing a draft. Things like that rather than specifically the-- sat behind it.

Q And Mott MacDonald, are they undertaking a design review or a design assurance review function for NHS Lothian at this time?

A No.

Q We will see when we come on to look at quite a few of the documents----

THE CHAIR: Sorry again. My fault entirely, Mr Henderson. The question was, Mott MacDonald, were they carrying out a design review or design assurance, and your answer to that is simply no?

A No.

Q Right.

A They were reviewing elements of design, but they weren't primarily-- there wasn't a shadow design team, there weren't full design reviewers. They didn't have that responsibility.

MR MACGREGOR: We will see when we come on to look at some of the documents though, Mott MacDonald do seem to comment on areas that go well beyond operational functionality. Was that your understanding?

A Yes, it was.

Q Why were they doing that?

A As far as I'm aware, it was where they spotted things that were clearly wrong or clearly an issue, they would highlight that and flag it in the course of their review.

Q Were they providing-- by

that, I mean Mott MacDonald. Were Mott MacDonald providing any advice to NHS Lothian on compliance with published guidance such as SHTM 03-01?

A Yes. They were. If it were-- spotted that it was an issue that contravened the guidance or were not in compliance with the guidance they would identify that if they could. If it was identified, they would highlight to us.

Q So, again, your understanding-- we are not asking for a lawyer's definition of the contract with Mott MacDonald, but would your understanding be that Mott MacDonald would be advising NHS Lothian on issues such as pressure regimes and air change rates per hour?

A Yes. If that was identified, yeah.

Q And, again, just so we can try and understand it, what reliance is NHS Lothian placing on Mott MacDonald at this point in the project?

A We were relying on them to advise us if there is an issue that would cause us a risk in the project.

Q Okay.

A A technical risk in the project.

Q If I could just perhaps

bring up a witness statement by one of your former colleagues, Ms Janice MacKenzie. So, that is in witness bundle, volume 1 at page 151, and if we could look to paragraph 20, please. There is a paragraph beginning, "As a result."

A Yeah.

Q If we could just perhaps look-- about four lines down, there is a sentence beginning, "I am not an engineer." Do you see that about four lines down?

A Yes.

Q So, what Ms MacKenzie says is:

"I am not an engineer and it was not my role to know what is required in terms of the technical guidance for every department. That is the role of the engineers and our technical advisors. I would have expected to have been advised either by IHSL directly or via MM [that is our definition of Mott MacDonald] where there were any proposed derogations to technical guidance and specifically what clinical areas and derogations applied to in order to assess the impact of this and be able to discuss this with the clinical leads and IPC and take an informed view."

Do you see that?

A Yes.

Q Do you agree with that categorisation by Ms MacKenzie?

A Yes, I do. Yes.

Q So, it was not Ms MacKenzie's role to be the expert in the technical guidance. My understanding is that you are saying as an Estates officer, it was not your role to be an expert in the technical guidance.

A That's correct, yeah.

Q In simple terms, was it Mott MacDonald's job?

A Of all the parties mentioned, yes, it would have been.

Q Now, in the period after the contract is signed, there still seems to be quite a lot of work that is going on, a very large volume of reviewable design data. Was that your experience when you started working on the project?

A It was, yes. I was surprised to learn that there was still so much design left to do in the project given that its initial completion date was July 2017 and we're in August 2016 at this point.

Q And what were some of the challenges that presented to NHS Lothian and their project team?

A Well, it was hard copy documents that you were reviewing, and there were bundles and bundles

coming at a time with a turnover time of 15 days. As I say, I don't think-- we didn't employ Mott MacDonald as a shadow design team, so we didn't have a team of designers sitting ready to receive that information and process it in the timeframe required. We were only doing reviews for operational functionality, but obviously, if something was spotted within the information that we were provided with, we would review that and comment on it. So, it was a lot of information to turn over.

Q And you cover this in your statement: there is a lot of information coming in, there is a lot of changes being made that have to be reviewed, albeit you say the only responsibility, as you understood it, on NHS Lothian's side was to check for issues of operational functionality----

A Correct.

Q -- because there were a lot of changes being made. One thing I would be interested in your views on, Mr Henderson, is in relation to the changes that are being made when you came into the project, did you think there was really a fixed brief, a fixed set of requirements that NHS Lothian had specified, or were the requirements changing as the project went on?

A No. I wasn't aware of the requirements changing as a project, and I think that when I came on I expected that the brief was fixed, it was-- everything was settled, but yes, there are always changes as things go on in projects but, you know, the level of change is something that may or may not be consequential.

Q So, your understanding is that NHS Lothian had fixed what their requirements were and that this was now, really, a discussion about how the designers were going to implement that?

A Yes. I'm hopefully trying to be kind of careful when I say that, but obviously, the fixed part of it-- the elements were that it was Project Co's responsibility to do the design. They were to take the documents at a certain stage and develop them into a full design. So, the fixed part was that we'd given over documents for them to adopt and change, alter, review, amend to meet compliance and ensure it was compliant and provide us with a compliant hospital.

Q If we just perhaps look at some of the documents in relation to trying to understand Mott MacDonald's role in the project. If we could look to bundle-- to volume 13, bundle 2(sic) to page 538, please. Volume 13, bundle

2, page 538. So, this should be an email from Kelly Bain of Mott MacDonald on 19 May 2016 to Darren Pike of Brookfield Multiplex and a range of other people, and it states:

"Hi all

The Board have noted the number of air changes within the en-suites is higher than that required under SHTM."

Do you see that?

A Yes.

Q Again, if all that NHS Lothian had responsibility for was operational functionality, why do we see NHS Lothian's lead technical advisors feeding back to Mott MacDonald that they are not complying with the technical guidance?

A I cannot-- I wasn't-- it was just prior to my start on the project, but I can only assume at that time that the reviewer had spotted an issue around the air change rates in the en suites and wished to raise it, and there may be a point there against the BCRs where we were to maximise heat recovery from the system, so there's an opportunity there for heat recovery that wasn't taken.

Q Okay. If we could then look to bundle 13, volume 1, please, and to page 7. Bundle 13, volume 1,

page 7. This is an email from Kamil Kolodziejczyk to Ken Hall of Multiplex, copying in various other people from 17 October 2016. Again, it states, "The Board have reviewed the Environmental Matrix and still has significant concerns on items that do not appear to comply with the BCR's." Do you see that----

A Yes.

Q -- The Board (inaudible). Then, if we look to point 6, it states, "Some ventilation rates don't appear to comply with BCRs." So, whenever you came into the project, was that a real concern that NHS Lothian had in terms of the content of the Environmental Matrix and its compliance with the standards that NHS Lothian was expecting?

A It wasn't initially apparent to me, no, and it didn't really become apparent until later on. The Environmental Matrix was a document that was – I think others have said it – a large piece of information that was difficult to review in its entirety and, as I understand it, Mott were doing sample reviews on the document, and where they identified discrepancies or errors they were raising comments with it, but it was never ever raised to me that it was a massive issue during my early part of the project, but

obviously, it later became so.

Q So, sample reviews that are taking place, issues being identified and fed back?

A Yes.

Q And if we look on just to page 8, please. You will see that the final paragraph:

"Whilst the Board has noted general and specific comments above, the Board reminds Project Co that unless the Board has already accepted a derogation, it is Project Co's obligation to comply with the BCR's/SHTMS etc, and the Board not commenting, does not remove that obligation on Project Co."

Do you see that?

A Yes.

Q Again, just so I am understanding things, is that whenever you say, "This is a revenue-funded project with a project company that is taking all of the design responsibility. While there might be comments coming back from NHS Lothian, that is not shifting the design responsibility," as you understand things?

A Correct. That's exactly how I understand it, yes.

Q Can we look to some of those documents involving Mott MacDonald? I would really just like to try and sketch out a timeline of your

involvement within the project, and if we could maybe begin by looking to bundle 13, volume 8, and to page 2340. So, bundle 13, volume 8, page 2340. Lord Brodie, just while the documents are being located, I am conscious that we are slightly after half past eleven, but given the stoppage, would your intention be simply to----

THE CHAIR: I think let us try and make up time.

MR MACGREGOR: Thank you.

THE CHAIR: Yes.

MR MACGREGOR: So bundle 13, volume 8, page 2340, document headed up:

"NHS Lothian

RHSC/DCN Edinburgh HV issues

19th June 2016

Health Facilities Scotland

Introduction

1.1 Health Facilities Scotland (HFS), were contacted by NHS Lothian (NHSL) via a telephone call on Tuesday 13th June 2016 to request a review of the High Voltage installation at the Royal Hospital for Sick Children (RHSC) in Edinburgh." Do you see that?

A Yes.

Q Were you working on the project at this point?

A I was working on the project at the time of this because these dates are wrong, unfortunately. HFS have put the wrong date on that document. It was actually 2017.

Q Okay, so whenever we see this date here as 2016, your understanding is that, actually, it is 2017?

A Yes. It was, yes.

Q So, if we look down to page 2344 and to paragraph 2.5, we see that there is a range of issues that HFS are asked to comment on, but at 2.5 at the bottom of the page, this note records, "What is Health Facilities Scotland's interpretation of the ventilation pressure requirements for four bed wards?" Do you see that?

A Yes, I do.

Q So, is that something you had asked HFS for advice about?

A I did, yes. Okay.

Q What they record is in the three bullet points on page 2344 onto 2345:

"• SHTM 03-01 Part A, Appendix 1, Table A, indicates the air change rates and pressure regime for clinical areas within healthcare premises. There is no four bed ward noted in Table A, however it would not be unreasonable to treat this area as one would a single bed ward with

respect to ventilation as the measures for infection control would be the same. Therefore the room should be neutral or slightly negative with respect to the corridor.

• SHTM 03-01 Part A clause 1.35 et al details the Management Action with Clause 1.37 highlighting the need to seek guidance from Clinical colleagues.

• [And then finally] SHTM 03-01 Part A clause 1.39 et al details the Design and validation process. Table 2 highlights the model to be followed and item 2 outlines some of the design questions to be asked and resolved."

Do you see that?

A Yes.

Q So effectively, the guidance being provided for four-bed wards is that it should be neutral or slightly negative pressure, and there is reference to clause 1.37, which we looked at previously, which said, "You really need to defer to clinical colleagues in relation to what they want to do with the space."

A Yes.

Q There is nothing recorded here from HFS that indicates you really need to consider whether you are dealing with a four-bed ward in critical care, is there?

A No.

Q Okay. Why were HFS not asked to provide advice on that specific issue?

A I think that what had happened in this case was that the clinical teams had already met and decided that they needed these rooms to be balanced or slightly negative to the corridor. It was presented as a schedule of 20 rooms, basically, that needed to be balanced or slightly negative, and the question was then posed to HFS, the clinical (inaudible), "What are your views?"

Q So, effectively, just so I am understanding, when you come into the project your understanding is the clinicians tell you, as the estates officer, "There are 20 rooms that we need to have as balanced or negative pressure; some of those are four-bed wards," and you then contact HFS for advice on that?

A Yeah.

Q So at that point, at the point you are contacting HFS, are you aware of whether any of these 20 rooms are in critical care?

A No.

Q Okay. If you had been aware of that, would you have escalated that to HFS?

A It's difficult to say. At the

time that (inaudible), this was a specific narrow requirement to have 20 rooms at that balanced pressure or slightly negative pressure, so it is unfortunate, but the dots weren't joined, so-- I would have-- had it been brought to my attention explicitly that there was an issue with those because they were in critical care then, yes, I would have escalated it to HFS, but no one, not Mott MacDonald, IHSL or anyone, raised specifically anything about critical care.

Q So you say that the dots were not joined, and that really seems to be key because is that not really what all the published guidance we have looked at has said, that you need all of the disciplines so that the dots can be joined? So, why were the dots not joined in this project?

A Again, in this specific item here, I can only say that it was a very narrow requirement and, when the clinical team had met, the clinical team had established the requirements and stated them to us-- or stated them to IHSL, basically, that we wanted these rooms to be balanced or slightly negative, and it wasn't a want, this was a compliance issue, and we sought advice from HFS on that regard. It just so happened that, unfortunately, four of the rooms were in critical care.

Q But the clinician has not told you that some of these rooms were in critical care?

A If it was mentioned specifically, then it missed.

Q Well, if we may just look through-- in fairness to you, it was a long time ago, some of the correspondence. It might help jog your memory, so if we look firstly to bundle 13, volume 7 at page 37.

A Okay.

Q And if we could start with the email towards the bottom of the page, the one from 20 January 2017----

A Yes.

Q And the time, 12.53. So, this is an email from you to Janette Richards. Who was Janette Richards and what was her role in the project?

A She was the project IPC head nurse basically, so she was the-- within the project, she would meet to discuss IPC issues with-- yeah----

Q So Janette Richards, in terms of the partnership model, is providing the infection prevention and control role and you are providing the estates role. Is that correct?

A Yes.

Q So we see the email from 20 January:

"Hi, Jeanette.

That's just it, it doesn't. There's some dubiety over a couple of things:

1. Can a 4 bed bay be described as a general ward.

2. If so what is the pressure relationship to the corridor as there is just a dash in the box in the table you attach.

I am looking for infection controls' take on a scenario such as if 4 patients with infection status unknown are in the room what way do you want the air to go – To the room from the corridor or to the corridor from the room?"

Do you see that?

A Yes

Q So is this, effectively, some of the discussions you are having before you contact HFS (inaudible)----

A Yes.

Q -- there is rooms, four-bedded rooms. There is no specific guidance for four-bedded rooms and you are trying to work out what you should be doing?

A Yeah.

Q And you are saying specifically to infection prevention and control, "To prevent infection, what pressure regime do you want?"

A Yes.

Q And if we look just slightly up, we see Janette Richards' response to you on 23 January 2017 at 9.25. So it is bundle 13, page 37 at the top:

"Dear Ronnie,

The 4 bedded rooms are considered to be the general ward. As you are aware each 4 bedded ward has an en-suite toilet- neg extract and an en-suite shower –neg extract. Should we get to the scenario that all sing cubicles are full and we have 4 co-horted patients in a 4 bedded bay then yes we would want to ensure all infectious organisms are maintained in the room which yes shows that neg pressure in the 4 bedded area is of benefit. Our contact at Mott MacDonald will probably be able to advise as will Ian Storrar at HFS if this communication is not clear enough."

Do you see that?

A Yes.

Q Okay. If we just pick through a few things, you are being told here firstly, the four-bedded rooms are to be considered as a general ward. Is that right?

A Yes, and again, that's an interpretation from the infection control nurse.

Q So you are not being told in this communication that it is going to

be a critical care area or an isolation unit or anything like that? Okay. You are also being told that each four-bedded bay has an en suite toilet. Is that of any significance in relation to the published guidance?

A It isn't respect of critical care because critical care do not have en suite toilets in any of the rooms.

Q Again, just so I am understanding things, if this had simply said four-bedded rooms will not have an en suite, would that have had relevance to you, given your knowledge of the guidance?

A It's difficult to pick up on whether that would have been the case at the time. Obviously, retrospectively looking at it, I would have definitely, but I can't say for certain at the time if that would have had relevance, but all that we can see from that is that the en suite toilet was the means by which the air would be extracted from the room to provide the pressure regime, and that would be classed as dirty extract. So, it wasn't in the patient bedroom, it was in the toilet or the en suite or the shower room.

Q But your understanding is that any space within critical care – a four-bedded ward, for example, in critical care – it would not have an en suite, so you could not extract ventilate that way?

A You couldn't. Yes.

Q Thank you. If I can ask you to look within bundle 13, volume 1. We go to page 21, please. This is an email of 9 February 2017 from Brian Rutherford of Wallace Whittle to a range of people including, you see, yourself. You are copied in just as the second last entry. So, it is bundle 13, volume 1 at page 21. See that? So, it is an email from Brian Rutherford to Stewart McKechnie and others. You are named in the recipients, just as the second-last entry before Dorothy Hanley, and the subject is "Multi Bed Room Ductwork Amendment Proposal." It says:

"All,

Further to our Ventilation workshop on Monday, please find enclosed a copy of our Multi Bed Rooms – Ventilation Amendment Proposal to Achieve Room Balance, Proposed Solution To Rooms Identified As Being Of Concern.

As agreed we have also enclosed a set of A3 general arrangement layout drawings to be used as key plans, over marked to show specific room locations."

Do you see that?

A Yes.

Q So why was this email being sent at this time?

A I think, from looking at the timing of that, that was when we began to discuss four-bed room ventilation being a concern, that it wasn't balanced at the door, and we'd asked Multiplex, or we'd asked Project Co to provide a solution to make them balanced at the door and this was the next step from that.

Q So at this this point in time, there is effectively a dispute between, on the one side, NHS Lothian, and on the other side, Project Co and their advisors as to what pressure regime there should be in various spaces. Is that right?

A Yes.

Q Okay. Then we will come on and look at later documentation about the rooms, what they are going to be used for, but at this stage, is it really just as simple as a dispute over whether four-bedded rooms, the 20 rooms identified, should have balanced or negative pressure or positive pressure?

A Yes. Yes.

Q Okay. If we still just stay within bundle 13, volume 1, if we look to page 22. You see there is a set of plans marked up pointing to A, B and C. Do you see that?

A I see that, yeah.

Q Then if we look on to the next set of plans, we will see them on page 23 marked up as D, E and F.

A Yeah.

Q And then on page 24 we will see them marked up as G, H, I, J, K and L.

A Yes.

Q Do you see that?

A Yeah.

Q So, specifically, the author of the email is highlighting where the rooms are that are in dispute between the parties. Is that right?

A Yeah.

Q And if we just look down onto page 25, we will see that there is a TÜV SÜD "Multi Bed Rooms – Ventilation Amendment Proposal to Achieve Room Balance." Do you see that?

A Yes.

Q Okay. So if we just take some examples that were circled as A to I, if we look at D, can you see the room number there is 1-B1-063?

A Yes.

Q You tell us in the statement that at the time those codes did not mean anything to you. Have you subsequently found out what the code B1 means?

A Yes.

Q What does the code B1 mean?

A That's the Critical Care area.

Q And we will see that code B1 cropping up for letter E, which is B1-031. Over the page onto F – so this is page 26 – letter F, B1-009. Do you see that?

A Yeah, I see that.

Q So, at this point in time, is it fair to say you get an email from Mr Rutherford on 9 February, there is a series of plans with giant red arrows pointing to the spaces in the building. Is that right?

A Yes, from the drawing there, yes.

Q And you have got a table that comes with it, with the codes B1, albeit at this point in time you do not understand what the code B1 means.

A Yes.

Q At this point in time – so we are into 2017 – had you seen multiple iterations of the Environmental Matrix by this point?

A I'd probably seen it, but I couldn't tell you how many iterations I had seen of it, and probably many versions have came out.

Q But you would have seen the Environmental Matrix?

A Yes.

Q Because you said part of your role, and it became an increasing role, was that you were involved in reviewable design data, which would include iterations of the Environmental Matrix.

A I will say, I didn't review the Environmental Matrix. That was left with Mott MacDonald. It was a document that I wasn't familiar with, and it was significant in size that I didn't review it.

Q Okay. If we just perhaps look-- We will come back to that document we are looking at, but if we just look to the Environmental Matrix. So, for example, if we look to bundle 13, volume 1 and page 67, do we see here in the Environmental Matrix there is a big box, left-hand box, with "Dept Code", department code? Do you see that?

A Yes, I do, yeah.

Q And then there is an index, and if we look down, we will see that B1 is "Critical Care / HDU / Neonatal Surgery". Do you see that?

A Yes, yeah.

Q If we could just look back to that email we were looking at a moment ago, page 21, at this point in time, 9 February 2017, Mr Rutherford is contacting Kamil Kolodziejczyk of

Mott Macdonald; Brian Currie of NHS Lothian; Colin Macrae, who is an engineer from Mott MacDonald that the Inquiry has heard evidence from before; yourself at NHS Lothian; and Dorothy Hanley at NHS Lothian; and included with that is the "TÜV SÜD Multi Bed Rooms Ventilation Amendment Proposal" that includes these codes, B1, but no one on that email chain is picking up on the fact that some of these rooms are in Critical Care. Is that right?

A I can't speak for others, but I certainly didn't.

Q Is this one of those issues that you would have expected Mott MacDonald, as your lead technical advisors, to be picking up on?

A I would say so, yes.

Q Still within bundle 13, volume 1, if we could look to page 34, please. See, this is a note of a meeting that takes place on 24 February 2017. Do you see that?

A Yes, I do, yeah.

Q And it is called "Bedroom Ventilation Update Meeting". There is a range of attendees. So the second attendee is Janice MacKenzie, who is the Infection Prevention and-- I think, the clinical director for the project. Is that right?

A Yes.

Q We see that number three is Dorothy Hanley, who is the commissioner, involved in commissioning. Four is Brian Currie. We then see number seven is Kamil Kolodziejczyk from Mott MacDonald, and then you also attend. You are number eight. Is that right?

A That's correct, yeah.

Q Can you remember, what was this meeting about? What was being discussed on 24 February?

A I think this may have been the second meeting subsequent to the initial raising of the issue around four-bed ventilation, and I think at that meeting the clinicians tabled the rooms that they required to be balanced. I think there was a total of 20 multi bed rooms in the facility and some of these were deemed to be essential for balanced or negative, and others were deemed to be desirable but not essential, and I think this was a meeting that set those 14-- I think it became ultimately 14 rooms as essential.

THE CHAIR: Sorry, again, 14 rooms?

A Fourteen of the 20, I think. I'm trying to think of the timing of it. I don't have the actual record of the meeting there, but I think that

meeting there was the one that decided it would be.

MR MACGREGOR: And if we just think back to the partnership model right at the start, we have got here clinicians, Estates, project manager and engineers. Is that right?

A That's correct, yeah.

Q But one discipline that we don't see here is Infection Prevention and Control?

A I can't speak for Janice, but I think Infection Prevention and Control had been consulted in the process leading up to the decision to name the rooms-- or to not name the rooms, but to identify the rooms that required it. They may not have been at that meeting, but they were in the process.

Q Then if we look on to page 35, do you see that this says, "Marked up at meeting 24/02/17"? "General Ward – Ventilation Amendment Proposal to Achieve Room Balance." Do you see that?

A Yes.

Q And there are various rooms, there are handwritten comments saying, "Essential, essential, essential." Do you see that?

A Yes, I see that.

Q So we see D, which is one of the rooms with the code B1, it is essential to have balanced or negative pressure. Is that right?

A Yes.

Q E, again, which has got the B1 code, it is essential to have balanced or negative pressure.

A Yeah.

Q F, which is again the B1 code, it is essential that it has balanced or negative pressure. And then if we look on to page 36 to M, you see the entry there for M, again, B1-065, it is essential that it is balanced or negative pressure. How was a judgment being made at this meeting in terms of which rooms it was essential to have balanced or negative pressure for?

A It was a clinical requirement to cohort patients, and the need to cohort patients in these rooms meant that they needed a specific, special regime to prevent the spread of infection outwith the room, and these were the rooms that were all deemed to be locations where they would cohort patients.

Q Okay. So was there discussion at this meeting that there had to be cohorting of patients? Is that right?

A I don't recall specifically that. I think this was the meeting where the decision was going to be

made about cohorting of patients. That was a clinical decision that had happened prior to this, and this was the meeting where the rooms were identified that needed to cohort patients.

Q And was there any discussion as to what area of the hospital they would have to be cohorted in?

A No, there was no discussion at that meeting that I recall.

Q So there is a meeting to decide which rooms it is essential to have balanced or negative pressure in, but there is no consideration given whatsoever to whether those spaces are in Critical Care?

A I can only speak for myself, but my view on this was really a very narrow focus. It was the pressure regime for these 14 rooms was required to be balanced or slightly negative, and at that point it didn't register or connect that some of these rooms were in Critical Care.

Q So, again, if I can just understand this, your understanding is that the decision has been made that it has to be balanced or negative pressure. Is that right?

A The clinical requirement has been assessed that these needed to be balanced or slightly negative,

yeah.

Q Just so I am understanding, are you saying effectively the clinicians had said, "We need balanced or negative pressure," and you interpreted that your job was simply to deliver balanced or negative pressure?

A Yes.

Q If we think back to that partnership model about-- You do not just have the clinicians making clinical decisions, you do not just have Infection Prevention and Control making infection prevention and control decisions, you do not just have the engineers working in silo. Do you think that partnership model had broken down if the clinicians had simply said what had to happen with the space?

A No, I think there were several meetings around with partners, certainly with Infection Control as well, and they came up with a clinical need for a space, and that was communicated to all those people that you mentioned in the partnership, the designers, ourselves, but the designers were a separate entity, so we take that to the designers in these forums that we're looking at here, and they were required to-- or requested to deliver it and there was a dispute over

who was responsible for delivering it or paying for the delivery of it. But, as I say, it was a narrow focus for me specifically, and I'm sorry I keep mentioning that, but specifically I was looking at the pressure-- or the schedule being the document for the pressures only.

Q But your recollection is that at this meeting there is no discussion whatsoever taking place that some of these rooms are in Critical Care?

A No.

Q If we can move on and look at the general risk assessment that was completed in July 2017. So if we could begin at bundle 13, volume 8, page 449, please. Bundle 13, volume 8, page 449, and if we could start with the email towards the bottom of the page. So this is the email of 6 July 2017 at 17:16, so this is from Janice MacKenzie to Jackie Sansbury and Brian Curry. You are copied into this email, as is Kelly Bain of Mott MacDonald, Kamil Kolodziejczyk from Mott MacDonald and Graeme Greer, who is also of Mott MacDonald, and the subject is "Risk Assessment re 4 bedded room Ventilation." It says:

"Dear Both

Please find the clinical risk assessment in relation to the above as requested, which Dorothy, Fiona and I have pulled together.

The issue only really affects Children's Services, but we have discussed with Hester."

Do you understand what Hester means?

A Hester Niven. She was the clinical lead for DCN, Department of Clinical Neurosciences.

Q Okay, so discussion with Clinical Neurosciences as well.

A Yes.

Q The email continues:

"We consulted with Children's CMT representatives this morning (Fiona Mitchell, Eddie Doyle, Lynda Cowie, Peter Campbell & Sharon Russell) and the risk assessment fully reflects their views."

So, effectively, a wide range of clinicians have had input into this risk assessment. Is that right?

A Yes.

Q It continues:

"They are clear, as we also are, that we cannot have a new facility that does not give us the option of cohorting patients with air-borne infections."

So is that really the clinical need that you talked about, this idea that you simply-- the clinicians are saying, "We must be able to cohort patients in

these four-bedded bays"?

A Yes.

Q It continues:

"We have suggested an overall compromise position of only some of the 4 bedded rooms in the facility having the ventilation changed (in summary – all in PARU & Medical Inpatients and one of the 4 bedded areas within Critical Care)."

Do you see that?

A Yes, I do.

Q Is this not Janice MacKenzie specifically flagging up that at least one of these rooms is going to be in Critical Care?

A It appears that, yes.

Q So, again, just think back to the project. We are in July 2017. We have got Infection Prevention and Control, project manager Mr Currie, yourself as the Estates officer, three individuals from Mott MacDonald, the lead technical advisor, Ms MacKenzie saying at least one of these rooms is going to be in Critical Care, but still at this point in the project, nobody involved in the partnership approach is picking up on the significance of that in terms of the ventilation pressure regime.

A That's correct.

Q How does that happen?

A I can't explain that. As I

say, unfortunately, the dots weren't joined, and I can't explain why. From my point of view, and I'll repeat it again, is that a very narrow focus to clinical lead was the requirements to have balanced or negative pressure to prevent the spread of infection. That was the means by which I carried my reviews of the schedule of rooms.

Q It does seem quite troubling that the guidance talks about the need for the partnership approach, and it does not pin down one limb of the partnership that takes overall responsibility. It says Infection Prevention and Control, they need to know about the guidance and the engineering requirements. It says the exact same for the contractors, the engineers, the clinicians. How does it come to be that this partnership model broke down?

A Well, I mean, you did mention one of the parties in that. Obviously, the contractors have a responsibility in this as well. They are the designers. They should have been highlighting to us, in my view, that, "You do realise that some of these rooms are in Critical Care and there are separate requirements for Critical Care spaces in the ventilation guidance?" None of that occurred. Nobody, in my time in the project,

anyway, took out Critical Care as a separate entity and said, “Let’s have a look at Critical Care’s ventilation requirements,” sit down and decide, “Do they meet the need-- Do they meet guidance?’” Nobody done that as they done for haematology-oncology or for the single bed ventilation issue, six to four.

These were treated as separate blocks of review, discussion and agreement, or tacit agreement, really, because we didn’t ID anything obviously. It was the designers to design it. That never happened for Critical Care, so----

Q If we just perhaps stand back from that, in terms of this issue, for this project, are we really talking about isolated errors where in this specific project this was missed, or in your view, really, is there a problem with the partnership model that the model itself simply isn’t working?

A If you’re talking the partnership model and its completeness, including the contractor and the special purpose vehicle, yes, that clearly didn’t work in this case here.

Q In terms of Ms MacKenzie’s email, we do not see the contractors being copied in. Do you know if they were provided with a copy of the risk assessment we are going to look at?

A I don’t know for certain if they were or not. I couldn’t say.

Q So was your understanding that they were labouring under the same misapprehension you were, that simply there must be balanced or negative pressure and there is no discussion of Critical Care rooms?

A I can’t speak for them in that regard.

Q If we just perhaps-- No, no, please do go on.

A Because the starting point was different for both parties as well.

Q Thank you. If we just return to the email, so we are still in bundle 13, volume 8, page 449, and I just read to the bit “Critical Care” and it continues:

“However the Children’s CMT did say that to achieve this, there would be a delay to programme then they questioned whether we should not be changing all of the 4 bedded rooms to allow for future proofing and flexibility.”

Do you see that?

A Yes.

Q It’s effectively in this email saying one room, one four-

bedded bay in Critical Care must have balanced or negative pressure but the clinicians would really like it to be all of them. Is that right?

A Yes.

Q And then it continues, next paragraph, "Infection Control have also confirmed they are happy with our risk assessment." Do you see that?

A Yes.

Q So, again, Infection Prevention and Control look at the risk assessment. They are not flagging any issues. Is that right?

A Correct.

Q At this point in the chain, in July 2017, this is whenever the risk assessment is being done, this is after the meeting has taken place to agree what the essential rooms are. Is that right?

A The timescale would seem to fit with what you're describing, yeah. It was, perhaps, done as a formal way of acknowledging the rooms that were to be done.

Q It is just that, again, to an outsider looking in, it might seem odd that you agree what rooms you have to have balanced negative pressure for, and then do the risk assessment? Why was it not the other way around?

A I couldn't speak for my

clinical colleagues. They-- They had done it that way.

Q But in terms of your involvement as an Estates officer, would you not expect the risk assessment to be done before you agreed what rooms it was essential to have a particular ventilation regime for?

A I would have liked to have had all the documentation in place, but I cannot specifically recall at the time why we came to the view that we had the information to hand to proceed with that, on that basis.

Q Okay. If we look onto the next page, so bundle 13, volume 8, we are now into page 451, which is the risk assessment that is attached to the email we have just looked at. Headed up, "Record of General Risk Assessment," and you will see in the top right-hand corner it is completed on 5 July 2017. Then it says, "Subject of Assessment: Consider Task or Environment." It states:

"Bedroom Ventilation design in 4 bedded rooms does not meet the recommendations of SHTM 03-01, as the current design has the 4 bedded rooms as being positive pressure."

Do you see that?

A Yes.

Q Again, the Inquiry will

hear from Ms MacKenzie in due course, but would she be able to make an assessment of whether there is compliance with SHTM 03-01? Because, as I understand it, her position is she was not an engineer, and she could not really make those judgments.

A By that time we would have had the view from HFS prior to this, so the view was that the way that they had designed it using the general board categorisation from Table A1 wasn't in compliance with SHTM 03-01.

Q So, this is guidance from HFS, when HFS were not told that any of the spaces were in Critical Care. Is that right?

A Yes, you're right, yeah.

Q Thank you. So, if we just return to that box, it says:

"To allow cohorting of patients with the same air-borne infections these rooms require to be balanced or negative pressure."

Do you see that?

A Yes.

Q So, again, clear risk assessment with the clinician saying from a clinical perspective, "We need balanced or negative pressure." Is that right?

A Yes.

Q We skip the next paragraph, and then the final paragraph in that box states:

"The risk assessments have been discussed with the Children's CMT and Infection Control & Prevention who have confirmed that not having the ability to cohort patients is not acceptable from a patient safety perspective. In addition, the Children's CMT highlighted that if the programme is going to be delayed in order to achieve compliance with the SHTM 03-01 in the 4 bedded rooms, then should we not be considering achieving this in all 4 bedded rooms…"

Which is what we have already seen in the email that accompanied it. So, both Infection Prevention and Control and the clinicians are saying, "This is exactly what we need, balanced or negative pressure."

A Yeah.

Q We see "Step 1" in the next box, the overall risks, and one of the overall risks is:

"The inability to cohort patients with airborne infections in a clinically safe environment."

Do you see that?

A Yes.

Q That is effectively the clinical requirement that you would be told about as an Estates----

A Yes, yeah.

Q Then after the bullet points, it says:

"See separate risk assessments for inpatient ward/s as the risk rating for each ward/s is different dependent upon the patient group and clinical risk."

Do you see that?

A Yes, yeah.

Q So, that would be telling anyone that read that there are different categories of patient, and different risk assessments for each of them. Is that fair?

A Yes.

Q Then Step 2, it says specifically, "See risk assessments for specific wards." Do you see that?

A Yes, yeah.

Q Then at the bottom, there is a summary of risks by wards. Do you see that?

A Yes, I do, yeah.

Q The third entry there is, "RHCYP – Critical Care," with the proposed action, "One 4-bedded room (B1-063) ventilation changed." Do you see that?

A Yes.

Q So, highlighting that certainly the individuals that created the risk assessment were fully aware that at least one of their four-bedded rooms was going to be in Critical Care.

A I see that, yes.

Q If we look on to p.455, please. This is still within the Record of General Risk Assessment. You see that the department there, so the third box down, the department, "RHSC & DCN Reprovision Project – RHCYP Critical Care (B1)." Do you see that?

A Yes.

Q So, again, anyone that is reading this document would see that there is a specific risk assessment being undertaken for Critical Care, with Critical Care being given the short code "B1." Do you see that?

A Yes.

Q It continues:

"Subject of Assessment: Consider Task or Environment. Ability to cohort patients within Critical Care Unit [and then] Step 1: What are the hazards? Clinical risk is still relatively high if no cohort area available, and therefore operationally to retain the ability to cohort within B1-063 (low acuity HDU) would be clinically and operationally highly advantageous."

Do you see that?

A Yes, I do.

Q So, that is the justification that the hazard is being set out:

"Step 3: What are you

already doing? (Existing precautions) [And then there is] Critical Care (B1) – 24 beds."

Do you see that?

A Yes, yeah. Is it possible I take a (inaudible)?

THE CHAIR: Certainly.

MR MACGREGOR: Perhaps, Lord Brodie, just to say to any core participants, I am going to go on and look at the second risk assessment. It may sometimes be helpful to have the two side-by-side. There are some copies at the front if anybody wants, so they can have one up on their screen and one paper copy. There are paper copies for anyone who would like that.

THE CHAIR: All right. (After a pause) Mr MacGregor?

MR MACGREGOR: Thank you. I was just going to move on and look at a second, refreshed Record of General Risk Assessment, so if we could have bundle 6, p.14, please.

THE CHAIR: Again, David, I am okay.

MR MACGREGOR: So, you see in the top right-hand corner, "Date of Original Assessment: 5 June 2017. Reviewed: 29 January 2018." Do you see that?

A Yes, yes.

Q Do you have any recollection of seeing this refreshed Record of General Risk Assessment when you were working on the project?

A I don't have specific recollection of that. I do know that these were produced, but I don't have a specific recollection of reviewing that document.

Q Do you think it is likely that you would be provided with a copy, or was this simply something that would be refreshed by the clinicians?

A I would probably be provided with a copy of it at some point.

Q If we just look through this, there are some similarities, some changes that take place. So, in the scope of, "Subject of Assessment: Consider Task or Environment," it says:

"Bedroom Ventilation design in 4 bedded rooms does not meet the recommendations of SHTM 03-01, as the current design has the 4 bedded rooms as being positive pressure."

Do you see that?

A Yes.

Q So, still, by the time we are in January 2018, none of those dots have been joined, I think you talked about. Is that correct?

A Yes.

Q Okay. This time it says in bold:

"To allow cohorting of patients with the same airborne infections, these rooms require to be balanced or negative pressure."

Do you see that?

A Yes.

Q If we look to the penultimate paragraph, about four lines up, or three lines up, it says:

"Risk assessments highlight that it is essential [do you see that in bold, essential] to change the ventilation in 7 of the 4 bedded rooms within RHCYP. It would be desirable [in bold] to change the ventilation in 6 of the 4 bedded rooms within RHCYP."

Do you see that?

A Yes, yeah.

Q Then the next paragraph:

"The risk assessments have been discussed with the Children's CMT and Infection Control & Prevention who have confirmed that not having the ability to cohort patients is not acceptable from a patient safety perspective."

Do you see that?

A Yes.

Q So, again, just so I am understanding things, the clinicians are still saying they need to cohort patients, and that is critical in terms of patient safety.

A Yes.

Q Again, there is references to the various risk assessments that need to be completed but if we look to the box at the very bottom, so bundle 6, page 14, very bottom of the page, you see the final entry there is, "RHCYP Critical Care," and the proposed action is:

"One 4 bedded room low acuity HDU (B1- [and then over the page] 063 & 3 bedded room surgical neonates (B1-065)."

Then in, "Summary of Risk by Ward/s (Desirable to have ventilation changed)," we see the, "RHCYP Critical Care – 4 bedded rooms intensive care (1-B1-009)." Do you see that?

A Yes, yeah.

Q Then in the next box:

"Summary of Risk by Ward/s [the second box] RHCYP Critical Care – No change to high acuity, 4 bedded room (B1-031)."

Do you see that?

A I see that, yes.

Q That is, again, references to Critical Care. We then look on to p.18, please. The department has given us:

"RHSC and DCN Reprovision Project – RHCYP Critical

Care (B1). Subject of Assessment: Consider the Task or Environment. Ability to cohort patients within the Critical Care Unit.

Step 1: What are the hazards? Clinical risk is still relatively high if no cohort area available and therefore operationally to retain the ability to cohort within B1-063 (low acuity HDU) and B1-065 (surgical neonates) is essential and it would be clinically and operationally desirable for B1-009 (intensive care)."

Do you see that?

A Yes.

Q Then below that at Step 3 we see:

"Critical care (B1) – 24 beds: 1 x 4 bedded rooms (low acuity); 2x 4 bedded bays (intensive care & high acuity)."

Do you see that?

A Yes, yeah.

Q So, at this point in time, by the time we have moved to January 2018, the clinicians are now saying that there are four rooms in Critical Care that must have balanced or negative pressure. Is that right?

A I think, I mean that is-- Yeah, actually. Yeah, yeah, yeah.

Q Again, this is not something that you spot. Is it something that you remember Mott MacDonald raising?

A No, no.

Q If I could ask you to-- If we move on in the timeline, so to 1 February 2018, if I could ask you to have in front of you, please, bundle 13, volume 5, page 1243. So, this is an email chain that you are not copied into, but it begins with Janice MacKenzie emailing Dorothy Hanley, copying in Graeme Greer of Mott MacDonald and Brian Currie, the project manager. Bundle 13, volume 5, page 1243. It is an email from 1 February. You see that the second email is an email from Dorothy Hanley to Janice MacKenzie, copying in Graeme Greer and Brian Currie, and she says:

"My comments and addition of rationale column for Janice's additions/amendments."

Do you see that?

A Yes.

Q Now, you are not copied into this email chain, but what it does include, if you look on to p.1244, is a Mott MacDonald logo document, if you see that in the left-hand corner.

A Yeah.

Q If we zoom in at the top, it is called, "RHSC + DCN – Multi-Bed Room: – 4 beds ventilation extracts from the IHSL Environmental Matrix."

Then below that, it says:

"This Tracker has been collated using information provided in IHSL's Environmental Matrix. The tracker is intended as a collated reference document for the key ventilation parameters for the Multi-Bed Room: – 4 beds."

Do you see that?

A Yes.

Q Now, if we think back to what you told the Inquiry at the start of your evidence about Mott MacDonald are involved in the project, they are the lead technical advisor, but all of the design risk sits with project company.

A Yeah.

Q There is just a sort of light-touch, sampling review that is being undertaken by Mott MacDonald, and if they are lucky enough to spot any discrepancies, that would be fed back. That is some of the emails we looked at, at the start. We now seem to be in a scenario in early 2018 where Mott MacDonald are making up tracker documents relating to pressure and air change regimes in four-bedded rooms. Is that fair?

A Yes, yeah.

Q What has happened between that original light-touch sampling approach, and the point in 2018 whereby we have got this Mott MacDonald-headed document that is setting out a whole host of technical environmental parameters? Has their role changed?

A No, no, there was no role change. I can only assume-- and this document's not familiar to me, I don't know if I was in the email chain, but I can only assume that it was in order to keep track of the schedule, the comparative schedule or comparator schedule that Project Co were producing of the 20 rooms; the one you had up earlier that had overmarked essential on it. That would have been a tracker to keep track of that, room-by-room, but I'm not familiar with this document.

Q Do you recall seeing this tracker, or a tracker of this type, when you were working on the project?

A I couldn't say for certain having seen it. It's possible that I may have seen it, I can't flatly deny I've seen it, but I wasn't included in the email chain and it's maybe something that Mott MacDonald were managing on our behalf, other than the engineering review on our behalf, but it's certainly-- it's a Motts document.

Q That's very fair and, as you say, you're not copied into the document there. If we just look at the document, if we look down, the left-

hand column says, “Department,” and if we look at the-- if we could zoom in on the second box down, which is “B1 PICU and HDU’s - 24 beds.” Do you see that?

A Yes, I do. Yeah.

Q So, again, we see the code B1, which I think you fairly said you did not understand, when you were working on the project, what code B1 meant. Is that fair?

A Yeah.

Q But we see next to B1 Mott MacDonald have helpfully added, “PICU and HDU’s - 24 beds.” So, if you had seen this document, would you have picked up that PICU and HDUs was a shorthand for Critical Care?

A I would have, yes. I would have, yeah.

Q So, if we just look at some of the entries as we work across, we have got the room name. Still within the B1, we see, “Open Plan Bay (4 beds)”; the room functions, multi-bed wards; we look over to the room number, we will see B1-009; we see that the ventilation is “Natural and Central Supply Air”; supply air change is given as four air changes an hour, and the relative pressure is positive. Do you see that?

A Yes.

Q And then we see that there is a box that has been added, “Compromise from 24 February 2017.” Is that referring back to that table we looked at before with the essential rooms written on in manuscript?

A I assume so. I can’t say for definite, but I assume it would be, yeah.

Q Okay. Just, again, so I’m understanding things, what we see is Mott Macdonald producing a table which is saying for these various multi-bed rooms in the Critical Care Department that what they are to have is four air changes per hour and positive pressure?

A Yes.

Q If that had been raised with you, if you had realised this, that what was being proposed was Critical Care rooms with four air changes an hour and positive pressure, what would your reaction be given your knowledge of SHTM 03-01?

A I would have probably said that this is-- again, I would require joining the dots, but this is specialised ventilation. We should be looking at this as a separate line, if you like, from the others but----

Q And, again, just so I am understanding things, you have said, “I have a general understanding of the

guidance but there is some things that are too complicated for me, and I refer them on to HFS or I refer them on to a technical advisor." Is that fair?

A Yes.

Q Is this one of these types of scenarios where you would be wanting that more specialist advice?

A It is, yeah.

Q Because on one point, there is a possible collision course here, that you have the clinicians on the one hand saying, "We absolutely must have balanced or negative pressure for these rooms including in Critical Care," and on one interpretation of Table A1, it is saying the exact opposite, that you need positive pressure for a Critical Care space. Is that right?

A Yes.

Q And that tension never gets resolved at this point in the project?

A It doesn't, no.

Q And this is not something that Mott MacDonald is raising as a potential issue?

A I think, as I said, no one raised Critical Care specifically in a ventilation context to separate it out from anything else that was being discussed under the Environmental Matrix or any other.

Q The timing of this document-- this tracker document in early 2018 might be quite significant because you tell us within your statement that at this point, really, there is huge tensions within the project.

A Yes.

Q And that leads up to what you describe as a "principals meeting" at the Sheraton Hotel in Edinburgh on 20 and 21 February.

A That's correct, yes.

Q So, just a few weeks after this tracker is being made up, there is this principals meeting taking place. What is happening at the principals meeting? What is being discussed there?

A What we had-- In the lead up to the principals meeting, you're right, this was one of the issues that we were raising, this was the issue that almost went to dispute resolution, and between then and the principals meeting in February, we were tasked with putting together a list of issues to be discussed at this principals meeting, and Graeme and his team collated that with our agreement. The issues were to be tabled, and that was tabled at the principals meeting for discussion amongst all parties to see if we could

resolve it without the need for court action.

Q And, again, just so I understand, the standoff that effectively takes place for the 20 rooms, which include some rooms-- some four-bedded rooms within Critical Care. You have NHSL and Mott MacDonald saying it must be balanced or negative pressure, and you have IHSL and Multiplex saying it is positive pressure. Is that right?

A Yes, correct.

Q Did you attend the principal's meeting at the Sheraton Hotel?

A I did, yes.

Q Okay, and do you recall any discussion taking place at that meeting about whether or not any of these rooms in dispute were in Critical Care?

A No.

Q Okay.

A It was more about the principal.

Q So, again, just so that the Inquiry understands things properly, there is a crisis point that is reached whereby the parties have fallen out, and there is the diametrically opposing views of what you need to do in these 20 rooms, and while the essential pressure requirements for the rooms

are being discussed, nobody is discussing whether they're in Critical Care?

A No.

Q If I could ask you to have a look, please, at bundle 10, page 111. So, bundle 10, page 111.

THE CHAIR: Thank you.

MR MACGREGOR: You see there three lines down-- So, this is effectively a timeline that was prepared at a later point in the project but one of the entries is:

"Four Bed Vent Meet – 27th Feb, 2018 – Project Team Attendees – B. Currie, J. Sansbury, J. MacKenzie, D. Hanley, E. Dhouieb, R. Henderson." That is taking place just a few days after the principals meeting at the Sheraton. Do you remember what was discussed at that meeting?

A I can't recall that meeting at all, unfortunately. I tried to find anything in my records that could have given an indication as to what was discussed, but I couldn't find anything. So I don't specifically recall that meeting. It may have been a meeting to discuss four-bed room----

Q Okay, and at the principals meeting at the Sheraton, had there been a breakthrough-- had there been an agreement on a way forward for the rooms that were in

dispute?

A Yes. Up until that point, Project Co had flatly refused to do it without being paid for it, basically. They said it was a change on our part, and I think at that-- at the principal's meeting, they agreed to do the rooms that were deemed to be essential. So it may well have been a follow-up meeting to discuss that.

Q So, again, what happens at the principal's meeting is NHS Lothian says, "We need balanced or negative pressure," and eventually IHSL and Multiplex, they agree that they will not provide positive pressure, they will provide balanced or negative pressure?

A Yes.

Q Right. Okay. So, that is what happens in early 2018 and, as we will see when we come on to a later stage in the project, there comes a point where NHS Lothian decide that that is not what they want, they want positive pressure for some of these rooms. Is that right?

A After the-- Yes, July 19.

Q So, in the period after that agreement is reached and outlined in February, is there a series of meetings that take place thereafter to try to agree and implement the fine details of the strategy?

A Yes, there were meetings. I can't recall how many or how regular they were but TÜV SÜD were tasked by IHSL to design an installation that would meet the requirements of balanced pressure.

Q Okay. We will just pick out one example. If we look to volume 13, bundle 2, page 1246. This is a record of a meeting that takes place on 12 April 2018. So, it is volume 13, bundle 2, page 1246. You see there is a meeting on 12 April. The topic is "M+E workshop NHSL/TUV SUD," and we see----

THE CHAIR: That is an example of (inaudible).

MR MACGREGOR: So, individual three is Kamil Kolodziejczyk, there is a Douglas Anderson, who again is a technical advisor for Mott MacDonald, Colin Macrae, a technical advisor from Mott MacDonald, and you are also attending at the meeting. So, in the NHSL side, it is just yourself and three individuals from Mott MacDonald. Is that right?

A Yes.

Q Can you remember what was being discussed at this meeting on 12 April?

A I don't specifically recall the meeting itself, but I understand there'll be documents of what was

discussed at the meeting, but I think these were-- Douglas Anderson, an electrical technical advisor, so some electrical things were discussed, I think, at that meeting. Ventilation was discussed to the point where we were discussing the four-bed-- I think there was a general discussion about the Environmental Matrix as well, but I couldn't 100 per cent say what the meeting-- exactly was discussed and what came out of it other than to refer to the minutes and actions.

Q It is obviously-- It is not a memory test for you. It is a number of years ago----

A (Inaudible). I just couldn't remember that meeting when it first came out. I thought, "I can't remember that."

Q If we look then to, I think, what is a summary of the key points discussed. If we look to the volume 13, bundle 2, to page 1242. So this is an email from a Mr Ken Hall of Multiplex, a range of people, including yourself, and the subject is, "12.04.18A 4 Bed Workshop Summary." Do you see that?

A Yes.

Q Okay. It says:

"Confirmation of Key Points discussed.

1.0 SM noted concerns and

agreement from the previous workshop No1 that the objective of workshop No2 was to obtain agreement in principle on the draft drawings being tabled to allow progress to continue on 4 bed design. This was due to NHSL held up at another meeting and no delegated authority at the workshop."

And then the action says, "Concerns resolved as Ronnie Henderson joined the workshop at 1.30." Do you see that?

A Yes, I do.

Q So, again, just to understand your role, were you really in a decision-making role? Did you have authority to sign matters off on behalf of NHS Lothian?

A I didn't. We would go to these meetings and discuss in principle what was to be designed, and either raised concerns or not, as the case may be, and take back a recommendation to decision-makers, which would be Brian Currie and Janice MacKenzie, but I had no authority to decide anything at these meetings.

Q So, again, just understanding the-- you were at the meeting having discussions but if there is to be any final sign-off, that is Brian Currie, Janice MacKenzie that are

taking that level of decision-making?

A Yeah. Absolutely, yeah.

Q If we just look, volume 13, bundle 2, page 1242, and then there's a bold heading, "A 4 BED Agenda Item." Do you see that?

A Yes.

Q And it says:

"Rooms in question tabled across on the previous Rev 05 schedule. Rooms cross referenced drawings against the schedule. See attached schedule and drawings over viewed. Room "M" type. NHSL noted environmental matrix metrics, notes, supply and extract. Drawing table and site inspection has no changes to the extract."

Do you see that?

A Yes.

Q And if I just ask you to bear in mind that letter "M" because we will come on and look at that in a moment, and then item four:

"Area I + J. NHSL requested actual air change rates be confirmed given the increase in one extract system rather than perhaps introducing it across the three systems in the locale."

Do you see that?

A Yes, I do. Yes.

Q So specific discussions taking place at this meeting in relation to what the actual air change rate should be.

A They are, yes, and that was to be confirmed with the schedule of the four-bedded rooms.

Q And, again, if we just think back to the model that was meant to be implemented whereby all of the design risk sits with Project Co, why do we see now NHSL having discussions about air change rates rather than simply saying to the design team, "Comply with the published guidance"?

A Well, I think we were saying that throughout the entire project, but we got to a level of detail with this specific item that in order to achieve balanced and-- or a slightly negative pressure at the doors, these things came into the discussion, and the schedule that was tabled had all the rooms at four-- or should have had all the rooms at four air changes, and this was a way of clarifying that all the rooms were going to be-- Because, again, my own thought was that all these rooms were in general wards, not in Critical Care. So the general ward single bedrooms had four air changes mechanical and two natural. The assumption would be that to comply or to meet the guidance that HFS had also provided, that would be

the same for these four-bedded rooms.

Q So, again, just so I can understand things, at this meeting-- and this again, you are there, there is three technical advisors from Mott MacDonald, and there is also people here from the Project Co side. Is anyone raising the fact that these rooms are in Critical Care?

A No one's raising the fact that they are in Critical Care (inaudible) anything, but Critical Care may have been mentioned in the meeting. I can't definitely say, but no one is saying specifically at that meeting Critical Care should be separated out from this discussion because it has different requirements.

Q So, nobody is saying specific pressure regimes for Critical Care and specific air change rates for Critical Care? That is just is not happening at this meeting?

A No.

Q If we could return to the volume 13, bundle 2, page 1242, and it is item 6 towards the bottom:

"NSHL confirmed agreement in principle to the strategy tabled, and to proceed to the next stage of site survey based on drawings tabled. Thereafter RDD pack to be submitted for speedy approval."

Do you see that?

A Yes, I do. Yeah.

Q By this point, is there really an agreement that is reached at this point between NHS Lothian and Project Co as to exactly what is going to happen for these 20-bed rooms?

A In principle, based on the fact that they were all assumed to be general bedrooms, then, yes, that agreement is in place-- or in principle, to say that all these rooms need to have balanced----

Q Okay, and if we look at item 7 and then just the final line on that page, it says:

"Supply: No impact is being maintained at 4ACH as per the Environmental Matrix."

Do you see that?

A Yeah, I see that. Yes.

Q So, again, at this meeting, is there really firm agreement that what is going to be in place for these rooms is four air changes per hour?

A Yes.

Q And there is no objection being taken on the NHS Lothian side. Is that correct?

A Yes.

Q And Mott Macdonald are not liaising with you saying, "You need to stop this because you need 10 air changes an hour, these rooms are in

Critical Care"?

A That's correct.

Q And that is not coming from the Project Co side either? IHSL, Multiplex, TÜV SÜD, nobody there is saying, "We should be having 10 air changes rather than 4"?

A That's correct, yeah.

Q And equally, there is no discussion about derogating down if these rooms are in Critical Care. Nobody is thinking about a formal derogation to go from 10 down to 4, are they?

A No, that's not ever mentioned.

Q I said I would come back to the potential significance of the letter "M." If I could ask you to look at volume 13, bundle 2, please, at page 1265. So this is another iteration of a document we looked at before, which is the TÜV SÜD General Ward Ventilation Amendment proposal to achieve room balance. Do you see that?

A Yes.

Q So it is volume 13, bundle 2, at page 1265.

THE CHAIR: (Inaudible)----

MR MACGREGOR: Lord Brodie, a couple of references. Are you happy to proceed with----

THE CHAIR: Yes, I think I am happy in the moment to work off the screen.

MR MACGEGOR: Thank you.

THE CHAIR: It is okay. Okay, (inaudible).

MR MACGREGOR: So, this is just another iteration of the general ward information, the various iterations being in the bottom left-hand corner. If we could look on to page 1267, please. Do you see room M there being mentioned? And that, again, has got the code B1-065, so B1 being the shorthand for Critical Care. Do you see that?

A I see that, yes.

Q And then if we look down to page 1270, this is just a further iteration of the same document we're looking at. It is signed off on 31 May 2018 by Brian Currie. Do you see the handwritten notes in the bottom left-hand corner in manuscript?

A Yeah.

Q Entry 2, it says, "Rooms"-- I think that is B1-063 and a couple of others including "B1-009 do not have en-suites." Do you see that?

A I see that, yes.

Q Okay. So, again, if you now know that the room code "B1" means Critical Care, and we are saying that these rooms don't have en suites, if you had seen this document

at the time, would that have been helping to join the dots in terms of these rooms being in Critical Care, would it still not have helped?

A It may well have done, but I can't-- I honestly-- I look back on that and think to myself why each document, as you see it there, has either an explicit reference or a tacit reference to it, and I can't say if that would have definitively meant that they'd joined the dots, but it would have helped to have had shoved in front and said, "You realise this is in critical care and it has a separate requirement in the guidance," and that never----

Q So, in terms of just, so I am understanding things, if we are looking at this type of document that has got a B1 or a reference to an en suite, is your evidence that it may or may not have made a difference?

A It may or may not have. It would depend on, as I've said – you know, I keep using that saying, I'm sorry – joining the dots. It would have depended on joining the dots at the time.

Q But should we really understand that, if we are talking about a real missed opportunity, that the real missed opportunity is round about the generalised risk assessment that

specifically says these rooms are in critical care?

A If you put it like that, yes, it is. Yes. I mean, it's unfortunate, but we didn't pick up at the time that these rooms were in critical care and the reviews all carried on of the schedule based on that.

Q It is important to understand what your position is. Do you think-- the generalised risk assessment that we looked at from 2017, do you think that is a missed opportunity, or was that still a scenario whereby clinicians were saying, "We need balanced or negative pressure"?

A Well, clinicians were still saying we need balanced or negative pressure, but where you could, perhaps, phrase it as a missed opportunity was it was an opportunity for technical advisers to go back to the clinicians and say, "You do realise that this room has separate requirements?" It was an opportunity for Project Co and its team to come back to us or our clinical teams and say, "You do realise that critical care has separate requirements? You're effectively asking us to provide something that does not meet the guidance."

Q That takes care of the issue of pressure.

A Yes.

Q But it does not really deal with the issue of air changes because within the generalised risk assessment, the clinicians were not saying, "Please reduce this down to four air changes per hour."

A No, they weren't.

Q So, how do we come to a scenario when we are in 2018 and we are looking at some of the air change rates and there are four rather than ten for critical care spaces?

A Again, I can't explain how that was overlooked or missed. The only explanation I can really give to it is that that schedule of 20 rooms, in my mind, were 20 rooms that weren't in critical care, or we hadn't registered that four of them were in critical care at that time.

Q Thank you. Just on that issue of air changes, if we could look within bundle 1, please, and look to page 2042. So, that is an email from Ken Hall to Stewart McKechnie and others dated 18 April 2018. So, Bundle 1, page 2042. Perhaps, just while the document references are being achieved, can you just-- we will come on and look at the detail of this email. Is this an email that you remember having a look at, and----

A (Inaudible).

Q Sorry. Is it an email that you remember being copied into?

A Yes, I do.

Q And can you just explain, before we look at the detailed text, what is happening in this email exchange?

A Well, this looks like, again, I wouldn't have recognised it if it came up on its own, but it looks like the timing of it was immediately in the aftermath of that meeting you referred to earlier on. The schedule that came with the documents associated with that meeting had the schedule still showing air change rates that were less than four air changes per hour and, because the view was that these rooms were all general four-bedded rooms, four-bedded wards, whatever you want to call them, they were all to have a minimum of four air changes per hour and the schedule was showing air changes less than that.

Q Okay.

A So, that's the reason for that email.

Q Lord Brodie, I am conscious that it is just before one o'clock. I think that is quite an important email that I would like your Lordship to have in front of him, if possible.

THE CHAIR: Right. Well, we will take the lunch break now. Mr

Henderson, we will take our lunch break now and we will sit again at two o'clock. So, could I ask you to be----

THE WITNESS: Of course.

THE CHAIR: -- back in the witness room and ready to start again at two? But I will ask, David, if you could take Mr Henderson out? Two o'clock, ladies and gentlemen.

(Adjourned for a short time)

MR MACGREGOR: Okay. (Inaudible) bundles.

THE CHAIR: Right. I think we are ready to begin. If you could ask Mr Henderson to join us. Good afternoon, Mr Henderson.

A Good afternoon.

THE CHAIR: Mr MacGregor

MR MACGREGOR: Thank you. I think just before lunch we were going to look at bundle 1, page 2042, which was an email exchange on 18 April 2018. So, bundle 1, 2042. So we started the email at the bottom. Do you see, it is an email from you to Douglas Anderson, Kamil, and Stewart McKechnie:

"Hi Ken.

I know the attached schedule rev 05 still refers to Air Change rates between 2.7 & 3.5, we are seeking design for 4 Air Changes to all 14 rooms. Can you confirm this is the brief to WW."

Do you see that?

A Yes.

Q So, what were you communicating there?

A Basically, I was saying that the schedule contained rooms that had air changes that were below four on the schedule on the basis that-- at that time, my understanding was all the rooms were in general ward areas, and I was communicating that all rooms therefore had to have a minimum of four air changes.

Q Okay, and whenever you say that you are confirming that this is the brief, you said very clearly in your evidence this morning you were not really in a decision-making role. Had someone told you to communicate this was now the brief?

A Yeah, I can't understand why it was worded like that necessarily but-- because the brief was-- basically, the brief was balanced across the 14 rooms, the air change rates to be four air changes because that was what we agreed on at these meetings, and that Multiplex or IHSL by that time had agreed that they would carry out these amendments to the alterations.

Q Yes, and we see that confirmed really just in the email above

that from Mr Hall. He says:

"Hi Ronnie,

4ACH is the brief."

Do you see that?

A Yes, I do. Yeah.

Q So, should we understand that whatever had gone on in the past, there was the dispute, there is the meeting at the Sheraton. By this point, when we have got to 18 April 2018, there is really agreement around about the pressure regime and the air changes for these disputed rooms.

A Yes. As I say, I know the air change rate is intrinsic in this, but the focus for us was really on the pressure regime and the 14 rooms but---

Q Thank you.

A -- because of the deficient air change rates.

Q If I could ask you to look at bundle 6, please, and if we could start at page 24. This is a minute of the Programme Board from 13 May 2019. Do you see that?

A Yes, I do. Yeah.

Q And there is a number of attendees, including yourself, and one of the items that seems to be recorded within the minutes for this meeting is what is called a Residual Risks Register.

A Yes.

Q Is that a document you are familiar with?

A Yeah. I'm familiar with the context of it. It's risks that reside after the project that need to be dealt with on an operational basis.

Q And who would be creating the Residual Risks Register?

A I'm not sure in this-- It would be done at this particular meeting, which I would wasn't a regular attendee of, but I wasn't sure who was in control of that risk register, but it would probably be a collection of people who would had input into it. Mott Macdonald may well have managed on our behalf, but I don't physically recall that, if I'm honest with you.

Q So, in fairness, you say you were at this meeting but you did not generally attend these types of meetings.

A No.

Q Do you remember why you were at this specific one?

A I think it's because the post-completion works had been identified from-- after Sheraton and after certain other issues, and that-- we were then developing all these works to go on, and I was updating relating to that.

Q Okay. So, if we look on to page 30, we will see the Residual Risks Register itself. So, bundle 6, page-- Is this a document you recognise or will have seen before?

A I think so. I'm not 100 per cent sure if I've seen the Residual Risks Register, but I have seen project risk registers and other matters and other items like this.

Q Thank you. If we could then perhaps just look down to page 34, and you see in the top left-hand corner, there is an entry, "12." This has all got strikethrough text on it:

"Bedroom ventilation pressure regime and air change rate in rooms for neutropenic patients."

Do you see that?

A Yes, I do. Yeah.

Q And it seems from the scored-out text there and on the right-hand side, that this has been discounted as an issue. Can you help the Inquiry with what that risk was and why it had been closed off?

A Yeah. I can't remember who raised it initially but there was a discussion around the neutropenic air change rates in terms of Table A1, in that the air change rates that we had didn't comply with Table A1 and SHTM 03-01. There was a clinical discussion within the project team, and outwith the project team, there was a meeting at the old Sick Children's site with the clinicians, infection control doctor and myself present, and we presented to them on the day what Project Co had designed, and was that acceptable to them, and it was concluded that it was, they could work with the confines of that new design.

Q Okay. So, just so I am understanding things, there was specific parameters within the guidance but there was an agreed derogation that was signed off by clinicians?

A Not at that specific time the derogation was signed off, but there was an agreement in place at that time to say that they could work with the ventilation system as designed.

Q And how does that differ from a derogation if you can work with it as designed?

A It would have become a derogation later on, but it wasn't at that specific time, yeah.

Q Thank you, and then if we look on still within that document, bundle 6, if we look down to page 35, the final entry, which is 26 with the scored-through text at the bottom, you see "4 bed ventilation" scored through on the basis that "Project Co have

amended the design as part of the settlement agreement." Do you see that?

A Yes.

Q So, effectively, at this stage, this chapter we are looking at, the process up to Settlement Agreement 1, by this point, there is an agreement in place that is now just going to be documented in a formal document. Is that right?

A Correct, yeah.

Q Thank you. If I could move forward in the chronology to August 2018, and if I could ask you to look to bundle 10 and to page 111. This is again the timeline that we had looked at before that was produced at a later stage of the project. This time, I would like you to look on to page 112, please. Approximately just over halfway down, there is an entry that says, "Motts Peer Review of Settlement Agreement." Do you see that?

A Yes, I do. Yeah.

Q So, it says:

"Motts Peer Review of Settlement Agreement – 29 August 2018 – B Currie, Mott Mac."

Do you have any understanding of what the Mott's Peer Review of the Settlement Agreement was?

A I don't, I'm sorry.

(Inaudible) Mott's.

Q The next document I would ask to have in front of you, please, is bundle 7, volume 3, page 143. So this is an email that-- It comes slightly later in the chronology. So we are going to now look at Settlement Agreement 1 and everything comes beyond that. But at this stage, you are sending an email to Brian Currie and Susan Goldsmith, and it is about the four bedrooms. Do you see that?

A Yes.

Q And if we just look in paragraph 2, the very last entry that you have, do you see in bold it starts, "Conclusion"?

A Yes. Yeah.

Q And it says:

"Conclusion – At no point compliant with Table A1, Appendix 1 of SHTM 03-01, important to know NHSL focus for this change was amending pressure regime only…"

Do you see that?

A Yes.

Q So, that is effectively entirely consistent with the evidence that you have given today, which is to say, "It really just was not on my radar because we are focusing on the pressure regime." Is that right?

A That's correct, yes.

Q And the email continues, "…it was assumed all other aspects of compliance were being met." Do you see that?

A Yes, I do. Yeah.

Q So, is that in many ways what all of this comes down to in terms of the issues we're going to come on and look at, the problems, the failure to open the hospital on time and on budget? Does that really come down to the fact at this earlier stage in the project there are rooms in critical care but everyone working on the project is just assuming that they are general spaces rather than specialist spaces?

A Yeah, I think it goes prior to that. You're exactly right in saying that. We do not think that critical care is being dealt with in this situation here. This issue is that we are assuming that, from initiation of design way back in the day, that critical care would be dealt with according to guidance separate from normal single bedrooms and normal multi-bedrooms.

Q And if we just think through all of the knowledge and expertise that flows through the project in this period, so you were working on it, Mr Currie's working on it, Janice MacKenzie's working on it, Mott Macdonald are heavily involved in it, Infection Prevention and Control, they have all been looking at it. It seems like there are a lot of opportunities whereby this just is not considered. How do you think these projects could be done better in the future so that these things could be spotted?

A I think that it's not so much the collaboration or a collegiate side of it. I think it's just more clarity in the initial brief. It's not having the amount of documents that we had for RDD at financial close, a more rounded and complete design and less reliance on-- and I don't know if you're going to touch on this later on, less reliance on what we would call reference design or exemplar design. That was a series of documents handed over as a starting point for the designers to take away with them and develop the design from.

Q So, is your evidence really that the germ of this problem is the fact that by the time the contract is signed whether it is a fixed brief or it is a moving draft, the Environmental Matrix that captures the environmental requirements for the ventilation system, that is not fixed, it is still a moving document? Regardless of who has responsibility for it, it is still a moving document at that point.

A Yeah. It's in development by NHSL up to the point

of financial close. After financial close, it becomes a document owned by Project Co and they're responsible for its accuracy.

Q And your understanding is that it is because that is not fixed, that is the chain of events that then take place. Is it everyone talking at cross-purposes or is it the wrong people not involved in the project?

A I couldn't answer that. I couldn't recollect as to what that reason for that is.

Q Within this phase of the project, just before we move on to look at the settlement agreement, you touched upon the fact that there might have been potential litigation that was being considered by NHS Lothian. Were you involved in those discussions or that process?

A I was involved in the technical elements of it when we got our technical expert on board as well to assist us with the process, prepare my document. I was involved in discussions around that. Again, from memory, these were all totally solely focused on pressure and altering the pressure. Again, it may seem silly to say this, but it just was not acknowledged or recognised that these four rooms should be treated differently.

Q At the stage of the litigation, you say you are getting an expert engaged. Is that right?

A Yes.

Q And are you still taking advice from Mott Macdonald at this stage?

A Yes.

Q So what were MacDonald telling you? Because the reason I say this is it's quite a major step to contemplate litigation. By this stage, has there been a fine-tooth comb run over these 14 rooms to make sure everyone is absolutely set on what should be happening, or is there just this this brittle thinking that because the clinicians have said it must be balanced or negative, that is what must happen?

A I think at this stage, it's the interpretation of the guidance that is the key factor. It's that-- We had interpreted the guidance to say that the general ward category in Table A1 did not apply to multi-bed rooms. General ward is a ward. It's not a-- It's a collection of rooms rather than a room-- specific room. So, their interpretation was that it had to have a pressure requirement of balanced or slightly negative to be the same as a bedroom. Their interpretation was that it didn't have to have any type of

pressure requirement because that's what the table said for general ward, and the discussion and the dispute got down to that technical detail of interpretation of the guidance and hierarchy standards and all of that sort of nitty-gritty, if you like, of contractual elements rather than technical elements.

Q And in terms of the technical elements, the interpretation of SHTM 03-01 and Table A1, Mott MacDonald are not saying this interpretation on the NHSL side is wrong, are they?

A No.

Q And you also said that you had input from an expert. Is that Rollason that provided the report?

A Yes.

Q If we perhaps just look to that, bundle 13, volume 9, page 30, please.

Bundle 13, volume 9, page 30. You see there, paragraph 1.0 introduction, 1.1, "This opinion has been written by David Rollason", who is an engineer. Do you see that?

A Yes, I do.

Q Is this the report that you're talking about that was obtained by NHSL?

A Yes.

Q If we look down to

paragraph 1.3, three lines up from the bottom of that paragraph:

"I understand that the Board may also have concerns regarding Project Co's proposed air change rates but this is not an issue upon which I have been asked to comment at this stage."

Do you see that?

A Yes.

Q What is Mr Rollason referring to there?

A I assume-- and I can't say for definite, I assume this is relating to the item in the schedule where they still had deficient air change rates below four air changes per hour. Some of them were saying 2.7, some 3.5. I think that may have been the concern he's alluding to, if we're talking about four beds, specifically.

Q But at this point, he has not specifically asked to consider air change rates?

A No. No.

Q We then look on to paragraph 34 within the report, please. So it is page 34, paragraph 3.3.6. You see the opinion offered in the----

A Yeah.

Q -- final sentence, last three lines:

"As noted below, I am of the

opinion that it is Good Industry Practice to provide balanced/negative pressure in 4-bed rooms relative to adjacent ward corridors."

Do you see that?

A Yes, yes.

Q So that, again, was a supportive expert report backing up the views that had already been obtained on the NHSL side. Is that correct?

A Yes.

Q And if we look down to paragraph 3.7, he records that:

"Good Industry Practice to ensure, inter alia, infection control requires the pressure in multi-bed rooms to be balanced or negative relative to the adjacent space."

Do you see that?

A Yes, I do, yeah.

Q If we look back up to page 32 just to see some of the information that the expert had. So, you see in paragraph 2.1 there is a Roman numeral two. Do you see that?

A Yes.

Q And he records, "Mechanical extract from the 4-bed rooms," and then the B1 code is used:

"(1-B1-000, 1-B1-031, 1-B1-063 and 1-B1-065), which do not have adjacent en suites/accessible WCs/wet rooms, at rates of 1.7 to 4ac/hr (based on the room volume of the 4-bed rooms)."

Do you see that?

A Yes, I do, yeah.

Q And, again, correct me if I am wrong, but within this report, the expert does not highlight that B1 is a code for critical care rooms----

A No.

Q -- and does not pick up on the fact that these are rooms without en suites which would potentially be in critical care spaces?

A Yes, yes.

Q So, again, if we are talking about things that were missed internally by NHS Lothian, things that were perhaps missed by Mott MacDonald, these things that might be markers are also missed by the independent expert engaged by NHS Lothian?

A Yes.

Q And just for completeness, were you aware that IHSL Multiplex, they also obtained their own expert report?

A I am, yes.

Q Did you see a copy of that report?

A I don't recall seeing a copy. I'm aware I think who carried it out, but I don't recall seeing a copy.

Q But effectively, did that report just simply back up the counterproposition that, for these rooms, it should be positive pressure?

A I believe so, and that led to the----

Q Thank you. The agreement is reached, and I think you tell us within your statement that, effectively, the solution is built out by IHSL and Multiplex before Settlement Agreement 1 is actually signed in the February of 2019?

A Yeah, I can't recall if it was 100 per cent complete, but it more or less was, yeah.

Q Okay, and do you recall whether NHS Lothian received a letter of comfort, effectively, from IHSL in relation to the ventilation parameters that they had built?

A I do. If we're referring to the comfort we received from IHSL in response to the letter that was sent by Brian Currie then, yes, I did see that letter.

Q So if we maybe just turn that reference up. It is within bundle 4 at page 9. This is a letter to Brian Currie, dated 31 January 2019. Do you see that?

A Yes. I do, yeah.

Q With the bold heading:

"Re-Provision of RHSC and DCN at Little France Plant Rooms + Ventilation Systems."

Do you see that?

A Yes. Yes.

Q And again, just so we are understanding the chronology, there is broad agreement reached at the principals' meeting in early 2018, further agreement effectively by April/May/June time in 2018, with that agreed upon solution being built before Settlement Agreement 1 signed in February of 2019.

A Yes.

Q So whenever Brian Currie is receiving this letter dated 31 January, for all practical purposes, the ventilation system has not just been specified but it has actually physically been built in the hospital?

A Yes, yes.

Q And if we go over the page to page 10, at the top you see in bold:

"All critical ventilation systems inspected and maintained in line with 'Scottish Health Technical Memorandum 03-01: ventilation for healthcare premises. Construction: - All ventilation systems have been designed, installed and commissioned in line with SHTM 03-01 as required, systems are maintained in such a manner which allows handover at

actual completion to meet SHTM 03-01 standards. Operations: - All critical ventilation systems will be inspected and maintained in line with Scottish Health Technical Memorandum 03-01: Ventilation for healthcare premises." Do you see that?

A Yes.

Q So, was your understanding that there was full compliance with SHTM 03-01 or partial compliance with some derogations?

A There was compliance with the SHTM 03-01 except for the previously agreed derogations that we knew about, like 64 air changes, for example, and the neutropenic ward.

Q Okay, so whenever you are talking about compliance in terms of the 20 rooms that were in dispute----

A Yes.

Q -- did you think that there was full compliance for those rooms, or did you think there were some derogations for those rooms?

A I thought there was full compliance for those rooms.

Q If that takes us in the chronology up to, effectively, Settlement Agreement 1, which gets signed in the February of 2019, can you assist the Inquiry, in terms of the schedule, the technical schedule that goes into the Settlement Agreement, do you remember, who drafts the information that goes in that?

A It was Mott MacDonald that drafted that information.

Q And, again, if they are drafting it, are they providing technical advice to NHS Lothian?

A They are. Yes, they are, yeah.

Q The next chapter really is the IOM Limited reports. For those that do not understand what IOM Limited are or what they do, how did they become involved in the project?

A They became involved when-- once it was clarified through discussion and dialogue with Infection Control colleagues that we would proceed with our own independent validation, not just rely on the documents that (inaudible) were providing. We sought a suitable company. Our initial thought was to go to the authorised engineer who was appointed as NHS Lothian's AE, but he didn't have availability. So after some correspondence with HFS and others, we found that IOM had the suitable qualifications and availability to carry the task out. So we proceeded to engage with them to do the validation on our behalf.

Q And is this really-- I think you talked about, both in your

statement and in your evidence this morning, that there was perhaps a lack of clarity in a revenue-funded project as to who has to do the validation.

A Yes.

Q You said for a design and build it is perfectly clear who comes in and does the independent validation----

A Yeah.

Q -- but for a revenue-funded project whereby the Health Board will effectively, for a period, be a lessee of the building, you were not clear on exactly who should be doing the validation.

A That's correct, and there was some debate, and it wasn't a long conversation or a long debate about whether validation was actually a completion criteria at all, a pre-handover completion criteria in the project. So we wanted to make sure that it was all covered. So we submitted the documents that IHSL had proposed to have as a validation to Infection Control to see if that's satisfied, and with the additional layer of assurance from the independent tester signing it off, that would meet the-- perhaps meet the independent element. So, after dialogue with Infection Control, they wanted it in a more simplified format that they could

easily understand, and I could see where they were coming from, and at the end of it, we-- that process we engaged with an independent validation of their own.

Q I will not take you through all the emails, but effectively you summarise this in your statement that there is an interaction between yourself and Infection Prevention and Control, particularly Dr Inverarity----

A That's correct, yes.

Q -- and he is not necessarily 100 per cent happy with what was being proposed. You go back to him and say, "If you are not 100 per cent happy, we will get someone independent in." Is that fair?

A That's correct, yeah.

Q And in terms of the validation report, the testing that was to be done by IOM Limited, was your understanding that that would simply be tested against published guidance such as SHTM 03-01, or were they testing against something different like a contractual standard?

A No, they were testing against-- SHTM 03-01, I think it says that in my letter of appointment (inaudible). It's an email appointment basically, because we didn't think there were any derogations from any critical ventilation systems at that time.

Q So did you think the original commissioning that had taken place before the validation had been done against published guidance such as SHTM 03-01?

A Yes.

Q Do you think there is a danger in doing that if the guidance is not particularly clear on what it requires?

A Well, I think you've probably alluded to it yourself that there's-- it is open to interpretation, but I think that the weight of evidence would suggest the interpretation that we had made was by and large correct. So these AEs that come and do this inspection are used to doing it against that standard. That's the standard they would use for measuring and validating against and that's the reason they would validate against these figures.

Q Unless there is a specific derogation.

A Unless there's a specific derogation, yes.

Q So, just talk the Inquiry through, what were you anticipating to happen whenever IOM Limited came in to do their testing?

A I was anticipating that they would by and large find that, with a few errors or tweaks or deficiencies,

that they would report that the systems were all okay and fit for purpose and meet the definition contained within SHTM 03-01. It's general to find that you will-- what you will get, you know, some deficiencies that can either be rebalanced or tweaked, or maybe some components were faulty or wrong when they'd done the test and you would repair them and rectify them and revalidate. Generally, you do not find significant deficiencies in these types of validations.

Q And what happens whenever IOM Limited come in and do their testing?

A In terms of the process they go through?

Q What do they find?

A What do they find? They found that the initial focus was on theatres, and they found some deficiencies in theatres. When they came in, they found-- and this is maybe something to labour on as well, that they did find that some of the areas weren't ready for them. They hadn't been made ready by the contractor. There were people doing other works in the area so they couldn't properly test at certain times, but eventually when they got down to doing the testing, focuses on theatres-- I was on holiday at the time, but I do

understand that they tested theatres initially, then went to the other critical ventilation systems, critical care namely, found that was deficient, recorded it.

Again, I can only speak to what I've learned since because I wasn't there at the time, but I think that they verbally communicated that there was an issue on 25 June with the critical care vent system, but at that time it was unknown, the magnitude of that issue. So what we did with IOM and the theatres was focused on theatre works-- when I came back from holiday, focus on theatre works.

Q So, whenever IOM come in, there is still some spaces that are effectively a building site, and they cannot do the testing on?

A I wouldn't say necessarily a building site, but what they were finding was that people were working on the systems they were meant to be validating. There were ceiling tiles missing, there were door controls not operating so that people were able to wander into the site while they were carrying it out. So I think there was an email from Mott's when I was on holiday, to that effect.

Q Okay. So, not all the areas can be tested, and then in relation to the critical care areas, what did they find there?

A Well, they did measure in critical care. I think they were finding that there were ceiling tiles missing in there as well, but they did measure and they found it to be deficient.

Q And when you say deficient, do you mean non-compliant with SHTM?

A Non-compliant with SHTM, yeah.

Q You mentioned you were on holiday whenever that happens.

A Yes.

Q Whenever you come back and you meet with the project team, what was the atmosphere like at this time?

A Well, there's a genuine concern and I must say particularly, initially, the focus was on theatres. There was 11 theatres and some of the things that I had raised, not necessarily about air change rates but about material workmanship, that type of thing, were concerning. So, for me, it was a week of complete and total intensive workload to try and get to the bottom of some of the fixable issues as well as keep a hand on what needed to be remeasured, revalidated, rechecked and there was a period of-- an intensive period of rechecking.

There were disputes between

IOM and IHSL's commissioning team around how these measurements were to be taken, and it was concluded that the best way to do this was-- them to do it collaboratively together and measure at the same time, so that we get the same reading. Otherwise, we were going to be faced with the issue of, "He says this, he says that," and we didn't want that. So, IOM presented-- as I understand it, they presented a list on 25 June. That was slightly altered on 26 June and then I came back at that time and we proceeded to try and resolve all the issues.

Q How close was this to the hospital opening?

A About a month, less than a month. Yeah.

Q So we will perhaps just look at one of the IOM reports. If we go to bundle 13, volume 9, page 259. So, bundle 13, volume 9, page 259, so IOM report:

"Witnessing of theatre re-balancing and validation summary report … Edinburgh Royal Infirmary – Hospital for Sick Children."

Do you see that?

A Yes, I do, yeah.

Q Dated 2–9 July 2019. If we go on to page 263 and towards the bottom there, you see a bold heading on page 263, "High Dependency areas." Do you see that? Just towards the bottom.

A Yes, I do.

Q

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

Do you see that?

A I do see that.

Q Do you ever remember Mott MacDonald telling you that there was a derogation from 10 to 4 for these areas?

A No.

Q So were you surprised to read this?

A Yes.

Q Did you raise it with anyone from Mott MacDonald?

A At that time, there was a flurry of activity and I think it was-- I don't know how it was said. I know who it was said by, I believe, but the focus was on getting the resolution to some of the issues and they categorically will state there was no derogation from 10 to 4 air changes for

critical care.

Q So that is entirely understandable. This happens, you are a month out from the hospital now, you are focused on solutions. But presumably at some point after events had calmed down, there was an investigation to try to work out if someone from Mott MacDonald genuinely thought there had been an agreed derogation in these areas from 10 to 4. Did that take place?

A I wasn't part of it if it did. Maybe Brian Currie did.

Q Okay. In discussions with Mr Currie, did you work out if he got to the bottom of this issue?

A Well, again, it was a speculative comment, or an inaccurate comment, so I don't know what actions were taken with Mott MacDonald to address it.

Q Did you ever get to the bottom of which individual from Mott MacDonald was allegedly attributed to have said this?

A I believe so, yeah.

Q Who was it?

A It was Colin Macrae.

Q Colin Macrae.

A Yeah.

Q So, your understanding was that-- Certainly what is recorded here in this document is that Colin Macrae, an engineer from Mott MacDonald, had told IOM Limited that there was a derogation agreed from 10 down to 4.

A Yes.

Q But that did not accord with your understanding of what had gone on in the project before.

A No.

Q If we look on within page 264, it continues:

"The test information was summarised in an initial briefing to the Health Board during w/com 2nd July. It later transpired that there was some confusion on the detail of the derogation and the Construction supply chain and the Health Board began working on both an interim solution to improve the situation and a longer term permanent solution. The final results for the high dependency areas were as follows."

So, again, is that your understanding, from having read that report, of what was happening at the time?

A Yes.

THE CHAIR: Mr MacGregor, if I can perhaps interrupt if you do not mind. The fault, I am sure, is mine. Mr Henderson, you instructed IOM and we see from the IOM report that they were appointed by the Health Board to validate the critical ventilation systems

at the new hospital. Now, as I say, I am sure it is my fault. Why was the requirement, as you saw it, to validate the critical ventilation systems?

A It's a requirement of the guidance to validate-- All critical ventilation systems should be validated prior to being put into use.

Q Excuse me. Where do you understand that requirement comes from?

A It comes from SHTM 03-01, in part, Part A, but mostly from Part B. Part B specifies the exact locations and Part A does as well, actually.

Q So the source of the requirement to validate comes from Chapter 8 of SHTM----

A Yes, 03-01.

MR MACGREGOR: It might be helpful, my Lord, simply to draw my Lordship's attention and Mr Henderson's to the relevant provision, if it is helpful. It is in bundle 1 at page 1159. Bundle 1, page 1159. This is within SHTM 03-01, the 2014 version, "Ventilation system commissioning/validation report", 8.64:

"Following commissioning and/or validation a full report detailing the findings should be produced. The system will only be acceptable to the client if at the time of validation it is considered fit for purpose and will only require routine maintenance in order to remain so for its projected life. The report shall conclude with a clear statement as to whether the ventilation system achieved or did not achieve the required standard. A copy of the report should be lodged with the following groups:

- the user department;
- infection control (where required);
- estates and facilities."

THE CHAIR: So, while it sounds as if you and Mr MacGregor are on the same page, that is a standalone requirement to validate derived from the technical memorandum?

A Yes. At that time it only referred to what they call specialised ventilation systems or critical ventilation-- It's often colloquialised depending on who you're speaking to, but "specialised or critical ventilation systems" has now been corrected to include all new and refurbishment ventilation systems.

Q When you say it has now been corrected, is that a reference to the update of SHTM in 2022?

A Yes, SHTM 03-01 (inaudible). It's been updated to include all ventilation systems initially. Initial validation.

Q All right. Thank you.

Yes.

MR MACGREGOR: Earlier this morning we were discussing the HAI-SCRIBE documentation. I think you had accepted that the Stage 4 HAI-SCRIBE had not taken place before the new hospital was accepted by NHS Lothian. Is that correct?

A Yes, that's correct.

Q Were you involved in the process that tried to complete HAI-SCRIBE Stage 4?

A I was to an extent, yes.

Q Okay. So if we could maybe just look to that document. If we could look to bundle 5, page 95, please. Is this the HAI-SCRIBE documentation?

A Yes.

Q And we see that the team was Lindsay Guthrie, SJ Sutherland, R Henderson, F Cowan, D Hanley and Janice MacKenzie. Do you see that?

A Yeah.

Q Then if we look on to page 98, this question is 4.26. Page 98, question 4.26:

"Is the ventilation system designed in accordance with the requirements of SHTM 03-01 'Ventilation in Healthcare Premises?'"

You can see there is a tick with an asterisk and it says, "With derogation 4 ac/hr – single. Risk assessed and approved." Do you see that?

A Yeah.

Q What was that referring to?

A I think that says the-- It's the risk assessment or it's the derogation from 6 to 4 air changes in single bedrooms, a single reference to a single room there.

Q And then if we look back up, there was an asterisk-- there is some asterisks on bundle 5, page 95. You see, there's:

"*LOCHRANZA – HAEM/ONC WARD"; "*PICU – PAEDIATRIC CRITICAL CARE"; "*DCN ACUTE CARE".

Does that have any relevance to the asterisks that we see?

A No, not that I know. I think that's probably the areas that we were looking at on that day, possibly, but-- Or maybe not. I can't remember the relevance of that, the asterisks on the front page.

Q Could the HAI-SCRIBE report be completed at this point in time?

A No.

Q Why not?

A The hospital wasn't fully completed. I think this was a desktop SCRIBE that we were doing at this

moment in time, and there were still elements of work ongoing in the hospital that weren't completed until June, and then obviously the ongoing works after that. What date is this, sorry?

Q Well, I think if we look to bundle 13, volume 8, and go to page 2218.

A (Inaudible) context with the date.

Q There's an email this time from Alex McMahon which is saying, "Please see Donald's comments below." I think if we look below, there is an indication that there is various risks.

A Yeah.

Q So it would seem that this was trying to be done certainly in the period after the building was accepted in February 2019.

A Yes, yeah, I see that.

Q But I think you were saying, in terms of why that decision was taken to enter into the settlement agreement, accept the hospital before you had done the Stage 4 HAI-SCRIBE, that wasn't a decision for you to make?

A It wasn't, no.

Q Whenever the IOM test reports are received, they indicate there is non-compliance for critical

care rooms. Did Mr McKechnie of TÜV SÜD still maintain at that point that what had been designed and built by IHSL and Multiplex complied with the relevant guidance?

A My recollection of him saying that was at a meeting. Once the issue had been discovered, there was almost like an all-party meeting, an all-interested stakeholder meeting. We had clinicians, we had HFS, we had IHSL represented by TÜV SÜD, and he reiterated that view, that in his view it was compliant and he was asked at the meeting to present his case, effectively, in a report and we were also to present our case for the opposite, if you like, in a report as well. I think it was clear from all present at the meeting, including HFS who asked for the report, that the interpretation should have been 10 air changes and plus 10 pascals for critical care.

Q So at this point, when the issue is discovered, you have NHSL and IOM saying it is non-compliant, but Mr McKechnie of TÜV SÜD, he is still maintaining that what has been designed and built still complies with the SHTM 03-01.

A Yes.

Q And again, I think you had probably answered this, but why was it that IOM's view was preferred to

Mr McKechnie's view?

A As I said, they are experienced, authorised engineers in the field and they validate systems all over the country, all over the UK, and they validate to that standard. It's not only because IOM said. It's because HFS said it and David Rollason probably effectively said as well, that there's a wrong interpretation that TÜV SÜD had.

Q So whenever this issue emerges, David Rollason, he is now agreeing with IOM Limited. Is that right?

A I shouldn't really have said that, to be fair, because he wasn't involved at that time. I take that-- I can retract that; but certainly IOM, HFS, ourselves, Mott MacDonald, we're all aligned with the fact that it should have been 10 air changes.

Q And is that big change because now there is an appreciation these rooms are in critical care?

A Yes.

Q Whenever that was communicated back to the clinicians, that actually what they really should be having is positive pressure rather than balanced or negative pressure, what was their reaction?

A Their reaction was that-- Well, I think there was genuine

surprise as well that they were receiving something non-compliant. As I say, there was that element where we thought we were dealing strictly with pressure. They knew they were dealing with critical care, but once they realised that it was not going to be compliant with guidance, they accepted that it had to be made compliant.

Q But did some of the clinicians not push back and say, "Really, what we want is balanced or negative pressure"?

A They didn't because they had a site walkaround and a review of the issue, and I think they produced a paper that accepted that it could be made compliant and they could work with that.

Q If we just look, for example, to bundle 13, volume .8, page 594, please. Well, perhaps if we start at page 593, so bundle 13, vol.8, p.593. This is an email from Janice MacKenzie to Donald Inverarity, also copying yourself in on 11 July 2019.

THE CHAIR: Thank you.

MR MACGREGOR: It says:

"Hi Donald, can you please phone me regarding Julie's emails as she has also phoned me and she is now feeling very uncomfortable about this and reversing a decision that was

made several years ago in conjunction with Pota and is very keen to meet to discuss further which I think we do need to do as a matter of urgency."
Do you see that?

A Yes, yes.

Q Then if we look to the email chain below which had been sent by Julie Freeman, that's on p.594, three bullet points up from the bottom of the first main paragraph, it says:

"The SHTM 03-01 for Critical Care has supply ventilation only with the positive pressure in Appendix 1. Is balanced pressure with both supply and extract ventilation not better than that?"
Do you see that?

A Yes, yes.

Q Then if we look to the next paragraph, the final sentence there, she states:

"Inherently cohorting infectious disease in a positive pressure area does not feel right to me."
Do you see that?

A Yes.

Q So were clinicians really quite concerned about this potential change?

A Yeah, I didn't-- I know I was copied into the email with Janice there, and obviously it had this trail at the back, but I didn't quite pick this up at the time. But, yes, it seems they were concerned at the time that they were reversing a decision that they'd made for clinical reasons previously, but I think ultimately, the requirement to comply with guidance in this case-- in this case only overrode that requirement.

Q Do you recall attending a sort of all-party meeting where this issue of whether you should have balanced, or negative or positive pressure was discussed?

A The meeting I do recall was at a walk-round of the area with Infection Control, Julie Freeman, and some of the clinical members of the project team present. I can't remember exactly who was there, but I do recall that, and I think a two-page paper was produced. I think from that meeting, Donald explained from an Infection Control perspective to Julie Freeman how it could be made to work with either negative, balanced or positive.

Q Just to be clear, your understanding of the meeting was that Dr Inverarity effectively said, "You can either do this with positive pressure or you can do it by way of balanced or negative pressure"?

A That's my recollection,

yeah.

Q So from a safety perspective, was there really a problem with the pressure regime? It did not comply with the guidance, but was the pressure regime unsafe?

A The pressure regime unsafe in complying with the guidance?

Q Mm-hmm.

A That's for an Infection Control doctor to----

Q That is fine if you cannot answer the questions, but I am really interested in what Dr Inverarity was saying at these meetings, because you are copied into the meeting where some of the clinicians are saying, "We are concerned, we think it should still be balanced or negative." What is your recollection of what Dr Inverarity was saying?

A I think that what he explained at the meeting was that there was a hierarchy of different ways to prevent the spread of infection and ventilation is just one of them, and there were other ways of doing it. I think that they felt that they wanted this, as a new hospital, to be compliant with guidance rather than start from a place of having to explain themselves every time this issue cropped up in the future. Every annual verification, for

example, it would be found to be non-compliant with guidance, so another explanation would be required as to why we accepted that. So, I think he explained it-- I'm speaking for Donald here and I'm just-- this is my own recollections of what was discussed at the location. It was around those items.

Q That is helpful. Perhaps if we look to bundle 13, volume 8, page 554. Bundle 13, volume 8, page 554. There is a record-- it is called "Summary of Discussion on 10 and 11 July 2019." Do you see that?

A I recognise that, yeah.

Q You are listed as one of the attendees both on the 10th and 11th.

A Yeah.

Q It records:

"We discussed the current proposals for improving the critical care ventilation to ensure that it is compliant with SHTM 03-01 with 10 air changes and 10 Pa positive pressure in the single rooms and 4 bedded bays."

Do you see that?

A Yes.

Q If we look over the page on to page 555, there is a bold heading of "Compliance with SHTM 03-01."

A Yes, I see that, yeah.

Q It says:

"Currently the 4 bedded rooms and single rooms have 4 air changes and this needs to increase to 10 air changes to ensure compliance with SHTM. It was acknowledged that the SHTM was more focused on adult critical care where the patient profile is different and the need to cohort patients was extremely rare.

It was noted that previously a decision had been made to derogate from the SHTM for the 4 bedded areas to allow patients to be cohorted with the same airborne infection and following consultation with the clinical team and IPCT at the time, the decision was made that these areas should be balanced or slightly negative. The SHTM states that both the 4 bedded areas and single rooms should have 10 air changes and 10 Pa (positive pressure)."

Do you see that?

A Yes.

Q If we skip the next bullet point, it says:

"IPCT view was that you could cohort patients with the same airborne infection in the 4 bedded areas that were 10 air changes and 10 Pa and that there is no reason that this would result in an increased risk of spread of infection. A design of balanced or slightly negative pressure approaches the issue of spread of infection from a cohort from a different direction but it was agreed that neither approach increases the risk of infection spread but the SHTM 03-01 compliant design has additional benefit for neutropenic patients who could be in single rooms at 10 Pa positive pressure."

Do you see that?

A Yes.

Q So having seen that, is the mood of the discussion effectively that you can do-- balance the negative pressure safely and you can do positive pressure safely, but both are perfectly adequate solutions.

A Yes, yes. I'm reading that.

Q Does the issue really then come to be that the air changes, the fact that you are only going to have four air changes rather than the ten set out in the guidance?

A The issue at this point-- by this point, is to meet the ten set out in the guidance, but in the initial discussions it was purely about pressure, and I think that was down to the clinical needs rather than----

Q Mm-hmm. Because, again, it is probably for Infection

Prevention and Control doctors, but how many air changes were there in the critical care rooms at the hospital at Sciennes?

A To answer that in an honest way, zero measurable, but it was “open all windows” were the means of ventilation in the old children’s hospital. Two of the rooms that were separating patients from the body of the main ward had extract fans in the window, but that was really the sum total of mechanical ventilation in the ward.

Q Again, just so I can understand, at Sciennes, effectively no air changes per hour unless the wind is blowing the right way whenever you open the window?

A Very much.

Q Guidance suggests ten and the solution that had been built at the RHCYP was four air changes per hour?

A Yes, that’s correct.

Q Do you recall any discussion at this meeting-- Obviously, your position is NHS Lothian always wanted the guidance, they always wanted ten air changes per hour, and they wanted a state-of-the-art hospital. I understand that, but the backstop was at Sciennes, there were not any air changes per hour.

Was there any discussion at this meeting about four air changes per hour, albeit it does not comply with best practice guidance, about whether or not it would be safe?

A I don’t recall it at this meeting. I do recall a very short discussion at one meeting, and I think it may have been the meeting where Mr McKechnie stated that he felt his design was compliant, that four air changes was better than where they currently have, but I think that was superseded by the decision-making process that occurred on 4 July.

Q Thank you. In terms of the chronology, there is then effectively what is called High Value Change Notice 107 and a second Settlement Agreement. Is that right?

A Yes, yes.

Q Again, could you just summarise your understanding of what happens? We have been through Settlement Agreement 1, whereby it is agreed that what you are going to have is four air changes per hour and positive-- balanced or negative pressure. What changes are made to the ventilation system for critical care in High Value Change Notice 107?

A In High Value Change 107, it was effectively a redesign of the critical air ventilation system to bring it

up to compliance standard, and that included new air handling units, new duct work, the opportunity then to look at the isolation rooms and put them on the air handling units. Not that it was an absolute 100 per cent requirement to do so but it was a 99 per cent one, so we'd done that at the time as well. So, the brief was basically to-- using the list of rooms within critical care to bring them on to what our understanding of what SHTM 03-01 compliance was; ten air changes plus 10 Pa.

Q Effectively, whenever IOM do their testing and it is identified that it is non-compliant with IOM's view of SHTM 03-01, you then have High Value Change Notice 107 to put in place a system that will comply with that interpretation of the guidance.

A Correct, yeah.

Q Thank you. Did you then arrange for further testing to be done by IOM Limited on the new solution after it had been designed and built?

A Yes, yes.

Q What was the outcome of that testing?

A It was tested against SHTM 03-01 and found to be compliant with the guidance.

Q Okay, so if we look within bundle 1 to page 2995. Bundle 1,

page 2995. This is an IOM report, "Ventilation Validation, Royal Hospital for Children & Young People and Department of Clinical Neurosciences." This is a service report for a date of site work being January and February 2021. If we look to page 3000.

THE CHAIR: Thank you.

MR MACGREGOR: The report starts on page 2995. We are at page 3000. Do you see "Areas Ventilation Details"? Do you see that?

A Yes.

Q Then this is a table for B1, PICU and HDU. If we perhaps just take one example, left-hand column, just over halfway down, we see 1-B1-009 Bay 1. Do you see that?

A Yes, I see that, yes.

Q If we read across, it has now got a supply design as ten air changes per hour, and if we look to the pressure, it is positive in achieving 11 Pa. Do you see that?

A Yes.

Q If we look on to page 3002, again, if we just take the example, approximately five or six entries down, B1-06, which is a Neonatal Bay 4, we see the supply air changes being ten and the pressure being tested as positive 11 Pa. Do you see that?

A Yeah, I see that, yes.

Q If we look down to page 3006, we see the conclusions. The final conclusion:

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

Do you see that?

A Yes.

Q Is that effectively that the sort of simple sign-off, independent validation statement that you would be anticipating from what we have looked at in terms of the guidance in SHTM 03-01? I think it is paragraphs 8.63 and 64.

A Yes, I think that's the exact wording from that, and I think that's where some of the issues arose, accepting IHSL's.

Q Still within that bundle, I think it is an appendix to the report. If we could look on to p.3014. This is an email from Paul Jameson, to yourself, Ronnie Henderson, and if we just read the second paragraph there, it states:

"I, as discussed on the day the physical inspections were made, indicate that the Daikin units look superior to the previous Sandometal units installed on site."

Do you see that?

A I do, yes.

Q For those of us that do not know what the Daikin units are as opposed to the Sandometal units, what has been communicated in this email?

A These are-- Daikin are the manufacturers of the air handling units. Paul Jameon and I went to a site inspection, or a factory inspection, of those with Darren Forbes as well of Imtech, to inspect them as they were being manufactured and to carry out tests on them in the factory, and Paul was making an observation there that they were far superior to the existing Sandometal units on site which were manufactured for the initial build.

Q Thank you. If we then look on over the page to page 3015, third paragraph, we see the author states:

"We jointly witnessed the air handling unit volume supply test one large and one small unit. The small unit this demonstrated over 20 per cent spare capacity and 40 per cent on the larger unit."

Do you see that?

A Yes.

Q And then if we look down just to the penultimate paragraph, it states:

"Overall, the units are in my

opinion satisfactory and I stated earlier far superior to the previous units used on the site."

Do you see that?

A I see that, yes.

Q Then look down to page 3048. Again, we just see a reiteration of the conclusions:

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

If I could finally ask you to go to bundle 1, page 3233. This is a document called the "AHU Remedials Cover Sheet." What was the purpose of this document?

A I think this is a document I actually produced and it was based on the checklist that's in SHTM 03-01 Part B, which is basically a checklist that's carried out, annual verifications of what they look at, air handling units when they're inspecting them, and this was used as a basis to inspect each air handling unit as a checklist to inspect if there was any faults or needed work required.

Q So, if we look to the third paragraph, it says:

"As discussed and agreed between the Board and the AE's representing IOM and Turner PES and to satisfy board governance, could all participants in the AHU … process please sign each individual AHU sheet as well as in the table below recording that the unit meets the criteria set out in Section 8 of SHTM 03-01 and return a scanned copy. All reviewers will be given a complete copy once all signatures are received."

Do you see that?

A I do, yes.

Q So, if we look at the organisations and the individuals involved, we have got the NHL commissioning manager, which is yourself.

A Yeah.

Q We have also got Lindsay Guthrie, NHSL Infection Control Lead; Donald Inverarity, NHSL Infection Control Consultant Microbiologist; we have got a Technical Advisor from Mott MacDonald; we have got the AE from NHSL Turner PES; we have got the AE Independent Validation from IOM, and we have also got HFS. Is that right?

A That's correct, yeah.

Q So, internally at NHS Lothian, you have Estates, Infection Prevention and Control, you have got engineers from Mott MacDonald, and you have also got IOM and HFS all

signing off on the new system as designed and built. Is that correct?

A Yeah.

Q Against all of that testing that has taken place, in your opinion, does the ventilation system that is currently installed at the hospital comply with statutory regulation, published guidance, and good practice?

A It does, yes.

Q And from your perspective as an Estates officer, does the ventilation system provide a suitable environment for the delivery of safe and effective care for patients?

A It does, yeah.

Q In relation to your reflections on the project, I think you have already said that you think part of the problem for the project really came because the specification was not absolutely, fully locked down by the point the contract is signed. Do you have any other reflections on the project in terms of things that went wrong or missed opportunities where these issues could have been spotted earlier?

A I think that, for me, the lack of-- I shouldn't say "lack of." Actually, it's the other way around. It's-- The amount of RDD at that stage in the project was something that was

new to me. I guess probably because I hadn't been fully involved at that type of level in a PFI/PPP project, I don't know if that was normal or not, but I certainly didn't expect that. So a reduction in that type of thing after financial close would be of a massive benefit because you really shouldn't be making fundamental design decisions after a contract has been signed.

So, that element-- As you said, and you alluded to it yourself earlier on when you were questioning, a standardised derogations process, a standardised briefing process, these kind of things, which I believe are-- and the workings of NHS Scotland Assure, but just as much standardisation and as much detail as possible at the earliest stage. And I don't mean that means just collaborating and meeting for meeting's sake, but to actually have some kind of method of ticking off and saying that that's been achieved, that's been achieved, and it's fixed at that point, but fundamentally for me, it's the-- the interpretation of guidance needs to be more prescriptive and there shouldn't be any flexibility or room to misinterpret the guidance. As long as we have that, we may well end up with issues similar to this in the future. I hope not, but potentially,

unless we nail down the guidance, then it could happen again.

Q Thank you. In relation to NHS Scotland Assure, it has been created as a centre for excellence in the built environment. Have you had any experience of operating key stage assurance reviews yet?

A I haven't, no. We should have been going through them fairly shortly on three projects, but they've been put on hold, as you're probably aware but, no, I haven't had any experience. But I'm aware of what type of documentation is required for them, what's involved in it, how intensive it can be and how difficult it can be to do them and obviously if that's the level of scrutiny over the designs, then that can only be welcomed because it should hopefully eliminate the majority of the significant mistakes in design.

Q Do you think that is going to be an improvement on what went before?

A In theory, it should. The only issue I can say is that what you will find, unless NHS Scotland Assure have the staffing levels internally to carry out these reviews themselves, they will be relying on M&E consultancy firms to carry out the reviews on their behalf. Then that's a

peer v peer situation, where you have one checking another's homework sort of thing. So if one interprets it slightly different from another, you could still have issues but there should be a forum within that to resolve that within the HFS or within the NHS Assure structure.

Q And NHS Scotland Assure, it is not going to be an inspector, it is not going to be taking responsibility. It is really just going to be ensuring that there are these key stage reviews. Do you think in terms of a centre for excellence, it would have been better if they did have an inspection role?

A It would certainly be beneficial had the NHS Scotland Assure had some kind of responsibility to sign off or to agree or to inspect. It would give the boards the reassurance that-- they have reassurance that someone above or someone to the side is inspecting that, and giving a second opinion on its compliance.

Q And in terms of why that is important, is it to try and just give the assurance? Why would it be relevant or helpful for a body like NHS Scotland Assure to be taking responsibility for certain decisions on a major infrastructure project?

A Responsibilities may be

a little more-- but just to sign off that they accept that the actual design complies with the guidance that they have produced. They're really inspecting it against their own guidance. So it would just be a kind of note, report, just to say, "We have inspected the design and agree that it fully complies with our current versions of our guidance."

Q Thank you. I think the final issue that I would like to ask you about is the revisals to SHTM 03-01, so the February 2022 version. It is probably easiest if we just bring that up on screen. So, it is bundle 1, page 2263. That is the February 2022 guidance.

A Yeah.

Q If we could look to the guidance it provides on derogations and alternative design strategies at page 2288, it states that:

"Any derogations or alternative design strategies from this guidance should be subject to the scrutiny and agreement in writing by the VSG [I will come on to discuss the VSG in a moment]. The reason for the derogation or alternative design strategy and limits to its application should be recorded. Designers proposing a derogation or alternative design strategy should be able to supply a body of evidence that their proposal will provide a degree of safety no less than if the guidance in this document had been followed."

Do you see that?

A Yes, I do. Yeah.

Q So, that is slightly revised guidance in terms of how one would go about derogating from published guidance. Is that correct?

A Yeah.

Q But are we still at a point where there is not actually a standardised form or a standardised process as to what someone working in an Estates function like yourself would physically have to do if they were going through a derogation?

A There's not a document that has been produced by any central body within NHS Scotland to-- that you can go to and pick off the shelf and have a pro forma to fill in the derogation. No, there's none of that.

Q Do you think it would be helpful if there was?

A Absolutely, yeah.

Q And can you just explain, for those of us that do not work in the space, why would that be helpful to you, the man on the ground doing that task, if you had that off-the-shelf solution to fill in?

A Well, it would be

expected that I'd have gone through some kind of approval process of itself, and that it would have been tested against the various types of project and contract that are out there at the moment. If it was applicable to each one, or separate ones applicable to each type of contract or project, then you would have expected NHS Assure to have vetted that and approved it. So, an approved document that could be used in the same way the guidance is being used to actually carry out that type of derogation.

Q Then if we look on within the guidance at paragraph 4.17 on page 2289:

"4.17 New build health facilities must be fully compliant with the requirements of all legislation in force at a date agreed when signing the contract. They should comply with the guidance contained in the current SHTM unless a derogation has been agreed with the VSG."

Do you see that?

A Sorry, is that 4.17?

Q 4.17, page 2289.

A Yeah. I see that, yeah.

Q So, does that just apply if you are doing a new build facility? Would it also apply if you are doing a refurbishment of an existing facility?

A I think it would. I mean,

that specific comment there is for new build facilities, but I think there would be something similar in there for refurbishments as well. I don't-- I've not read this one word for word yet. I've checked various aspects of it, but---

Q And this guidance creates the concept of a ventilation safety group. If we look to page 2286, I will not read it all out but really just reading short of-- at 4.5, there is a sort of multidisciplinary group that should typically comprise of an authorising engineer, Infection Prevention and Control, an authorised person, Estates, clinicians and specialist departments, personnel from the finance department, other stakeholders as appropriate, and coopted expertise. Do you have any experience of operating within a ventilation safety group?

A Yeah. I was a member of the NHS Lothian Ventilation Safety Group from 2021 until I retired last November, and all these people were on it, and they did talk about normal day-to-day things that Estates would deal with. They also talked about projects, and they also-- the other stakeholders as appropriate. The element there is, people could bring to the safety group issues that they had

with ventilation or requests for upgrades and that type of thing, and it would be considered at the group.

Q And given that the previous guidance-- and if we look through SHFN 30, it all talks about a partnership collaborative approach. Is the ventilation safety group something new or is it just formalising what was always best practice?

A I think it's new in a way, but it is formalising what would have been best practice in other ways as well. It's more defined than the collaborative approach. It's telling you exactly who should be there, for example.

Q And what improvements, if any, do you think it brings to major new build projects?

A It would be an immediate understanding of the complexities of the project. The only issue I have potentially with this is that the centralised ventilation safety group for NHS Lothian is dealing with all the properties in NHS Lothian. So it's limited as to the aspects that they can deal with for individual projects, and I think the understanding is that large projects will have their own smaller ventilation safety groups comprising the contractor and other people of the same type of people there in them as

well, to make the decision initially and make a recommendation up to the main safety group. So the benefit is there for all the stakeholders to be at both the local-- the main safety group and be involved in all the decisions pertaining to it, but the downside of that is it's the same people that will be involved in both.

Q Thank you, and just finally from me, do you have any other reflections, having worked on the project, for how these types of projects, new build hospitals, which are obviously difficult, complicated projects, how they can be done better to try and avoid some of the issues that we have been discussing today?

A Again, as I say, I think it's in the brief, but I think standardisation would be the most appropriate way to kind of ensure that you are eliminating the risk of having a major issue.

Q And what do you mean by standardisation?

A Similar types of designs for-- I know that hospitals are utilitarian buildings anyway, but the more complex architecturally a structure is, potentially the more difficult it is to service that internal engineering wise-- engineering wise, sorry. So it would be better to kind of come up with ways to ensure that the

right spaces are available for fitting the hospital out. Standardisation in that regard.

Q Thank you. Well, Mr Henderson, thank you for answering my questions. I don't have any more questions at this stage, but Lord Brodie may have some questions or there may be applications from core participants, but thank you.

A Thank you.

Questioned by The Chair

Q Mr Henderson, what we will do shortly is we will take a brief break to allow the legal representatives here to take instructions and for me to find out if there is any more questions, but can I just run you through the points that counsel has just dealt with? In other words, he was asking for your reflections, looking back partly on this particular project but also of course from your experience, as to how things might have gone better.

Now, the first point that I have noted is that you consider it would have been better to have the-- and I have noted you as saying "the design." We are talking about the design in the ventilation, "locked down at the time of financial close," at the time the contract project agreement was fixed.

A Yes.

Q So have I got that point right?

A Yes, as much as possible. As much as possible, locked down, yeah, yeah.

Q Now, your second point, I think maybe just as another way of looking at the same point, but I want to be sure about this. I have noted you as drawing attention to the amount of reviewable design data that was still outstanding at the time of financial close.

A Yes.

Q Is that really the same as your first point, or is it slightly different?

A It's slightly different in that we were receiving a lot of design data that, had it been locked down, you would still be getting quite a bit, but they would be in the form of more technical schedules rather than design drawings or design information. They may be things like technical schedules about equipment or grill schedules rather than actual design information that had to be reviewed. It would be more information about components of the systems rather than----

Q Okay, should I take-- Am I understanding this correctly? You are making the point that there is a

distinction between fundamental or more fundamental design issues and minor matters of, for example, items of equipment?

A Yeah. Yes, yes.

Q The third point I noticed was you thought it was desirable to have a more standardised derogation process.

A Yes.

Q Again, at the earliest-- And we are talking about derogations from a guidance or other sorts of derogation?

A It would be from guidance.

Q Sorry?

A It would be from guidance. Guidance, yeah.

Q And I think I understood that you had in mind that there should be a centrally provided pro forma document which everybody would use?

A Yes, yes.

Q The fourth point I have noted is that it would be helpful to have-- Well, I have noticed it as the interpretation of guidance. Now, what I took from what you said was that the guidance, as currently expressed, was not sufficiently prescriptive. So should I be taking from what you said that you would want more detailed, more

specific wording, or have I got that wrong?

A Yes, that's probably accurate, and what I really mean by that is Table A1 could probably be produced in a better way to be more explicit than what it's actually trying to achieve. It does give you air change rates, but it could be a little bit more explicit still.

Q Counsel then asked you about the innovations in the 2022 version----

A Yes.

Q -- or the revised version and the ventilation safety-- and the safety group, and I think again you pointed to the usefulness of an agreed, generally used document to address derogations.

A That's correct, yeah.

Q Did I pick you up correctly on that?

A Yes, yes.

Q And your final point, which you used the word "standardisation", is that-- did I understand that properly as standardisation of components, or is it maybe larger items of design?

A It's both, really. It's component-- It's down at component level. If you have the same installation materials, you can maintain or alter

these in the future more easily, but also to the bigger aspect of it is when hospitals are designed----

Q Yes?

A -- they're not often designed with the infrastructure within them in mind, they're designed to look like they're meant to look and then the infrastructure has got to be fitted into that design. So it's more standardisation to allow the scope and space for the materials and services that are required to actually make the building work.

Q Right, I think I have got your points. Is there anything that rises----

MR MACGREGOR: Nothing arising from me.

THE CHAIR: No. Well, we will rise for-- I would like to think no more than 15 minutes to allow legal representatives to get instructions if necessary, speak to Mr MacGregor if necessary. If it turns out that these steps are not necessary, no doubt we can be told about that, but if we budget for about 15 minutes. Could I ask you to return to the witness room, Mr Henderson, and if you could give us another 15 minutes?

THE WITNESS: No problem. That's fine.

(Short break)

THE CHAIR: Mr MacGregor?

MR MACGREGOR: There is no additional issues, my Lord.

THE CHAIR: All right. Well, I think we could probably go on to the next witness.

MR MACGREGOR: The next witness is Janice MacKenzie, my Lord.

THE CHAIR: Janice McKenzie. I am being reminded I should have confirmed with Mr Henderson that his evidence is finished. That was an error on my part. Mr Henderson, there will be no further questions and you are free to go, but before you do, can I thank you for the assistance you have given to the Inquiry? And by that, I do not mean simply your attendance today, but preparing statements and otherwise collecting necessary documentation, all involved you in considerable amounts of work. I am very conscious of that and would accordingly thank you for that assistance, but you are now free to go.

THE WITNESS: Thank you very much. I appreciate that, thanks.

THE CHAIR: If you give it to Mr Ray. Thank you, David. Good afternoon, Ms MacKenzie. As you are very well aware, you are about to be asked further questions, but before

you do that I understand you are prepared to take the oath.

Ms Janice MacKenzie
Sworn

Thank you very much, Ms McKenzie. Now, I am aware you have been waiting for probably the best part of today. We usually sit till four o'clock, but I would anticipate that we might sit a little bit beyond that to make some progress with your evidence, but I will just leave myself in the hands of Mr MacGregor to determine. We will probably not finish with your evidence today. Mr MacGregor.

Questioned by Mr MacGregor

Q Thank you. You are Janice MacKenzie?

A Yes.

Q And you have provided a witness statement to the Inquiry which should be at pages 145–149 of witness statement bundle, volume 1. That is the third statement you have provided to the Inquiry.

A It is.

Q The content of that statement, or the most recent statement you have provided, will form part of your evidence to the Inquiry,

but you are also going to be asked some questions by me today. If you want to refer to your statement at any point, please just do let me know. Your qualifications and work history were covered at previous hearings and particularly in your statement for the May 2022 hearings. It dealt with your qualifications and work experience, but really just by way of summary, you qualified as a nurse in 1981. Is that correct?

A Yes.

Q You worked for NHS Lothian, retiring in October 2019.

A Yes.

Q And you were the project clinical director for the Royal Hospital for Children & Young People in the Department of Clinical Neurosciences.

A Yes.

Q Thank you. Part of that role within the project required you to engage with the children's clinical management team. Is that right?

A That's correct, yes.

Q Can you just explain, what was the children's clinical management team?

A So the children's clinical management team is a group of people headed up by-- At the time it was Fiona Mitchell who was the general manager for children's

services and she was supported by the medical director, associate nurse director and a service manager, and they had day-to-day operational responsibility for the current hospital.

Q And I think you say very fairly in your statement at paragraph 8 that a lot of the contact was done relatively informally by way of discussions and telephone conversations.

A Yes, it was.

Q We will come on and discuss some aspects of your involvement in the project – so, by the project, I mean the Royal Hospital for Children & Young People – really from the point that the contract is signed right through until the hospital eventually opens. But just before we get there, if we could maybe just look at some relevant guidance that would have been in play during the course of the project. So if I could ask you to have in front of you, please, bundle 13, volume 13, page 464, which is:

"SHFN 30 [–] Part B: HAI-SCRIBE [–] Implementation strategy and assessment process."

Do you see that?

A I do.

Q And was that a document that you were familiar with when you were working for NHS Lothian?

A It was, yes.

Q And, again, just to explain in your own words, what is Part B of HAI-SCRIBE?

A So the Part B is the process for implementing the HAI-SCRIBE, and it's really about giving you the opportunity to identify any risks to patients, visitors, staff, and therefore then to manage those risks or mitigate them.

Q And the Inquiry's heard some evidence about SHFN 30 and HAI-SCRIBE before, but effectively there were various stages that you would go through on a project, with Stage 4 being a check that was completed before final handover. Is that correct?

A That's correct, yes.

Q If we could just look within the guidance itself onto page 468, please, but before we go there and read it out, was this a document that was simply addressed to clinicians or was it meant to be understood more widely within the NHS community?

A So, no, it should be understood more widely. We would certainly-- I think, yes, it was used for obviously this project but it got used in the then existing hospital for any refurbishment works, etc. So it was a document that Estates would be very

actively involved in, and whatever area the work was being undertaken, then there would be representatives there as well.

Q So clinicians should understand it, Infection Prevention and Control should understand it, Estates should understand it. It should be certainly on the radar of a range of disciplines.

A Yes, and the contractor should understand it as well.

Q Okay. That is interesting. Your position would be that, on a major new build hospital project, a document like SHFN 30 should also be understood by the contractor.

A Yeah.

Q Do you think that happened in practice in the period before 2021?

A I think, certainly speaking for this project, Multiplex were aware of it because they were completing the Glasgow project. So they had used it there, so many of their staff were aware of it, yes. Not all of them, but some certainly were.

Q And we will come on and look at the guidance, but it talks about a partnership approach between various disciplines. Do you think that partnership approach happened on the RHCYP project?

A I think it happened from the point of view of having-- undertaking it with the Infection Prevention Control and members of the project team and Estates. Depending on which stage of SCRIBE we were doing, we did have representatives from Multiplex as well.

Q And in terms of Multiplex's involvement, do you think that worked in terms of the partnership model set out in SHFN?

A I think it worked to an extent. I don't think-- I think because invariably they would select one person to come along, and I suppose one individual couldn't necessarily-- able to answer all of the questions.

Q Okay. So, if we just look to bundle 13, volume 3, page 468, it says:

"Scrutiny of this guidance will highlight the frequent use of the word 'partnership'. Successful use of HAI-SCRIBE requires participation and cooperation, particularly between estates and facilities staff and infection prevention and control teams. To manage or mitigate the risks highlighted through the use of HAI-SCRIBE requires knowledge from many sources. However, it is not expected that any group will possess

full knowledge or experience of another's discipline."

Am I right in thinking that you did feel largely that this multidisciplinary approach worked on the project?

A Yes.

Q If we could look on to p.471, please. That sets out the four stages that we have just discussed a moment ago, including Development Stage 4 – Pre-handover check, ongoing maintenance and feedback. The Inquiry has heard evidence that there was not a Stage 4 HAI-SCRIBE completed for the project before the hospital was accepted by NHS Lothian. Were you aware of that?

A I was, yeah.

Q Do you know why that Stage 4 HAI-SCRIBE was not completed before the hospital was handed over to NHS Lothian?

A Because the hospital was not in a state to have that undertaken because there was still a large amount of outstanding works, so we couldn't have completed it. We were very aware that under normal circumstances you would do one before completion, but there would have been no point in doing it.

Q So, why not pause the project until the building is at that stage and then do the HAI-SCRIBE?

A I think from my understanding, the reason to go for completion at that time was for commercial reasons. A lot of the detail I don't know of that, but there was a recognition because we had agreed that there would be a three-month commissioning period after the hospital was handed over, that that would give us time for the works to be completed and then to do the HAI-SCRIBE then.

Q Were you involved in that decision to accept the hospital without the HAI-SCRIBE being done, or was that simply something you were told was going to happen?

A No I wasn't involved in the discussions; they were at a very high level.

Q What would your personal views be on that as a clinician? Do you think it was the right decision for NHS Lothian to take?

A I think in hindsight, no, it wasn't the right decision for us-- for us to take. I think, you know, this was a project that had been-- had had many delays to it, everybody wanted it to open, and I think people did it with the best of intention but, no, it probably wasn't the right thing to do.

Q Because, again, to an outsider looking in, if you have a four-

stage process, it does seem slightly odd that that guidance would simply be sidestepped. Was that your own view?

A I think I did seek some reassurance from it because we had this commissioning period. So it wasn't that, you know, the hospital, we were saying, "That's it, it's completed and we're all-- you know, we're going to move in, in the next week." So from that point of view, I think part of the issue was that actually the works took longer than we had anticipated.

Q From a clinical perspective, what are the risks associated with not doing the Stage 4 HAI-SCRIBE before you accept the building?

A Well, I suppose you're not highlighting any issues that you may have picked up. Now, some of them might be very minor, some of them might be more serious, which would need to be rectified before you did have completion.

Q Because we will come on to look at this whenever we go through the various stages of the project, but one of the things that is asked for at the Stage 4 HAI-SCRIBE is whether or not the design complies with published guidance, including SHTM 03-01. Is that correct?

A That is correct, yes.

Q So, the very fact that that Stage 4 check had not been done, there had not been that final check signed off, that the hospital did comply with published guidance. Is that correct?

A That's my understanding, yeah.

Q Again, would it be fair to say that that is a sort of missed opportunity to spot some of the issues that were identified later on in the project?

A It could have been, yes.

Q Thank you. I would like to just look at one earlier set of guidance, so bundle 13, volume 3, page 554. So, this is an earlier iteration of Scottish Health Facilities Note 30 that we have just been looking at from June 2007. Do you see that?

A I do.

Q During your time working for NHS Lothian, would that be a document that you would have worked with?

A It was a document that I didn't particularly know about before I started on the project, but I was told about it, and I did read it at the time. We also included it as one of the documents in the clinical output specification as well.

Q Because the project really spans quite a long time----

A It does.

Q -- from 2005 effectively, the concept right through to 2021. So this guidance would have been in force at certain stages of the project before the 2014 guidance comes into play. Is that correct?

A Yes.

Q And, again, I won't take you through all of the issues within the guidance, but, again, does it talk about a partnership, holistic approach towards healthcare-acquired infection?

A Yes, from-- my recollection is that it very much talks about a team approach, and that people would look at infection risks from their kind of area of expertise.

Q If we look, for example, on to p.568, para.3.10. The guidance states:

"It is important to consider certain issues before construction work commences including: [if we look four bullet points down] the air flow and pressure differentials in the area (differentials may be varied by external wind strength and direction) [and then the next bullet point] the susceptibility of the occupants to infection, e.g. through respiratory problems, immuno-compromised or intensive care patients."

Do you see that?

A Yes.

Q So, if the guidance is directed at a whole range of disciplines – clinicians, Infection Prevention and Control, engineers, Estates – is the guidance really saying to all those disciplines, "You don't need to be an expert on all these areas, but you need to have some basic knowledge of them"?

A I think it's-- I think how I kind of interpret it is that-- So, myself as a clinician would look at elements of that and I would have knowledge of and control over ensuring that those things happened, and the engineers would be looking at it from another perspective. Clinicians may be looking after, you know, depending on the area that they work in.

Q The Inquiry's heard evidence from at least one witness who has talked about it as almost a process of joining the dots, of trying to make sure that you have got all the right people so that everyone's knowledge almost overlaps, so that if there are issues, you can join the dots. Is that a helpful way of trying to understand this guidance?

A Yes, I suppose that is quite a good way.

Q Okay, thank you. If we could look on within bundle 13, volume 3, to page 573, please. Paragraph 5.2 is headed "Identifying Risk." Do you see that?

A Yes.

Q At para.5.3, it states:

"To avoid mistakes and pitfalls the Project Team must consider issues including: How will the product, equipment, room, or clinic be used? [And then the penultimate bullet point] What are the standards and guidelines from architectural and engineering bodies, government departments, and accrediting agencies?"

Do you see that?

A Yes.

Q So, again, there has to be an understanding on the part of the project team. Firstly, clinically, what is the space going to be used for, and you also need to be thinking about standards and guidance relevant to the project.

A Yes, and I suppose that that was why we developed the clinical output specifications, because that covered those two issues.

Q Then if we look over the page onto p.574, "Common Errors":

"5.5 Common errors in design and construction (adapted from Carter and Barr, 1997) due to inept or non-existent risk management include: [and then the second bullet point is] incorrect air turnover and airflow patterns."

Do you see that?

A Yes.

Q So, when you were working on the project, were you aware from a clinical perspective that a common error in these types of projects can be getting incorrect air turnover and airflow patterns?

A I'd say I did read the document when I joined the project, so I would have read that, yes, so I would-- I was aware that that would have been, potentially, one of the issues.

Q It says that that can happen if there is ineffective risk-management. On the project that the Inquiry is considering, obviously it is a hospital that is built whereby there is one particular specification for a pressure cascade, which is agreed in Settlement Agreement 1. That is then changed within Settlement Agreement 2. Did this project then fall into this kind of classic, common error of just inappropriate risk-management being done, and missing air turnover and airflow patterns?

A I think, yes, the kind of history of what happened, yes, you

would have to say that. That is what happened, yeah.

Q What is your understanding of-- If this is a known common error, how does that happen on the project?

A I suppose I have thought about this a lot obviously, because it has happened and the impact of it. I think it-- I think it's a difficult one to answer because I think looking at things now, you know, there were lots of missed opportunities where it could have been picked up upon. I think, and I'm-- I think you have asked me before around whether or not it's something that I, you know, or clinicians should have picked up on. My own kind of view on that would be we're not engineers, that's not our area of expertise. Our-- The expectation is that your design team, your engineers, and your technical advisors would be checking those type of things and we as clinicians would be checking the things that, from a clinical perspective, we have the knowledge to do.

Q We will come on and look at the detail, but if we just think as a matter of generality, you are obviously a clinician. But in 2017, refreshed in 2018, you do a generalised risk assessment which clearly identifies that some of these rooms are in Critical Care, and you send that on to Mott MacDonald, and you send it on to the Estates team at NHS Lothian. It is difficult to understand how it was not spotted that these spaces were in Critical Care, given the generalised risk assessment that you did and the wide body of people that that document was sent to. Do you have any observations on that?

A I mean, obviously, yes, it-- it's very disappointing that it wasn't picked up. As you say, it-- there was a wide range of people that it went to. I think my observation probably would be it was an incredibly busy time for everybody, and I think, you know, the sheer volume of things that people were dealing with, you know, it may just-- it just kind of slipped through the net, I suppose.

Q Whenever you say, "It just slipped through the net," from a clinical perspective, you could not have been clearer that there was a requirement to cohort patients and, as you say, you are not an engineer to translate that into how a detailed ventilation specification should be put together. Who do you think should have been doing that on the NHS Lothian side?

A I think it should have been predominantly the technical advisers, with input from Estates as well.

Q And who was that? Who was the technical adviser?

A Ronnie Henderson was our hard FM commissioning manager.

Q So, he is the internal hard FM commissioning manager. Who else was assisting NHS Lothian with technical issues?

A So, our technical advisors. So Mott MacDonald.

Q Mott MacDonald.

A Yeah.

Q Whenever you say you think there were a lot of missed opportunities, what, in your view, would be the key missed opportunities on the project from the period that the contract is signed?

A I think, obviously, the error in the Environmental Matrix is probably one. Potentially, the issue of the air changes in single rooms from six to four, and the interpretation of that being seen by the contractor that it included Critical Care, and the risk assessment for the four-bedded bay pressure.

Q Thank you. I am now going to move on and ask you some specific questions about the project. I will try and break it up into stages. So, firstly, to deal with the period from when the contract is signed up to Settlement Agreement 1, then look at Settlement Agreement 1, then look at the reports when IOM Limited come in, and then look at High Value Change Notice 107 and the period after that. So, in the period after the contract is signed, what in practical terms are you doing on the project at that point?

A After the contract is signed? So the design was ongoing then. So we were still doing room layouts, so we were meeting with every department, with the clinical leads for every department, with the architects and Multiplex design manager to finalise the room layouts. We were agreeing on the equipment that was required.

Q In terms of some of the other people involved in the NHSL side, what was Brian Currie's role at this point in the project?

A So, Brian's role obviously was to make sure that everything was going along as it should do, have an overview of everything that was happening.

Q And what about Ronald Henderson? What was his role?

A So, Ronnie would be predominantly liaising with the kind of

technical advisors and kind of NHS Lothian Estates if that was required.

Q Okay. So, in terms of Mr Henderson, he is almost the link, in your view, between NHS Lothian and the technical advisors?

A In many ways, yes. I mean, the technical advisors for some things did directly discuss things with me, but it was mainly around kind of maybe, you know, a clinical query about something.

Q And what was your understanding of Mott MacDonald's role in the project at this point? So, the reference design has been completed, the contract has been signed. What, if anything, are Mott MacDonald doing at this stage?

A So, they were continuing to give us advice. We still had a large amount of RDD to sign off. So they were obviously reviewing that, and they continued to advise us on these things.

Q And in terms of Mott MacDonald's position, the Inquiry has heard evidence that their role was not as a shadow design team or undertaking a design review. That risk, certainly in their analysis, really sat with the project company. Was that your understanding as well?

A I mean, my

understanding was certainly they weren't designers, yeah. Absolutely.

Q It is just if we look through some of the correspondence with Mott MacDonald, they do seem to be doing more in terms of comments and advice than simply commenting on operational functionality or clinical adjacencies. Did you see them having a wider role in the project?

A I mean, I would say they definitely had a very integral role on the project. I mean, we were all in the same office, so they were obviously involved in lots of things that were going on at the time.

Q And in addition to assisting with reviewable design data, was your understanding that they were providing advice to NHS Lothian on engineering matters?

A Yes.

Q And, again, can you just explain your understanding just exactly what would they be advising on?

A So, they attended-- My understanding is they attended a lot of the technical meetings. As much as there were room layout design meetings going on, there were meetings, you know, going on around many of the technical engineering aspects of the project. So, Mott MacDonald were always at those.

Q Okay, and your understanding, and attending with a view to giving advice to NHS Lothian?

A Yeah, but I didn't routinely attend those meetings. That's just my understanding of what they were doing.

Q And, again, just to try to understand what is happening, there does seem to be a lot of work that is taking place in the period after the contract is signed, particularly a lot of work that is happening in what people have referred to as the reviewable design data phase. What was your impression of the volume of work that was being carried out in that phase?

A There certainly seemed to be a lot of RDD. It was the first major project I'd worked on, so I didn't have anything to compare it with but certainly that was the view of people who had been involved, that we did appear to be having a lot of RDD to review and sign off.

Q As far as you were concerned, was this NHS Lothian developing its brief to the designers, or was this the designers designing the brief that had already been fixed?

A No. This was the designers developing on the brief that we had already given them.

Q So, if I just ask you some

questions then about the timeline really from 2017 onwards, in terms of your involvement in the project and how matters developed. Was there a dispute that arose in relation to the four-bedded rooms?

A Yes, there was.

Q And was that effectively a dispute about the pressure regimes that should be utilised in those spaces?

A Yes, it was. Yeah.

Q And can you recall, how did that discussion come about? It seems to me-- You explain in your statement that there was a clinical desire to cohort patients but there seems to be an issue that is developing after the contract is signed. So how did that issue come about?

A I mean, it wasn't a new issue in-- Pediatrics cohorting of patients is a very common practice. So it was something that we always planned to do. So, from that point of view, it wasn't a new issue. I can't actually recall who first raised it as an issue. I think it was raised on the back of-- the design team had said that the four-bedded bays, they had equated it to a general ward in the guidance, which obviously has a different pressure regime, and our understanding-- and we did-- Ronnie

sought-- and Infection Control sought advice from HFS on this as to whether or not that should be the case, and the view was that, no, they should be treated the same as a single room, because obviously a general ward is a collection of rooms, a four-bedded room is one room. So that was how it came about but who actually first of all raised it, I can't remember.

Q Okay, but, again, by the point we are in 2017, is this effectively a live dispute between NHSL on the one hand and IHSL and Multiplex on the other?

A Yeah.

Q If I could ask you to look to bundle 13, volume 1, page 34, please. This is a record of a meeting that took place on 24 February 2017. Do you see that?

A Yes.

Q So, on the NHSL side, we see at point two, you were listed, "Janice MacKenzie" of NHSL. There is also Dorothy Hanley, Brian Currie. We see that Kamil Kolodziejczyk of Mott Macdonald, the technical advisor, he is there, as is Mr Ronnie Henderson as number eight from NHSL. Do you see that?

A Yes.

Q We will come on and look at some of the documents relating to that meeting, but is that a meeting that stands out in your memory? Do you remember what was discussed at it?

A I remember being asked to attend it routinely. Neither myself nor Dorothy Hanley, who was the commissioning manager for Children's Services, would go to those meetings, but we were asked to go to explain why we wanted to cohort patients and to identify areas where we wanted to do that.

Q And whenever you say areas that you wanted to do that, would you be telling people at this meeting that some of these rooms are in Critical Care?

A I honestly can't remember if we did. My recollection is we were presented with the list of all the four-bedded bays just by code, and we went through it quite quickly just saying, "Yes, that room is essential, non-essential." I don't genuinely know if we identified each of the departments.

Q Okay. The only reason I ask that question is, again, if we think back to some of the guidance, SHFN, it says you need to know the clinical use for the space to work out the ventilation requirements. Can you explain, how was it being determined

which rooms it was essential to have balanced and negative pressure if everyone in that room was not discussing the clinical usage?

A I suppose-- Well, partly because what we were doing is we were identifying where we wanted to cohort patients, and we had-- the advice to us from Infection Control was if we were going to cohort patients, then it had to be balanced or negative pressure. So that was what we were looking at.

Q And in terms of that advice from Infection Prevention and Control, are they saying if you want to cohort patients in Critical Care rooms, it is balanced or negative pressure, or are they simply saying if you want to cohort patients in a general ward, it is balanced or negative pressure?

A My recollection is that the discussion was around where did we want to cohort patients, and we did discuss the risk assessment with them. So it was identified in that risk assessment, the areas that we wanted to do it in.

Q If we just look on, page 35, we see that there is handwritten annotations to a schedule. It says, "Marked up at meeting 24/02/18." So if we just take, for example, the letters in the left-hand column, D, E and F,

did you understand, if we look at D, the code B1063? Does "B1" to a clinician mean Critical Care?

A Well, it wouldn't mean necessarily to Critical Care basically, but I knew all the codes for all of the departments-- Every department had a kind of code B1, C1.1, and the first one indicated the floor. So I certainly would know, and the lead clinicians for the area would know that that was their code, but another clinician from another area wouldn't necessarily have known that that was Critical Care.

Q So, when you are looking at rooms D, E and F, you know that they are Critical Care rooms?

A Yeah.

Q Do you think the other people at the meeting, Ken Hall of Multiplex, Stewart McKechnie of TÜV SÜD, would they know that "B1" meant Critical Care?

A I would have thought so, given that any of the plans that we saw-- and they would be identified-- you would get a-- Much as we had architectural plans for an area for the room layout, there were equally plans for all the different types of engineering, and they all would say, you know, the code and the name of the department on them. So I would

have expected-- They may not have instantly thought about it, but I would have thought that, before the meeting or after the meeting, they would have looked to see where they were.

THE CHAIR: I am assuming-- I am sorry, Mr MacGregor. A very small point. I am assuming but please correct me if I am wrong about that, but the code is made up-- I mean, the first digit or letter is the floor, the second is the department in the sense of a clinical use, and the third is the specific space or room.

A Yes.

Q Thank you.

A That's correct.

Q Sorry, Mr MacGregor.

MR MACGREGOR: No problem, my Lord. Mr Henderson gave evidence this morning, and he said at this time he did not know that "B1" meant Critical Care, but he very fairly accepted that if he just looked to the Environmental Matrix, the first box on it says "B1 Critical Care." So, is it perhaps the case that you knew that "B1" meant Critical Care and for anyone that did not know that, it was hiding in plain sight because all you had to do was look at the Environmental Matrix or the plans for the hospital?

A Yeah.

Q From your perspective, did you think it was so obvious that you almost did not need to raise it with anyone?

A Yes.

Q If we can come on and look at the general risk assessment that we have discussed, I think if we could begin at bundle 13, volume 8, at page 449, please. If you begin with the email at the bottom of that page, that is the email from yourself, Janice MacKenzie, to Jackie Sansbury and Brian Currie, dated 6 July 2017. Do you see that?

A Yes.

Q And you have copied in Fiona Halcrow, Dorothy Hanley, Ronnie Henderson, and then from Mott MacDonald you have copied in Kelly Bain, Kamil Kolodziejczyk and Graeme Greer.

A Yes.

Q And you say:

"Dear both, please find the clinical risk assessment in relation to the above as requested, which Dorothy, Fiona and I have pulled together."

Do you see that?

A Yes.

Q Just in terms of a chronology, it seems slightly unusual that a clinical risk assessment is being

produced after the key and essential rooms have being agreed. Can you explain why that took place?

A I think at the time of the February meeting, that that was the kind of initial meeting. It still hadn't been agreed that those were going to be the rooms. So there was still a lot of debate going on about whether or not IHSL were actually going to do anything about it or what was happening. So at that point, Children's Services were aware that there were issues going on but we didn't feel, until we were kind of a bit clearer about what potentially IHSL were prepared to do, that we could do the risk assessment.

Q Thank you, and then the email continues:

"The issue only really affects Children's Services, but we have discussed with Hester"--

What with Hester?

A Hester Niven was the clinical nurse manager for DCN.

Q Thank you:

"We consulted with Children's CMT representatives this morning (Fiona Mitchell, Eddie Doyle, Lynda Cowie, Peter Campbell & Sharon Russell) and the risk assessment fully reflects their views."

So this risk assessment fully represents the views of all the clinical team?

A Yeah, of the clinical management team, yes.

Q Thank you. It says:

"They are clear, as we also are, that we cannot have a new facility that does not give us the option of cohorting patients with air-borne infections. We have suggested an overall compromise position of only some of the 4 bedded rooms in the facility having the ventilation changed (in summary – all in PARU and Medical Inpatients and one of the 4 bedded areas within Critical Care)."

Do you see that?

A Yes.

Q So at this point, should the Inquiry understand, 6 July 2017, you have sent an email which Ronnie Henderson, the Estates obviously is involved in, and three individuals from Mott MacDonald including Graeme Greer are involved in, and you have told them specifically at least one of these four-bedded rooms in Critical Care needs to balance their negative pressure to cohort patients?

A Yes.

Q

"However the Children's CMT did say that to achieve this, there would be a delay to the programme

then the question whether we should not be changing all of the 4 bedded rooms to allow for future proofing and flexibility."

Do you see that?

A Yes.

Q So whether you had sent this email, does Ronnie Henderson come back and say, "If those rooms are in Critical Care, you need positive pressure"?

A No.

Q And----

A No one came back to us.

Q Nobody. So Mott MacDonald, three individuals from Mott MacDonald included in this email chain told that these spaces are going to be in Critical Care, and they do not come back saying, "You have to do it by way of positive pressures to comply with the published guidance"? They are not telling you that?

A No, nobody told us that.

Q Then the next paragraph states:

"Infection Control have also confirmed they are happy with our risk assessment."

So was this something that you obviously discussed with Infection Prevention and Control?

A Yeah, so we discussed it with Janette Richards-- or Rae, I can't

remember when she got married, but who was our link with Infection Control.

Q So when you say Infection Prevention and Control are happy, you mean Janette Rae or Richards, she was happy----

A Yeah, because she was the link and she would escalate anything to the wider IPC team.

Q Thank you. Then if we look on to the record of the general risk assessment, that begins on page 451. Date in the top right-hand corner, 5 June-- 5 July 2017. Subject of Assessment:

"Bedroom ventilation design in 4 bedded rooms does not meet the recommendations of SHTM 03-01, as the current design has the 4 bedded rooms as being positive pressure."

Do you see that?

A Yes.

Q Now, you tell us within your statement you are not an engineer, and while you might know about the existence of SHTM 03-01, you are not someone that has the technical knowledge to work out whether something is or is not compliant. Had someone told you that there is a non-compliance with SHTM 03-01?

A Yes, because we knew that around, again, it was the issue of

how four-bedded bays were being treated and the design team were treating them as a general ward. So we did know and we were told that, you know, it should be a single room in which case.

Q And when you say, "We were told," who told you that?

A So it-- I think it initially came from Motts, from Colin Macrae.

Q So Motts from Colin Macrae. You go to Motts, Colin Macrae, and say, "We want to cohort these patients," and his response is, "If you want to cohort the patients you have to do that. You cannot do that with positive pressure, it has to be balanced or negative." Is that right?

A That was correct, and we-- as I say, we then discussed it with Janette, the IPC nurse around that and at the time she agreed that.

Q And in terms of these discussions with Colin Macrae of Mott MacDonald, was he aware that some of these spaces were going to be in Critical Care or was he simply told that there were going to be four-bedded bays?

A I can't 100 per cent say that he was aware that they were in Critical Care, but-- and I know he didn't get sent the risk assessment. I don't-- Why, I don't know if he was off or if

there was some reason, but I would imagine he would have seen it at some point.

Q But if we think back to the partnership approach, there is perhaps two ways that we could look at that type of discussion, which is, one would be to say, as the clinician, you should have told him that it was in Critical Care, but you could also look at it the other way round which is to say, as an engineer, he should have asked you what the space was going to be used for. Is that a fair way of looking at it?

A Yeah, no. I think-- Yes.

Q So it is just difficult to understand. If all the right disciplines are involved and they all know about the published guidance that talks about working in a partnership approach, knowing about all the relevant published guidance, how does it come to be in this period that there still seems to be this statement that there is non-compliance with SHTM 03-01 because it is positive pressure, whenever we know much later down that is exactly what gets built into the hospital?

A I suppose the honest answer is that I don't know. I don't know how we-- how it happened.

Q But certainly when you

are committing this generalised risk assessment, what you have been told is that the pressure regime of positive is non-compliant with SHTM 0301.

A Mm-hmm.

Q And you, from a clinical perspective, could not be any clearer, as we will see, in telling people at least one of these rooms is going to be in Critical Care.

A Yes.

Q And no one from Estates or Mott MacDonald is pushing back, saying, "Because this room is in Critical Care, we need to do something different."

A No, nobody did, and we would have looked at it very differently if that had been the case.

Q Thank you. Again, just staying within that main box, if we skip the next paragraph, final paragraph:

"The risk assessments have been discussed with the Children's CMT and Infection Control & prevention who have confirmed that not having the ability to cohort patients is not acceptable from a patient safety perspective. In addition the Children's CMT highlighted that if the programme is going to be delayed in order to achieve compliance with the SHTM 03-01 in the 4 bedded rooms then should we not be considering achieving this in all 4 bedded rooms."

Do you see that?

A Mm-hmm.

Q You then see the overall risk section which addresses the cohorting of patients, and then final sentence after the bullet points:

"See separate risk assessments for inpatient ward/s as the risk rating for each ward/s is different dependent upon the patient group and clinical risk."

Do you see that?

A Mm-hmm. Yes.

Q So you have done a generalised risk assessment for individual patient groups depending on clinical risk, as we will see when we come on to look at the further sheets.

A Yes.

Q And then just to make that abundantly clear, step two says, "See separate risk assessments for specific ward/s," and we see a summary of wards completed at the bottom. Third entry in the summary of risks by ward, "RHCYP – critical care. One 4 bedded room (B1-063) ventilation change." Do you see that?

A Yes.

Q And if we look on to page 455, we see that subject of assessment is "Ability to cohort patients within Critical Care Unit," and

that is for the department RHCYP Critical Care (B1). Do you see that? It is a specific record of general risk assessment for critical care spaces within the proposed new hospital.

Lord Brodie, I am conscious that that is just before half past four. I was going to move on and look at the next risk assessment, but I do not think I would complete that in the next five minutes. That may be an appropriate place to break.

THE CHAIR: Right. Well, I am happy to be guided by you, Mr MacGregor. Ms MacKenzie, can I ask you to come back tomorrow for ten o'clock?

THE WITNESS: Yes.

THE CHAIR: Thank you very much indeed. Ms Ray will show you out. Well, we will all see each other, all being well, tomorrow morning at ten o'clock.

(Session ends)

16:30