

OPUS 2

INTERNATIONAL

Grenfell Tower Inquiry

Day 49

October 7, 2020

Opus 2 International - Official Court Reporters

Phone: +44 (0)20 3008 5900

Email: transcripts@opus2.com

Website: <https://www.opus2.com>

1 Wednesday, 7 October 2020
 2 (10.00 am)
 3 SIR MARTIN MOORE-BICK: Good morning, everyone. Welcome to
 4 today's hearing. Today we're going to begin by hearing
 5 further evidence from Mr Simon Cash, and then we shall
 6 hear other witnesses from Artelia.
 7 Yes, Mr Millett.
 8 MR MILLETT: Mr Chairman, good morning.
 9 SIR MARTIN MOORE-BICK: Could you ask Mr Cash to come in,
 10 please.
 11 MR SIMON CASH (continued)
 12 THE WITNESS: Good morning.
 13 SIR MARTIN MOORE-BICK: Good morning, Mr Cash. That's it,
 14 get the water done and then ...
 15 THE WITNESS: Sorry, it's a bit like a ritual.
 16 SIR MARTIN MOORE-BICK: That's all right.
 17 MR MILLETT: Mr Chairman, I'm not sure the microphones are
 18 working in the room.
 19 THE WITNESS: Is that better?
 20 MR MILLETT: They are now.
 21 THE WITNESS: Sorry, I was slightly off-centre.
 22 MR MILLETT: No, I don't think it was you.
 23 SIR MARTIN MOORE-BICK: Right. Ready to get going?
 24 THE WITNESS: Yes.
 25 SIR MARTIN MOORE-BICK: Thank you.

1

1 Yes, Mr Millett.
 2 Questions from COUNSEL TO THE INQUIRY (continued)
 3 MR MILLETT: Mr Chairman, thank you.
 4 Mr Cash, good morning.
 5 Last night we were discussing the issue of value
 6 engineering when we stopped, and I now want to go back
 7 to that subject into the spring of 2014, but now looking
 8 at the position after Rydon had been notified that they
 9 were the preferred bidder, as they were on
 10 18 March 2014.
 11 A. Yes.
 12 Q. Can we now go to the contractor induction meeting of
 13 1 April 2014. These are notes we have seen before
 14 a number of times. {ART00002256}, please. This is
 15 a meeting at which you were not present, but Mr Booth
 16 and Mr Blythe of Artelia were there, as we can see, and
 17 again they did the notes and checked them.
 18 Do you think you saw these notes after the meeting,
 19 soon after the meeting?
 20 A. They would have been copied to me, yes.
 21 Q. Can we look at page 2 {ART00002256/2}, please, and look
 22 at paragraph 2.1. This is under the heading "Proposed
 23 savings referenced in tender submission". You can see
 24 there that cladding savings were discussed, and the note
 25 records:

2

1 "There is a potential saving of up to £376,175 that
 2 could be realised through changes to the proposed
 3 cladding. Savings can be achieved by changing the
 4 material and the method of fixing. Changing from zinc
 5 to aluminium and using a face fixing, rather than
 6 cassette, would save the most money."
 7 Now, were you aware before this meeting of the
 8 figure of £376,175 for savings on face-fixed aluminium
 9 cladding that Rydon was suggesting?
 10 A. I can't remember specifically if that was the figure,
 11 but Rydon had been asked to price an alternative for
 12 aluminium cladding within their tender return, and
 13 I can't remember whether that was the same figure or
 14 not.
 15 Q. I follow.
 16 Do you know or did you know how that figure was
 17 arrived at?
 18 A. At that point in time, no.
 19 Q. Right.
 20 Now, if we look at your second witness statement,
 21 please, at page 3 {ART00007399/3}, you say there at
 22 paragraph 11, in the third line:
 23 "I am not aware of the extent to which Rydon may
 24 have benefitted from any cost savings achieved through
 25 VE as I am not privy to its profit margin on the Project

3

1 (i.e. the margin between its costs and the contract sum
 2 paid to it by the TMO)."
 3 You see that?
 4 A. Yes.
 5 Q. Now, it's right, isn't it, that Artelia's contract sum
 6 analysis allowed a 12.5% margin for contractors'
 7 overheads and profit?
 8 A. Sorry, Artelia's contract -- when you say contract sum
 9 analysis, our -- are you talking about our estimate?
 10 Q. Yes.
 11 A. Rather than the tender?
 12 Q. Well, it's called a contract sum analysis, which I think
 13 was produced by Artelia in July 2014. We can look at it
 14 if you like.
 15 A. Yeah, sorry, when you talk about that, are you talking
 16 about the one that was completed by Rydon or are you
 17 talking about our estimate?
 18 Q. Well, I'm talking about an analysis that -- well,
 19 perhaps we should look at it, it may help you.
 20 A. Yes.
 21 Q. Can we please look at {ART00005918}. This is something
 22 called a contract sum analysis done by Artelia.
 23 A. Yes. When we prepare it, it is unpriced, it is not
 24 completed. We don't put a -- we didn't put a figure --
 25 any figures in there; those were completed by the

4

1 tenderers.
 2 Q. Yes, I understand that. Let's just see how far we go
 3 then.
 4 If you go to page 20 {ART00005918/20}, please, and
 5 look at B12, we can see there that under B12,
 6 "Contractors OHP 12.5% (Included)". That's how you get
 7 to the 9.249 for Rydon. Do you see that?
 8 A. That's how they've priced their tender, yes.
 9 Q. Exactly. So when I refer to this document as the
 10 contract sum analysis, that's because it was called
 11 that.
 12 Cutting through the detail, did you know -- looking
 13 at this document, it looks as if you would have done --
 14 that Rydon had allowed a 12.5% margin?
 15 A. No, that's not the margin; that is the allowance that
 16 they had made for overheads and profit.
 17 Q. All right, overheads and profit, then, I'll take that.
 18 Now, did you know that, on 18 March 2014, Harley had
 19 offered Rydon savings on the cladding of £517,000 for
 20 face-fixed ACM in place of zinc?
 21 A. I wasn't aware of that, no.
 22 Q. Had you known that fact, you would have realised,
 23 wouldn't you, that the statement at the meeting that
 24 there was a potential saving of up to £376,175 for the
 25 cladding was a false and misleading statement?

5

1 A. If I had known, yes.
 2 Q. If you had known, what would you have done about it?
 3 A. I would have actually -- I would have raised that as
 4 an issue, that Rydon's weren't passing on the full value
 5 of the saving from their supply chain to the client.
 6 Q. Is one of the reasons for that because otherwise Rydon
 7 would be making a secret profit over and above the 12.5%
 8 OHP?
 9 A. Yes.
 10 Q. Were you aware or did you ever become aware -- at the
 11 time of the project, that is -- that the savings offered
 12 by Rydon to the TMO were substantially less than the
 13 savings offered to Rydon by Harley, and that Rydon was
 14 thereby retaining more than the 12.5% OHP?
 15 A. No, I didn't become aware of anything like that.
 16 Q. Can we go to your second statement, please,
 17 {ART00007399/2}. You answered some questions about
 18 savings in respect of value engineering, and this is at
 19 page 2, and I would like just to look at paragraph 6
 20 with you, if we can.
 21 You say there:
 22 "Where VE does achieve a cost saving, the party or
 23 parties who receive the benefit of that cost saving will
 24 depend on the stage in the project when the VE takes
 25 place."

6

1 If we skip down to the next paragraph, which is
 2 under the heading "VE prior to the contract price being
 3 agreed", you say:
 4 "If VE occurs prior to the agreement of the contract
 5 price, then the saving achieved in the VE process will
 6 only benefit the client because it should result in
 7 a lower contract price. The client will, therefore, be
 8 paying the contractor less for the works and will get
 9 the benefit of that saving."
 10 By "in practice" there, you say "in practice", do
 11 you mean that that's where there is no contractual
 12 obligation, but the contractor will anyway adjust his
 13 price?
 14 A. No, this is prior to any contractor being involved.
 15 This is during design rather than during the
 16 construction phase of the project.
 17 Q. I see.
 18 A. So this is pre-procurement.
 19 Q. Pre-procurement. I follow.
 20 Then you go on to deal with VE after the contract
 21 price is agreed at paragraph 8 and following. Well,
 22 let's look at that, then. You say:
 23 "VE after the contract price is agreed most commonly
 24 arises at the instigation of the client (or its
 25 advisors) when the price for the works exceeds its

7

1 budget (although VE can also involve the client
 2 achieving value in ways other than just cost saving, for
 3 example, a material with a longer lifespan but the same
 4 price ..."
 5 And then you go on to say:
 6 "When VE arises in the context of a client trying to
 7 complete the works within its budget, the benefit of any
 8 cost saving achieved through VE will, in practice, go to
 9 the client because it will be reflected in an adjustment
 10 to the contract price."
 11 Does that tell us that, in your experience, the
 12 whole of the VE goes to the client by way of a cost
 13 saving?
 14 A. It should do; however, the contract doesn't make any
 15 obligation on the contractor to pass on any of the
 16 saving.
 17 Q. I understand that.
 18 At paragraph 9 you say, in answer to the question:
 19 "Specifically, to what extent is a contractor or
 20 subcontractor obliged to pass on the savings it may make
 21 in such a process to the client?"
 22 You say:
 23 "A contractor or subcontractor will not usually be
 24 obliged under their contracts to pass on the savings in
 25 a VE process (directly or indirectly) to the client but

8

1 in practice, as explained above, will do so.”
 2 Now, this is exactly what you have just told us just
 3 now on the transcript, but if a contractor is not
 4 obliged to pass on savings, why would they do so?
 5 A. In the spirit of collaboration on the project.
 6 Q. Is the effect of that that you believe that it's up to
 7 the subcontractor to pass on the savings as a matter of,
 8 as it were, moral choice or commercial good practice?
 9 A. I wouldn't know what the contract terms are between
 10 subcontractor and main contractor, so therefore I can't
 11 really say.
 12 Q. Are you saying that it's actually really up to the
 13 contractor how much of the savings are passed on?
 14 A. Yes.
 15 Q. And what would determine that decision?
 16 A. It would be a negotiation between the client's
 17 professional consultants team and the contractor. If
 18 the contractor didn't feel that they wished to pass on
 19 all of the savings, that's for them.
 20 Q. Yes.
 21 A. But at the end of the day, obviously from our point of
 22 view it was to try and get the best position and protect
 23 the position for the client in terms of trying to get
 24 the price to an affordable level; therefore, trying to
 25 make sure that the full saving was being passed on.

9

1 Q. You say it would be a negotiation between the client's
 2 professional consultants team and the contractor; am
 3 I right in thinking that where a contractor decided that
 4 it wasn't going to pass on all the savings, it would
 5 nonetheless not do anything or say anything to lead the
 6 client to think that it was getting the benefit of all
 7 the savings?
 8 A. Sorry, I don't follow.
 9 Q. Well, where you have a situation where a contractor
 10 decides to keep some of the savings from value
 11 engineering for itself, am I right in thinking that,
 12 even though that may be the case, they wouldn't do
 13 anything or say anything to the client to lead the
 14 client to think that the client was getting the benefit
 15 of all the savings?
 16 A. Correct, I think.
 17 Q. Yes.
 18 Now, if we go back to the contractor induction
 19 meeting -- we don't need to see it, actually -- we can
 20 see that a cheaper cladding option was proposed.
 21 Cutting a very long story short, it was ultimately
 22 accepted. Do you remember that?
 23 A. Yes, but not with face-fixings.
 24 Q. Did you or anybody else at Artelia perform any analysis
 25 or any breakdown of the savings offered?

10

1 A. We reviewed the savings and we looked at trying to get
 2 substantiation of what those savings were.
 3 Q. When you say you reviewed the savings, being specific,
 4 did you review the savings being offered by Rydon to the
 5 TMO in respect of the ACM face-fixed or cassette-fixed?
 6 A. We looked at a number of options, yes, in terms of the
 7 financial evaluation.
 8 Q. Did you look at the savings being offered by Harley to
 9 Rydon?
 10 A. No.
 11 Q. You didn't --
 12 A. We weren't provided with that information.
 13 Q. I follow. So it was only the savings that Rydon were
 14 offering to the TMO?
 15 A. Correct.
 16 Q. Is that because you only had access to what it was that
 17 Rydon was telling the TMO?
 18 A. Correct.
 19 Q. I follow.
 20 Can I then turn to a different topic altogether,
 21 which is the role of Exova on the project. Can we look,
 22 please, first at {ART00006247}. These are the minutes
 23 of design meeting 4 of 25 June 2012, and if we look at
 24 the first page, we can see who was present at that
 25 meeting: Paul Dunkerton from the TMO, Alun Dawson and

11

1 Keith Bushell from Appleyards as they then were, and we
 2 can see if we look down at "Appointments", do you see
 3 a little bit lower down, the third item down, it says:
 4 "AY [and that I think is Appleyards] to instruct
 5 fire consultant."
 6 Do you see that?
 7 A. Yes.
 8 Q. Do you think you saw these meeting notes at the time?
 9 A. They would have been distributed to me, yes.
 10 Q. Is it right that Exova was appointed by the TMO on the
 11 KALC project?
 12 A. I believe it was. I can't remember specifically.
 13 Q. Right.
 14 Now, we can see that a "J Lee", if you look at the
 15 distribution list, is the fourth distributee down on the
 16 list, J Lee of Exova. That's James Lee.
 17 Do you know what circumstances led Exova being
 18 referred to in the distribution list for the meeting on
 19 25 June in respect of Grenfell?
 20 A. No.
 21 Q. Do you know how Exova came to be appointed to act as
 22 a fire consultant on the Grenfell Tower refurbishment at
 23 all?
 24 A. Studio E issued a request for them to submit a proposal.
 25 Q. Right. You say Studio E issued a request, and we've

12

1 seen something of that a little bit -- round about this
 2 time. In fact, a little bit earlier in 2012.
 3 Were Artelia involved in Studio E's decision to
 4 request Exova to submit a proposal, as you put it?
 5 A. No.
 6 Q. No, so they did it off their own bat, did they?
 7 A. I don't know whether they were instructed to or whether
 8 they did it of their own volition, I don't know,
 9 I wasn't involved in it, and nor were Appleyards.
 10 Q. Did you know that Studio E were looking for help from
 11 Exova in mid-2012 in respect of the Grenfell Tower
 12 refurbishment?
 13 A. When you say help, are you referring to help in respect
 14 of engaging Exova? If that's the case, then it's not
 15 unusual to have a fire consultant on a project in
 16 addition to other members of the design team.
 17 Q. No, but my question is: did you know that Studio E were
 18 looking for help from Exova at that time in respect of
 19 this project?
 20 A. I wasn't aware that they were looking for help.
 21 Q. No, thank you.
 22 Do you know if anyone other than Exova, any fire
 23 consultant or fire specialist other than Exova, was ever
 24 considered to act as a fire consultant on the
 25 Grenfell Tower project?

13

1 A. I don't know.
 2 Q. Do you know what led to what we see in this note, "AY to
 3 instruct fire consultant"?
 4 A. I believe it was a recommendation from Studio E to the
 5 client that Exova should be appointed, based on their
 6 proposal.
 7 Q. I see.
 8 I know that it's a rather succinct reference here,
 9 but was the position that Studio E thought it was
 10 necessary to have the assistance of a specialist fire
 11 consultant, wanted Exova to assist, and wanted Artelia
 12 to instruct Exova? Is that all we take from what you
 13 have told us and this note?
 14 A. All I can say is that it was recommended that Exova be
 15 appointed as a fire consultant, and that Studio E had
 16 reviewed their proposal and said that they had -- they
 17 felt it was acceptable, and the overall action for
 18 Artelia was then to issue an instruction to say that the
 19 proposal had been accepted.
 20 Q. Do you know whether any steps were taken by way of
 21 action by Appleyards to instruct a fire consultant, as
 22 this note says would happen?
 23 A. The action was a note was sent to Exova confirming that
 24 they would be appointed by the TMO.
 25 Q. I see. But I think you say that you weren't involved in

14

1 that?
 2 A. That would have been done by Alun Dawson -- in fact, it
 3 was done by Alun Dawson.
 4 Q. Right.
 5 Can we then go to the question of fees.
 6 {ART00000088}, please. This is an email of 20 June 2012
 7 from Bruce Soules to Chris Churchman and Andrzej Kuszell
 8 in respect of KALC, copied to Alun Dawson, Kevin Powley
 9 and David Hale. Who is Kevin Powley?
 10 A. Kevin Powley was someone employed on the KALC project.
 11 Q. Right, okay.
 12 This is about Grenfell Tower, and it says:
 13 "Chris,
 14 "Exova's appointment will be direct to the TMO. We
 15 will not be instructing them direct as we are on KALC.
 16 "Exova are awaiting instruction for both the main
 17 component of the project, and for a separate item,
 18 a Fire Strategy for the existing tower which will cover
 19 fire access.
 20 "Appleyards have been asked to do a review of team
 21 fees and scope. Alun, please confirm you will take this
 22 up with Mark Anderson?"
 23 This is a few days before the meeting on 25 June
 24 we've just seen, the design meeting number 4.
 25 Looking at the third paragraph, where it says

15

1 "Appleyards have been asked to do a review of team fees
 2 and scope", was that a review of Exova's proposed fees
 3 and scope?
 4 A. I don't know what it was referring to.
 5 Q. Are you aware if anyone from Artelia did agree to
 6 perform a review of Exova's fees and scope, as this
 7 email suggests should happen?
 8 A. No, and when it goes on to say, "Alun, please confirm
 9 you will take this up with Mark Anderson", I believe
 10 that was because this was an additional requirement over
 11 and above our commission, and I don't believe that there
 12 was ever any particular instruction from the TMO to
 13 actually take this up.
 14 Q. Right. So, so far as you're concerned, does that take
 15 us to this point: that even though there was
 16 an indication that Appleyards would do a review of team
 17 fees and scope, in the end the TMO did not instruct you
 18 as their professionals to conduct such a review?
 19 A. Correct. I don't know who had asked us to do the
 20 review, and obviously this is a correspondence between
 21 Studio E and Chris Churchman, so we were only a cc to
 22 it.
 23 Q. Right.
 24 Now, turning to the fee proposals in a bit more
 25 detail, do you accept that it's within the skillset of

16

1 a quantity surveyor to be able to provide advice on
 2 Exova's fees?
 3 A. No, I don't.
 4 Q. You don't? So a QS wouldn't be able to identify or
 5 analyse a budget for fire strategy work on a project?
 6 A. No, it's not part of the core skill.
 7 Q. It's right, nonetheless, though, isn't it, that Artelia
 8 did receive copies of Exova's fee proposals?
 9 A. Yes, that's correct.
 10 Q. Yes. Can we go to {SEA00000074}.
 11 Now, this is an email from Margaret Treanor at Exova
 12 to Alun Dawson at Appleyards, copied to Bruce Sounes, on
 13 25 October 2012. At the bottom half of that page,
 14 because this is a response to it, there is an email from
 15 Alun Dawson on 18 July 2012 to Terry Ashton, copied to
 16 Bruce Sounes and David Hale. There it just says:
 17 "Terry,
 18 "I just wanted to drop you a short note, to confirm
 19 that the Client has now confirmed your proposed fee is
 20 approved - to which end we would now ask that you engage
 21 with Bruce @ Studio E, in respect of the above project
 22 forthwith."
 23 So just looking at that, it does look as if the TMO
 24 had confirmed that Exova's proposed fee was approved,
 25 and then Alun Dawson asked that Terry Ashton engage

17

1 directly with Studio E.
 2 Do you know on what basis the TMO had confirmed that
 3 the proposed fee was approved?
 4 A. I believe on the advice of Studio E.
 5 Q. I see. So Artelia had no role to play, are you telling
 6 us, in the approval of that fee proposal?
 7 A. Correct.
 8 Q. I see.
 9 Now, if we go to the top of the page, to the email
 10 I first identified to you, Margaret Treanor's email,
 11 that sets out the two proposals that Exova had made, and
 12 if you look at the first paragraph you can see that
 13 there is a reference to a fee proposal for the upgrade
 14 works. Do you see that? £8,600 plus VAT for the
 15 upgrade works.
 16 A. Yes.
 17 Q. In the second paragraph there is a reference to the
 18 existing acceptance of the fee proposal in respect of
 19 the existing condition of the building for the sum of
 20 £2,865 plus VAT.
 21 Now, just looking at the existing condition
 22 proposal, do you recall that there was in fact no
 23 existing fire strategy for the building?
 24 A. Yes.
 25 Q. And the job of Exova -- is this right? -- as you

18

1 understood it, was to write one from scratch?
 2 A. It was to review, yes.
 3 Q. Yes, well, it was to produce --
 4 A. Yes.
 5 Q. -- a fire strategy for the building as it stood prior to
 6 the refurbishment?
 7 A. Yes, I believe it was a fire strategy or a report on
 8 fire strategy.
 9 Q. Yes.
 10 Now, given that this was a proposed refurbishment of
 11 a 1970s high-rise residential block, the refurbishment
 12 project was, and was contemplated at that stage to be,
 13 a substantial and complex piece of work. Do you accept
 14 that proposition?
 15 A. I'm not sure who had said that, but, I mean, in terms of
 16 projects, they all have different complexities and
 17 different levels of difficulty. And, you know, in terms
 18 of what was required on this project, it didn't seem to
 19 be overly complex in that sense, how I understand it.
 20 Q. Was that a personal view you had at the time, that the
 21 fire strategies, both of them, were neither of them
 22 particularly complex?
 23 A. I can't comment on the fire strategies. I was talking
 24 in reference to the project as a general.
 25 Q. Well, do you agree that, both for the existing building

19

1 fire strategy and for the refurbishment fire strategy,
 2 both pieces of work were significant and substantial
 3 pieces of work for Exova?
 4 A. I don't know, I've not done fire strategies before.
 5 Q. Right.
 6 Did you yourself or anybody else at Artelia ever
 7 actually consider the scope of Exova's proposals?
 8 A. No, because it wasn't part of our remit.
 9 Q. I see. So you didn't consider whether the fees that
 10 they were quoting, as seen by Alun Dawson in this email
 11 here, were adequate to perform the necessary work?
 12 A. No, because Studio E had actually requested the
 13 proposals and had reviewed them themselves.
 14 Q. I see. So you didn't check whether Exova had devoted
 15 sufficient time to the job or was proposing to do so or
 16 put yourself in the position of checking Exova's
 17 quality?
 18 A. It wasn't part of our role.
 19 Q. Whose role do you think it was, if not Artelia's role?
 20 A. Studio E.
 21 Q. And why was that?
 22 A. Because they were the ones that had requested the
 23 proposals and had also identified what the scope of the
 24 service was.
 25 Q. Right.

20

1 Can you explain why Artelia were involved at all, as
2 we can see that they were, both in June and July 2012
3 and then again in October 2012, if Artelia really wasn't
4 involved in assessing the amount of the fee, its
5 adequacy and the scope of the work that was proposed to
6 be done by Exova on both of these proposals?

7 A. On -- as employer's agent, obviously we can act on
8 behalf of the employer, on behalf of the TMO, in issuing
9 instructions, and the TMO had actually approved the
10 proposals that had been put forward by Exova and asked
11 us to issue an instruction confirming that their
12 proposal had been accepted and that they were to be
13 appointed direct to the TMO, and that was solely what we
14 were asked to do, no other involvement at all.

15 Q. I see, so does it come to this: your evidence is that,
16 as EA, employer's agent, which was Alun Dawson's role at
17 the time, your role was simply to make sure that there
18 was a contractual link between Exova and the TMO, and
19 look no further than that about what it was that Exova
20 was to do and the adequacy of the price?

21 A. Correct.

22 Q. I follow.

23 So do we take it that you never, and nobody else at
24 Artelia, actually ever did give any advice to the TMO
25 about the scope of the proposals for both of these

21

1 reports on the building that Exova were being asked to
2 do?

3 A. Correct.

4 Q. Did Artelia have a view at the time about whether these
5 fees were adequate, given the amount of professional
6 service required on a project of this complexity?

7 A. I didn't have a view, no.

8 Q. Do you know whether Mr Dawson had a view?

9 A. I don't know.

10 Q. Can we then go on to look at Exova and Artelia's role in
11 the context of CDMC.

12 I want to go back to where we were yesterday, and
13 look at Artelia's duties under the CDM Regulations to
14 ensure that competent designers and contractors were
15 appointed. If we need to go back to the ACOP, the
16 Approved Code of Practice, at paragraph 90, Mr Cash, we
17 can do that.

18 Would you agree, though, generally that Exova would
19 come within the definition of "designer" for the
20 purposes of the CDMC?

21 A. I don't know.

22 Q. For the purposes of the CDM Regulations. You don't
23 know.

24 Well, would you agree that a CDMC, a CDM
25 co-ordinator, should have considered and provided advice

22

1 on the competency and resources of Exova as a designer?

2 A. I don't know.

3 Q. You don't know?

4 A. That would be -- I'm not a CDM co-ordinator.

5 Keith Bushell was the CDM co-ordinator and he would have
6 identified whether or not Exova were a designer under
7 the definition of the CDM Regulations.

8 Q. Yes, and I'm really after your recollection.

9 Was there any, to your knowledge, discussion within
10 Artelia about whether Artelia, or Keith Bushell in
11 particular, as CDM co-ordinator, would consider and
12 provide advice on the competency of Exova as a designer?

13 A. I don't know if he had in specific reference to this
14 project. Obviously Exova were engaged on the KALC
15 project and had already been through a test of
16 competency on that project.

17 Q. Yes, but the fact that they had done that on that
18 project doesn't necessarily carry across to this
19 project, does it?

20 A. I can't comment.

21 Q. Well, each project must carry its own set of standalone
22 obligations, surely?

23 A. Yes, but in terms of the competency, because this was
24 a follow-on project from the KALC project, I'm not sure
25 what level of checks were carried out by Keith Bushell.

23

1 Q. Right. But you were Keith Bushell's supervisor, as
2 project director, weren't you?

3 A. Not his line manager, no. I was the project director
4 for the project.

5 Q. Yes, and as project director for the project, even
6 though you weren't his line manager, you nonetheless had
7 overall supervision or overall responsibility for the
8 quality of his work.

9 A. Responsibility, not supervision. He is an associate
10 director within the business and therefore is at
11 a particularly senior level, being able to act
12 autonomously and under his own authority.

13 Q. Did you regard it, though, as part of your
14 responsibility as project director for this project, to
15 make sure, nonetheless, however senior the particular
16 role-carriers were, that they knew exactly what their
17 roles were?

18 A. That they knew what their roles were, yes, and that had
19 already been defined. We'd had kickoff meetings and
20 each person within the team knew exactly what their role
21 was.

22 Q. Was there any discussion, so far as you can recall,
23 between you and Keith Bushell or anyone else at Artelia
24 about whether Keith Bushell, as the CDM co-ordinator,
25 should have been examining Exova's competency and

24

1 resources as a designer?

2 A. I don't recall any particular conversations that I was
3 involved with, no.

4 Q. Do you accept that, under the CDM Regulations, Artelia,
5 as a CDM co-ordinator, had the obligation to ensure that
6 designers complied with their duties, just as a general
7 proposition of law, do you accept that?

8 A. In terms of making sure that the clients were complying
9 with their obligations, yes.

10 Q. Well, maybe we need to look at the regulation. Could
11 you please go to {INQ00011315/11}, please. This is the
12 CDM Regulations 2007, and I want to go to
13 regulation 20(2)(c), and regulation (2) starts off:
14 "Without prejudice to paragraph (1) the CDM
15 co-ordinator shall ..."
16 Then if you look at (c):
17 "Take all reasonable steps to ensure that designers
18 comply with their duties under regulations 11 and
19 18(2)."
20 Were you aware at the time that a CDM co-ordinator
21 had that obligation?

22 A. Not specifically. I knew that they had obligations,
23 yes.

24 Q. In general terms, do you agree with me that completing
25 a fire safety assessment of the proposed façade

25

1 construction was fundamental to Exova's task of
2 delivering a refurbishment fire strategy?

3 A. For the completed project or for the existing --

4 Q. For the refurbishment. You're quite right, for the
5 refurbishment.

6 A. I'm not sure whether it did or didn't. I know that
7 obviously the fire strategy is there to deal with the
8 operation of the building in the event of a fire, and
9 how people may escape from it or how the Fire Brigade
10 may attend to fires, et cetera. So that to me is
11 a fire strategy rather than actually being a design
12 document.

13 Q. Right.

14 What I'm really putting to you, to try and cut
15 through this, is that Exova were a designer, they had
16 duties under regulations 11 and 18(2), and it was
17 Artelia's job, as CDM co-ordinator, to take all
18 reasonable steps to ensure that they complied with those
19 duties. That's the point I'm putting to you. Do you
20 accept that?

21 A. I'm not sure what regulations 11 and 18(2) are.

22 Q. Right.

23 Let's then turn to Exova's OFSS, the outline fire
24 safety strategy for the refurbishment.

25 When you were working on the Grenfell Tower project,

26

1 Mr Cash, were you aware of the three issues of the
2 outline fire safety strategy, or OFSS, produced by Exova
3 for the refurbishment?

4 A. No.

5 Q. Did you or, to your knowledge, anybody else at Artelia
6 ever read these reports when they came in?

7 A. I didn't. I don't know if anybody else in Artelia did.

8 Q. Just to try and prompt your memory, there were three of
9 them: the first one was 31 October 2012; the second was
10 24 October 2013; and the third one, the third issue, was
11 7 November 2013. Those dates, do they ring a bell with
12 you?

13 A. No.

14 Q. Right.

15 Would you have expected an employer's agent to read
16 those documents when they came in to you?

17 A. No.

18 Q. Why is that?

19 A. Because they were documents that were either documents
20 to help the TMO in terms of operational issues in
21 relation to the existing building, or in terms of
22 operational issues in the future building based on the
23 design that was being developed.

24 Q. Would you expect the CDMC, the CDM co-ordinator, to read
25 these?

27

1 A. No.

2 Q. But Exova was part of the professional team as defined
3 in the EA requirements and the contract that you have
4 signed, was it not?

5 A. No, they were not.

6 Q. You didn't regard Exova as part of your professional
7 team?

8 A. No, they weren't identified as a member of the
9 professional team. There were only three people apart
10 from Artelia that were identified as the professional
11 team.

12 Q. I see. So did they not become part of the professional
13 team by reason of working on this project?

14 A. No, because they weren't identified as an additional
15 member of the professional team by the client. They
16 became a subconsultant -- sorry, they became a direct
17 employee to the TMO under contract, and worked alongside
18 Studio E, Max Fordham and Curtins, but they weren't
19 identified as a member of the professional team, no.

20 Q. Can we then go to {EXO00001106}. I just want to see how
21 far we can get with this document in the light of the
22 answers you have just given me.

23 This is issue 3 of the outline fire safety strategy
24 for the building dated 7 November 2013. Looking at its
25 page, is this a document you think you ever saw at the

28

1 time?
 2 A. I can't remember.
 3 Q. Then we may not get very far at all, but let's just look
 4 at page 4 {EX000001106/4} if we can, and let me just try
 5 this out on you.

6 Page 4 is the introduction, and it explains what the
 7 refurbishment comprises, and there are five bullet
 8 points, none of which identify the overcladding, and
 9 then it goes on:

10 "This report details the applicable statutory
 11 controls in respect of fire safety and contains an
 12 outline fire safety strategy for compliance with these
 13 statutory controls."

14 If that had come in to Artelia, do you expect that
 15 the person receiving it would have read that page?

16 A. I don't know.

17 Q. Right. You don't know.

18 Can we go to page 9 {EX000001106/9} then and look at
 19 paragraph 3.1.4, "Compliance with B4 (external fire
 20 spread)". This says:

21 "It is considered that the proposed changes will
 22 have no adverse effect on the building in relation to
 23 external fire spread but this will be confirmed by an
 24 analysis in a future issue of this report."

25 I'm assuming from your answers you have given me

29

1 that you weren't aware that each of these reports -- and
 2 I say "each", each issue of the OFSS October 2012,
 3 October 2013, November 2013 -- said exactly what is said
 4 there under 3.1.4, which is that, in relation to
 5 external fire spread, the adverse effects or lack of
 6 them would be "confirmed by an analysis in a future
 7 issue of this report"?

8 A. I wasn't aware of that, no.

9 Q. No.

10 Did you ever see anything that would lead you to
 11 think that Exova ever provided an analysis in a future
 12 issue of this report?

13 A. I haven't seen -- I don't remember seeing anything, no.

14 Q. Do you accept that Artelia, as a CDMC, should have
 15 ensured that Exova, as a designer, did produce a final
 16 report addressing the impact of the overcladding work on
 17 external fire spread, as they indicated they would?

18 A. No. I don't believe it was part of the CDM
 19 co-ordinator's role to manage design issues or to manage
 20 production of fire strategies. Its role as CDM
 21 co-ordinator would have been to collect the information
 22 for the health and safety file at the end of the
 23 project, but obviously that didn't happen because of
 24 changes in legislation.

25 Q. Now, earlier we looked at the contract, and let's look

30

1 at that again, {ART00005742/63}, please. I want to look
 2 at that in the light of what you have been telling me,
 3 just to go back to it. This is the CDMC schedule of
 4 services, and at the top half of the page, this is under
 5 the contract that you signed with the TMO, Mr Cash, and
 6 it says in the second bullet point:

7 "Work with the project team with a proactive
 8 approach to ensure that the schemes are designed and
 9 delivered incorporating all relevant requirements to
 10 achieve statutory compliance."

11 Did you understand at the time that that obliged
 12 Artelia to work with Exova and the TMO to ensure that
 13 the B4 requirements of the Building Regulations were
 14 properly addressed by Exova, and completely addressed by
 15 them?

16 A. No, because it wasn't to actually carry out the design
 17 or carry out any reports or -- it was to work with them
 18 in terms of ensuring that designs met the requirements
 19 in relation to working safely on site and also in terms
 20 of being able to maintain safety after the work's been
 21 completed.

22 Q. Can we go back to page 8 {ART00005742/8} of this
 23 document, because you said earlier in your evidence that
 24 Exova weren't part of the professional team. I just
 25 want to, particularly in the light of what I've just

31

1 shown you, examine that again.

2 The definition of "Professional Team" here means:

3 "... the Consultant, and professionals listed in the
 4 Appendix ..."

5 And then this:

6 "... any other professionals engaged by the Client
 7 in relation to the Project and which the Client notifies
 8 to the consultant."

9 Now, we know that Exova, as you have been telling
 10 us, were engaged by the TMO, who was the client. Why do
 11 you say that Exova weren't a professional who were part
 12 of the professional team as defined?

13 A. They weren't actually notified as an additional member
 14 to the professional team, they were just engaged as
 15 another consultant.

16 Q. They were engaged as another consultant. Were they not
 17 notified to you? Why do you say they weren't notified
 18 by the TMO to you?

19 A. They were notified as an appointee, but they weren't
 20 notified as another member of the professional team.

21 Q. That's an interpretation of the provision. Can I just
 22 understand what you understood at the time it was that
 23 notification involved within the context of that
 24 definition?

25 A. That it would be a -- if you -- it would be a variation

32

1 to the names that were already listed within the
 2 appendix.
 3 Q. That would have to be done formally, would it?
 4 A. I believe so, yes.
 5 Q. Why wasn't the communications that we saw in July 2012
 6 about Exova being engaged to perform two analyses of the
 7 building sufficient notification to bring them within
 8 the definition of "professional team" as you understood
 9 it?
 10 A. Because I didn't feel it was. There were others that --
 11 I believe there were -- that other people were also
 12 consulted and didn't become part of the professional
 13 team either.
 14 Q. Well, who are those others that you are referring to in
 15 that answer, do you think?
 16 A. I can't remember specifically, but I don't believe that
 17 Exova were actually part of the professional team. The
 18 professional team was limited to Studio E, Max Fordham
 19 and Curtins.
 20 Q. Right. I thought -- maybe I'm wrong -- that Artelia's
 21 role, at least in part, was to identify risks in respect
 22 of the project and gaps in respect of professional
 23 expertise.
 24 How could Artelia carry out that role if they didn't
 25 read these documents, the outline fire safety strategy

33

1 and the existing fire safety strategy?
 2 A. Sorry, I don't see the correlation between the two. The
 3 risks that you referred to were actually risks -- there
 4 was a risk register which was produced, which was
 5 looking at risks in terms of the delivery of the
 6 project, and those related to particularly risks such as
 7 things like planning, finances, contractor insolvency,
 8 et cetera.
 9 There were also reviewing roles and responsibilities
 10 of the professional team in terms of making sure that
 11 there was no overlap between their appointments or in
 12 terms of their understanding of their roles and
 13 responsibilities or any gaps. So I'm not sure in
 14 terms -- I feel that there's a mixing up there of what
 15 you're saying.
 16 Q. Right. I'm just puzzled here, because, as we've seen,
 17 specifically in respect of the CDM Regulations, which
 18 obviously applied, and the role of the CDM co-ordinator,
 19 why was it not the case that the CDM co-ordinator had
 20 an obligation to ensure that Exova, as a designer, was
 21 carrying out its own health and safety obligations which
 22 were imposed on it under the regulations?
 23 A. The health and safety -- sorry, the CDM co-ordinator
 24 issues a health and safety risk register which is for
 25 each of the consultants to complete, to ensure that they

34

1 are reviewing and ensuring that their design, where
 2 there may be risks in terms of their design, are being
 3 mitigated in relation to works being carried out on site
 4 safely and also in terms of works to be maintained
 5 post-completion of the works.
 6 Q. Right. Let's see how we go, then, on this.
 7 {ART00002256}, please. These are the minutes of the
 8 contractor induction meeting of 1 April 2014 which we've
 9 seen before. Again, you weren't at the meeting, but we
 10 looked at this a moment ago.
 11 If we go down to, this time, point 5.3 on page 4
 12 {ART00002256/4}, please, it says there, underneath
 13 "Novation of Designers", under 5.3:
 14 "Exova completed the fire strategy at tender stage."
 15 Were you aware at the time that it was being said at
 16 this meeting that Exova had completed the task of
 17 delivering a fire strategy at the tender stage?
 18 A. In terms of what they'd been engaged to do, I presume
 19 that's what it was relating to, yes.
 20 Q. Looking at it now, do you accept that that was wrong and
 21 misleading, given that an important part of Exova's
 22 work, namely the much promised future analysis of
 23 external fire spread under B4 of the Building
 24 Regulations, remained outstanding?
 25 A. There would always have had to have been a fire strategy

35

1 completed at the end of the project, because there was
 2 still design to complete, and you can't carry out and
 3 complete an overall fire strategy until you have all of
 4 that information. This to me is saying that they'd
 5 completed what they were required to do at tender stage
 6 in terms of the documents that were issued then.
 7 Q. Right. But we know that the fire strategy wasn't
 8 complete at the tender stage, which is in and after
 9 November 2013, because Exova's report expressly said
 10 that there was a future analysis still outstanding.
 11 That's why I put it to you in the terms I did. It
 12 wasn't complete, was it?
 13 A. It was complete as required -- as complete as it could
 14 be at tender stage, and I believe -- I don't know in
 15 terms of their terms of appointment -- that there would
 16 never have been completed as a final document -- it
 17 wouldn't have been until the end of the project. As
 18 I say, my interpretation of that, it was completed in
 19 terms of what was required and what could have been
 20 completed at tender stage.
 21 Q. You say it was as complete as it could be at the tender
 22 stage; what's the basis for that view, Mr Cash?
 23 A. Because the design was still evolving and still had to
 24 be completed by Rydons. Until the design is complete,
 25 you can't actually complete the fire strategy.

36

1 Q. Well, the design may not have been complete, but it was
 2 sufficiently advanced to be able to form the basis of
 3 a tender, and so the question is then: why wasn't the
 4 Exova fire strategy sufficiently complete at that stage
 5 in respect of the overcladding design and materials to
 6 be able to form a view at least about the safety of the
 7 design as it then stood?
 8 A. Because in a design and build contract, the design is
 9 not complete at tender, it still has development to
 10 carry out, to be carried out by the contractor, and that
 11 is -- that therefore means that you cannot complete all
 12 of the necessary documentation that has to be in place
 13 at the end of the project. If you were going down
 14 a traditional route then the design would have been
 15 completed to a much greater level of detail.
 16 Q. You see, the problem with that is that there is
 17 absolutely nothing in the Exova OFSS at all about the
 18 cladding, whereas in fact the tender stage documents,
 19 which all went out to the tenderers, had quite a bit in
 20 it about the external overcladding. Hence my question.
 21 I don't understand how you can form the view that it was
 22 justifiable that there should be nothing in there at all
 23 about the fire strategy at the tender stage.
 24 A. I didn't say there was nothing in there about
 25 fire strategy --

37

1 Q. Well, external fire spread.
 2 A. Sorry, in which document?
 3 Q. In issue 3 -- indeed, issues 1 and 2 -- of the OFSS.
 4 A. I wouldn't know, I didn't read the documents.
 5 Q. No, right.
 6 Can we then turn to the question of -- well, before
 7 we leave that, if you're right, is it right that Artelia
 8 would have expected a final fire strategy to be
 9 delivered by Exova to the client once Rydon had
 10 completed the design?
 11 A. I would have expected Rydon to deliver a final
 12 fire strategy as part of their role as the design and
 13 build contractor.
 14 Q. Yes.
 15 A. Not necessarily Exova. There was no requirement that
 16 Rydon actually engage Exova. Albeit that there had been
 17 minutes that identified that they were going to appoint
 18 them, there was no obligation on them having to do that.
 19 They could have appointed anybody else to do that.
 20 Q. Indeed. But would you not expect, given that Exova had
 21 been appointed and had done some work, for Exova to have
 22 finished their work off at the stage at which the
 23 construction was completed?
 24 A. No, no particular expectation that it would solely be
 25 Exova that would have done that role; it could have

38

1 been, as I say, somebody else.
 2 Q. Somebody else being a specialist fire consultant?
 3 A. Somebody with specialist fire strategy knowledge.
 4 Q. Yes. Yes. So that's a gap, isn't it?
 5 A. I --
 6 Q. The fact that there wasn't one is a gap.
 7 A. I don't know. I don't know whether or not
 8 a fire strategy -- somebody was engaged as part of the
 9 design and build supply chain.
 10 Q. Did you realise at the time that Exova never was engaged
 11 by Rydon following Rydon's appointment as main
 12 contractor?
 13 A. No, I wasn't.
 14 Q. To your knowledge, did Artelia ever give any advice to
 15 the TMO, or indeed Rydon for that matter, that Exova
 16 needed to be properly engaged by Rydon specifically to
 17 ensure that the fire safety of the external cladding was
 18 properly considered by a specialist fire consultant?
 19 A. It wasn't our position to tell anybody who to engage.
 20 If Rydon decided to engage somebody else other than
 21 Exova, that was their decision.
 22 Q. Yes, indeed, but you could see, or Artelia could see,
 23 from the 1 April meeting that there had been a report at
 24 the tender stage, leave aside the question we've debated
 25 about whether it was complete or not. My question is:

39

1 did Artelia ever tell the TMO that Exova needed to be
 2 properly engaged to complete their work and to ensure
 3 that the fire safety of the external cladding was
 4 properly considered?
 5 A. No, because it wasn't our role to tell them.
 6 Q. Wasn't it part of Artelia's role as employer's agent?
 7 A. Not to tell them that they had to engage Exova, no.
 8 Q. Why is that?
 9 A. Because, as I say, it could have been any other fire
 10 consultant that could have carried out that
 11 fire strategy on behalf of Rydon's.
 12 Q. Right. I understand the difference or distinction you
 13 are drawing between Exova and AN Other, so I'll ask my
 14 question in a different way.
 15 Did Artelia ever advise the TMO that a specialist
 16 fire consultant or engineer needed to be properly
 17 engaged to complete the work and produce a final report
 18 so that the fire safety of the external cladding was
 19 properly considered?
 20 A. It would have been part of the employer's requirements.
 21 Q. Yes.
 22 A. And part of Rydon's duty.
 23 Q. You accept that it was part of the employer's
 24 requirements to do that?
 25 A. Yes.

40

1 Q. And so the question arises: did you ever advise the TMO
2 that they needed a final and comprehensive report on the
3 fire safety strategy of the external cladding, by any
4 specialist, whether it was Exova or somebody else?

5 A. Not specifically, but I know it would have been
6 identified in the design reports that there was still
7 further work to be carried out.

8 Q. Indeed, and given that there was further work to be
9 carried out, whether by Exova or by somebody else, was
10 it not Artelia's job to make sure that that happened?

11 A. It was identified, I believe, in the stage D report.

12 Q. Was it Artelia's job to make sure that that happened,
13 Mr Cash?

14 A. I don't believe it was, no, it was part of Rydon's duty
15 as the design and build contractor to ensure that it
16 happened.

17 Q. Was it not part of Artelia's duty under the morass of
18 contractual obligations as we've seen in the contract
19 that was signed in July 2014?

20 A. I don't believe so, no.

21 Q. Were you aware of the contractual basis on which Exova
22 was used by the TMO after the appointment of Rydon, as
23 we've seen?

24 A. No.

25 Q. We've seen various instances where, in, for example,

41

1 September 2014, and again in March 2015, ad hoc advice
2 was sought by Rydon and given by Exova in respect of
3 various aspects of the external wall construction. Do
4 you know the basis on which that advice was sought and
5 given, the contractual basis?

6 A. No, I don't.

7 Q. Did you ever consider the question of whether it was
8 appropriate to use Exova on an as-and-when required
9 basis?

10 A. No, because I wasn't aware that they were being used on
11 that basis.

12 Q. I would like to turn to a different topic now, which is
13 the change in the CDM Regulations.

14 Now, we've talked about the role Artelia was
15 contracted to perform, namely the role of CDMC under the
16 2007 regulations.

17 Before I do that, I just want to pick up a question
18 I should have asked you just a moment ago.

19 Have you or Artelia ever to your knowledge done
20 a project which has involved a façade consultant or
21 specialist façade engineer?

22 A. I believe within Artelia there would have been projects
23 that would have involved a façade engineer, yes.

24 Q. Were they quite common in the years 2012, 2013, 2014?

25 A. I can't remember.

42

1 Q. You may not be able to remember specific instances, but
2 do you not have a recollection of, in general, whether
3 façade consultants were commonly used in respect of
4 high-rise overcladding projects?

5 A. High-rise overcladding projects were not common projects
6 at that point in time.

7 Q. Right. Any overcladding projects, whether high-rise or
8 not?

9 A. Some projects, I wouldn't say -- it's difficult to say
10 whether it's common or not, but I have been involved in
11 projects where there have been façade engineers,
12 particularly where buildings have been re-clad.

13 Q. Did you ever consider yourself, or to your knowledge did
14 anybody at Artelia consider, whether a façade consultant
15 would be appropriate in respect of the Grenfell Tower
16 project?

17 A. No.

18 Q. Why is that?

19 A. Because we weren't engaging the design team, and in
20 projects where façade engineers have been engaged, it's
21 normally at the instigation of other members of the
22 professional team who have identified that the projects
23 are particularly complex or have a requirement for
24 a façade engineer.

25 Q. You say you weren't engaging the design team. That may

43

1 be true post-tender; what about before the tender? Did
2 you ever consider at that stage whether a façade
3 consultant would be appropriate for this project?

4 A. No.

5 Q. Again, why is that at that stage?

6 A. Because it didn't occur to us that one was necessary,
7 based on the other consultants that had been appointed
8 and what their duties were.

9 Q. So presumably I'm right, it would follow that you never
10 had a discussion with the TMO, or indeed anybody else,
11 that they should consider obtaining the services of
12 a specialist façade consultant?

13 A. Correct.

14 Q. Right.

15 Can we then go back to where I was about to go next,
16 which is the CDM Regulations change. We discussed
17 earlier on, I think, in your evidence that the basic
18 legal position changed in 2015 so far as the CDMs are
19 concerned.

20 A. Yes.

21 Q. And there was a transitional period, I think, between
22 April 2015 and October 2015, and after that, after
23 October -- I think it's 5 October 2015 -- there was
24 a new regime in place.

25 A. Correct.

44

1 Q. Did you also know that the role of CDMC, CDM
2 co-ordinator, was abolished in the 2015 regulations?
3 A. Yes.
4 Q. And it was then replaced by or replaced with the role of
5 principal designer; is that right?
6 A. Yes, correct.
7 Q. Can we go to {INQ00011316}, please. These are the
8 CDM Regulations 2015 themselves, and if we go to page 6
9 {INQ00011316/6} we can look at regulation 5, which
10 provides, as you can see:
11 "Appointment of the principal designer and the
12 principal contractor."
13 Were you familiar with these regulations in the
14 period between April and October 2015?
15 A. I knew that they were in existence, I wasn't familiar
16 with the contents though.
17 Q. All right. Can I just focus then on subregulation (3):
18 "If the client fails to appoint a principal
19 designer, the client must fulfil the duties of the
20 principal designer in regulation 11 and 12."
21 Were you aware of that rule?
22 A. I was -- I became aware of it, yes.
23 Q. Just to be clear, regulation 11 pertains to duties in
24 the pre-construction phase, and regulation 12 in the
25 construction phase itself and the health and safety

45

1 file. Did you know that?
2 A. Not specifically, but I was aware that they would assume
3 those duties, yes.
4 Q. Right.
5 So for this project, I think it's right to say --
6 just tell me if this is wrong -- the effect of the 2015
7 regulations was that there was no role of CDMC after it
8 had come into force.
9 A. After the end of the transition period on 5 October.
10 Q. Yes, and that at that point, the TMO, as the client, had
11 to appoint a principal designer.
12 A. Correct.
13 Q. And if the TMO did not appoint a principal designer,
14 then the TMO had to perform the role of principal
15 designer itself.
16 A. Correct.
17 Q. And in doing that then, discharge the duties of
18 principal designer in regulations 11 and 12, as we can
19 see here.
20 A. Yes.
21 Q. Yes. And that law came into effect on -- I think I said
22 the 5th; it's actually 6 October 2015. Yes?
23 A. Yes.
24 Q. That's the date.
25 Now, tell me if this is wrong, but are you aware

46

1 that the TMO have criticised Artelia for only giving
2 them two weeks' notice to find and appoint a principal
3 designer?
4 A. I'm aware that they have said that.
5 Q. Would the TMO have been able to appoint a principal
6 designer after 6 October 2015 if those two weeks didn't
7 give them enough time to find one?
8 A. I believe that they could have appointed a principal
9 designer which would have then passed that role on to
10 whoever was appointed, but in the intervening period
11 they would have been the principal designer.
12 Q. Let's just move on with the story, then, or rather pick
13 it up in April 2015.
14 Do you remember that Keith Bushell was, until
15 April 2015, the CDMC? You mentioned him before in your
16 evidence.
17 A. Correct.
18 Q. Keith Bushell was then replaced with Colin James as,
19 I think, a subcontractor of Artelia --
20 A. Correct.
21 Q. -- as CDMC. Then you referred, I think, earlier on in
22 your evidence also to Paul Burrows, who I think was
23 involved at the same time as Colin James. Is that
24 right?
25 A. Correct.

47

1 Q. Paul Burrows was employed by Artelia, wasn't he?
2 A. Yes.
3 Q. He was also in a CDMC role.
4 A. Yes.
5 Q. Do you remember what the division of responsibility was
6 between Paul Burrows and Colin James?
7 A. Not particularly, no.
8 Q. Can we look at your third witness statement, please.
9 You set out there some instances where Artelia had
10 discussed the rule change with the TMO in 2015, and if
11 we can go to, first of all, {ART00006286}, please, this
12 is an email of 20 July 2015 and we can see that the
13 subject line in both emails on that page is
14 "Grenfell F10". What is an F10?
15 A. An F10 is a form that is required by the Health and
16 Safety Executive to be submitted in connection with
17 carrying out works.
18 Q. Can we go to page 7 {ART00006286/7} of this email
19 string, then, and at the top of the page we can see that
20 there is an email from Neil Reed of 13 July 2015 to
21 Paul Burrows, and you're copied in on this string, do
22 you see?
23 A. Yes.
24 Q. He asks the question, does Neil Reed:
25 "Could you confirm if the F10 has been amended to

48

1 suit the EoT to 23rd Oct 2015.”
 2 Just to be clear, does the EOT mean or stand for
 3 extension of time?
 4 A. Yes, it does.
 5 Q. Is it right that this email chain is about re-submitting
 6 an F10 form to the Health and Safety Executive?
 7 A. Correct.
 8 Q. And you had to do that because the completion date for
 9 the project had changed?
 10 A. Correct.
 11 Q. Am I right in thinking that’s a fairly routine matter?
 12 A. Yes.
 13 Q. Can we look at page 6 {ART00006286/6} then, moving up
 14 the email chain, and go to the bottom of that page. You
 15 can see here an internal email within Artelia from
 16 Paul Burrows to Colin James, again copied to you, and he
 17 says in the third paragraph there:
 18 “Neil, as this finishes after 6th October,
 19 a Principal Designer needs to be appointed. If we are
 20 not in control of the design process, then we cannot
 21 accept this role. Please advise so we know which
 22 direction we need to take.”
 23 That email chain was then forwarded to
 24 Claire Williams of the TMO on 20 July, and we can see
 25 that at page 2 {ART00006286/2}, if we just jump up to

49

1 page 2. You can see that at the bottom of that page,
 2 Neil Reed, Claire Williams, 20 July, “Revised F10
 3 attached”. Do you see that?
 4 A. Yes.
 5 Q. Does that mean a revised F10 form was attached to this
 6 document? Again, you received it, as we can see --
 7 A. Correct.
 8 Q. -- when you go to the next email up.
 9 In fact, actually, you’re not copied in on this, so
 10 that’s my mistake, but that’s your understanding of it.
 11 You then say in your statement, your third witness
 12 statement, that Ms Williams should have understood from
 13 that email chain that Artelia was refusing to perform
 14 the role of principal designer. If you look at the
 15 email in the middle of that page, Claire Williams says
 16 to Neil Reed:
 17 “Neil
 18 “I am not sure that Artelia should be the designer
 19 on the latest F10 - you may want to check info on this
 20 earlier version.”
 21 I think you have suggested in your third statement
 22 that Ms Williams should have understood from that that
 23 Artelia would refuse to perform the role of principal
 24 designer. Is that your recollection?
 25 A. Yes.

50

1 Q. It is.
 2 Let’s just perhaps look at your statement,
 3 {ART00009416/4}, please. If we can look at
 4 paragraph 16, four lines down into that, you explain
 5 that:
 6 “This email was forwarded onto Claire Williams in
 7 a chain on 20 July ...”
 8 Do you see that?
 9 A. Yes.
 10 Q. And:
 11 “In response to this chain, Claire Williams
 12 commented, on 20 July 2015, that she was not sure that
 13 AUK should be the designer on the latest F10 Form and
 14 noted that AUK was ‘an unlikely designer!’”
 15 Then if you go to page 5 {ART00009416/5} and look at
 16 paragraph 20(b), you repeat the point just there.
 17 So the question then arises for me: why did you
 18 assume that Claire Williams had read six pages down into
 19 the email chain to see that Artelia was not willing to
 20 take on the role of principal designer and the reasons
 21 for it?
 22 A. Because also she had identified that, on the F10,
 23 Artelia was being identified as principal designer, and
 24 that she had said that we were an unlikely designer.
 25 Q. I see. So you took from that that she had read all the

51

1 way down through the long string of forwarded email
 2 discussions within Artelia?
 3 A. I’m not saying that she would have done necessarily, but
 4 that’s what my assumption is, yes, and the fact that she
 5 commented on the F10 as well.
 6 Q. Can you just tell me, why was Claire Williams not
 7 actually told the reason that we see here, that Artelia
 8 was not in control of design, directly by you or anyone
 9 else at Artelia?
 10 A. I believe there was another email which identified that
 11 she had to appoint a principal designer at a similar
 12 time from Colin James.
 13 Q. We will come to that. My question is: why was
 14 Claire Williams not told the reason at this point,
 15 namely that Artelia was not in control of design?
 16 A. Because it was still being -- because at that time
 17 Paul Burrows was looking for an answer whether or not we
 18 were in control of design.
 19 Q. Right. Okay.
 20 Well, if we go to the top of the email chain we’ve
 21 got -- this is back to {ART00006286} -- you can see that
 22 there was a mix-up with the F10, if you just go to the
 23 top of the chain, page 1, and Claire Williams comes back
 24 on 20 July and says:
 25 “Whoops - here is the one I am asking you to check

52

1 against, Artelia are an unlikely designer!"

2 Is it your evidence that this statement indicates

3 that Ms Williams understood very well in July 2015 that

4 Artelia wasn't going to act as principal designer come

5 October?

6 A. Yes.

7 Q. Right. Now, as I say, you're not on this email chain,

8 but you have given evidence about it in your statement

9 which is why I'm asking you about it.

10 Can we then go to {ART00004398}. This is an email

11 from Neil Reed to Colin James and Katrina Stoneley.

12 This time you are copied in on it, and it is also dated

13 20 July 2015, and Neil Reed says:

14 "Thanks for this. I have sent on to the Client."

15 He attaches a document, and the document is a

16 "Revised F10 or Grenfell Road", apparently.

17 If we go to that document, that's at {ART00004399}.

18 Can you see that? Here is the notification that you

19 referred to earlier, at least generically. It's dated

20 20 July 2015. If we look at the first page at the

21 bottom, can you see that it says, about two-thirds of

22 the way down the page, "About those involved in the

23 project"? Do you see it says:

24 "Role: Principal Designer.

25 "Name: Artelia UK Ltd.

53

1 "Email: colin.james@[artelia] ..."

2 So that's showing that this document was telling the

3 HSE that Colin James of Artelia is the principal

4 designer.

5 A. This was the document that was sent to Claire Williams

6 that she commented on saying that Artelia was

7 an unlikely designer. I'm not sure whether or not this

8 was the actual form that was finally submitted to the

9 HSE.

10 Q. Fair enough, and I think you have answered my question.

11 So this is the document that was sent to Ms Williams, as

12 we've seen from the 20 July email that goes to her?

13 A. Yes.

14 Q. When she says "Artelia are an unlikely designer", did

15 you understand when you saw this -- and I think you do,

16 because you have said so essentially -- that she was

17 expressing surprise that Artelia had put themselves down

18 in this form, this F10, as principal designer?

19 A. Correct.

20 Q. Because she has seen the F10 that was sent on to her

21 which you have now corrected.

22 So returning to Mr Reed's comments in his email,

23 {ART00004398}, if we can go back to it, please, he goes

24 on to say:

25 "However, in the meantime we are wondering if we

54

1 should [be] the Principal Designer?

2 "And what happens in October 2015 - we need to

3 explain to the client who needs to do what?"

4 So at this point, can we take it that you and others

5 at Artelia were alive to the fact that a discussion

6 needed to be had about who was to be the principal

7 designer on the Grenfell Tower project, at least come

8 October?

9 A. Correct.

10 Q. Can we then go to {ART00004418}, because we now see

11 Mr James' response, Colin James' response, to

12 Claire Williams' email of 20 July. Here is his response

13 of 21 July, and Neil Reed is copied in. You are not

14 I think copied on that. He says:

15 "Hi Clare.

16 "The 2015 CDM Regulations have replaced the CDM

17 Co-ordinator with Principal Designer and the new F10

18 uses this title. Existing F10's will also change to the

19 new format when they are revised, as is the case here.

20 By to the (sic) 6 October 2015 the Client must appoint

21 a PD [principal designer] under the new Regulations for

22 all new projects and existing projects that extend

23 beyond that date."

24 Now, it's clear from this that Mr James' response

25 doesn't highlight any difference between the CDM

55

1 co-ordinator role that Artelia had at that point and

2 that was going to disappear, and the new principal

3 designer role, does it?

4 A. No, it doesn't.

5 Q. And it doesn't spell out to the TMO the consequences to

6 them as a client of not appointing a principal designer.

7 A. Correct.

8 Q. Looking at this response, do you agree that you could

9 fairly read this email as meaning that the principal

10 designer is a straight replacement of the CDMC?

11 A. Somebody might infer that, but I wouldn't necessarily

12 say that is a given.

13 Q. Yes, and you wouldn't say that is a given because it

14 would be wrong, and you would know why it was wrong, but

15 it may be that somebody less versed in the detail might

16 think that a principal designer was being said to be

17 a straight replacement for the CDMC.

18 A. Potentially, yes.

19 Q. Yes.

20 Can we then go to -- this is an offline document

21 I think we need -- {ART00009332}.

(Pause)

23 If you can't find the offline version we can try the

24 non-offline version.

(Pause)

56

1 This should be an email chain of September 2015.
2 Can we start at pages 7 and 8. Just at the very bottom
3 of 7, we can see Andrew Malcolm's email to Neil Reed of
4 10 September. You see that? It's in two colours,
5 because Neil Reed I think has responded.

6 If you go over the page you can see Neil Reed's
7 response the same day, copied to you. Yes, that's that.
8 Can we go back to page 7. I'm so sorry, this is over
9 two pages. This is the one I want. Neil Reed,
10 10 September, to Andrew Malcolm, copied to you and
11 Paul Burrows.

12 If you go then to page 5 -- well, perhaps we should
13 just stick on that, so that you have the detail. He
14 says:

15 "Andrew,

16 "Re your email below - these are all good questions
17 and exactly why I raised the email I did to Paul et al
18 on 21st July - re what does Artelia wish/need to do Re
19 CDM2015 ... we need to advise our client. Comments
20 added below."

21 And the comments are set out on page 7.

22 "Paul - can you please determine in [conjunction]
23 with Simon Cash and then action whatever it is Artelia
24 needs to do on this project to ensure client compliance
25 with CDM2015. Thanks PS I assume you have an approach

57

1 [consistent] with the situation on other projects?

2 "Thanks and regards."

3 Then if we go to page 5, I just want to track this
4 through with you. At the top of page 5, you see
5 Colin James comes back next day. You're copied in:

6 "Hi Neil,

7 "The Client needs to appoint a Principal Designer
8 prior to 6 October 2015. I am not sure what the scope
9 of our involvement is on this project; however, if we
10 have control over the designers we can be appointed as
11 Principal Designer (please see attached appointment
12 template)."

13 Further up page 5, I think, you have your email to
14 Neil Reed:

15 "Neil,

16 "I thought that this question had already been
17 raised with Claire and we had advised her that Artelia
18 are not in a position to take on the Principal Designer
19 Role and that the TMO should approach Rydon's to take it
20 on as they are in control of the design process now."

21 So that's your response, and then if we go to the
22 bottom of page 4, you get a response from Neil Reed
23 where he says:

24 "Not formally to my knowledge. I think Paul/Colin
25 should write to set out the situation and recommended

58

1 action although should letter come from you?"

2 Then I'm sorry to take so long over this, Mr Cash,
3 go to the top of page 1, you can see in the second email
4 from the top:

5 "Neil,

6 "Simple fact is that we can not act a PD. So
7 choices are to ask [Rydon] to take on the role, [as]
8 they are responsible for design, but they are not
9 obliged to take it on. If not, TMO will have to engage
10 someone direct."

11 Then Mr Reed says:

12 "Ok, thanks Si. That is my understanding but
13 I didn't know if Paul had found a way or desire for
14 Artelia to provide it given discussions at Wisley."

15 Just on that, what do "discussions at Wisley" refer
16 to?

17 A. I'm not sure.

18 Q. Do you agree that, even as at mid-September 2015, not
19 even the employer's agent, Neil Reed, which he was by
20 that stage, was sure if Artelia was going to act as
21 principal designer come 6 October?

22 A. He was still looking to find a way as to whether or not
23 we would or wouldn't, but there had already been prior
24 discussions -- albeit, as he says, it's not been
25 formally noted -- about the fact that we wouldn't take

59

1 on the PD role.

2 Q. Right. I mean, there had been no formal notification to
3 the TMO about the need for it to assume the role of
4 principal designer as at this stage, had there?

5 A. Not formal, no.

6 Q. Or even, I think, informal other than the discussions
7 we've seen in July?

8 A. There may have been intervening discussions, I can't
9 remember.

10 Q. Right. Right. Well, let's see.

11 If you go to your third statement, you make
12 a reference there -- this is page 7 {ART00009416/7} --
13 to progress meeting number 15 on 15 September 2015, and
14 if we go to the notes of that meeting, that's
15 {ART00006731}, please. These are the minutes of that
16 meeting. It's easier to take it from the minutes.

17 Now, you weren't there, but you do refer to these
18 minutes in your statement, so I'm assuming that you're
19 able to answer questions about it.

20 If you look at page 7 {ART00006731/7} of this
21 meeting minute, Andrew Malcolm and Neil Reed were there,
22 and it's an Artelia document, as they always are. If
23 you look at page 7, at the top of the page,
24 paragraph 7.3, it says:

25 "CDM2015 - CW to appoint a Principal Designer from

60

1 the TMO's new Consultancy Framework."
 2 Now, do you accept that it wasn't until September,
 3 mid-September 2015, ie this meeting and in these
 4 minutes, that the TMO can really be taken to have
 5 understood that they needed to appoint a principal
 6 designer?

7 A. It was the first time that it was formally recorded.

8 Q. Yes, and that being so, do you accept that this was the
 9 first time that the TMO were really firmly and clearly
 10 alive to the fact that they needed to appoint
 11 a principal designer?

12 A. I'm not sure what conversations had occurred prior to
 13 this meeting, but this was the first time, as I say, it
 14 was formally noted, yes.

15 Q. All right.

16 Now, we then move on to the appointment of
 17 a principal designer. We know that Artelia refused to
 18 perform that role on the Grenfell Tower project. Your
 19 reasons, I think, were that you weren't in control of
 20 the design; is that right?

21 A. Correct.

22 Q. I think you do say that, actually, at paragraph 217 of
 23 your first witness statement {ART00006544/68}.

24 Can we then look at a different part of that
 25 statement, at page 70, your first witness statement

61

1 {ART00006544/70}, because we here see how you describe
 2 how you told Claire Williams of the change on
 3 25 September 2015, and you see what you say there.

4 If you look at paragraph 222, you summarise
 5 a conversation in an email to Paul Burrows and Neil Reed
 6 on 25 September, and you set that out there. There is
 7 no need to turn to that. Actually, you can see that the
 8 first part of it says {ART00006196/2}:

9 "Under CDM 2015 the CDMC role terminates at close of
 10 5th October. The role of CDMC has been abolished, and
 11 a new role created - that of Principal Designer."

12 It looks from that as if this is the first time you
 13 are spelling out to Claire Williams exactly what it is
 14 that's happening?

15 A. Because up to that point in time there seemed to be
 16 an impression that Artelia would take on that role, and
 17 I wanted to make it absolutely clear, despite any
 18 previous conversations that may or may not have taken
 19 place, that that was our position.

20 Q. Perhaps we ought to look at the document, {ART00006195}.
 21 This is an email to Paul Burrows and Neil Reed on
 22 25 September 2015, and you say:

23 "Neil/Paul,

24 "I have just had a conversation with Claire to try
 25 [and] clarify what has been going backwards and forwards

62

1 in terms of what the TMO need to do, as this seemed
 2 different to what Bailey Garner were saying to her."

3 Just pausing there, Bailey Garner were who?

4 A. I believe they were a consultant on their framework.

5 Q. What was their role in the Grenfell Tower project?

6 A. I don't know. I don't believe they had one.

7 Q. Right. Why were they talking to her about this subject,
 8 do you know?

9 A. Because I believe she had talked to them, one of their
 10 consultants on the framework, about taking on the
 11 principal designer role.

12 Q. It goes on:

13 "What I have said is:

14 •" The current role of the CDM coordinator ceases to
 15 exist as of 5th October.

16 •" The TMO must appoint a principal designer.

17 Bailey Garner are not prepared to take on the role as
 18 they say the PD should be involved with the project from
 19 inception ..."

20 Then there are other things too.

21 Just on that second bullet point there, you are
 22 telling Paul Burrows that you have said to

23 Claire Williams that the TMO must appoint a principal
 24 designer.

25 Just going back to my point again, is this a record

63

1 of that conversation in which you were really making it
 2 clear to the TMO, yourself at least, for the very first
 3 time?

4 A. Yes, in terms of spelling it out, because obviously it
 5 still wasn't -- the message wasn't getting through from
 6 previous conversations because the issue was going
 7 backwards and forwards between ourselves and the TMO,
 8 and they were still trying to push us to become the
 9 principal designer.

10 Q. Now, you go on to say in the second bullet point:

11 "My response is that: this situation is not common
 12 to this project and many organisations are being engaged
 13 due to the transition of roles, who have not been
 14 involved with projects since inception - such is the way
 15 of the legislation."

16 Does that mean that this problem about advising
 17 clients about them taking on the PD role was not
 18 confined to the Grenfell Tower project and was a generic
 19 problem across the industry?

20 A. Yes.

21 Q. Was it your view at the time that if no principal
 22 designer was forthcoming, the TMO had the option of
 23 engaging somebody else, in other words somebody not
 24 previously engaged on the project, or really did they
 25 have no choice and have to take it on themselves?

64

1 A. If they couldn't -- if none of the existing members of
 2 the team were to take on that role and they didn't want
 3 to engage or they couldn't engage somebody else, then,
 4 yes, they would automatically take that role on board.
 5 Q. Let's look at the third bullet. You say:
 6 "However, for this project, her first port of call
 7 should be Rydon, as they are the D&B contractor and as
 8 such manage the design process and are responsible for
 9 the design. If Rydon are not prepared to take the PD
 10 role on, then the next option is to ask if Studio E
 11 would take on the role through Rydon."
 12 Now, Rydon were asked whether they would be
 13 principal designers, weren't they?
 14 A. I believe so, yes.
 15 Q. They refused, didn't they?
 16 A. Yes.
 17 Q. Studio E were asked, weren't they?
 18 A. Yes.
 19 Q. They refused, didn't they?
 20 A. Yes.
 21 Q. At one point I think it seemed as if John Rowan and
 22 Partners would perform that role, do you remember that?
 23 A. They had, I believe, expressed an interest, and
 24 Neil Reed had recommended that Claire Williams speak to
 25 them.

65

1 Q. Yes. What happened to that?
 2 A. I've no idea.
 3 Q. Right.
 4 Now, if we look and see what Ms Williams says in her
 5 fourth witness statement -- can we go to that, that's at
 6 {TMO00853697}, please, and I would like to show you the
 7 first page there. That's her additional witness
 8 statement, and we can go to page 4 {TMO00853697/4} of
 9 that, please, and then over on to page 5. I want to
 10 look at paragraphs 20 and 21 with you.
 11 At paragraph 20 she says:
 12 "On 1 October 2015, I emailed Neil Reed highlighting
 13 various issues in relation to the Project. In respect
 14 of the change in CDM regulations, I queried as follows."
 15 Then she sets out her query:
 16 "CDM Regulations change: As long as the project team
 17 agree the Design is fundamentally complete then we
 18 believe the provisions within the legislation allow
 19 KCTMO to request the Principal Contractor to compile the
 20 H&S File and issue direct without the formal appointment
 21 of a Principal Designer. Can we get this put into the
 22 meeting next week - and check that the team agree the
 23 design is 'fundamentally complete' - and get this
 24 minuted?"
 25 "I believe the expression 'fundamentally complete'

66

1 came from a discussion with Simon Cash."
 2 That's what she says.
 3 Then she goes on:
 4 "This email was formalising the discussion that I'd
 5 had with Neil Reed's manager. At this point, Neil was a
 6 consultant to Artelia and not based in their office.
 7 I cannot recall Neil Reed ever advising that this
 8 arrangement was unacceptable under the new
 9 CDM Regulations 2015."
 10 A number of things follow from that.
 11 Would the design being fundamentally complete be
 12 a good reason for the TMO performing the role of
 13 principal designer?
 14 A. It wouldn't be a prerequisite in terms of them
 15 performing that role. I think it's just a -- it was
 16 a point in time. I don't recall the term "fundamentally
 17 complete", but we probably would have had a discussion
 18 at the time about where the project would have been
 19 relative to when it was going to complete on 23 October
 20 and the changeover on 6 October.
 21 Q. Who was it who came up with the idea that the design was
 22 fundamentally complete so as to justify the TMO taking
 23 on the role of principal designer?
 24 A. That would have been the TMO. Nobody came up with the
 25 particular idea that it was fundamentally complete.

67

1 As I say, I don't remember the term being used. But
 2 obviously at that stage in the project, if there was
 3 only going to be two weeks after the changeover, then
 4 the inference is that there should be no design left and
 5 they should be actually in the handover period.
 6 Q. We can see that she says in paragraph 21 that the
 7 expression "fundamentally complete" came from
 8 a discussion with you. What do you say about that?
 9 A. I don't recall that.
 10 Q. Can we just look at your third witness statement, page 7
 11 {ART00009416/7}. I just want to go to paragraph 25 in
 12 that. You say there, commenting on paragraph 21:
 13 "... that she believes that the expression
 14 'fundamentally complete' (relating to the progress of
 15 design on the Project) had come from a discussion she
 16 had had with me. I cannot recall whether I said this to
 17 her. At that time, the Project was due to complete
 18 on 23 October 2015. The design should have been near to
 19 completion at such a late stage in the Project, so it is
 20 possible that I discussed this (or something similar in
 21 nature) with her."
 22 Is that still your evidence?
 23 A. Yes.
 24 Q. Yes.
 25 Did you consider, when having that discussion with

68

1 her, that the TMO would be giving themselves duties
 2 imposed by regulations 11 and 12 under the new 2015
 3 regulations?
 4 A. I knew that they would be giving themselves duties, not
 5 necessarily what those specifically were under 11 and
 6 12, because I didn't know what the specific wording of
 7 those regulations were.
 8 Q. To your mind, what relevance does a design being
 9 fundamentally complete have to producing a health and
 10 safety file?
 11 A. Well, to produce the health and safety file, there has
 12 to be information in there as to how to maintain and
 13 operate the building in a safe manner and carry out
 14 maintenance works in a safe manner, so it could be
 15 record information of the design, once it is completed.
 16 Fundamentally complete is not complete. It has to be
 17 completed to actually fulfil the -- or to prepare a full
 18 health and safety file.
 19 Q. Indeed.
 20 Did you advise the TMO precisely on what duties they
 21 were undertaking if taking on the role of principal
 22 designer?
 23 A. Not me particularly, but I know that Paul Burrows did
 24 actually advise the TMO of the differences between a
 25 CDM co-ordinator and a principal designer, identifying

69

1 what the principal designer's role was.
 2 Q. Right. You say Paul Burrows did; do you know when he
 3 did or how he did that?
 4 A. I can't remember specifically the dates, but I know it
 5 was probably around this time.
 6 MR MILLETT: I see.
 7 Mr Chairman, is that a convenient moment?
 8 SIR MARTIN MOORE-BICK: Yes, I would think it is. How are
 9 you doing?
 10 MR MILLETT: We're doing quite well. We have probably about
 11 another hour maximum on the questions I have prepared,
 12 and then there will have to be a short break to see if
 13 there are any other questions which are coming in from
 14 core participants. But that is very much a maximum.
 15 SIR MARTIN MOORE-BICK: Right.
 16 All right, Mr Cash, we're going to have a break now
 17 and we will come back at 11.45.
 18 THE WITNESS: Right, thank you.
 19 SIR MARTIN MOORE-BICK: Please don't talk to anyone about
 20 your evidence or anything to do with it while you're out
 21 of the room.
 22 THE WITNESS: I won't, thank you.
 23 SIR MARTIN MOORE-BICK: Thank you very much, would you like
 24 to go with the usher.
 25 (Pause)

70

1 Right, 11.45, please. Thank you.
 2 (11.30 am)
 3 (A short break)
 4 (11.45 am)
 5 SIR MARTIN MOORE-BICK: All right, Mr Cash?
 6 THE WITNESS: Yes.
 7 SIR MARTIN MOORE-BICK: Yes, Mr Millett.
 8 MR MILLETT: Now, Mr Cash, in your third witness
 9 statement -- and I don't think we need to go to it -- at
 10 paragraph 17 {ART00009416/4}, you say you had
 11 a conversation with Ms Williams about Artelia performing
 12 the role of CDM compliance adviser on 25 September 2015.
 13 We can look at it if you want to, but that's what you
 14 say there.
 15 A. Yes.
 16 Q. Can we look back, please, at {ART00006195}, this is the
 17 email which we saw just before the break which records
 18 that conversation. In the last bullet you are telling
 19 Paul Burrows:
 20 "The CDM Compliance Adviser role is not a project
 21 specific role, but rather a clientside role (and one
 22 that we can fulfil) advising clients of their
 23 obligations under the new regulations and ensuring that
 24 their project managers, PDs and PCs are all doing what
 25 they should be under the new regulations. Similar to

71

1 the role we are offering to Lambeth."
 2 What tasks specifically did you think the CDM
 3 compliance adviser would perform?
 4 A. Specifically I wasn't -- I hadn't considered in any
 5 detail, but it was particularly in terms of the health
 6 and safety file and making sure that the client or
 7 principal designer, if the client wasn't the principal
 8 designer, would be putting together the health and
 9 safety file.
 10 Q. So is it right that the CDM compliance adviser role that
 11 you refer to there would involve ensuring that the
 12 health and safety file was complete?
 13 A. Not necessarily, it would be ensuring that whoever was
 14 responsible for it would complete it.
 15 Q. I see, so advising the TMO in this case of their
 16 obligations to ensure that the health and safety file
 17 was complete?
 18 A. Correct.
 19 Q. Now, we know that the TMO decided not to appoint a CDM
 20 compliance adviser. Do you know why that was?
 21 A. They decided to take that role themselves.
 22 Q. Yes, do you know why that was?
 23 A. No.
 24 Q. We then turn to the next topic, which is the TMO's own
 25 decision to perform the role of principal designer,

72

1 which we know they decided to do themselves.
 2 Can we look at {ART00009351/3}, please, and go to
 3 page 3. This is an email from you to Andrew Malcolm on
 4 23 October 2015, copying other people from Artelia as we
 5 can see, Neil Reed, Paul Burrows, and at the top of the
 6 page in the second paragraph, you say there:
 7 "Paul Burrows is responsible for all matters
 8 relating to CDM ..."
 9 I should just show you the first line, actually,
 10 because it's relevant:
 11 "I have spoken to Claire, but that was to say that
 12 we are not in a position to act as PD."
 13 Was that a later discussion from the one in
 14 September that you referred to, or was it the discussion
 15 that you had in September?
 16 A. I can't recall.
 17 Q. You go on to say:
 18 "Paul Burrows is responsible for all matters
 19 relating to CDM and the action is with him to sort out
 20 what is going on. No one else is qualified to deal with
 21 this."
 22 By "no one else is qualified", do we correctly
 23 understand you to mean that dealing with CDM requires
 24 specialist skills?
 25 A. It requires to be -- yes, it requires specialist skills

73

1 because it needs an understanding of the regulations and
 2 the intricacies of those regulations.
 3 Q. What would be a qualification? You say no one else is
 4 qualified to deal with this; what sort of qualification
 5 would you need?
 6 A. I wasn't saying that he had a particular qualification,
 7 but that he would be -- he was a member of, I believe,
 8 ACOP, and that he was the business's health and safety
 9 adviser, corporate health and safety adviser, and
 10 actually had an in-depth knowledge of CDM Regulations.
 11 Q. Right.
 12 Would you agree that the role of principal designer
 13 under the new CDM Regulations, as they were in
 14 October 2015, was a specialist position requiring
 15 specialist expertise?
 16 A. I wouldn't know whether it was a specialist position
 17 because in fact the role of principal designer is taken
 18 on by different types of people, whether it be a project
 19 manager or an architect or a contractor.
 20 Q. Whatever they were, would you agree that the role would
 21 require specialist knowledge and expertise?
 22 A. I would require knowledge. I wouldn't necessarily say
 23 it's specialist. You would need an understanding of the
 24 regulations.
 25 Q. Fine, and an understanding of the consequences of the

74

1 regulations and what they had to do under them,
 2 presumably?
 3 A. Yes.
 4 Q. Did you think at the time that it was sensible for the
 5 TMO to perform that role themselves on what you knew of
 6 them?
 7 A. They were an educated client and, as far as I was
 8 concerned, would understand what the role of a principal
 9 designer was because they were actually carrying out
 10 other capital works within their organisation, and
 11 therefore this wasn't solely an issue on this project.
 12 Q. Did you have the view at the time that Claire Williams
 13 and those assisting her in relation to the Grenfell
 14 project had sufficiently specialist expertise and
 15 familiarity with all the obligations in the new
 16 legislation, the new regulations, to be able to perform
 17 their obligations as principal designer thereunder?
 18 A. I don't know what level of knowledge they had
 19 specifically, but in terms of what was left to do on the
 20 project, I didn't feel uncomfortable in them taking on
 21 that role.
 22 Q. I see. So you didn't think that it was not very
 23 sensible for them to perform that role and, indeed, do
 24 so without a CDM compliance adviser?
 25 A. We were offering a service, a bit like we did with the

75

1 CDM design -- sorry, as we did with the client design
 2 adviser role, where we felt that we could help support
 3 them. It was up to them as to whether or not they took
 4 that offer up.
 5 Q. Right.
 6 Now, can we then turn to a short topic, namely
 7 pre-construction information under the CDM Regulations.
 8 I think it's right that, under the 2007 regulations,
 9 the CDM co-ordinator had a statutory obligation to
 10 deliver pre-construction information to the main
 11 contractor. Was that your understanding?
 12 A. Correct.
 13 Q. Can we look at {RYD00092644}, please. This is the
 14 pre-construction information that Artelia provided in
 15 November 2013, and you can see it's dated
 16 25 November 2015. Did you read this at the time it was
 17 released?
 18 A. I can't remember if I specifically read through the
 19 detail. I would have been aware of that document.
 20 Q. Right. Can we look at page 14 {RYD00092644/14},
 21 paragraph 2.14, please, "Fire Precautions", and it says
 22 there in the second paragraph:
 23 "The Principal Contractor shall not remove or
 24 displace any of the fire fighting/fire protection
 25 arrangements provided for the normal operation of the

76

1 building/area without first agreeing and arranging the
 2 implementation of adequate alternative arrangements.”
 3 I think it’s right that the pre-construction
 4 information document doesn’t anywhere provide any
 5 information in the form of descriptions or drawings or
 6 the like to show the firefighting or fire protection
 7 arrangements, does it?
 8 A. I don’t believe it does, no.
 9 Q. Without that information, do you know how the contractor
 10 would know what they should do with the firefighting
 11 measures?
 12 A. There would be -- they would look at whatever record
 13 information there is in existence within the TMO.
 14 Q. Can you go to page 15 {RYD00092644/15}, then, please,
 15 and look at section 2.15. This is entitled “Emergency
 16 Procedures and Means of Escape”:
 17 “Refer to the following for details of means of
 18 escape ...”
 19 And you can see there what those include:
 20 “Location Plan;
 21 “Site Area Access Plan;
 22 “Phasing Plan;
 23 “Other; and
 24 “Existing emergency procedures and fire plan.”
 25 Do you see that?

77

1 A. Yes.
 2 Q. But, again, as you have I think accepted, this document
 3 doesn’t append those drawings or plans, does it?
 4 A. I don’t know if -- this is a document that sits within
 5 an overall pack of information that was issued for
 6 tender, so I can’t remember whether or not those
 7 documents were included in the overall tender
 8 information pack that was issued.
 9 Q. Right, I see.
 10 I mean, it doesn’t, on the face of it, give you any
 11 guidance as to what the plan is or where to find it or
 12 what number it has or anything like that, any of these
 13 plans.
 14 A. No, it doesn’t.
 15 Q. Do you think that, on that basis, the pre-contract
 16 information was incomplete?
 17 A. No. If the documents are included in the overall tender
 18 pack, then it would have been with Rydons to have
 19 checked everything that was in that pack.
 20 Q. Right, and if they weren’t?
 21 A. Then they should have raised a technical query
 22 requesting where that information was if it wasn’t
 23 available.
 24 Q. And if they weren’t, would you accept that the
 25 pre-contract information was incomplete?

78

1 A. If the information wasn’t available then we couldn’t
 2 have provided it, but that’s where it should have been.
 3 Q. Can we then turn to the health and safety file, and
 4 I want to start with a discussion with you about the
 5 preparation of the health and safety file.
 6 Under the 2007 regulations, it was the CDMC, the CDM
 7 co-ordinator, who was to produce the health and safety
 8 file. Was that your understanding?
 9 A. Yes.
 10 Q. Can we then just look very briefly at the regulations,
 11 they are at {INQ00011315/10}, please. At page 10 in
 12 that document, we can find regulation 20, which pertains
 13 to the duties of a CDM co-ordinator. You can see the
 14 general heading there.
 15 If you go over to page 11 {INQ00011315/11}, we can
 16 see regulation 20(2)(e):
 17 “Prepare, where none exists, and otherwise review
 18 and update a record (‘the health and safety file’)
 19 containing information relating to the project which is
 20 likely to be needed during any subsequent construction
 21 work to ensure the health and safety of any person,
 22 including the information provided in pursuance of
 23 regulations 17(1), 18(2) and 22(1)(j) ...”
 24 Do you accept, looking at that, that there was
 25 a statutory duty to prepare a record of health and

79

1 safety information relating to the project?
 2 A. Correct.
 3 Q. Yes.
 4 Then if we look to {RYD00092644/18}, then, this is
 5 back to the pre-construction information report, I just
 6 want to go in this to section 3.14. It says there:
 7 “Existing Health and Safety File:
 8 “A Health and Safety File as defined by the
 9 Regulations is not available for this building.”
 10 Now, in the circumstances where there was no health
 11 and safety file for Grenfell Tower at that time, so
 12 November 2013, would you have expected Artelia to
 13 produce one?
 14 A. No.
 15 Q. Why not?
 16 A. Because those regulations refer to not only
 17 refurbishment projects, but also to new construction
 18 projects where there wouldn’t have been a health and
 19 safety file. What it is saying is that the obligation
 20 is to produce one, but it doesn’t say when, and as is
 21 normally the practice, the information for the health
 22 and safety file is amassed during the project, and the
 23 health and safety file is produced at the end of the
 24 project when all the information is available and there
 25 are no further changes to be made to that information.

80

1 Q. I'm not sure I follow that. Given that Artelia was the
 2 CDMC, and given the obligation under regulation 20(2)(e)
 3 that we have just looked at together to prepare a health
 4 and safety file, and given that one didn't exist as at
 5 November 2013, why wasn't it Artelia's job in that role
 6 to produce the health and safety file?

7 A. It was, but, as I say, it doesn't say specifically at
 8 that point in time. There was no information to prepare
 9 a health and safety file at that point in time, so
 10 therefore we have to prepare one, and we can only
 11 prepare it based on the information that eventually
 12 becomes available from the various parties that are
 13 asked to supply that information. So the TMO, the
 14 contractor and the designers supply the information that
 15 go into that health and safety file, and that plan was
 16 issued by Keith Bushell, identifying who the various
 17 parties were that contributed to that health and safety
 18 file, and you can't produce it without that information.
 19 So it's very much reliant on those parties to provide
 20 that information.

21 Q. Right, I understand that answer.
 22 Did you or anybody under your tutelage ever spell
 23 out to the TMO, as the client, or Rydon, as the
 24 contractor, as they became, what precise information you
 25 needed as the CDMC to be able to discharge your

81

1 functions under regulation 20(2)(e)?

2 A. I didn't personally. I believe that Keith Bushell did.

3 Q. You believe he did. Do you know when he did and how he
 4 did?

5 A. He issued a template identifying what information was
 6 required from which party.

7 Q. To your knowledge, how far did that get as at October of
 8 2015, how developed was it?

9 A. I don't know, but I would say it was probably quite
 10 limited because, as I say, that information is not
 11 normally amassed and gathered until the end of the
 12 project.

13 Q. Can we then go to Artelia's contract again,
 14 {ART00005742/61}, I just want to go back to the schedule
 15 of the CDMC services that Artelia agreed to perform
 16 there.

17 If we look at paragraph 7 under those obligations,
 18 it says:
 19 "Give suitable and sufficient advice and assistance
 20 to the client on the following measures."
 21 Then there are various measures set out.
 22 At item (e) at the bottom:
 23 "Providing health and safety information for the
 24 health and safety file. [Regulation 20.1(a)]."
 25 Do you see that?

82

1 A. Yes.

2 Q. So the obligation wasn't only in the regulations, it was
 3 also part of your contract.

4 A. Yes.

5 Q. Then if we go over the page to page 62 {ART00005742/62},
 6 please, we can see paragraph 10. It says:
 7 "Liaise with the principal contractor on ..."
 8 And then item (c):
 9 "The contents of the Health and Safety file."
 10 Do you see that?

11 A. Yes.

12 Q. Again, there's a reference to regulation 20(1)(c).
 13 Then lower down the page to paragraph 13:
 14 "Prepare where none exists or otherwise review and
 15 update the health and safety file incorporating relevant
 16 information from other duty holders."
 17 And there is a reference to regulation 20(2)(e)
 18 there.
 19 Under 14, immediately below it:
 20 "Deliver TWO copies of the health and safety to the
 21 Client."
 22 And sub-subregulation (f).
 23 Summarising it, do you agree that it was Artelia's
 24 duty under the 2007 regulations and the contract that we
 25 have just been looking at first of all to prepare

83

1 a health and safety file where none previously existed?

2 A. Yes.

3 Q. Secondly, to advise the TMO on the information to be put
 4 into the health and safety file?

5 A. And other members who would need to contribute to it,
 6 yes.

7 Q. Thirdly, liaise with Rydon on the contents that were
 8 required for the health and safety file?

9 A. Correct.

10 Q. Fourthly, to deliver two copies of that file to the
 11 client?

12 A. Yes.

13 Q. Can we then go to {INQ00013936}. This is the Approved
 14 Code of Practice for the 2007 regulations which we
 15 looked at before, otherwise known as L144. If we go to
 16 page 58 {INQ00013936/58} in that document, and look at
 17 paragraph 259, you can see that it says there, "What you
 18 must do", and there is a reference to, as you can see in
 19 the little box on the left, regulation 20(1)(c) and
 20 (2)(e), which we have been looking at in terms of the
 21 contract and the regulations.

22 Can I just ask you: are you familiar with this
 23 document, or were you familiar with this document?

24 A. No.

25 Q. Right.

84

1 A. I know of its existence but I wasn't familiar with the
 2 detail of its contents.
 3 Q. Okay.
 4 If we look at paragraph 259 it says, under "What you
 5 must do":
 6 "Clients, designers, principal contractors, other
 7 contractors and CDM co-ordinators all have legal duties
 8 in respect of the health and safety file."
 9 Then if you look a little bit lower down, (a) says:
 10 "CDM co-ordinators must prepare, review, amend or
 11 add to the file as the project progresses, and give it
 12 to the client at the end of project."
 13 Now, did you know -- well, let me try it this way:
 14 does that suggest -- or did that suggest, if you had
 15 read this, I suppose -- that the CDM co-ordinator should
 16 be compiling the health and safety file during the
 17 project as you go, not at the end?
 18 A. As the information becomes available, yes.
 19 Q. Yes. And although, as you say, you weren't familiar
 20 with the details of this ACOP at the time, is that your
 21 understanding, that the CDMC should be compiling the
 22 health and safety file on an as-you-go basis once the
 23 information becomes available?
 24 A. Once it becomes available.
 25 Q. And not leaving it to the last minute?

85

1 A. Well, if the information doesn't become available until
 2 the end of the project, then that is the only time that
 3 you have the opportunity to do so, and that is the
 4 normal course, that's the way -- that's how projects
 5 normally run.
 6 Some projects have sectional completions or phase
 7 completions, in which case the health and safety file is
 8 updated as those sections are completed, and that's how
 9 the industry interprets that particular requirement in
 10 terms of the regulations.
 11 Q. Right. So was it your understanding, just so I've got
 12 it, that even though this ACOP says that CDM
 13 co-ordinators must prepare, review, amend and add to the
 14 file as the project progresses, in practice your
 15 experience was that that didn't happen and it was done
 16 at the end once all the information was available?
 17 A. Yes.
 18 Q. Right. Let's then turn to what was prepared,
 19 {ART00004765}, please. This is an email from
 20 Paul Burrows to Claire Williams on 24 September 2015.
 21 There it is on the screen. You're copied in, and it
 22 says:
 23 "Hi Claire,
 24 "I will be consolidating the CDMC document for the
 25 Artelia project so that it can be issued to the

86

1 Principal Designer under CDM 2015."
 2 What did you understand to be the CDMC document that
 3 Paul Burrows was referring to there?
 4 A. It would have been any information that we have
 5 pertaining to the CDMC role that would be relevant to
 6 the principal designer role.
 7 Q. Can you give us some specifics? What did you understand
 8 it would have included?
 9 A. I didn't understand it to include anything specific. It
 10 was a statement that Paul Burrows had made. I didn't
 11 think about what the contents of those documents might
 12 be.
 13 Q. Right. But you understood that the CDMC would be or
 14 include the health and safety file?
 15 A. If we had any information, yes.
 16 Q. Did you divine from this or did you have any other
 17 reason to think that you didn't have all the information
 18 you needed at that stage for the CDMC file?
 19 A. Well, I know that we wouldn't have had all the
 20 information because the project hadn't completed at that
 21 stage.
 22 Q. Right. But it was very close to completion; indeed,
 23 sufficiently close to completion for Claire Williams to
 24 think the design was fundamentally complete. Given
 25 that, and given that that was the basis on which she

87

1 agreed to be principal designer, what was outstanding,
 2 or what was so importantly outstanding, that you
 3 couldn't pull together the CDMC document or, within
 4 that, the health and safety file at that stage?
 5 A. I don't know what information had been received in terms
 6 of the information that had been outlined in the
 7 original template that had been sent much earlier in the
 8 project.
 9 Q. Right.
 10 Were you surprised that the CDMC document was only
 11 being compiled at this late stage?
 12 A. No.
 13 Q. Is that because of the practice that you have referred
 14 to before, that it was left until late on?
 15 A. Correct, and also that our role in the project was
 16 coming to an end, and that we would need to hand over
 17 whatever information that we had to the principal
 18 designer.
 19 Q. What would you have expected to have been handed over at
 20 this stage? So we're looking at late or late-ish
 21 September 2015.
 22 A. I didn't have any expectations of any particular
 23 documents other than what was -- what the CDM
 24 co-ordinator may have received and what other
 25 information had been prepared. So there would have been

88

1 the template for the health and safety file certainly ,
2 and any pre-construction information which the principal
3 designer wouldn't necessarily have had a copy of, if it
4 had not -- if it was somebody else that was being
5 appointed other than the TMO.

6 Q. Right.

7 I mean, we know that the project should have been
8 completed by October 2015, and I think the revised
9 completion date was 23 October 2015, as we saw from the
10 EOT reference earlier on.

11 Given that the completion of this project was really
12 imminent by this point, you're only a month away from
13 the extended period, could you just explain why you
14 wouldn't have expected more by way of documentation to
15 be available to be put into the health and safety file?

16 A. Because the project actually subsequently extended
17 beyond 23 October.

18 Q. You didn't know that at the time.

19 A. No, I didn't, but obviously the information hadn't been
20 issued and despite -- I don't know what levels of
21 request had been made, but the information wasn't there
22 and wasn't trouble.

23 Q. Did it trouble you that it wasn't there and wasn't
24 available?

25 A. It didn't trouble me because I knew that eventually,

89

1 when you get to the end of the project, a health and
2 safety file will be amassed and produced.

3 Q. Let's see what was available at the time.
4 {ART00009351}, please. This is an email chain
5 internally within Artelia, and this one is from
6 Andrew Malcolm to Paul Burrows, copied to you, on
7 26 October, but it has an earlier history.

8 If we go to page 4 {ART00009351/4}, please, we can
9 see that on 23 October, Andrew Malcolm writes to
10 Neil Reed, copied to you:

11 "Neil

12 "Apparently you have all the CDM information.

13 "Apparently Simon has spoken with Claire.

14 "Seems as if, Neil can you send the information to
15 Claire referencing conversation that she had with
16 Simon."

17 Again, that conversation, was that the one in
18 September or was there a later conversation about what
19 the CDM information was that she would be getting, do
20 you remember?

21 A. I can't remember, no.

22 Q. If you go up the chain to the next email on this page --
23 it starts at the bottom of page 3, I think, we need to
24 see that one -- Neil Reed writes to Andrew Malcolm on
25 23 October -- and we need to go back to the top of

90

1 page 4 because it's split -- and it's copied to you:

2 "I don't have anything guys. And whatever is being
3 issued needs to come from Paul and/or via Simon does it
4 not?"

5 You see that?

6 A. Yes.

7 Q. Then if you go one email up from that, to page 3
8 {ART00009351/3}, you write to Andrew Malcolm, 23 October,
9 and say:

10 "Andrew,

11 "I have spoken to Claire, but that was to say that
12 we are not in a position to act as PD."

13 This is an email we saw before in the context of
14 a different discussion.

15 A. Yes.

16 Q. Just putting it in its context.

17 Then we go up another email, please {ART00009351/2},
18 and Paul Burrows comes back to Andrew Malcolm, copied to
19 you, as well as Neil Reed, and says:

20 "Andrew,

21 "The only information we have is attached. This
22 includes:

23 "1) Reviews of the Principal Contractors
24 Construction Phase H&S Plan

25 "2) The old and updated F10

91

1 "3) Reports associated with the construction phase
2 of the project

3 "4) Agreed template for the H&S File.

4 "Best Regards,

5 "Paul."

6 Were you surprised at the time that this was the
7 only information that Artelia had for the health and
8 safety file at this time, late October 2015?

9 A. At that point in time, that's all that we would have
10 received, yes.

11 Q. Were you surprised that it was so thin?

12 A. That there was no information other -- in the health and
13 safety, I wasn't necessarily surprised by it. It was
14 a statement of fact.

15 Q. Well, I know.

16 Let me try it a different way: by 23 or
17 26 October 2015, would you have expected more to have
18 been done on the health and safety file?

19 A. Well, on the basis that our appointment terminated on
20 6 October, we wouldn't have had any involvement beyond
21 that in terms of collating any information for the
22 health and safety file.

23 Q. That may be, Mr Cash, but I'm asking you: learning what
24 you learnt in late October about what was available for
25 the health and safety file, did it not surprise you at

92

1 that time, regardless of your continuing role, that it
 2 was so thin?
 3 A. No, because quite often, as I said, information will
 4 come in a lump at the end of the project, and we hadn't
 5 actually reached the end of that project yet.
 6 Q. Let's go to {ART00009351}, this is an email from
 7 Andrew Malcolm to Paul Burrows, copied to you, same day:
 8 "Hi Paul,
 9 "With the greatest of respect. I don't think this
 10 can be dumped on the client like this - assuming you're
 11 expecting me to just forward this on ... (or can it)
 12 "Simon's email below infers: We have not discussed
 13 nor briefed the client in a CDM capacity other than to
 14 explain that we cannot act as PD.
 15 "The immediate project team (Neil, Michelle and
 16 myself) whilst we are 'superstars', we aren't qualified
 17 or competent in areas of CDM.
 18 "This goes back to my original email some time ago
 19 now explaining that we need to have a process for
 20 handing over the CDM 'bundle' and its associated
 21 components to the client.
 22 "The message that I am getting back from both Neil,
 23 Simon and the Client is that this has not happened -
 24 despite the HSE deadline.
 25 "Therefore, can I request that either you, or

93

1 Colin James (or anyone from Artelia who is qualified or
 2 competent in areas of CDM) arrange (happily through me)
 3 either a face to face handover meeting or even a call,
 4 with the client, ahead of any cold emails. This is so
 5 that the CDM 'bundle' is passed complete with
 6 explanation of the associated components.
 7 "Please can we treat this is a matter of urgency but
 8 by no later than the end of next week (06-11-15) for
 9 this to happen.
 10 "If anything, I personally want to stop looking daft
 11 at client meetings for missing a deadline we
 12 (royal - Artelia - we) had 6 months+ to sort out, let alone
 13 any regulatory implications that may or may not have
 14 repercussions against Artelia"
 15 Now, a number of questions about that email which
 16 I have read in full to you.
 17 Would forwarding on the documents -- or, as it's put
 18 by Mr Malcolm, dumping them on the TMO -- have fulfilled
 19 Artelia's obligations and duties, did you think at the
 20 time?
 21 A. In terms of handing over information?
 22 Q. Yes.
 23 A. Our role had come to an end and there was a handover
 24 process, and I believe that Paul Burrows had agreed to
 25 meet with Claire Williams and actually have a handover

94

1 meeting and pass documents on to her.
 2 Q. So you couldn't simply dump them on the TMO; your
 3 thoughts at the time were in agreement with Mr Malcolm,
 4 were they, you needed a handover meeting and to explain
 5 what was there and what wasn't there?
 6 A. Yes, and I believe that happened.
 7 Q. Right.
 8 Did you agree with Mr Malcolm that the process of
 9 handing over a CDM bundle is one that should happen?
 10 A. Yes.
 11 Q. And that that should be done by what he calls the CDM
 12 team; yes?
 13 A. Yes, and I believe it happened.
 14 Q. You thought it happened, okay.
 15 Looking at the last paragraph, which I have read out
 16 to you, Mr Malcolm seems to be criticising Artelia or
 17 individuals at Artelia for their performance.
 18 Was there some friction between the employer's
 19 agents on the one hand and the CDM practitioners on the
 20 other within Artelia at this point on this project?
 21 A. There appears to be, in terms of his own personal views,
 22 yes.
 23 Q. Did you know about that, given your role as project
 24 director on this project?
 25 A. Yes.

95

1 Q. What did you do about it?
 2 A. I tried to smooth the waters and tried to push -- one,
 3 I made -- had to make sure that the handover process had
 4 actually taken place in terms of Paul Burrows making
 5 sure that he passed the information, and also, in terms
 6 of the friction there, I felt that Andrew Malcolm was
 7 actually probably not in -- that email wasn't actually
 8 written in a tone that was acceptable, in terms of
 9 an exchange between people.
 10 Q. Regardless of the tone, was it your view that the
 11 substance of his point was correct, namely that Artelia
 12 had been slow in sorting out this question?
 13 A. I don't think there was any obligation on Artelia to
 14 actually sort out the client appointing a principal
 15 designer. We had made it quite clear to the client that
 16 we couldn't take on that role and that they would have
 17 to appoint a principal designer, or that they would take
 18 on that role themselves.
 19 Q. Well, he is of the view that you have had six months
 20 plus to sort out this problem. Did you agree with him,
 21 that you had had six months to sort it out and had been
 22 slow in doing so?
 23 A. I believe that we had -- you're right, we had
 24 six months, and we had been discussing it with the TMO
 25 and it hadn't been sorted, but I don't believe it was

96

1 solely within Artelia's obligations to actually carry
 2 out any re-appointment for the principal designer role;
 3 it was down to the TMO to take that responsibility .
 4 We --
 5 Q. Can we go to {ART00009356}, please. This is an email
 6 from Neil Reed to you on 27 October 2015, and he says:
 7 "Simon,
 8 "1. CDM:-
 9 "Following a further completion meeting today it
 10 transpires that Claire has had no call from Paul.
 11 "Accordingly despite all the effort to ensure a
 12 smooth transition re CDM Claire considers Artelia's
 13 efforts in this regard appalling.
 14 "Andrew and I were quite embarrassed by the lack of
 15 professional closure that I think we all expected and
 16 planned for from Paul.
 17 "Can you exert some pressure on Paul to wrap this
 18 up? Much in the way you suggested in a previous email -
 19 Claire still needs a CDM advisory type role and will
 20 probably bite Paul's arm off if he is able to offer this
 21 role."
 22 You saw that?
 23 A. Yes.
 24 Q. Then it goes on:
 25 "As at today we have an expired F10 and a client

97

1 expecting a handover of documents to inc a partial H&S
 2 File. Someone will need to help compile a completed H&S
 3 File so there remains scope for Artelia to see extra
 4 fee."
 5 Now, Artelia's efforts had been described by
 6 Claire Williams, according to this, as "appalling". Do
 7 you agree with her assessment?
 8 A. Only in respect that Paul had not contacted her to pass
 9 over the information that we had.
 10 Q. Right.
 11 Did you understand this email to be essentially
 12 an escalation of this issue to you, as the project
 13 director?
 14 A. Yes.
 15 Q. Did you take any steps to sort this out?
 16 A. I tried -- I would have taken steps with Paul to ensure
 17 that he actually did meet with Claire and pass over the
 18 information that we had.
 19 Q. Do you know whether there was any handover of documents
 20 or a file to the TMO?
 21 A. I don't know specifically, no.
 22 Q. Did you not follow that through, in your role as project
 23 director?
 24 A. I can't remember.
 25 Q. Right. It was your responsibility to do so, given that

98

1 this matter had been escalated to you, so I ask the
 2 question.
 3 A. Yes.
 4 Q. You can't remember.
 5 What about Rydon, was there any handover of
 6 documents or a file to Rydon?
 7 A. No, there was no need to hand over documents to Rydon.
 8 Q. Was a completed health and safety file ever handed over
 9 to the TMO, do you remember?
 10 A. I believe it came from Rydon's to -- direct to the TMO.
 11 Q. Right, so not from you?
 12 A. Correct.
 13 Q. Can we go to {ART00005461}, please. I just want to look
 14 at some different questions about Rydon during the
 15 construction phase.
 16 This is a formal complaint email from Neil Reed to
 17 Steve Blake of 30 March 2016, so late on in the project.
 18 Now, you were copied in on this. It's a longish
 19 document, and I'm not going to read it all out to you,
 20 but it starts out by saying:
 21 "Steve,
 22 "We are writing to set out our frustrations and
 23 concerns about a number of current issues with this
 24 project as both the client team and consultant team hold
 25 a perception that Rydon could and should be doing more

99

1 in the run up to completion."
 2 Then you can see that there are three main topics
 3 set out: resource, meeting attendance and handover
 4 matters.
 5 Now, when you saw this email, did you read it, do
 6 you think?
 7 A. I was aware of the email and I had discussed it with
 8 Neil before it was issued.
 9 Q. Yes. I think in fact you also saw this email before it
 10 was sent.
 11 A. Yes.
 12 Q. You knew that it had been reviewed by David Gibson of
 13 the TMO before it was sent to Steve Blake; is that
 14 right?
 15 A. Yes.
 16 Q. Yes.
 17 Can we look at {ART00006672}, please. This is
 18 an email from Neil Reed to you, copying in others,
 19 relating to Rydon on 9 May 2016. You see it there on
 20 the screen, 9 May 2016, and this is now very close to
 21 the end of the project. Neil Reed says:
 22 "Simon,
 23 "O&Ms are unacceptable to the CoWs [clerks of
 24 works].
 25 "This is just to flag that this is becoming a farce:

100

1 despite all our efforts to ensure a smooth landing
 2 I have to say I do not think I have ever worked with
 3 a Contractor operating with this level of nonchalance.
 4 "We are all getting sucked into to doing far more
 5 than we ought to at this stage of the project. I am
 6 wondering if you need to write to TMO to express our
 7 concern and what we are endeavouring to do about it -
 8 additional site visits, additional meetings, endless
 9 emails on design related issued that dont concern us as
 10 Claire is the design lead, etc, challenging the
 11 Contractor, etc."

12 Now, you see that Mr Reed describes the situation as
 13 a farce, as he puts it, and that Rydon are operating
 14 with a level of nonchalance.

15 Did you ever write to the TMO to express your own
 16 concern, as suggested by Mr Reed in this email?

17 A. I can't remember if I did.

18 Q. We can't find a document showing that you did do that,
 19 and my question is if you didn't do that, why you didn't
 20 do that.

21 A. Possibly because I would have had a conversation rather
 22 than writing.

23 Q. Did these complaints about Rydon cause you any concern
 24 about the quality or the safety of Rydon's work?

25 A. No.

101

1 Q. Did they cause you any concern about the regulatory
 2 compliance of the work that they'd done?

3 A. No.

4 Q. Why is that?

5 A. This was in regard to a process, it wasn't in regard to
 6 the quality of work that they had done. This was in
 7 terms of trying to close out matters in terms of
 8 documentation which they were due to produce to achieve
 9 practical completion and to ensure that they contained
 10 the right information.

11 Q. Did you do anything in response to this email with
 12 either the TMO or Rydon?

13 A. I can't remember if I did anything specific, no.

14 Q. Did you take it up with Rydon yourself?

15 A. I can't remember.

16 MR MILLETT: Right. Thank you very much.

17 Mr Chairman, I have come to the end of my prepared
 18 questions.

19 SIR MARTIN MOORE-BICK: Right, thank you.

20 MR MILLETT: This is the normal moment where we look and see
 21 whether there are others that I have missed or whether
 22 there are other questions that people want me to ask.

23 SIR MARTIN MOORE-BICK: Yes.

24 Well, Mr Cash, as Mr Millett said, he has got to the
 25 end of the questions he prepared, but counsel needs time

102

1 just to take stock, and sometimes questions come in from
 2 people who are outside the room. So we will have
 3 a ten-minute break at this point.

4 Do you think 12.30 will give you long enough?

5 MR MILLETT: Yes, certainly.

6 SIR MARTIN MOORE-BICK: We will come back at 12.30, and no
 7 talking to anyone about your evidence.

8 THE WITNESS: Fair enough. Thank you.

9 SIR MARTIN MOORE-BICK: Would you like to go with the usher,
 10 please. Thank you.

11 (Pause)

12 Mr Millett, that's quite a short break. If you need
 13 longer ...

14 MR MILLETT: Yes, Mr Chairman, thank you very much.

15 SIR MARTIN MOORE-BICK: 12.30, thank you.

16 (12.23 pm)

17 (A short break)

18 (12.30 pm)

19 SIR MARTIN MOORE-BICK: Right, well, we will see if
 20 Mr Millett has found any more questions, Mr Cash.

21 Have you?

22 MR MILLETT: Yes, Mr Chairman, there are a couple of
 23 follow-up questions of our own which we want to ask.

24 Can I ask, please, that Mr Cash be shown the
 25 contract again, {ART00005742/48}, please. At

103

1 paragraph 1.3.3 -- we looked at this yesterday -- one of
 2 the roles that was ticked was to:

3 "Establish the roles and responsibilities of the
 4 Client, the Professional Team [which you can see we
 5 looked at this morning and has a definition] the
 6 Contractor and specialist /design sub-contractors".

7 My question is whether or not you understood at the
 8 time that when it came to Exova, who were a direct
 9 contractor of the TMO, it was your role or your
 10 obligation, Artelia's obligation, to establish the role
 11 and responsibility of Exova within that network?

12 A. I believe that that was identified within the project
 13 execution plan, that they were appointed as the fire
 14 consultant.

15 Q. That being so, was it not your role and responsibility
 16 to make sure that everybody knew what Exova was doing
 17 and that Exova knew what it was doing?

18 A. That was within the project execution plan. The detail
 19 of their appointment was not something that was within
 20 our remit.

21 Q. Why was it not within your remit?

22 A. Because we weren't responsible for appointments of
 23 consultants.

24 Q. No, but were you not responsible for establishing the
 25 role and responsibility of Exova as a specialist /design

104

1 subcontractor?

2 A. And that was as a fire consultant, yes.

3 Q. Yes.

4 Next question, or second question: do you know or

5 did you know whether the existing fire safety strategy

6 which had been compiled by Exova in the August of 2012

7 and had never progressed beyond a draft and has "draft"

8 watermarked through it, was included in the pre-contract

9 information pack of November 2013?

10 A. I don't know if it was or not. I don't know if we had

11 a copy of that.

12 Q. Right.

13 Do you know whether Terry Ashton's design note was

14 incorporated or included in that document?

15 A. I don't know. Again, I don't know if that was issued to

16 us.

17 Q. Did you understand that that document or those documents

18 ought to have been included in that pack?

19 A. If we knew of their existence, we would have made sure

20 they would have been.

21 Q. Okay, thank you.

22 Mr Cash, those are the end of my planned questions.

23 I have one more question for you, which is a

24 question I often ask certain witnesses in this Inquiry,

25 and that's this: looking back on all the documents and

105

1 exchanges we have had in the last day and a half or so,

2 and looking back over your own involvement in this

3 entire project, is there anything you would have done

4 differently?

5 A. I think it's fair to say that if there was anything that

6 we could have done or influenced that would have avoided

7 the events that happened, then I think, in hindsight,

8 one would say yes, there's always ways of doing things

9 better. I don't think that we can say that we act with

10 perfection, and, in going forward, we always look at

11 ways we're doing better and improving on what we learn.

12 MR MILLETT: Thank you very much.

13 Well, Mr Cash, it only remains for me to thank you

14 very much for coming to the Inquiry and assisting us

15 with our investigations. We're extremely grateful.

16 Thank you.

17 THE WITNESS: Thank you, I did my best.

18 SIR MARTIN MOORE-BICK: Mr Cash, it only remains for me to

19 thank you as well for coming to give your evidence.

20 I am sorry that we spread your evidence over more

21 days than I think you were given to expect originally,

22 but I'm afraid that was just unfortunate.

23 THE WITNESS: Circumstance.

24 SIR MARTIN MOORE-BICK: Circumstances go that way sometimes.

25 But I'm very grateful to you for coming to give your

106

1 evidence. It's been very helpful to hear from you.

2 THE WITNESS: Thank you.

3 SIR MARTIN MOORE-BICK: And now you are free to go.

4 THE WITNESS: Thank you very much. No questions from core

5 participants, then?

6 SIR MARTIN MOORE-BICK: I don't know. Mr Millett will have

7 considered whether there are any questions and probably

8 taken them in already, I think.

9 THE WITNESS: All right. Thank you.

10 SIR MARTIN MOORE-BICK: Thank you very much. If you would

11 like to go with the usher.

12 THE WITNESS: Thank you very much indeed, everyone.

13 (The witness withdrew)

14 SIR MARTIN MOORE-BICK: Right, thank you, Mr Millett.

15 Now, we will have to rise, won't we?

16 MR MILLETT: We will have to rise briefly. The next witness

17 is Mr Philip Booth, and Ms Grange will be taking him.

18 We need a five-minute cleaning break for that, and then

19 I shall relinquish the podium for her.

20 SIR MARTIN MOORE-BICK: Thank you very much. We will rise

21 for a moment and you can ask someone to come and fetch

22 us as soon as you're ready.

23 MR MILLETT: Very good.

24 SIR MARTIN MOORE-BICK: Thank you very much.

25 (12.36 pm)

107

1 (A short break)

2 (12.44 pm)

3 SIR MARTIN MOORE-BICK: Yes, Ms Grange.

4 MS GRANGE: Yes, good afternoon, Mr Chairman. Could we have

5 Mr Philip Booth, please.

6 MR PHILIP BOOTH (affirmed)

7 SIR MARTIN MOORE-BICK: Thank you very much, Mr Booth. Do

8 sit down, and make yourself comfortable.

9 THE WITNESS: Thank you.

10 (Pause)

11 SIR MARTIN MOORE-BICK: All right?

12 Yes, Ms Grange.

13 Questions from COUNSEL TO THE INQUIRY

14 MS GRANGE: Yes.

15 Thank you very much for coming today and assisting

16 the Inquiry with its investigations. It's very much

17 appreciated.

18 My questions are intended to be short and simple,

19 but if you have any difficulty understanding anything

20 I'm saying, please ask me to just repeat the question or

21 put the point in a different way.

22 If you feel you need a break at any point, just let

23 us know, and please can you try and keep your voice up

24 so that the lady sitting to your right just there can

25 take a nice clear note of what you're saying.

108

1 THE WITNESS: Sure.
 2 MS GRANGE: You have made two witness statements to
 3 the Inquiry. The first one is {ART00008527}, and if we
 4 look at page 59, the final page of that statement, we
 5 can see it's dated 27 September 2019. Is that your
 6 signature there?
 7 A. Yes, it is.
 8 Q. Have you read that statement recently?
 9 A. Yes, I have.
 10 Q. Are the contents true?
 11 A. They are.
 12 Q. Thank you.
 13 If we go to your second statement, this is
 14 {ART00009420}, and this is a shorter statement, if we go
 15 on to page 4 of it, there we can see it's dated
 16 10 March 2020, and again is that your signature on that
 17 page?
 18 A. Yes, it is.
 19 Q. Can you confirm that the contents are true?
 20 A. They are true.
 21 Q. Have you discussed your statements or your evidence with
 22 anybody before coming here today?
 23 A. No.
 24 Q. Thank you.
 25 So I'm going to start with just some questions about

109

1 your background and your history.
 2 In your witness statement at paragraph 3
 3 {ART00008527} you set out your qualifications and
 4 training. If we just bring that up, this is in your
 5 main statement. I think it starts at the bottom of
 6 page 1 and then goes on to page 2.
 7 You tell us there that you graduated from
 8 Aston University in 2001 with a degree in managerial and
 9 administrative studies, and then you say that you are
 10 a member of the Association for Project Management and
 11 that you have completed training in project management.
 12 A. Yes.
 13 Q. Just to ask you a couple of questions about that. In
 14 (a) at the top, you refer to the Association for Project
 15 Management APMP qualification. Do you see that there?
 16 A. Yes.
 17 Q. When did you complete that?
 18 A. I can't exactly recall, but it would probably have been
 19 about 12 years ago, something like that.
 20 Q. "PRINCE 2", you have referred to that in (b), can you
 21 help us as to what that is?
 22 A. It's a form of project management principles. It's born
 23 out of the IT industry's projects in a controlled
 24 environment. So it's a qualification that you can get
 25 in project management as to a particular type of

110

1 methodology of project management.
 2 Q. Again, did you complete that some time ago or more
 3 recently?
 4 A. Again, maybe eight, ten years ago.
 5 Q. You also say there in (c) that you have attended various
 6 management and project management training courses, and
 7 also industry-related conferences and seminars; that's
 8 right, isn't it?
 9 A. Correct.
 10 Q. Is there any particular training that you have to
 11 undertake to become an employer's agent?
 12 A. There's not an official qualification to be
 13 an employer's agent as far as I'm aware, no.
 14 Q. Now, at (c) you also say there -- 3(c) -- that you have
 15 training in contract procurement. Do you have
 16 specialist knowledge of contract procurement?
 17 A. I've learnt about procuring main contractors, different
 18 types of procurement methodology through ad hoc training
 19 events and through just experience over the last 15-odd
 20 years.
 21 Q. I see.
 22 A. I wouldn't say I'm an expert, but I am very familiar
 23 with it.
 24 Q. You go on in your statement at paragraphs 5, 9 and 10 --
 25 if we could look at paragraph 5 to start with

111

1 {ART00008527/2} -- and what you do in those paragraphs
 2 is you set out some examples of the projects that you
 3 have worked on. So we can see that you're talking
 4 about, in paragraph 5, working as a project manager for
 5 Glen Care, projects relating to mental health hospitals,
 6 and you outline a number of schools and hospital
 7 projects there. Would that be fair?
 8 A. Yes.
 9 Q. Now, is it right that, before the Grenfell Tower
 10 project, you had no experience in the overcladding of
 11 high-rise buildings?
 12 A. So I had been involved in projects that were in tall
 13 buildings and I have been involved in projects that had
 14 cladding and curtain walling refurbishments, but not
 15 both together.
 16 Q. I see. Yes.
 17 Did you have any experience of projects involving
 18 residential buildings that were occupied?
 19 A. So when I was at -- in my sort of hospitals, some of
 20 those projects were carried out while residents -- well,
 21 the occupants of the hospital, because it was their
 22 residency, were in place. So I had that experience.
 23 School projects were often done while schools were open.
 24 But not a residential high-rise building, no.
 25 Q. Had you ever worked on any projects which involved

112

1 aluminium composite materials, aluminium rainscreen
 2 cladding being applied?
 3 A. So some of the schools that I did, did have those type
 4 of systems put in, yes.
 5 Q. You tell us in your statement that you joined
 6 Appleyards, as it was then called, in January 2005, and
 7 you left there in April 2016; is that right?
 8 A. That's correct.
 9 Q. And you now work for a different company doing project
 10 management; is that right?
 11 A. Correct.
 12 Q. You say that, during your time at Appleyards, then known
 13 as Artelia after that, you went from being an assistant
 14 project manager to a senior project manager, which is
 15 what you were at the time of the Grenfell project; is
 16 that right?
 17 A. Correct.
 18 Q. Then is it right that you ultimately became project
 19 director within Appleyards? Is that right?
 20 A. Yes. I was there about 12 years at the organisation,
 21 so --
 22 Q. Yes.
 23 A. -- I climbed the ranks.
 24 Q. Can you help us as to exactly when did that promotion to
 25 project director occur?

113

1 A. I can't actually recall.
 2 Q. Was it while you were working on the Grenfell project,
 3 do you think?
 4 A. I don't think it was. I think it might have been after.
 5 Q. After, okay.
 6 A. It would have been fairly close, though, perhaps.
 7 Q. Yes.
 8 Now, in terms of your appointment to the
 9 Grenfell Tower project, is it right that you were
 10 assigned to the project in around April 2013? Is that
 11 correct?
 12 A. That is correct.
 13 Q. Is it right that your role was at employer's agent?
 14 A. Correct.
 15 Q. Is it right that your start on the project overlapped
 16 with Robert Powell, who was also the employer's agent on
 17 the project?
 18 A. Yes.
 19 Q. And did he leave the project in around July 2013?
 20 A. He did, so we had a few months working together as
 21 a handover period.
 22 Q. Yes, I wanted to ask you about that. Was that simply
 23 a long handover with him or was it intended that during
 24 that period you would both be working full-time as
 25 employer's agent?

114

1 A. So we just took advantage of the fact that Robert was
 2 working his notice period, because he was leaving the
 3 employment of Artelia, and when I came on board, it was
 4 at quite a transition period of the project, and so it
 5 made sense to, you know, have that transition and
 6 handover process --
 7 Q. Yes.
 8 A. -- with both of us working on it.
 9 Q. Is it right that you were assisted in your role as
 10 employer's agent by Peter Blythe and later Nick Valente?
 11 Is that correct?
 12 A. Correct.
 13 Q. Have I said his name correctly?
 14 A. Yes.
 15 Q. Were they both assistant employer's agents?
 16 A. Yes.
 17 Q. Who did you report to on the project?
 18 A. So on the project, the project director for the project
 19 was Simon Cash.
 20 Q. And that was who you were reporting to. Was your line
 21 manager somebody different?
 22 A. It was.
 23 Q. Who was your line manager?
 24 A. It was Bill Phelps.
 25 Q. You then tell us in paragraph 22 of your first statement

115

1 {ART0008527/5} that in around mid-June 2015 you were
 2 assigned to another project which required a full-time
 3 commitment. So is it right that your involvement in the
 4 Grenfell project ceased at that point, in June 2015?
 5 A. Correct.
 6 Q. Is it right that Neil Reed, a witness that we'll hear
 7 from after you, then replaced you on the project as
 8 employer's agent?
 9 A. That's correct.
 10 Q. He replaced you in March 2015; is that right?
 11 A. Yes. Yes, that sounds right.
 12 Q. Now, it doesn't appear that you were assigned to another
 13 full-time project until June 2015. Can you help us as
 14 to what happened between March and June 2015?
 15 A. So there was, again, a handover process that happened.
 16 Q. Yes. I see. So you were handing over during that time
 17 to Mr Reed?
 18 A. Yes.
 19 Q. Is it right that, at the point that you joined the
 20 project, the TMO was considering whether or not to
 21 continue with Leadbitter as main contractor?
 22 A. That's right, yes.
 23 Q. And when you left the project, Rydon was part-way
 24 through the construction work?
 25 A. Correct.

116

1 Q. Now, I'm going to start this topic -- we won't finish
2 it, but I'll start it. I'm going to ask you about the
3 difference between an employer's agent and a project
4 manager, and also something about those roles on this
5 Grenfell project.

6 Now, we've heard from Mr Cash about the contracted
7 services that Artelia performed, and that Artelia was
8 not formally contracted on to the refurbishment until
9 a signed contract in July 2014. Was that your
10 understanding?

11 A. That's right, yes.

12 Q. Now, can you just explain your understanding of the
13 difference between an employer's agent and a project
14 manager?

15 A. So an employer's agent is a defined role on design and
16 build contracts to administer the building contract with
17 the design and build contractor. There's an RICS scheme
18 of works that's associated with an employer's agent and
19 what duties they might or might not take. So it's
20 a very defined administrative role for design and build
21 projects, that's what I understand employer's agent is.

22 A project manager is a far more wider descriptor,
23 and it encompasses more. I am project manager and so
24 have fulfilled that role on other projects, and continue
25 to do so.

117

1 The main key difference as I see it is: a project
2 manager may well take on responsibilities outside of
3 just administering the contract, the construction
4 contract, and those duties can be written specific to
5 the project, and it might be that they get involved more
6 in things that are wider to the project than just the
7 construction. So maybe communication outside the
8 construction elements with stakeholders, maybe
9 client-side elements to help with things that are
10 outside just the administration of the building
11 contract.

12 Q. I see.

13 A. A project manager also may have sort of delegated
14 authorities from the client to make decisions. Usually
15 employer's agent does not; they are administering the
16 contract under the direction of the client.

17 So I think the main difference is employer's agent
18 is a more narrow scope of services for a design and
19 build contract. A project manager can be much more
20 far-reaching responsibilities, with some decision-making
21 authority if given by the client.

22 Q. Thank you, that's very helpful.

23 When you were describing the employer's agent role,
24 you said that that's linked very much to the appointment
25 of a design and build contractor. But would you accept

118

1 that, prior to the appointment of a D&B contractor,
2 an employer's agent may well have a role in
3 co-ordinating whatever professional team the client had
4 gathered together at that point?

5 A. Yes.

6 Q. Are the skills of an employer's agent broadly similar to
7 those of a project manager?

8 A. There are similarities, yes. I think you need more
9 skills to be a project manager than an employer's agent.

10 Q. Yes.

11 A. It's quite an administrative role, the employer's agent
12 role.

13 Q. Yes.

14 A. And I think as a project manager, it is defined, you can
15 get scope of services in an RICS, but actually it's
16 quite a generic title and it can mean a lot to different
17 people. Sometimes there is some confusion as to what is
18 a project manager.

19 Q. So you talked about there might be similarities; would
20 the similarities be in terms of the administrative
21 aspect of the role, the administration of --

22 A. Yes.

23 Q. -- the contracts and administration relating to,
24 you know, the process of design or the process of
25 construction?

119

1 A. Yes. In both roles you need to be sort of organised
2 and --

3 Q. Yes.

4 A. -- write lists, diligent.

5 Q. Is it sometimes common for construction professionals to
6 use the terms "employer's agent" and "project manager"
7 interchangeably? Is that a thing you have come across?

8 A. It is a thing in industry, yes. So, yes, that is
9 something that in the industry, it does get chopped and
10 changed around a bit.

11 Q. Would you agree that project management is a specialist
12 skill which should involve some formal training in
13 project management?

14 A. I believe you should be formally trained in it to do it.

15 Q. Yes.

16 A. It's not like an industry like, you know, an accountant
17 where you have to have achieved accreditation to do it,
18 I think anybody can call themselves a project manager if
19 they want to, but my belief is that you should be -- you
20 should have done the exams, you should have got the
21 badges to do a good service.

22 Q. In your experience, do most major construction projects
23 have a project manager, properly so-called, in the way
24 you have just described?

25 A. Yes.

120

1 Q. And what about major refurbishment projects? In your
 2 experience, would major refurbishment projects commonly
 3 have a properly trained project manager?
 4 A. Yes.
 5 Q. But is it possible that you can have without one and
 6 just have an employer's agent?
 7 A. It is possible, yes.
 8 Q. Would you agree that the Grenfell Tower project was
 9 a complex project to manage for either any employer's
 10 agent or, indeed, any project manager?
 11 A. Yes, it was complicated.
 12 Q. And was it complicated in part because it was
 13 residential, with residents remaining in occupancy, and
 14 because it was an older building that may have been
 15 subject to dilapidations over time?
 16 A. Yes, they were parts of the factors that made it more
 17 complicated.
 18 Q. Would there be any other factors in your mind that made
 19 it particularly complicated?
 20 A. Well, there was a construction site behind that they
 21 were building the Kensington Leisure Centre and Academy.
 22 Idiosyncrasies of this particular job -- yes, residents
 23 were staying in occupation, that was a part that was
 24 specific to this project.
 25 Q. Yes.

121

1 A. That's why, you know, the TMO were heavily involved,
 2 because of that.
 3 Q. In your view, was this the sort of project that needed
 4 a designated, trained project manager?
 5 A. Somebody needed to fulfil the role, so yes.
 6 MS GRANGE: Mr Chairman, I think that's a good moment for
 7 a break.
 8 SIR MARTIN MOORE-BICK: Yes.
 9 MS GRANGE: I will now go into slightly more detail.
 10 SIR MARTIN MOORE-BICK: Yes, thank you.
 11 Mr Booth, you have only just got into your stride,
 12 I'm afraid, but given the hour, I think this is the time
 13 when we must have a break so we can all have some lunch.
 14 THE WITNESS: Okay.
 15 SIR MARTIN MOORE-BICK: In a minute I will ask you to go off
 16 with the usher and be ready to return at 2 o'clock,
 17 please.
 18 While you're out of the room on this or any
 19 subsequent occasion, please don't talk to anyone about
 20 your evidence or anything relating to it. All right?
 21 THE WITNESS: Okay, of course.
 22 SIR MARTIN MOORE-BICK: Would you like to go with the usher,
 23 please.
 24 (Pause)
 25 2 o'clock, then, please. Thank you.

122

1 (1.03 pm)
 2 (The short adjournment)
 3 (2.00 pm)
 4 SIR MARTIN MOORE-BICK: Right, Mr Booth, ready to carry on?
 5 THE WITNESS: Yes, I am.
 6 SIR MARTIN MOORE-BICK: Good, thank you.
 7 Yes, Ms Grange.
 8 MS GRANGE: Yes, thank you.
 9 Mr Booth, so we know that there are two points in
 10 time when the contractual obligations of Artelia were
 11 addressed: first in August 2012, when the standard RICS
 12 terms of engagement are proposed, and then a variation
 13 in July 2014, when the contract documents are formally
 14 signed. Do you recall that?
 15 A. So I'm aware of the contract that we sign up to, our
 16 terms and conditions.
 17 Q. When you started in 2012, what was your understanding of
 18 the contractual position of Artelia?
 19 A. So I was introduced and told by Robert Powell and
 20 Simon Cash that we were performing three duties:
 21 employer's agent, which would be the role that I would
 22 be taking on; quantity surveyor, which was
 23 Chweecheen Lim; and we were also the CDMC, which was
 24 Keith Bushell.
 25 Q. Yes.

123

1 A. They took me through, you know, where the project was as
 2 part of my getting up to speed on the project.
 3 Q. Yes.
 4 Let's just look at a document on this. This is the
 5 fee proposal. If we go to {ART00006358}, we can see
 6 that this is before your involvement in the project, but
 7 it's 2 May 2012, and it's to Mark Anderson. We can see
 8 from the first paragraph that this is an offer for those
 9 three services that you've just described there. So we
 10 can see:
 11 "Further to our recent conversation and the outline
 12 briefing ..."
 13 And the second line:
 14 "... I have pleasure in setting out our proposal for
 15 the provision of Quantity Surveying, Employer's Agent
 16 and CDM Co-ordinator Services in connection with the
 17 proposed improvement works to Grenfell Tower."
 18 You see that there?
 19 A. Yes.
 20 Q. Just to be absolutely clear, was it your understanding
 21 when you joined the project that Artelia had offered
 22 employer's agent services and not project management
 23 services?
 24 A. Yes.
 25 Q. Now, during your work on the Grenfell project, the 2014

124

1 contract was agreed; we know that. Did you read through
 2 the July 2014 contract when it was agreed?
 3 A. Yes.
 4 Q. Were you aware at that time of the exclusion, express
 5 exclusion, of project management services when that was
 6 agreed?
 7 A. Yes.
 8 Q. Is it your understanding that contractually Artelia was
 9 never obliged to provide any project management
 10 services?
 11 A. I don't think we were, no.
 12 Q. Did you understand that someone else was performing
 13 a formal project management role on the Grenfell Tower
 14 refurbishment?
 15 A. Yes.
 16 Q. And who was that? Who did you think was doing that?
 17 A. It was a client-side role, so Claire Williams was the
 18 main role that performed that, but prior to her there
 19 were other people, like Paul Dunkerton and others. So
 20 I always understood it was the client that were
 21 fulfilling the project management role.
 22 Q. Yes. But prior to Claire Williams joining the project,
 23 did you have a clear understanding of who was project
 24 managing from the client side?
 25 A. Yes, Paul Dunkerton.

125

1 Q. Right.
 2 Now, going back to Claire Williams, were you aware,
 3 or were you ever informed, about what training, skills
 4 and experience she had in project management?
 5 A. So when she was introduced to me, I understood that she
 6 had experience of social housing elsewhere. She'd done
 7 capital projects, refurbishment projects, for other
 8 social housing enterprises. So she seemed a good fit to
 9 fulfil the duties that she was put forward for.
 10 Q. Did you understand that she had fulfilled the role as
 11 project manager on some of those previous projects?
 12 A. I didn't question her as to what she fulfilled the role
 13 as, but she came across as competent, knew what she was
 14 talking about.
 15 Q. Did her skills and training appear to you to be
 16 equivalent to yours at that point?
 17 A. I think we're different in terms of our experiences.
 18 She was very much experienced of delivering for housing
 19 association, on their side, refurbishment projects, and
 20 I was more being an employer's agent or as a consultant
 21 basis, a project manager.
 22 Q. I see. Can we now turn to the draft revised project
 23 brief from June 2013. This is {ART00001219}. Now, this
 24 is dated, I think, 10 June 2013. We can see it's
 25 definitely June 2013 at the top of that page. It

126

1 describes the project title and the client there, and
 2 a description of the project.
 3 If we go on to page 5 {ART00001219/5} within this
 4 document, we can see there the project team is set out.
 5 Do you see that there?
 6 A. I do.
 7 Q. And you are listed with Robert Powell as the project
 8 manager. Do you see that there?
 9 A. I do.
 10 Q. Who wrote this revised project brief, can you recall?
 11 A. I can't, but I think it might have been Robert Powell.
 12 Q. Right. It wasn't you then?
 13 A. I don't think so.
 14 Q. Yes.
 15 A. I know I was at meetings where this was discussed.
 16 Q. We can see in this version that you seem to have made
 17 some comments on the draft. If we look up at page 4
 18 {ART00001219/4}, for example, we can see on the
 19 right-hand side there's some PB comments. Do you see
 20 those?
 21 A. Yes, I do.
 22 Q. Are those your comments?
 23 A. I believe they are, yes.
 24 Q. So we can take it from this that you read this brief?
 25 A. Yes.

127

1 Q. If we look at page 2 {ART00001219/2} under "Contract and
 2 Procurement" at the top of that page, and it's in the
 3 third paragraph, in the last sentence -- so it begins,
 4 that paragraph:
 5 "The design team who have been involved with the
 6 project to date will remain appointed and will continue
 7 through to project completion."
 8 Then:
 9 "Previous plans to novate all designers to the
 10 Principal Contractor are to be reviewed."
 11 Then it says this:
 12 "Appleyards, who had previously acted as EA/QS will
 13 take on a full PM/EA role in addition to their QS
 14 responsibilities and will fulfil the Lead Consultant
 15 role."
 16 Do you see that there?
 17 A. I do.
 18 Q. So is it right that in this document, Artelia was
 19 putting forward a proposal to act as project manager as
 20 well as employer's agent?
 21 A. I think, yeah, that's fair.
 22 Q. Can you help us, why was that proposal being put forward
 23 at this stage? What was the reason for that?
 24 A. So in the early -- this is the early part of me being
 25 involved still with the handover, and the project was in

128

1 sort of a bit of a state of distress, and we were
2 re-forming through our status report around that sort of
3 time as well, in April and June, what was the project,
4 because it had kind of hit a wall and wasn't getting
5 anywhere.

6 So there were a number of things that were being
7 reviewed with the client, TMO, as to how to re-form the
8 project to make sure, you know, we could move it
9 forward, and we prepared a short-term action plan.

10 There were times where we were reviewing who was
11 doing what, and you've refreshed my memory there.
12 I think, you know, evidently at one point we were
13 talking about being the PM or the lead consultant, but
14 we didn't actually end up doing that in terms of
15 appointment.

16 I mean, in terms of who is the right person to
17 fulfil the role of project manager, I actually think it
18 was -- it rightly sat on the client side, because the
19 wider scheme of responsibility for a project manager was
20 going to be largely around, for this project, the
21 complications for this project, so like the resident
22 liaison, lots of communication within all the other
23 departments within the TMO. So I actually think it sat
24 correctly in-house as a client-side. I think it would
25 be very difficult for Artelia or myself or anyone to

129

1 actually fulfil the wider remit of project manager.

2 Q. Right. Yes.

3 You talk there about the project being in distress.
4 Was it your perception that certainly Appleyards'
5 understanding was that the project needed stronger
6 project management at this point to move it forward?

7 A. I think there were -- it was before my time, but in my
8 briefing as to where the project had got to, there were
9 a number of contributing factors as to why the project
10 had sort of stalled and got stuck, largely around
11 negotiations with Leadbitter, that wasn't progressing
12 particularly well.

13 Q. Yes.

14 A. You know, it was overbudget, and so there was lots of
15 discussion going back and forth about scope, what could
16 be afforded.

17 Q. I think what I'm getting at here is: why were Appleyards
18 proposing at this stage that there should be some form
19 of professional project management on their part? What
20 was that reason for that, can you help us?

21 A. Erm ... what was the reason?

22 (Pause)

23 I think ... I don't know, but it needed a bit of --
24 it did need some clarity as to what are the next steps
25 that were needed in the short-term plan.

130

1 Q. Yes.

2 A. So I think that's why we were talking it through with
3 them, and it was considered whether or not we should
4 take that role on, but ultimately we didn't.

5 Q. Yes.

6 Can we move forward then to some minutes of
7 a meeting, 6 June 2013, {ART00009106}. We can see these
8 are some minutes, "TMO meeting" it says in the top
9 there, 6 June 2013, and we can see, I think, that you
10 took -- you were the author of these minutes. Is that
11 correct? Underneath "Author", we have your name.

12 A. That's correct.

13 Q. So you took the minutes.

14 A. I wrote them, yes.

15 Q. If we look at item 1.1 on this same page, we can see it
16 says "PB" -- is that you, Philip Booth?

17 A. Yes.

18 Q. "PB presented the draft, revised project brief. It was
19 agreed to insert overall project costs, including fees
20 and surveys, not just construction costs. Subject to
21 the proposed changes the brief was approved. PB advised
22 that following the inclusion of fees and surveys a full
23 picture of project affordability will be known which may
24 require revisiting the removal and additions to the
25 project."

131

1 So we've got the minute there.

2 Now, is it right that the changes that were agreed
3 in terms of this project brief were around including
4 more about the overall project costs and fees and
5 surveys?

6 A. Yes, from my memory, yeah.

7 Q. Is it right that none of the changes were about the
8 proposal that Artelia would act as project manager?

9 A. I don't recall this, like, vividly in my memory, but
10 I don't think that was part of the discussion of that
11 meeting at all, otherwise it would have been on the
12 minutes.

13 Q. Yes, that was going to be my next question: do you
14 recall any specific discussion about the project manager
15 role and Artelia taking that up at this meeting?

16 A. I don't. I mean, this was a time where the fees and
17 roles and responsibilities were being discussed and
18 reviewed amongst the rest of the professional team as
19 well, and it was a combination of what needs to be done,
20 how much has been spent to date, what needs to be set as
21 the roles and responsibilities going forward. So it was
22 like an iterative process at that time, and there were
23 a few changes, as happens sometimes when you're
24 negotiating terms and conditions of roles for the team.

25 Q. Yes. But would you accept that if you read these

132

1 minutes in conjunction with that revised proposal, it
 2 would suggest that Artelia was approved to act as
 3 project manager at this point?
 4 A. I could see how that would be read from that, yes.
 5 Q. Was that your understanding at the time of this meeting,
 6 that Artelia had got that green light?
 7 A. I ... well, the brief had been approved, and I was
 8 concentrating at this time -- rather than on my,
 9 you know, specific terms and conditions of the
 10 appointment, I was concentrating on delivering the
 11 short-term plan that we'd put together.
 12 Q. Yes. So if you had been asked at the end of this
 13 meeting, "Going forward now, are you acting as project
 14 manager?", what would you have said?
 15 A. I probably would have said at that time I may well have
 16 been fulfilling some of the duties, as a consultant
 17 project manager.
 18 Q. Yes.
 19 After this meeting -- this is June 2013 -- were
 20 there ever any discussions with the TMO about whether
 21 Artelia was in fact to act as project manager as had
 22 been proposed in the brief?
 23 A. No, it really wasn't something that was talked about.
 24 Q. Right.
 25 A. I mean, I have to say, you know, I have been party to

133

1 causing some of this confusion here by writing myself
 2 down as project manager, because that's like my job
 3 title at Artelia. So -- and I'm sorry for that
 4 confusion.
 5 Q. Yes. What we're trying to get at is: was there a period
 6 of time when Artelia did consider itself as acting as
 7 project manager?
 8 A. I don't particularly feel there was, no. I mean, it's
 9 not a hard line in the industry, like that, you were
 10 being employer's agent or project manager. They're
 11 quite close as roles. But in terms of -- even if --
 12 you know, I was never given any authority limits by the
 13 client to -- the client was always at almost every
 14 meeting we went to, if you look at all our meetings. So
 15 in terms of fulfilling a role as project manager, if
 16 I did, through, you know, pre-actually signing our
 17 appointments, it was always -- I was never making
 18 decisions on behalf of the client because they were very
 19 hands-on, they were very experienced, they were very
 20 there and involved.
 21 Usually when I'm employed as a project manager, it's
 22 because a client has perhaps not got the resource to
 23 dedicate to a project, so I would be representing them
 24 without them being present there or making decisions
 25 with authority limits, maybe up to £10,000 or something

134

1 like that. That was never here. This was -- so
 2 whatever label you put on it, I was organising and
 3 orchestrating, whether you call it an EA or a project
 4 manager.
 5 Q. To your knowledge, was it ever minuted in a meeting that
 6 Artelia was not acting as project manager?
 7 A. No, but I think -- you know, I think it was understood
 8 by everybody that we -- our appointment was as
 9 employer's agent, but -- because that was what our
 10 appointment documents were, and I think TMO were clear
 11 that they were the project manager, but we had project
 12 management capabilities.
 13 Q. I see.
 14 A. And sometimes we did help out.
 15 Q. Yes.
 16 Would you accept that this might have been confusing
 17 for the TMO, including Claire Williams, in terms of
 18 whether Artelia was itself acting as project manager?
 19 A. Maybe, but she never raised it with me, and they were
 20 very vociferous in going through our appointment
 21 document. I mean, they're a very diligent client,
 22 you know, there's correspondence for -- you know, going
 23 through our appointment documents checking, you know,
 24 every tick-box and every line and it being negotiated
 25 over a long period of time. That's why it took so long

135

1 to actually be signed up to in the end. It was
 2 scrutinised heavily by Jenny Jackson, as their
 3 procurement expert, plus Claire and others.
 4 So I don't think she was in doubt, but I can see
 5 that we didn't help by calling ourselves a project
 6 manager.
 7 Q. That was the subject of my next set of questions.
 8 Do you accept that there are times when you are
 9 describing yourself as project manager --
 10 A. Yes.
 11 Q. -- because, as I understand it, one of the points you
 12 make in your witness statement is that was what you were
 13 known as within Artelia: you were a project manager?
 14 A. Yes. I still am, yeah.
 15 Q. Let's have a look at a few examples of that.
 16 {ART00008782}. This is an email chain between you and
 17 Claire Williams and Peter Blythe from around March 2014
 18 about the pre-construction agreement with Rydon. If we
 19 go to the second email in the chain, which is at the
 20 bottom of page 1, there is an email from you, 27 March
 21 at 12.30, and it's to Claire Williams. It starts there,
 22 "Claire", and if we go over to the next page
 23 {ART00008782/2}, you say this in the first line:
 24 "I am not a lawyer so these comments are purely
 25 a recommendation as a project manager. You may wish to

136

1 include the following additional activities to the
 2 appendix."
 3 And that's the appendix to the pre-construction
 4 agreement.
 5 So can you see here that you seem to be giving
 6 advice and describing yourself as a project manager; do
 7 you see that?
 8 A. I do.
 9 Q. Did you think you were giving that advice as project
 10 manager of the Grenfell Tower refurbishment, or as
 11 a project manager within Artelia?
 12 A. That comment was because she was asking my opinion on
 13 a legal document and I was -- just wanted to be clear:
 14 I'm sharing my views from my professional opinion.
 15 Q. Yes.
 16 A. So it wasn't that I was being the project manager on the
 17 job; I was saying, "I'm not a lawyer, but these are my
 18 thoughts on and my experiences to advise you on it".
 19 SIR MARTIN MOORE-BICK: Ms Grange, it won't have escaped
 20 your attention that the reply from Claire Williams in
 21 the next email up --
 22 MS GRANGE: That's what I'm about to go to.
 23 SIR MARTIN MOORE-BICK: -- describes herself --
 24 MS GRANGE: Describes herself as a project manager, exactly.
 25 If we go up to the top where we started --

137

1 A. It's not uncommon to have a client-side project manager
 2 and a consultant project manager.
 3 Q. Yes.
 4 A. Because there are duties that, you know, just need to be
 5 done by the client.
 6 Q. Yes, yes.
 7 I think just to finish the Chairman's point, what we
 8 see at the very bottom of this email from her back to
 9 you is she is described as the project manager. Just so
 10 we can see that there.
 11 A. Yes.
 12 Q. Can we go to another document, {ART00006390}. These are
 13 minutes of a contractor introduction meeting on
 14 1 April 2014, and on the first page we can see that
 15 these minutes were authored by Peter Blythe and they
 16 were checked by you. Do you see that?
 17 A. Yes.
 18 Q. On the first page, under "Present", we can see your name
 19 four lines down, and you're described there as the
 20 project manager and Peter Blythe as the assistant
 21 project manager. Do you see that?
 22 A. I do.
 23 Q. Then below that at point 1.2 in these minutes, it says:
 24 "ART, represented by PB [Philip Booth], will perform
 25 the role of Employer's Agent on the project."

138

1 Do you see that there?
 2 A. Yes.
 3 Q. So we've got slightly contradicting information here
 4 between what's in the "Present" list at the top and
 5 what's said in the minutes. Do you see that?
 6 A. We're guilty of incorrectly representing our function in
 7 the "Present" list.
 8 Q. Yes. Do you know whether --
 9 A. This is a job titles sort of ...
 10 Q. Yes.
 11 A. Rather than actual roles on the project, so that was
 12 an error.
 13 Q. Do you recall having a specific discussion with the TMO,
 14 Claire Williams or anyone else at the TMO, in which you
 15 explained what the difference was between employer's
 16 agent and project manager?
 17 A. I spent a lot of time with Claire, taking her through
 18 roles and responsibilities, so I think over a passage of
 19 the year or so that we were working together, I did make
 20 it clear as to what my role was, what I was due to
 21 perform, and what she needed to do. So I think I'd
 22 taken the time and explained the roles and
 23 responsibilities to her, and I think she understood them
 24 as well, and she was familiar with it.
 25 As a professional, she was -- she liked involving

139

1 everybody in the project, and so it's fair to say, as we
 2 went through, she'd share things with me and others and
 3 consulted quite a lot, and, you know, was wanting to get
 4 people's opinions that may well have been slightly
 5 outside our scope, and generally, you know, if it helps,
 6 I'll sort of help.
 7 Q. Just one more document on this theme. This is slides
 8 presented at the bidders' conference to those that were
 9 bidding for the D&B contract. This {TMO000856136/4}. We
 10 can see there that Claire Williams is said to be
 11 "Project Manager, KCTMO", and then you are "Project
 12 Manager, Artelia". Do you see that there?
 13 A. Yes.
 14 Q. Now, do you know, with the bidders, was the difference
 15 between your roles made clear at this meeting?
 16 A. Not at this meeting. This was a bidders' conference, so
 17 this is introducing -- I didn't have a speaking role,
 18 and this was a TMO presentation to get interested
 19 contractors a bit of a flavour of what the project was
 20 so that they could decide whether they were going to
 21 tender or not. So I think me being put up there would
 22 have been not very interesting to most of them. But
 23 I think when we got into the contract stage, with doing
 24 the tendering and ultimately with Rydon as the
 25 contractor, they were very familiar that I was an

140

1 employer's agent.
 2 Q. Right.
 3 A. I didn't have any, you know, authority to make decisions
 4 and, you know, they were very familiar that they needed
 5 to go to the TMO to get those sort of decisions made.
 6 Q. Do you know, were you actually introduced as the project
 7 manager to the potential contractors at this point?
 8 A. This slide says so, yes.
 9 Q. Is it possible Claire Williams is also using her own
 10 internal TMO job title at this point?
 11 A. Yes, that's possible.
 12 Q. Would you accept that, having looked at a number of
 13 these examples, it's possible that other professionals
 14 on the project outside the TMO might have had some
 15 confusion or there might have been some confusion as to
 16 precisely what role Artelia was performing?
 17 A. I think clearly, you know, you can pick some of those
 18 documents out and, you know, it doesn't help, it does
 19 cause confusion. But I think the actual main
 20 professionals and everybody that was heavily involved in
 21 the project were very clear as to Artelia and my role,
 22 which was as an employer's agent.
 23 Q. We've heard some oral evidence from Mr Bruce Sounes from
 24 Studio E, and his evidence was that I believed Artelia
 25 was acting in a project management role. He said this,

141

1 {Day7/67:13-17}, for the transcript:
 2 "... I think for the duration of the project, I had
 3 always assumed that Artelia was acting in some kind of
 4 project management role. Now, I know that term is used
 5 loosely, but if I had been asked, that's what I would
 6 have said."
 7 Were you ever aware during the project that Studio E
 8 understood that Artelia was acting as some kind of
 9 project manager?
 10 A. Yeah, I -- obviously, yes, they had assumed that --
 11 Q. But were you aware of that on the project, that Studio E
 12 had made that assumption about you?
 13 A. I think when I receive correspondence and people calling
 14 me a project manager, I don't jump on it and say, "I'm
 15 not that" because, you know, that is my job role. So it
 16 wouldn't have caused me alarm if Bruce had thought I was
 17 doing that or wrote it in correspondence. So I can
 18 understand why he might have thought that we were doing
 19 it.
 20 Q. Yes.
 21 Let's have a look at this point at the contractual
 22 schedule of services that was agreed in July 2014 for
 23 the employer's agent services. This is
 24 {ART00005742/45}, we can see what we're looking at if we
 25 start there.

142

1 So this is the part of the RICS agreement, the
 2 signed agreement with the TMO, that set out the EA
 3 services.
 4 Then if we go within this to page 48
 5 {ART00005742/48}, we can see that certain individual
 6 services have either been crossed or not crossed,
 7 setting out what Artelia's role was. I think you
 8 confirmed you were aware of this at the time of your
 9 work as EA; is that correct?
 10 A. Yes.
 11 Q. Was this a document that you looked at frequently? Did
 12 you come back to this to check exactly what roles
 13 Artelia were performing?
 14 A. I was familiar with it. I wouldn't say I came back to
 15 it frequently. The way I operate is to -- I'm familiar
 16 with the general role I need to fulfil, and if I'm asked
 17 to do things, I just get on with it. I'm not a sort of
 18 person who goes back and go, "Not within my role",
 19 you know, because I want to become, you know, a helpful
 20 professional.
 21 Q. If we just look at the top left at 1.3.3, it says there:
 22 "Establish the roles and responsibilities of the
 23 Client, the Professional Team, the Contractor and
 24 specialist /design sub-contractors."
 25 Do we take it that you understood it was one of your

143

1 roles on the project to establish the roles and
 2 responsibilities of the client and professional teams?
 3 A. Yes.
 4 Q. How did you go about doing that in practice?
 5 A. So I went -- first of all the project team had already
 6 been set up when I joined the project, so there was
 7 already custom and practice in place and everybody sort
 8 of knew what they were doing. But prior to me, Artelia
 9 had prepared documents like the project execution plan
 10 that explained who was performing which role, and the
 11 professional team was defined and listed out: we had the
 12 architect, we had the services engineer, and we had the
 13 structural engineer. And so I think when I joined the
 14 project, the team was already set up.
 15 Q. Yes.
 16 A. I did help and establish roles and responsibilities by
 17 supporting the appointment of the other professional
 18 teams, by clarifying roles and responsibilities at
 19 meetings through the minutes. But this duty under -- as
 20 an employer's agent is more sort of setting up the
 21 high-level principle of who does what, so the high-level
 22 roles, more so than going into the intricate details of
 23 specifics, but we knew we had the client, they were
 24 going to make decisions, we knew we were going to do
 25 a design and build route, and that there was going to

144

1 be -- we had architects , we had engineers, and we had
 2 structural and mechanical and electrical , and I think
 3 they all knew -- they were all familiar with being in
 4 similar projects what their roles were.
 5 The only bits that were sort of debated or talked
 6 about was at one point there was: who is going to be the
 7 lead consultant, and that ultimately ended up being
 8 Studio E.
 9 Q. Okay.
 10 A. Who was ultimately responsible for design, that was
 11 Studio E, and the project management bit that you have
 12 talked about.
 13 Q. The last part of that, you have got to "Establish the
 14 roles and responsibilities of the Client, the
 15 Professional Team, the Contractor and specialist /design
 16 sub-contractors". Who would that have encompassed?
 17 A. So this RICS appointment thing is obviously for all
 18 types of projects.
 19 Q. Yes.
 20 A. So there would be different specialist designers and
 21 subcontractors, depending on the specifics of a project.
 22 My experience is usually they're associated with design
 23 aspects --
 24 Q. Yes.
 25 A. -- that might be pertinent to the particular project.

145

1 So if specialists were needed for a particular element,
 2 I would expect my lead designer, the architect , to say,
 3 "We need one of these X, Y, Z specialists".
 4 Q. So would a good example of that have been Exova, where
 5 we see Studio E encouraging the appointment of Exova to
 6 work on the fire strategy for the project? Would that
 7 have been a good example of that kind of specialist
 8 coming in to this team?
 9 A. They were one of the specialists that, yes, Studio E did
 10 draw in and say that they think they needed one, yes.
 11 Q. Yes, and did you understand that your job here to
 12 establish the roles and responsibilities of the list
 13 there would have incorporated Exova during their time on
 14 the Grenfell project?
 15 A. So I don't think, as employer's agent, I needed -- I was
 16 responsible for defining the role of a specialist
 17 fire -- I think mine was roles and responsibilities of
 18 the client and the professional team, who were defined
 19 in here as the three: architect, two services engineers.
 20 I think it was then the specialist -- the professional
 21 team, the design team, that would bring in any
 22 specialist underneath them.
 23 I didn't have -- in terms of Exova, I didn't have
 24 any dealings with them --
 25 Q. Okay.

146

1 A. -- particularly .
 2 Q. We will come back to them later on as a more substantive
 3 topic, but I just wanted to get your view on this now.
 4 Going back to the project manager role, how did you
 5 make sure everyone was clear about Artelia's roles on
 6 the project?
 7 A. Well, first of all, you know, defining -- having agreed
 8 terms and conditions as to what roles we were
 9 performing, introducing ourselves through meetings.
 10 Q. Yes. We know the contract terms don't come in and get
 11 signed until July 2014. That's what we're looking at
 12 here.
 13 A. Yes.
 14 Q. So prior to that, do you remember taking any specific
 15 steps to make clear what Artelia's roles and
 16 responsibilities were and were not?
 17 A. So whilst they weren't signed, these had been in
 18 circulation for a long time, and we'd always, even back
 19 to 2012, before my time, the client was very aware we
 20 were going to be an employer's agent. So there are
 21 instances of minutes where I've talked about who the
 22 roles and responsibilities are, where I took, you know,
 23 people through who was doing what. So there are
 24 schedules that are produced when we're, for example,
 25 getting ready to tender as to who was to provide what

147

1 based upon their particular roles .
 2 Q. Yes.
 3 A. At no point in the project did people come to me and
 4 say, "I'm not sure whose role is what or who is doing
 5 this". So it wasn't an issue as far -- it was not
 6 an issue as far as I was aware.
 7 Q. Okay.
 8 Do you ever remember taking any specific steps to
 9 make clear the limited sense in which Artelia was
 10 referring to its own staff as project manager or
 11 assistant project manager?
 12 A. Can you say that again, sorry?
 13 Q. Yes. Did you ever take any specific steps to make clear
 14 the limited sense in which Artelia was referring to
 15 itself as project manager or assistant project manager?
 16 A. No, I don't think -- when you say "limited", I think we
 17 just did our role and there wasn't anything, from my
 18 memory, as a problem as to who was the project manager
 19 or not.
 20 Q. Okay.
 21 A. We were --
 22 Q. As an employer's agent, just moving on to your role as
 23 employer's agent and sticking with these terms, was it
 24 your role, as you understood it, to advise the TMO
 25 client on what the building professionals were obliged

148

1 to do contractually on the project?

2 A. I don't think -- I don't believe so, no.

3 Q. So if that wasn't Artelia's role, who did you understand

4 did have that role on the project?

5 A. So, again, when I came to the project, most of the

6 professional team were already in place. So sometimes

7 that is a duty that's put on the employer's agent, to

8 assist with that, but I think they didn't need it

9 because they'd already gone about appointing the

10 professional team, they'd already been operating for

11 some time, familiar with -- you know, as a client, the

12 TMO were familiar with running large construction

13 projects and what services and what support they needed

14 to buy in to support them and what they had in-house

15 already.

16 Q. If a contractor was not fulfilling its contractual

17 obligations, was it your understanding that you were

18 obliged to point that out?

19 A. Yes, if there was something that I thought somebody

20 wasn't doing what they should, that -- I've got a duty

21 of care to raise that if I saw it.

22 Q. Yes.

23 Now, at page 47 {ART00005742/47}, if we go back

24 a page, of this schedule of employer's agent services,

25 we can see on the right-hand side, in the second half of

149

1 the page, 1.2.5, if we could zoom in on that left-hand

2 column:

3 "Advise the Client on specialist services, including

4 consultants, contractors, sub-contractors and suppliers

5 required in connection with the project."

6 That's not ticked. We can also see that 1.2.8:

7 "Advise the Client on the selection, the terms of

8 appointment and fee structures ..."

9 That's also not ticked.

10 Can you just help us: what did you understand those

11 exclusions -- what did they get rid of in terms of your

12 role?

13 A. I think they weren't ticked because the professional

14 team was largely appointed --

15 Q. I see.

16 A. -- when we were brought on, so that wasn't a service

17 they needed.

18 Q. Yes.

19 Now, going back to the 1.3.3 that we were looking at

20 before on the next page {ART00005742/48}, when you were

21 fulfilling that obligation of establishing the roles and

22 responsibilities of, and then the list, would you also

23 identify if there was a role or responsibility that was

24 missing?

25 A. Yes, I think if there was something obvious that we were

150

1 not -- we didn't have that was inhibiting the project,

2 I would raise that to the clients.

3 Q. Yes, and I think we heard from Mr Cash yesterday that he

4 agreed it would include identifying any gaps in services

5 to be provided, and that Artelia would look to close the

6 gaps; would you agree with that?

7 A. Yes.

8 Q. If later in the project you realised that the roles and

9 responsibilities of the building professionals on the

10 project had become confused, would you tell the client

11 pursuant to that obligation?

12 A. Yes.

13 Q. Was it your role to help spot that and help remedy it?

14 A. I had a role in that, yes. I remember, as an example,

15 later on in the project there were -- it was brought to

16 my attention that changes post-contract, Claire was not

17 sure who -- like how they should be managed and who was

18 responsible for what. So that was a good example, and

19 I remember drawing out a flow diagram that said: well,

20 if nothing's changed from what you tendered, then

21 nothing needs to happen. If it's a mechanical and

22 electrical design change, then I had a flow chart that

23 went to Max Fordham, we'd have a look at that and

24 support you.

25 Q. I'm going to take you to that flow chart in a little

151

1 while, but I accept that that's an example of what you

2 were just describing.

3 Can we look at something that happened later in the

4 project. If we can go to {ART00006629}. This is

5 an email from Mr Reed, who we know succeeded you as

6 employer's agent, to Claire Williams on 9 April 2015.

7 We know you had left the project at this stage, but

8 this email records his perception of the project when he

9 took over. What we can see is he gives a numbered list.

10 So he says:

11 "Claire,

12 "Thanks for your email of yesterday suggesting

13 a meeting to discuss Artelia's fee account."

14 Then in the next line he wants to propose a broader

15 meeting objective for the following reasons, and then in

16 the third sentence he says:

17 "With my limited involvement to date I hold a

18 perception that:

19 "1. The scope of the work that Rydon is doing is

20 not as well understood as it could be - there is

21 significant email traffic of what is considered to be in

22 the contract.

23 "2. The roles and responsibilities of all parties

24 do not appear as clear to me as they could be -

25 processes for resident liaison, CoW scope, Architectural

152

1 compliance monitoring for example."
 2 Now, I just want to ask you some things about this
 3 email.
 4 Do you agree with Mr Reed that, as at April 2015,
 5 Rydon's scope of work was not well understood? That's
 6 the point he is making at point 1.
 7 A. I'm not -- I mean, I hadn't seen this email, but I think
 8 Rydon were familiar with what was -- what they needed to
 9 do. I think Neil was new to the job obviously here, and
 10 without a doubt there was considerable correspondence
 11 about, "Is this included? Do we need to do this?" So
 12 I can see why Neil may well have felt that coming in and
 13 thinking --
 14 Q. Yes.
 15 A. -- we needed to support this a bit more.
 16 Q. Did you yourself think that was a problem when you were
 17 the employer's agent?
 18 A. Not necessarily a problem, but it was something that we
 19 were constantly having to actively manage.
 20 Q. Yes.
 21 A. I mean, it's not unusual on projects that there's this
 22 sort of level of review, correspondence. I think it was
 23 exasperated a little bit by -- there were quite a lot of
 24 client changes post-contract, and I think that was
 25 adding to the number of queries and everything. Usually

153

1 when you go out -- if you go out to tender on saying,
 2 "This is what I want", then that is what you want.
 3 Q. Yes.
 4 A. You don't change lots of things afterwards.
 5 Q. When he says the scope of the work that Rydon is doing
 6 is not as well understood as it could be, I appreciate
 7 you didn't write this, but did you understand at the
 8 time that TMO wasn't understanding the scope of work
 9 that Rydon was doing, or was it Rydon itself not
 10 understanding the role it was performing, the scope of
 11 its work?
 12 A. I don't know. I can only -- my experience of the
 13 project, when I was in charge, was largely that this was
 14 around ... I think Rydon knew what they were doing, but
 15 they ... there was a lot of changes going on and that
 16 was resource-hungry to manage those changes, as well as
 17 developing the design on from when they took -- they had
 18 it at sort of -- you know, at tender stage to take it
 19 then through to construction. It was complicated.
 20 Q. What about point 2, he says:
 21 "The roles and responsibilities of all parties do
 22 not appear as clear to me as they could be ..."
 23 Then he gives some examples, and I just want to pick
 24 up on a couple of them. He's got CoW scope, clerk of
 25 works scope, he says is not as clear as they could be.

154

1 Had you detected that there was a difficulty in terms of
 2 the understanding of the scope of works by the clerk of
 3 works?
 4 A. My experience of the clerk of works was that they were
 5 a direct appointment by TMO to check compliance and
 6 buildability, quality, so it was -- there was a --
 7 you know, what was their role, I can understand that
 8 being a question.
 9 When I was in the role of employer's agent, they
 10 were reporting to the TMO saying, "We went on this date,
 11 we found these things", and a report was being issued to
 12 them, and I accepted those reports and was a sort of
 13 vehicle to take them up with Rydon if there was a sort
 14 of -- you know, "You need to fix this or you need to fix
 15 that", and it was as simple as that. But we didn't
 16 get -- as Artelia, we didn't really get involved in
 17 forming that scope of what they were due to do.
 18 Q. Yes.
 19 A. I saw clerk of works as purely an extra comfort level
 20 for the TMO, an extra reporting and compliance checking
 21 for them, that we could use as employer's agent to,
 22 you know, pass on.
 23 Q. Yes. Just to be absolutely clear, the clerk of works,
 24 you talked about compliance checking, do you mean
 25 compliance, say, with the Building Regulations? Was

155

1 that your understanding, that they were checking for
 2 that?
 3 A. Yes.
 4 Q. Then we've got architectural compliance monitoring as
 5 another example that he's given.
 6 Again, during your time on the project, were you
 7 ever aware of any problem with architectural compliance
 8 monitoring?
 9 A. I didn't -- not that -- I didn't think it was -- there
 10 was a problem. I remember on the project that we spent
 11 some time with the TMO defining ... there was a client
 12 design adviser role that we put forward as Artelia at
 13 one point, and that sat with them a long time before
 14 they decided not to take it forward. I did spend some
 15 time with Claire and others making sure they understood
 16 that if they didn't have that then they would be taking
 17 on that role.
 18 Q. I see.
 19 A. So I think that's what that means by architectural
 20 compliance monitoring.
 21 Q. Did you ever establish a matrix of design responsibility
 22 on the project, or are you aware that anyone else at
 23 Artelia did that?
 24 A. So ... I believe just generally through the roles and
 25 responsibilities, and by preparing the tender and things

156

1 like that, we did divide up who was responsible for
 2 what. If you were to call it --
 3 Q. Did you ever do a detailed matrix, say for the design of
 4 the project, setting out for each element of the works
 5 who had the design responsibility, where it sat? Did
 6 you ever do that kind of matrix?
 7 A. I did not, I don't believe.
 8 Q. Are you familiar with such a matrix? Have you ever seen
 9 them on other projects?
 10 A. Yes, I have.
 11 Q. Did anyone ever give any consideration to establishing
 12 such a design matrix on the Grenfell project?
 13 A. I think that the design team knew the roles that they
 14 were performing, so it wasn't something they felt was
 15 required. I mean, when I -- this project we didn't have
 16 a large number of designers, so, you know, when I was
 17 pre-contract it was, you know, very clear: there was
 18 an architect, mechanical and electrical engineer, and
 19 a structural engineer, and they are familiar with their
 20 roles and responsibilities, and then post-contract all
 21 design responsibility is with Rydon. So I didn't think
 22 a matrix was needed.
 23 Q. Okay.
 24 Can we just go back to the schedule of services for
 25 the employer's agent, back to {ART00005742/48}. I want

157

1 to look at tick-box 1.4.1 in that left column. There we
 2 can see it has been ticked that Artelia should:
 3 "Prepare and maintain a Project execution plan, or
 4 similar management tool, identifying the roles and
 5 responsibilities of the Client, the Professional Team,
 6 the Contractor and specialist sub-contractors/suppliers.
 7 Establish review, approval, variation and reporting
 8 procedures. Prepare recommendations for the Client's
 9 approval."
 10 Now, do you agree that the role of employer's agent
 11 on the project included an obligation to create
 12 a project execution plan or similar management tool that
 13 set out clearly the roles and responsibilities of the
 14 parties on the project?
 15 A. Yes.
 16 Q. And do you agree that this would include establishing
 17 the review, approval, variation and reporting procedures
 18 on the project?
 19 A. Yes.
 20 Q. To the best of your knowledge, was any such plan or tool
 21 ever created and then monitored?
 22 A. So there were project execution plans prepared and
 23 various iterations before my time on the project, and
 24 then subsequently, as we worked through the project, the
 25 various elements of the project execution plan and roles

158

1 were clarified by other documents, whether it be the
 2 actual appointment documents or whether it be through
 3 minutes or, you know, the flow diagram I talked about
 4 earlier was, you know, establishing how variations would
 5 be done.
 6 Q. Yes.
 7 A. I did spend -- on this project I spent quite a lot of
 8 time, actually, going through the roles and
 9 responsibilities and how, particularly post-contract,
 10 variations would be managed.
 11 Q. Yes.
 12 A. And there were -- there was that flow diagram I did
 13 which spelt out the roles, clearly talking it through
 14 with everybody so they knew, and there were trackers
 15 that were tracking changes that were put forward with
 16 dates of who needed to approve what. So that's how
 17 I feel we discharged that duty of myself.
 18 Q. We can see that this responsibility here is to prepare
 19 and maintain a project execution plan, and as you say --
 20 and I'll take you to it in a minute -- there was
 21 a project execution plan from November 2012. But in
 22 terms of maintaining it, did you yourself ever revisit
 23 that project execution plan and refresh it, particularly
 24 after the D&B contractor was appointed and, as you say,
 25 then you have got a different set of roles and

159

1 responsibilities?
 2 A. I didn't update the project execution plan later on.
 3 Usually it's, you know, written at the beginning, it's
 4 an execution, like to start off with, usually, in
 5 projects, so that everybody understands what's the
 6 project, who is doing what.
 7 Q. Yes.
 8 A. And you can go back and keep changing it, and that would
 9 be good to do. But I felt we had -- when we got to the
 10 various stages in the project, it was documented in
 11 other vehicles, not the project execution plan, through
 12 minutes, through meetings, through talking it through.
 13 I felt everybody understood the different roles and
 14 responsibilities, but I didn't go back and update it.
 15 Q. Okay, you didn't consolidate it in one place?
 16 A. No.
 17 Q. Let's look at that plan. This is the last version of
 18 the plan we can find, {ART00008445}. Now, we think this
 19 is dated 6 November 2012. If we look at page 3
 20 {ART00008445/3} we can see there the date at the top
 21 right, and we can see that it's authored by David Hale
 22 and checked and approved by Alun Dawson.
 23 I just want to look at a few pages within it. If we
 24 could look at page 10 {ART00008445/10}, here we can see
 25 a section for "Roles and responsibilities", and we can

160

1 see that the project manager there is said to be
 2 Mark Anderson of the TMO. Do you see that there?
 3 A. Yes.
 4 Q. He is said to have day-to-day project management of the
 5 project.
 6 If we look at the bottom of that page, under
 7 "Contractor & Novated Design Team", we can see that some
 8 of it is to be confirmed, post-construction services, do
 9 you see that there?
 10 A. Yes.
 11 Q. TBA, to be advised. But as you say, we have some of the
 12 consultants already appointed.
 13 Then if we look on at page 11 {ART0008445/11}, if we
 14 look at the top of that page, we can see that this says
 15 "Lead Consultant/Employer's agent: Alun Dawson: Overall
 16 co-ordination and control", and then QS, Chweecheen Lim,
 17 CDM co-ordinator.
 18 That would have been superseded, wouldn't it, in
 19 that Studio E took on the lead consultant role, didn't
 20 they?
 21 A. Yes.
 22 Q. Before we leave the top box, we can see we've got
 23 "Fire Safety Surveyor: Terry Ashton" is named in this
 24 project execution plan, isn't he, as one of the client
 25 advisers? Do you see that?

161

1 A. Yes.
 2 Q. We can see in the box below that the clerk of works is
 3 TBA, to be advised; is that right?
 4 A. Yes.
 5 Q. So would you agree with me that this is at quite
 6 an early stage, and what could have happened is we
 7 refreshed this as the project went on to make clear
 8 exactly who was engaged and what their responsibilities
 9 were?
 10 A. Yes.
 11 Q. If we look briefly at page 15 {ART0008445/15}, we can
 12 see there are some sections here that deal with design
 13 changes, and there's discussion of a change control
 14 procedure set out here.
 15 Did you ever come to look at that, the change
 16 control procedure that was set out in this document?
 17 A. I was familiar with it, yes.
 18 Q. We can see design development change is dealt with in
 19 a heading at the bottom of that. It says:
 20 "For all changes the design team are requested to
 21 maintain a log of all changes arising ... to their
 22 individual drawings ..."
 23 Do you know if any such log was ever maintained?
 24 A. Usually any time a designer, like an architect or
 25 whatever, changes a drawing, a new version is created,

162

1 and on the side of the drawing it says the date and what
 2 was changed.
 3 Q. Yes.
 4 A. And then there are drawing issue sheets that are issued
 5 out that say who it has been issued to and -- so, yes.
 6 Q. Was that something that you ever looked at and checked
 7 that it was being done properly?
 8 A. I saw the changes coming through as the design was
 9 developed, yes.
 10 Q. But did you ever check that log?
 11 A. Well, the log -- whenever drawings were issued to me,
 12 they would usually come with a drawing issue sheet, and
 13 the log would be on the side, so yes.
 14 Q. I see.
 15 Then at page 16 {ART0008445/16} we get some general
 16 descriptions of quality management procedures. We can
 17 see under "Quality":
 18 "The consultant team will adhere to QA procedures,
 19 of which this document is a part."
 20 Then it says under "Quality control":
 21 "The consultant team shall be responsible for the
 22 quality of their own work."
 23 "The TMO will appoint a Clerk of Works to undertake
 24 quality assurance checks ..."
 25 Do you see that there.

163

1 A. Yes.
 2 Q. It's quite brief about quality management, isn't it,
 3 this document?
 4 A. Yes, but an execution plan is quite high level, usually,
 5 at the beginning.
 6 Q. I see.
 7 A. So I wouldn't be alarmed by it being short.
 8 Q. Okay.
 9 Now, you mentioned before this point about the
 10 client design adviser role, and I now want to ask you
 11 some questions about that.
 12 Can we go first to {ART0002111}. These are the
 13 final contract preliminaries which were prepared for the
 14 OJEU tender process for the main construction work.
 15 Okay?
 16 Were you familiar, at least in outline, with these
 17 contract preliminaries?
 18 A. So Chweecheen wrote these and pulled them together, but
 19 they are -- yes, there's a piece of software that puts
 20 this all together.
 21 Q. Yes.
 22 A. I didn't write them, but I'm familiar with them.
 23 Q. If we look on page 5 {ART0002111/5} at the bottom of
 24 the page, I want to look at clause 195A, we can see
 25 there there's reference to a "Client Technical Adviser

164

1 (Architectural)", and it says "Name: To be appointed".
 2 Do you see that there?
 3 A. Yes.
 4 Q. Is the client technical adviser in this document the
 5 same as what was also referred to on the project as
 6 a client design adviser?
 7 A. I think they're similar roles, yes.
 8 Q. Is it right that Artelia and the TMO both envisaged that
 9 a client design adviser would be appointed to advise on
 10 architectural design issues during the project?
 11 A. I think so, yes. I think it's not always the case,
 12 because it depends on, you know, the complexity of the
 13 project and --
 14 Q. Yes.
 15 A. Yeah, so you don't always have a technical adviser.
 16 Often it is performed by the client themselves.
 17 Q. I see, yes.
 18 A. Depending on how much support they feel they need.
 19 Q. But when Rydon received this, would you agree that they
 20 might have expected such a client technical adviser or
 21 client design adviser to be appointed?
 22 A. Yes.
 23 Q. To your knowledge was that role of client design adviser
 24 discussed with the TMO when these preliminaries were
 25 drawn up?

165

1 A. I don't know -- I don't think it was perhaps -- I don't
 2 recall it being a big subject matter that was talked
 3 about at that time, but I do know that TMO were -- we
 4 spent a lot of time going through the tender and what
 5 was included and what was going out, you know, days of
 6 taking through it, so I don't recall that particular bit
 7 being a large part. But it wasn't shortly after the
 8 tender that I think we gave them the proposals.
 9 Q. Yes.
 10 A. I think they would have been familiar.
 11 Q. Just to complete what was in the tender documents, if we
 12 go to page 36 {ART00002111/36} now, top of the page, at
 13 clause 158A, there is there reference again to the
 14 client technical adviser, and it says:
 15 "Meaning: Client Technical Adviser Client is to
 16 advise Client on Contractor's proposals and
 17 architectural /services issues."
 18 Do you see that there?
 19 A. I do.
 20 Q. Then if we look at page 40 {ART00002111/40}, at the top
 21 of the page, at clause 650, we can see a number of tasks
 22 for the client technical adviser that are set out in
 23 these preliminaries, with regard here to tasks relating
 24 to drawings. We can see at clause 650(a) that:
 25 "Client Technical Advisor will review the

166

1 fabrication and shop drawings."
 2 Do you see that there?
 3 A. Yes.
 4 Q. If we look at paragraph 5 on this page, it says:
 5 "All clearance of Contractor's drawings shall be
 6 given by the Client Technical Advisor.
 7 "Clearance of drawings or materials for manufacture
 8 (and Works derived therefrom) mean the permission of the
 9 Client Technical Advisor to proceed."
 10 Do you see that there?
 11 A. Yes.
 12 Q. Now, at this stage, and given what we've just seen in
 13 these contract preliminaries, if that had been then
 14 followed through and someone appointed to that role,
 15 would they have advised on all of Rydon's drawings or
 16 only some of them?
 17 A. I think they would have been primarily focused on
 18 drawings that were a change from the employer's
 19 requirements.
 20 Q. Yes.
 21 A. That's usually how that role is -- the client design
 22 adviser support role is, but any drawings issued by the
 23 contractor, who is the design contractor, I would expect
 24 the client design adviser to have had a review of in
 25 that role. But primarily it's to support changes from

167

1 what was asked for in the employer's requirements at
 2 tender stage to what was actually being proposed as
 3 an alternative.
 4 Q. Yes, I understand. Yes.
 5 Would it have also included advising on
 6 subcontractor drawings, such as Harley, the external
 7 wall subcontractor? Might it have included looking at
 8 subcontractor drawings as well as any drawings from the
 9 main contractor?
 10 A. Yes.
 11 Q. Yes.
 12 A. They would have had to have come through the main
 13 contractor, so I think there's a duty for, you know, the
 14 main contractor, that was Rydon, to sort of co-ordinate
 15 what -- the design amongst all of their designers, and
 16 then issue them to the client or the client design
 17 adviser as a package for review.
 18 Q. What about changes to specifications, for example as
 19 a result of a value engineering exercise; would you have
 20 expected this client technical adviser to have advised
 21 on any changes to the materials in the specifications?
 22 A. Yes.
 23 Q. It appears from these preliminaries that the client
 24 technical adviser would "clear drawings or materials".
 25 There is reference to clearance in both subparagraphs 5

168

1 and 6 on that page. Can you just help us as to what it
 2 would be expected that this person would check for in
 3 such a clearance process?
 4 A. I interpret that as -- so the client design adviser or
 5 the client has no design responsibility, they're not
 6 drawing it or specifying it, they are saying, "Yes,
 7 I accept that what you're proposing as a change is
 8 acceptable, as in it is a comparable to what we asked
 9 for in the employer's requirements or it's a client
 10 change request".
 11 So the clearance, I think, would encompass not only,
 12 "Yes, we would like -- that's okay with that change",
 13 I think that there is a duty of checking that it
 14 conforms.
 15 But really I think the main design responsibility
 16 sits on the contractor that's proposing it.
 17 Q. Yes.
 18 A. So they are ultimately responsible for the design. This
 19 is more of a checking and a clearance, not
 20 responsibility.
 21 Q. If we move forward, then, as to what happened about the
 22 client design adviser, if we go to {ART00008591}, this
 23 is an email from you to Simon Cash on 10 January 2014
 24 and you say this:
 25 "Claire wishes for us to put forward a proposal for

169

1 the CDA role. As the custodian of fee proposals and
 2 scopes please can I ask you to do this? I know they are
 3 considering others, e.g. one man bands but they have PI
 4 concerns."
 5 Do you see that there?
 6 A. Yes.
 7 Q. Can you just help us, what discussion did you have with
 8 Claire Williams at this time about the CDA role?
 9 A. It doesn't register as a strong memory of mine, but
 10 I think she -- you know, reading that, she was
 11 recognising that she may need some support and wanted us
 12 to -- and she was considering others, and she wanted
 13 Artelia to put forward a proposal to fulfil that role.
 14 Q. Yes.
 15 Can you recall actually positively encouraging
 16 Claire Williams and the TMO to appoint a client design
 17 adviser on this project?
 18 A. I certainly made her aware of our proposal and felt that
 19 it was something that, if she didn't take up, then she
 20 needed to understand what she was taking on as
 21 a responsibility.
 22 Q. Yes.
 23 A. So I was -- I think maybe you could describe that as
 24 encouraging, yes.
 25 Q. Was it your view at the time that this job needed

170

1 a client design adviser to be appointed?
 2 A. It comes down to resource levels of the client and how
 3 much support they feel they need. It isn't a role
 4 that's regularly involved in projects. It is definitely
 5 on more complicated design and build projects, when the
 6 client wants that reassurance and support from
 7 a professional.
 8 Q. Yes.
 9 A. So I think it was more of a client decision as to --
 10 Q. Yes.
 11 A. -- if they need that support or not.
 12 Q. I understand that entirely. But I think you said
 13 earlier that you agreed that the Grenfell project was
 14 quite a complex project in terms of what they were
 15 seeking to do. You have got an occupied building, it's
 16 quite an old building, you're trying to add things on to
 17 existing services, you're overcladding it, you're
 18 restructuring the lower floors.
 19 I just want to ask you again: if someone had come up
 20 to you at this time and said, "Do you think this project
 21 needs a client adviser?", what would you have said?
 22 A. I think I would have said that, yes, it needs one,
 23 but ... the TMO had a massive team, some of them were
 24 architects, some of them were fire engineers, so
 25 I wasn't concerned when they said, "We'll take it on

171

1 ourselves".
 2 Q. Let's look at the client design adviser proposal. You
 3 then put it forward. This is {ART00006279}, and it's
 4 dated February 2014. We can see that proposal there.
 5 This is the front page, and the date at the bottom.
 6 Then if we go to page 6 {ART00006279/6} and look at
 7 the top of the page, at paragraph 3.1, we can see that
 8 Artelia's saying there that they've performed this role
 9 on other similar projects, including the KALC project.
 10 That's right, isn't it?
 11 A. Yes.
 12 Q. Were you yourself involved at all with the KALC project?
 13 A. No.
 14 Q. Then down under "Scheme Design" in the middle of this
 15 page, there is mention of a design compliance report.
 16 So as part of this proposal, it says:
 17 "We will provide a Design Compliance Report at
 18 Pre-Contract award stage following a review of the
 19 construction or contractor's proposals (CPs) and
 20 endeavour to ensure they meet the Employer's
 21 Requirements (ERs), NBS specifications, British &
 22 European Standards as well as all statutory and planning
 23 requirements."
 24 Do you see that there?
 25 A. Yes.

172

1 Q. So is it right that this role would have included
 2 checking the contractor's proposals for compliance with
 3 the Building Regulations?
 4 A. I think so, yes.
 5 Q. And would you have expected that to have also included
 6 checking for compliance with the statutory practical
 7 guidance, for example in something like Approved
 8 Document B on fire safety?
 9 A. Yes.
 10 Q. Would you have expected that exercise to pick up the
 11 extent to which the employer's requirements themselves,
 12 including the NBS specification, were not compliant with
 13 the Building Regulations? Do you think that's something
 14 that this role would have picked up?
 15 A. Possibly, yes. I mean, I didn't write this, and this
 16 was written by, you know, one of our architects at
 17 Artelia that's familiar with performing that role, so --
 18 Q. Yes, it's Richmal Harding; is that correct?
 19 A. Yes. So, from my understanding, I think that would have
 20 been picked up.
 21 Q. Yes.
 22 Then in the next paragraph, it says:
 23 "Once the contract is let, we will review detailed
 24 drawings as they are produced to ensure the Works
 25 proposed continue to meet the [employer's

173

1 requirements]."
 2 Do you see that there?
 3 A. Yes.
 4 Q. In terms of the extent of the advice that Artelia was
 5 proposing a CDA might give, is it right that any CDA
 6 would not have advised on M&E elements?
 7 A. So not within this proposal, because the arrangement
 8 here was that Max Fordham were retained by the client
 9 themselves, so they were reviewing the mechanical and
 10 electrical elements.
 11 Q. Yes.
 12 A. And it was the architectural elements that --
 13 Q. Yes.
 14 A. -- the TMO did not have a retained professional to
 15 comment on. That's why this was just on the
 16 architectural aspects.
 17 Q. Yes, I understand.
 18 Now, I appreciate you said earlier that a client
 19 design adviser isn't appointed for all projects.
 20 A. Yeah.
 21 Q. But in your opinion, would it be standard or usual to
 22 appoint such a person on a project like this, on
 23 a refurb project such as Grenfell?
 24 A. It's not unusual. It also comes down to, you know, the
 25 level of trust placed in the design and build

174

1 contractor, because this is a checking role, so they
 2 don't have any design responsibilities, it's really just
 3 checking: are the lead designer -- the people
 4 responsible for design complying? The responsibility
 5 for complying still sits with the designers.
 6 So I think that's why this role -- it comes down to
 7 how competent the client is and how much they're likely
 8 to receive on a project that will require their comment
 9 in terms of changes.
 10 Q. Yes.
 11 But on a project like this, that underwent quite
 12 a significant value engineering exercise, was that
 13 perhaps another reason why a client design adviser would
 14 be a good idea?
 15 A. Yes, I think that's fair to say.
 16 Q. If we go on in the chronology to {ART00006523}, this is
 17 an email from you to Simon Cash dated 4 February 2014.
 18 In the third paragraph of this email, you say:
 19 "Please also see CDA proposal prepared by Richmal
 20 for your consideration. We wanted to ensure that there
 21 was a clear definition between what I am doing as EA and
 22 what Richmal will do. I have reviewed the EA scope of
 23 services as submitted and sign off responsibility under
 24 the EA services only refers to preparing and maintaining
 25 a handover report (1.5.9) and issue instructions on

175

1 behalf of the client (1.1.2)."
 2 Now, where you're referring to sign-off
 3 responsibility there, can you just help us as to what
 4 you mean, "sign off responsibility under the EA
 5 services". Is that signing off design work? What is
 6 that?
 7 A. I remember this because Claire Williams was, you know,
 8 wanting to make sure: was there responsibilities from
 9 an employer's agent to sign off and approve, like,
 10 drawings and things like that, and I was saying, "No,
 11 there isn't, that's not included in employer's agent
 12 scope of services". So that's where we then needed to
 13 put the CDA proposal together, and this was me, just
 14 internally with Simon and everyone, just checking that
 15 was really clear so that when Claire received it, she
 16 could see, "That's Philip's role", and that there is no
 17 duplication -- she is not paying twice for what the CDA
 18 proposal was.
 19 Q. Yes.
 20 If we just pick up your witness statement at this
 21 point. This is your second witness statement at page 2
 22 {ART00009420/2}, and I want to look at what you say at
 23 paragraph 7. You say this:
 24 "I wanted to ensure that there could be no question
 25 about whether the CDA Proposal was an offer of new

176

1 services from AUK that were not currently covered by
 2 AUK's existing EA obligations. From my review of the
 3 scope of AUK's EA services under the Project, I was
 4 clear that that was the case. The CDA role would have
 5 involved AUK considering design on the Project. This is
 6 why it would have been carried out by Richmal Hardinge,
 7 a qualified architect. AUK's existing Appointment, as
 8 EA, QS and CDM-C, expressly provided that AUK was not
 9 responsible for design. Accordingly, the services
 10 offered by AUK under the CDA Proposal were new ones and
 11 not covered by its existing Appointment. I believe that
 12 Ms Williams understood that."

13 Do you see that there?

14 A. Yes.

15 Q. Now, in this statement you mention a review of the scope
 16 of the EA services. What did that review comprise?
 17 Were you just looking at the schedule of EA services
 18 we've taken you to?

19 A. Yeah, me going back to -- from the sort of query from
 20 Claire as to say, "Well, are you going to sign off some
 21 of these designs or review these?" and my response being
 22 sort of, "Well, no", I wanted to check that that was in
 23 accordance with what we'd ticked in the EA services. So
 24 that was just my internal review.

25 Q. Did you consider at this point the obligations of the

177

1 CDM co-ordinator in any such scope review? So did you
 2 take into account the extent to which Artelia would, in
 3 its role as CDM co-ordinator, perhaps have some
 4 responsibility for ensuring that designers were of
 5 an appropriate competence, were organising themselves in
 6 the right way, doing the right risk assessments? Did
 7 you take that into account?

8 A. I don't remember taking that into account, no. The
 9 CDM -- it's different to a CDA. It's a lot of acronyms,
 10 isn't it? But CDM is more around making sure the works
 11 are carried out safely, and then, at the end,
 12 information is handed over so the client can look after
 13 the building and maintain it appropriately. It
 14 doesn't -- my understanding of that role is that they
 15 don't do design reviews like what was being queried by
 16 Claire.

17 Q. Yes, I understand.

18 In your mind, is there ever any crossover of roles
 19 between the CDM co-ordinator and a client design
 20 adviser?

21 A. I've not come across that, no.

22 Q. Okay.

23 A. They're called something different now as well.

24 Q. Did you ever explain to Claire Williams that, in your
 25 opinion, the CDA role was truly additional to your

178

1 employer's agent role?

2 A. Yes. It was separate.

3 Q. Did you ever explain to Claire Williams that you
 4 yourself as employer's agent could not perform a role
 5 like the client design adviser role, the CDA role? Did
 6 you ever say that to her?

7 A. I did.

8 Q. Did you ever explain to her the importance of appointing
 9 a CDA on a project like Grenfell?

10 A. I spent some time with her, taking her through our
 11 proposal and why I thought she should have it, and there
 12 was ... she was wanting to understand it a bit better,
 13 and she also wanted to sort of understand what things
 14 they might be needing to review, particularly when --
 15 the point of the project where it was in terms of how
 16 far the design had gone, and she was very clear that she
 17 felt that the TMO, with their experience and expertise,
 18 didn't need this extra support and services. They had
 19 the knowledge within their own organisation and they
 20 could do it themselves, and did not need the additional
 21 fees or the support that we were offering.

22 Q. Yes.

23 We know that it took the TMO some six months after
 24 this proposal was made to respond to it. Do you know
 25 why it took them so long? Were you ever given

179

1 an explanation for that?

2 A. I think it just took that long because at the time, from
 3 the February that we issued it, we were still in the
 4 tender stage, so there was nothing to -- for the CDA to
 5 review, because we were going through the tender
 6 exercise, and we didn't actually get that completed,
 7 I think, until later, in the sort of Easter time, until
 8 Rydon came on board. So it came more to the forefront
 9 of them needing to make a decision later on that summer
 10 when, actually, now contractors' proposals were starting
 11 to come through for them to consider.

12 So it wasn't a role that was needed in February, but
 13 we were trying to plan ahead. I think that's why it
 14 took so long. And they were also, as the TMO, you know,
 15 budget, as you can clearly see, was a key consideration
 16 on this project and they were not wanting to necessarily
 17 incur additional fees. So I think that's why it sort of
 18 sat in -- for consideration later.

19 Q. Did they expressly say that to you, "We don't want to
 20 incur the additional fees"?

21 A. Well, yes, they were very much about, "Do we need this
 22 role?" You know, it's 30 grand or whatever it was.

23 Q. Yes.

24 A. Yes.

25 Q. Can we look at a set of minutes, {ART00002752}. So we

180

1 have gone forward in time now to 19 August 2014. This
 2 is progress meeting number 2. We can see you were
 3 present at this meeting from the list on that first
 4 page.
 5 If we can go to the second page of these minutes
 6 {ART00002752/2}, at item 3.1, it says there -- we've got
 7 a minute:
 8 "CW to appoint a Client Design Adviser."
 9 So Claire Williams to appoint a client design
 10 adviser.
 11 Then we've got a post-meeting note:
 12 "CW advised that the TMO will perform the role of
 13 the CDA in house. They will therefore need to sign off
 14 all design."
 15 Do you see that there?
 16 A. Yes.
 17 Q. So it appears that there was some discussion of this at
 18 the meeting, and then a post-meeting note is added
 19 afterwards saying the TMO have decided to do it
 20 in-house.
 21 Can you remember what was discussed at the meeting
 22 about this role?
 23 A. I remember talking to Claire, her asking me, you know,
 24 "Do we need this? What will this role include? What
 25 sort of things am I -- are they likely to be reviewing?"

181

1 and taking her through that. She went away and had
 2 a think about it, and she decided afterwards -- that's
 3 why we put it as a post-meeting note -- that they could
 4 do it themselves.
 5 Q. Yes.
 6 A. Yeah. That's what I remember.
 7 Q. Yes.
 8 Now, in your witness statement -- this is your
 9 second witness statement, at paragraph 12
 10 {ART00009420/3} -- you say you remember telling
 11 Claire Williams that if the TMO was going to take on the
 12 role, it would need to sign off future designs. Is that
 13 right? You said that to her?
 14 A. Yeah. So, again, change is proposed -- there is no
 15 design responsibility, but they would need to say, "Yes,
 16 we're happy with that to proceed", so a checking role
 17 still. But they would need to agree it. I couldn't as
 18 employer's agent.
 19 Q. You say also that you did not say that cladding would be
 20 excluded from that; that's your memory, is it?
 21 A. No, I definitely did not say cladding would be excluded.
 22 Q. Yes.
 23 A. I think -- and, again, I don't know, I'm not Claire, but
 24 I think she was reassured by the fact that obviously
 25 there were specialist cladding advisers coming in and

182

1 that there were warranties, product warranties and
 2 product guarantees that come with the cladding.
 3 Q. Yes.
 4 A. And I said, "Well, yes, that is true, but you will still
 5 need to sign it off", and she was reassured by having
 6 those extra checks and balances.
 7 MS GRANGE: Yes, great.
 8 Mr Chairman, I think that's a good moment. I'm
 9 halfway through this topic, but it's a good time to
 10 break.
 11 SIR MARTIN MOORE-BICK: Yes.
 12 Mr Booth, we're going to have a short break now. We
 13 will come back at 3.40. I would ask you again not to
 14 talk to anyone about your evidence while you're out of
 15 the room. All right?
 16 THE WITNESS: Of course.
 17 SIR MARTIN MOORE-BICK: Would you like to go with the usher,
 18 please.
 19 (Pause)
 20 Right, 3.40, please.
 21 MS GRANGE: Thank you.
 22 (3.25 pm)
 23 (A short break)
 24 (3.48 pm)
 25 SIR MARTIN MOORE-BICK: All right, Mr Booth, are you feeling

183

1 okay?
 2 THE WITNESS: Yes, I'm fine, thank you.
 3 SIR MARTIN MOORE-BICK: If you have a problem, just
 4 indicate.
 5 THE WITNESS: No, thank you. Someone's very kindly given me
 6 some paracetamol.
 7 SIR MARTIN MOORE-BICK: That's good.
 8 Ms Grange.
 9 MS GRANGE: Thank you.
 10 So carrying on with the client design adviser story,
 11 can we now go to {ART00006464/2}, and I want to look at
 12 the bottom of the page. There we see, 29 August 2014 at
 13 5 o'clock in the afternoon, there is an email to you and
 14 Peter Blythe, and she says:
 15 "Last Tuesday we talked about the appointment of
 16 a design advisor, and the likelihood that this did not
 17 particularly apply to cladding and M&E elements which
 18 were designed and under guarantee. Upon discussion most
 19 of the design concerns were over the new build areas, ie
 20 the flats, nursery and boxing club.
 21 "I have spoken to David Gibson and we are going to
 22 see if we can manage this within the TMO, as we are very
 23 familiar with the specifications for social housing. We
 24 will monitor how this is working, as presumably all
 25 proposals for comment will have a 'respond by' date.

184

1 Can you please send any design proposals to myself, cc
2 David Gibson.”
3 So this is her rejection of that client design
4 adviser proposal; that’s correct, isn’t it?
5 A. Yes.
6 Q. Just looking at what she says, had you had a discussion
7 about that role likely not applying to cladding and M&E
8 elements which were designed and under guarantee?
9 A. No, I did not say to her that cladding would be
10 excluded. As I said before, I think she was taking
11 assurances from the fact that some packages would come
12 with product warranties and guarantees, and the cladding
13 was one of those.
14 The M&E very clearly wouldn’t sit within the CDA
15 role because she had Max Fordham supporting her. But
16 the cladding, you know, would be something that she
17 would have to -- you know, as it had been changed, she
18 would have to sort of review and comment on.
19 Q. Yes.
20 A. And there had been lots of reviews and considerations of
21 various types of cladding on this project by this time.
22 Q. Yes. So you don’t agree that that’s something that you
23 suggested, that it didn’t particularly apply to
24 cladding?
25 A. No. In fact, quite the reverse. I think I was almost

185

1 saying, “Look, this is an area that, whilst you might
2 know social housing and what the appropriate thing is
3 for a kitchen or whatever” -- you know, I was saying,
4 “If you had a client design adviser, then they would be
5 able to support you in everything. If you accept it as
6 yourself as a responsibility, then you will have to do
7 everything bar M&E elements.”
8 Q. Do you recall specifically highlighting the cladding in
9 that discussion with her as an example of that?
10 A. Yeah, as a memory I have that, yes.
11 Q. The next part in that first paragraph, she says:
12 “Upon discussion most of the design concerns were
13 over the new build areas, ie the flats, nursery and
14 boxing club.”
15 Again, was that something you had discussed and said
16 to her or was that something that was new to you when
17 you got this email?
18 A. No, so the area that there was most design happening was
19 the area that new facilities were being created, so the
20 lower levels.
21 Q. Yes.
22 A. In the actual flats themselves there wasn’t a great deal
23 of design required because it was, you know, new heating
24 and new windows, so I think I did have a conversation
25 with her around, “Okay, you may well” -- that was where

186

1 a lot of the change was, around what those lower levels
2 would be, and she was comfortable with taking on that
3 responsibility, because she felt that was within her,
4 you know, area of expertise.
5 Q. Yes.
6 We can see in that second paragraph she says that
7 she has spoken to David Gibson, “and we are going to see
8 if we can manage this ... as we are very familiar with
9 the specifications for social housing”.
10 Were you of the view when you read that email that
11 being familiar with the specifications for social
12 housing was a relevant consideration in terms of whether
13 to appoint a CDA on the project?
14 A. It would help fulfilling that role, yes, because --
15 Q. So that would be a relevant consideration in your view?
16 A. Yes.
17 Q. Then in your first witness statement at paragraph 148 on
18 page 44 {ART00008527/44}, you say it was your impression
19 that the TMO considered they were better placed to take
20 on the role as they were informed about residents’ needs
21 and the internal specifications for the flats.
22 Did you agree with the TMO’s view that they were
23 better placed to act as client design adviser?
24 A. So they were certainly better placed to understand the
25 needs of their residents, because they work with them

187

1 all the time, and Artelia’s CDA wouldn’t have that level
2 of understanding. Same with the boxing club and things
3 like that. So, yeah, I agree that they were well placed
4 to review those elements that they would be reviewing
5 against.
6 Q. I see.
7 A. If they were proposing a particular thing, you know,
8 change to the spec of the boxing club showers or
9 something, I don’t know, then they would be closer to
10 that.
11 Q. Again, that expertise wouldn’t apply to all of it, would
12 it, including the overcladding?
13 A. True, yes.
14 Q. Yes.
15 Did you think at the time that Claire Williams’ or
16 David Gibson’s skills were comparable with
17 Richmal Hardinge’s skills when it came to assessing
18 compliance of a design with the Building Regulations,
19 for example?
20 A. I’m not sure they’re entirely the same, but I felt that
21 the TMO as a collective were, had the skillset to do the
22 role.
23 Q. I see. You mean across the individuals that they had
24 within the organisation?
25 A. Yes. So they had their own, you know, fire officers,

188

1 their own health and safety officers , their own team
 2 that reviewed, you know, specs and drawings and
 3 refurbishments elsewhere on their estate , so --
 4 Q. Yes.
 5 A. -- I was assured they could do the role .
 6 Q. Can we look at what Claire Williams has said about this
 7 in her witness statement. If we go to {TMO00853697/7},
 8 paragraph 32. I just want to look at the first five
 9 lines of what she says here:
 10 " Specifically , as described in detail above, Artelia
 11 were already providing services as CDM-C, Employer's
 12 Agent and Quantity Surveyor. The CDM-C role included
 13 taking reasonable steps to ensure that the designers
 14 complied with their duties ..."
 15 Then she quotes something from the CDM Regulations
 16 2015, and then she said :
 17 "Furthermore, in Artelia 's form of appointment they
 18 confirm themselves to be designers ."
 19 Do you see that there?
 20 A. Yes. I think that 's designer in terms of CDM regs, not
 21 designer in terms of design responsibility .
 22 Q. Yes. Then she said :
 23 "In addition to Artelia , Rydon had ultimate design
 24 responsibility under the Design and Build contract ,
 25 having also directly appointed Studio E."

189

1 In terms of what she says in that first paragraph,
 2 she seems to be saying that, because of the services
 3 that Artelia were already providing, that was a reason
 4 not to appoint the CDMC(sic) role. I'm interested, was
 5 that a view she ever expressed to you when you were on
 6 the project?
 7 A. She certainly sought clarification as to -- from Artelia
 8 as to: are we doing design reviews as part of CDMC, and
 9 I said, "No, that 's not that role ".
 10 Q. Yes. So the opinion --
 11 SIR MARTIN MOORE-BICK: Sorry, Ms Grange. In your last
 12 question you referred to not appointing Artelia to the
 13 CDMC role. Did you mean --
 14 MS GRANGE: Sorry, I meant the CDA role. Apologies.
 15 SIR MARTIN MOORE-BICK: Perhaps the transcript could correct
 16 that, then.
 17 MS GRANGE: I think you understood my question nevertheless?
 18 A. I did. I did, correct, yes.
 19 Q. Did she ever say to you, "Well, we don't need the CDA
 20 role because some of that is already covered by your
 21 existing appointments"? Did she ever say that to you?
 22 A. Conversations like that happened, and I told her why
 23 that was an incorrect assumption to make.
 24 Q. Yes, so you didn't agree with that?
 25 A. Correct. It wasn't adversarial, it was just clarifying

190

1 what was already covered under Artelia 's appointment.
 2 Q. If we look down at what she says now at paragraphs 33
 3 and 34, 33 she says:
 4 "For these reasons the TMO concluded that the scope
 5 of services that Artelia offered as CDA were already
 6 provided under other appointments. It did not see the
 7 justification in the role did not apply to specialist
 8 areas of constructions such as cladding."
 9 Then she says:
 10 "In hindsight, I wish that the TMO had ... made the
 11 position outlined above clearer to Artelia , reiterating
 12 that we expected them to fulfil the full duties of a
 13 CDMC and Employer's Agent, rather than simply stating we
 14 would take the CDA role. What is clear is that we had
 15 every appointment in place under the CDM Regulations
 16 required by law."
 17 So she seems to be saying there that somehow, by
 18 saying they didn't want the CDA role, she missed
 19 an opportunity to tell you that they wanted the full
 20 duties of a CDMC and an employer's agent. Do you
 21 understand that?
 22 A. No. So we were employer's agent and CDMC, and they had
 23 appointed everybody that they needed to under
 24 CDM Regulations. You don't have to have a client design
 25 adviser, there is no requirement to have one. Does that

191

1 answer your question?
 2 Q. I think so, yes.
 3 Just to be clear , it wasn't your position that you
 4 could make up for the lack of a CDA role by fulfilling
 5 fuller duties of a CDMC and employer's agent; is that
 6 right?
 7 A. Correct, and I think I went to some lengths to try and
 8 describe that to her and explain that to her, and it was
 9 documented in the client design adviser role, how it was
 10 different .
 11 Q. Yes. You say you went to great lengths. Was that
 12 because she wasn't understanding the point, you think,
 13 or was there something else going on?
 14 A. I think it was ... I don't know. It might have been
 15 partly a misunderstanding. I think by the end she
 16 understood definitely . I think it was partly wanting to
 17 make sure she drew as much out of Artelia ... and
 18 sometimes we did get drawn into things outside our
 19 scope.
 20 Q. You say in your second witness statement at paragraph 12
 21 {ART00009420/3} that Claire Williams was reluctant for
 22 the TMO to incur the additional costs of the CDA
 23 proposal, and we have touched on that earlier .
 24 A. Yes.
 25 Q. To what extent did you think at the time of the

192

1 rejection that saving money was a part of the TMO's
 2 motivation for rejecting this offer?
 3 A. It certainly was a consideration, but I don't think it
 4 was the only part. I think they genuinely believed that
 5 they could do the role themselves and were best placed
 6 for it too.
 7 Q. What did they say about the cost of the role? We've
 8 seen that it was about £30,000 as the basic fee for this
 9 role and then the possibility of extras. Did you ever
 10 have a discussion about that amount of money and whether
 11 the TMO were particularly concerned about that?
 12 A. I don't remember anything particular, other than just
 13 that: could they do this role themselves, therefore do
 14 they need to spend that money.
 15 Q. Yes.
 16 We saw in the email where she rejected the role she
 17 said that she was going to monitor how it was working,
 18 and that any proposals for comment would have
 19 a respond-by date. Then she said, "Can you please send
 20 any design proposals to myself and David Gibson".
 21 Do you recall there ever being any monitoring by the
 22 TMO of how the design sign-off process was working?
 23 A. So what we used for changes and sign-off and things was
 24 there was a bit of a tracker as to when proposals were
 25 put forward and, therefore, when a decision needed to

193

1 come back, and I do remember on the project there being
 2 some times where I needed to, you know, support in the
 3 administration of that, so that everybody knew: you've
 4 got a proposal, you've got two weeks to think about it
 5 and respond and ask or raise any queries.
 6 Q. Yes.
 7 A. So it was -- from my memory, it was actually Rydon that
 8 prepared the track -- this client change design tracker,
 9 because they were co-ordinating the design at that time.
 10 So they were the ones that were saying, "Well, here's
 11 what we're proposing, two weeks or so, come back to us",
 12 so we could just see where it sat at any one time and
 13 everybody knew: okay, it's with me to decide.
 14 Q. Did you understand that David Gibson himself would be
 15 checking the design and compliance in the way that
 16 a client design adviser would?
 17 A. I thought that he would be supporting Claire in doing
 18 that, yes.
 19 Q. Were you ever aware of David Gibson actually performing
 20 any CDA functions or considering the design himself?
 21 A. I was aware of -- you know, Claire was our main point of
 22 contact, but I think she went back and checked with all
 23 sorts of different people back at TMO about things, as
 24 part of -- I saw that in sort of correspondence emails
 25 and conversations.

194

1 Q. Yes.
 2 A. I don't think -- Claire didn't just do it on her own;
 3 she definitely consulted others at TMO.
 4 Q. If we can go back to the email chain where the proposal
 5 was rejected, {ART00006464/2}, and look at the top of
 6 the page, this is an email from you, 29 August 2014, to
 7 Richmal Hardinge, who was going to be the CDA, if
 8 appointed, and also to Simon Cash. You just say:
 9 "Sadly TMO decided to be their own CDA."
 10 And you forward Claire Williams' email.
 11 Why was that regrettable? Why did you say "sadly"
 12 in that particular email?
 13 A. I think Richmal wanted to do the role, and she hadn't
 14 been appointed.
 15 Q. Were you concerned that the TMO's decision would affect
 16 the project?
 17 A. No, I thought -- no.
 18 Q. Okay.
 19 Now, if we go up to the first page {ART00006464/1}
 20 of this email chain, this is Simon Cash's response to
 21 you of 1 September, and we can see he says this:
 22 "Philip,
 23 "I would like to think that with Rydon's approach so
 24 far, it should not be an onerous task. However, it is
 25 very important that we do not find ourselves being

195

1 dragged into dealing with any issues relating to
 2 compliance or design advice without it being
 3 acknowledge[d] as additional work."
 4 So that was Simon Cash's response to you.
 5 You have said in your witness statement -- this is
 6 paragraph 50 of your first statement {ART00008527/11} --
 7 that you understood Simon Cash to mean that there was
 8 not an onerous task because there were only a limited
 9 number of changes which would need to be approved. Is
 10 that right?
 11 A. That's partly it, particularly -- yes, because -- yeah,
 12 it was -- we weren't expecting loads of changes, so we
 13 weren't expecting lots of review to be required.
 14 Q. I see.
 15 You also say that Rydon were building according to
 16 approved drawings and therefore it was unlikely that
 17 many changes would be made. So your view seemed to be
 18 at that point, "Well, I don't think there are going to
 19 be many changes, so we can live with this". Is that
 20 a fair summary?
 21 A. Yes.
 22 Q. When you're referring there to approved drawings, when
 23 you say Rydon were building according to approved
 24 drawings, can you just help as to what exactly you mean
 25 by that?

196

1 A. So largely Rydon were not looking to alter very much
2 from what was tendered to them. So Studio E as the
3 designers had prepared it up to tender stage and they'd
4 been novated over, and largely Rydon were saying, "Look,
5 we're just going to build that, what you asked us to do,
6 so we're not coming back to you with lots of changes or
7 variations ". That's what I meant by approved as in the
8 client had approved them to go to tender.

9 Q. Yes.

10 At this point, did you have in mind the cladding?
11 You obviously knew there had been some changes in terms
12 of specification in the period since the contractor had
13 been appointed, and more finalisation of the materials
14 to be used. Were you thinking about that when you
15 thought to yourself, "Well, I don't think this will be
16 a problem because there won't be too many changes"? Was
17 the cladding in your mind then?

18 A. Well, the cladding was always an item that was being
19 reviewed because it was a large package, even
20 pre-tender, so I don't -- no, I knew that was always
21 going to be something that was -- there were variations
22 coming from it.

23 Q. Yes. Do you think the TMO was taking a risk in not
24 appointing a client design adviser?

25 A. They -- I don't know if I would say taking a risk.

197

1 I think they were not appointing additional specialist
2 advice and support.

3 Q. Right.

4 A. I mean, again, I reiterate that you kind of expect your
5 designers to -- you know, they shouldn't be proposing
6 anything that's not compliant or anything irregular. So
7 the CDA is a checking and a reassurance, so ...

8 Q. Yes.

9 Moving on, in your first witness statement you
10 explain that, despite not appointing a client design
11 adviser, the TMO and Claire Williams in particular kept
12 asking Artelia about design issues, and issues that you
13 considered to be outside the scope of Artelia's role.

14 Is that a fair summary?

15 A. That is, yes.

16 Q. I just want to look at just a few of those now. We're
17 not going to go to the detail that you have included in
18 your statement.

19 If we can look at, say, {ART00008627}, this is
20 an email from Simon Lawrence to you, cc'ing
21 Nick Valente, and its subject is "Grenfell Design". In
22 paragraph 1 he's dealing with an upcoming meeting. Then
23 in paragraph 2 of this email he says:

24 "On top of this I sat down with Claire this
25 afternoon and she has concerns about some of the design

198

1 and is proposing changes. All of which is fine
2 providing it is done formally so everyone is in the
3 loop. My only concern is that the designs she has
4 concerns about are the tender drawings which were
5 obviously issued to us by the KCTMO. Admittedly we are
6 the designers but I won't be expecting us to make
7 changes to flat layouts, etc. off of our own back, we
8 would assume that they were correctly designed at
9 tender. She also mentioned that designs needing to
10 comply with KCTMO design guide. I'll haven't checked
11 the tender does yet but don't believe this has been
12 issued to us, but I could be wrong. So plenty to iron
13 out before we get to far and changes become costly for
14 no reason."

15 Do you see that there?

16 A. Yes.

17 Q. So it appears from this that Claire Williams had been
18 proposing changes to the flat layouts, and
19 Simon Lawrence was expressing some concern to you about
20 that. Again, is that fair?

21 A. Yes.

22 Q. Was it your understanding that Claire Williams was
23 attempting to change the designs without having received
24 advice or input from a designer, from someone with
25 expertise in architectural design?

199

1 A. So what she was talking about was changing some of the
2 lower floor layouts and purposes, you know. From memory
3 it was things like, "Well, we were going to have
4 an office there, but can we put another flat there?",
5 things like that. There weren't necessarily, you know,
6 need to be done by an architect. They were client
7 design, they were client wishes and changes.

8 Q. I see.

9 Was it your view at the time that she didn't
10 understand the implications of changing the designs?

11 A. No, she definitely understood, and I spent time with her
12 and said, "Look, changes could well have impact on
13 programme and could have impact on cost, and should only
14 be made if absolutely necessary".

15 Q. Yes. Now, in paragraphs 165 to 167 of your first
16 statement {ART00008527/49} you provide some further
17 examples from October 2014. So the first one you give
18 is there were concerns on the part of Rydon about
19 Claire Williams attempting to change the size of the
20 windows. Do you remember that?

21 A. Yes.

22 Q. Then you also give an example that there was confusion
23 over the sign-off of risk assessments and methodology
24 statements following an instance where the boilers were
25 shut off; do you remember that?

200

1 A. I remember that incident, yes.

2 Q. I'm not going to ask you about the detail of those
3 incidents but I want to ask you some more general
4 questions.

5 At that stage -- so what you are describing is
6 examples from October 2014 -- did you have concerns
7 about the TMO's understanding of roles and
8 responsibilities on the project?

9 A. I don't think she had -- no, I don't think there was
10 a confusion particularly. The windows bit was --
11 you know, it was genuine that she picked up that the
12 windows were going to change in size, so that wasn't
13 a role or responsibility issue. And we did need to
14 explain -- the boilers getting shut off was purely how
15 Rydon were doing the works issue, and it was a problem,
16 because residents ended up not having hot water for
17 a couple of days, and we responded by saying, "Well,
18 actually, Rydon have got to be responsible for managing
19 how the works are done on site".

20 Q. Yes.

21 A. We as Artelia, in all our hats, don't approve how the
22 works are sort of carried out, that's got to sit firmly
23 with the responsibility of Rydon, because they're
24 managing the day-to-day works on site.

25 Q. Did you ever suggest to the TMO that they should perhaps

201

1 reconsider its rejection of the appointment of a client
2 design adviser?

3 A. I -- no, I don't think I did. I mean, Claire was
4 fulfilling the duties, she was accepting proposals,
5 going and consulting. Sometimes she was asking,
6 you know, my opinion on things and I had to sort of
7 point her elsewhere. But she was doing the duties.

8 Q. I see, yes.

9 So looking back on it, do you think you should have
10 advised the TMO that it should have reconsidered this,
11 given how things then panned out on the project?

12 A. Yeah, in hindsight, maybe Richmal would have picked up
13 some of the issues that have occurred now we've seen how
14 things have gone, so ...

15 Q. Okay.

16 A. So in hindsight, potentially, yeah.

17 Q. Now, again, just some more general questions here.

18 After Rydon was appointed in March 2014, we know
19 there were a number of value engineering design
20 decisions that were taken, including in relation to the
21 cladding. I just want to ask you a little bit about the
22 process of decision-making in that period.

23 Was there any process, as far as you were concerned,
24 to assess the impact of changing the design as a result
25 of the value engineering that was done?

202

1 A. So there was a lot of value engineering on this project,
2 and there were options put forward, and everything that
3 was put forward, the consideration of, "Well, what's
4 that going to change?" was considered.

5 Now, most of it was around: what's that going to do
6 to cost? Some of it was: what's that going to do to the
7 programme? And obviously: what's that do to sort of
8 quality as well? So there were plenty of reviews. All
9 of the professional team were engaged in the value
10 engineering exercises, as well as Rydon, when they were
11 on board. So I think all of the -- it was a very
12 collaborative piece of work to review what could be
13 value engineered and what couldn't. Proposals were put
14 forward, and some were decided to proceed with and some
15 were not.

16 Q. Okay.

17 Just picking up, you talked about quality. To your
18 knowledge, was there an assessment done of the potential
19 changes in terms of value engineering and any reduction
20 in quality that would result?

21 A. So the way contractor -- like value engineering goes is
22 the proposals might be identified by somebody and it's
23 put forward, and then what's different in the proposal
24 should be highlighted so that you can make an informed
25 decision on the overall. And that process was worked

203

1 through with the design team, because most of the
2 proposals for changes came from, you know, material
3 changes and design changes. Some of it was just
4 excluding scope, and that's simple.

5 Q. Yes.

6 A. So I think -- but the onus of what are the changes in
7 terms of quality is from whoever's putting forward that
8 proposal.

9 Q. Right.

10 A. Largely from either designers or Rydon. And then they
11 were debated and reviewed and discussed for the client
12 to decide yes or no.

13 Q. Right.

14 Was there any specific assessment of the potential
15 changes in terms of risk to safety?

16 A. So, there was lots of discussion around changes, but it
17 was always, you know, assumed and implied that design --
18 everything put forward would need to be safe, that's
19 implicit, you know --

20 Q. But were you ever aware of a specific assessment being
21 done of the potential changes in terms of any risk to
22 safety?

23 A. So an example would be at one point we were talking
24 about changing the windows and how they were going to
25 operate.

204

1 Q. Yes.
 2 A. And what was put in were tilt -and-turn windows, and that
 3 was -- one of the reasons the value engineering to
 4 change that to a normal just opening window was actually
 5 it's safer to have tilt -and-turn because you can just
 6 have your window like that (indicated). So yes, they
 7 were considered, but they were usually, you know --
 8 yeah, they were considered.
 9 Q. Was it any part of your role to make sure that there was
 10 a change control process in place so that a qualified
 11 designer considered the impact of, for example, the
 12 change in the choice of cladding materials?
 13 A. So I think we did have a change control process agreed
 14 and documented, and that was one of the flow diagrams
 15 that I showed. We were working collaboratively, all
 16 together in terms of what value engineering was taken
 17 forward. But the, you know, responsibility of design
 18 and safety, you know, it was always -- you know, so for
 19 the cladding example, all of the debates about changes
 20 were all around aesthetics or fixing and planning. They
 21 were never around: is it going to be fire compliant or
 22 is it safe? Because that's just a given, that designers
 23 have to design to the, you know, health and safety
 24 requirements of the time.
 25 Q. To your knowledge, did the CDM co-ordinator on the

205

1 project have any input into the value engineering
 2 decisions in relation to the cladding materials?
 3 A. Not particularly, no. He was more involved in,
 4 you know, sort of kickoff of the project and methodology
 5 of how the works were maybe going to be done. Asbestos
 6 and things were the big focus of his. But -- so, no,
 7 there's not really a CDM role in value engineering so
 8 much.
 9 Q. It's really the consequences of the final decisions on
 10 the value engineering to, say, use different materials,
 11 it was whether or not you can ever recall the CDM
 12 co-ordinator being involved; no?
 13 A. No.
 14 Q. Design change tracker, we've touched on this already but
 15 I want to ask you some more questions about it. If we
 16 can go to {ART00008861}, this is an email from
 17 Simon Lawrence to you on 24 October 2014, and the
 18 subject is "Change tracker", and in the email, we get it
 19 from the first line, he explains that following a client
 20 design meeting, he says:
 21 "... I've put together a spreadsheet tracker for
 22 project changes, as attached. Before I send it out
 23 formally I wanted to run it past yourselves to make sure
 24 it works for you also. Basically Rydon don't have
 25 a specific document to record change because it is

206

1 normally done via email records, RFI's, drawings, etc.
 2 In my experience in some of the standard construction
 3 processes don't always work as well in Refurb as they do
 4 in New Build environment because of the way and timings
 5 that Clients have to make decisions, often reactively.
 6 So we often find that parts of the Project team get
 7 informed late in particular the Commercial side. Then
 8 it becomes hard work all round to catch up and
 9 reconciled what happened. Anyway I've put together this
 10 hybrid form from several others we have with the aim
 11 that it can serve as a record and audit trail of what
 12 has changed and why. It is only an overview sheet to
 13 use in conjunction with emails, RFI's etc. It will also
 14 highlight any likely financial or programme change so
 15 the Client doesn't get any surprises. If as a team we
 16 feel it will work then I'll add it to our monthly
 17 report."

18 Do you see that?

19 A. Yes, I do.
 20 Q. Do you remember receiving this document and the
 21 attachment?
 22 A. Yes.
 23 Q. Just before we go to the tracker that he proposed in the
 24 attachment, we can see he has said there that Rydon
 25 don't have a specific document to record change because

207

1 it's normally done via email records, RFIs, drawings.
 2 Would you have expected Rydon to have had a way of
 3 formally recording and managing design decisions?
 4 A. I think what -- RFIs is usually the methodology that
 5 contractors use, which stands for request for
 6 information, but it can become quite a clunky and
 7 administratively, you know, burdensome process.
 8 Q. Yes.
 9 A. And I get what he was talking about there on
 10 refurbishments, because sometimes, you know, there are
 11 uncertainties, you find something and you need a maybe
 12 sort of faster answer than on a new-build.
 13 So I supported his proposal of a simple change
 14 tracker to help with keeping an audit trail of what was
 15 needed, when.
 16 Q. Yes.
 17 A. But --
 18 Q. I suppose what I'm getting at is whether you were
 19 surprised that Simon Lawrence had to put one together
 20 for this project, in that there wasn't one that Rydon as
 21 a standard always used?
 22 A. Well, I read this as he felt that this would be
 23 an easier way of using this than using their other
 24 systems, which would have been RFIs. I'm familiar with
 25 other contractors that have very slick sort of online

208

1 tools, but again, they can be quite clunky and
 2 administrative to manage.
 3 Q. I think you have just said that you would agree with
 4 Simon Lawrence that there can be this distinction
 5 between new-builds and refurbishments in terms of time
 6 for decisions needing to be made, unexpected things
 7 flashing up, and you having to react.
 8 A. Yes.
 9 Q. Is that correct?
 10 A. Yes. You would expect that less on a --
 11 Q. On a new-build?
 12 A. -- on a new-build, that's --
 13 Q. Does that have the consequence that sign-off of the
 14 design decisions and design changes is often rushed, and
 15 had it become rushed on this project?
 16 A. It shouldn't have been, because a lot of -- what this
 17 was tracking wasn't actually finding out things like
 18 from the building necessarily. So it shouldn't have
 19 been rushed.
 20 Q. Had it become rushed on this project?
 21 A. So there had been -- part of the reason for having this
 22 tracker was to create more visibility, because I think
 23 definitely the TMO were feeling they were perhaps not
 24 given the timescale to consider drawings and respond,
 25 and this was a direct response to that, so that it could

209

1 be more transparent, more open and know what was coming
 2 down the line.
 3 Q. Yes.
 4 A. So there had been some instances where they'd had to
 5 make decisions quicker than perhaps the two weeks or so
 6 that would normally be allowed.
 7 Q. Yes.
 8 Let's have a look at the tracker he was proposing at
 9 this point. This is {ART00008592}. I think it's right
 10 that you did provide some comments on this, but is it
 11 right that you didn't have any comments on the structure
 12 or format of the tracker?
 13 A. It looked good to me. It was helpful.
 14 Q. You thought it was a helpful document?
 15 A. Yes.
 16 Q. So we can see on the left you get the description of the
 17 change, any related information in terms of the drawing
 18 numbers, who it's been requested by, the date of the
 19 request, when it's been resolved and signed off. Any
 20 cost and implication impact and programme impact are
 21 then recorded on the right-hand side.
 22 Moving on in the story, if we go to {ART00008532},
 23 this is an email from you to Simon Lawrence and
 24 Claire Williams about the tracker, and this is on
 25 12 November 2014. So Simon Lawrence had proposed this

210

1 on 24 October 2014, and you now, in mid-November, pick
 2 this up, and you say this:
 3 "Simon,
 4 "I am concerned that I have not yet seen the tracker
 5 distributed following the design meeting held on
 6 22nd Oct. I commented on this on Friday 24th Oct and
 7 thought it would be a good document and process to
 8 adopt. On the tracker were some short timescales for
 9 decisions put upon KCTMO to meet the design development
 10 programme and also a record of areas of design
 11 alteration to be carried out by your design team. I am
 12 concerned that, because the tracker hasn't been seen,
 13 some of these deadlines may have been missed."
 14 Do you see that there?
 15 A. Yes.
 16 Q. Then he says:
 17 "As we agreed at the meeting, Rydon are responsible
 18 for managing the design development process and for
 19 seeking approval for alterations to tender designs and
 20 comments on for construction drawings. I just want to
 21 make sure that appropriate and fair time is given to
 22 Maxfordham(sic) and TMO to review and comment on
 23 drawings. There have been some difficult, quick
 24 decisions required recently for TMO (Windows/metering)
 25 and I want to ensure that going forward these type of

211

1 things are avoided or recognised early to give time."
 2 Is it fair to say that you regarded this tracker as
 3 an important document at this time to make sure that
 4 design changes were properly considered by everyone who
 5 needed to consider them?
 6 A. Yes, and I was chasing to see what Simon had done with
 7 it. I mean, I wasn't engaged directly in the design
 8 develop -- you know, the design co-ordination, so Simon
 9 and Claire would, you know, be doing that directly
 10 without me. I'd only hear about it if Claire --
 11 you know, a decision had been made that needed
 12 instructing as my role as employer's agent.
 13 So it may well have -- at that time I was just
 14 concerned, well, I haven't seen anything more, and I was
 15 chasing him because I thought it was a good document and
 16 I didn't want Claire to be -- you know, any surprises
 17 going forward, and I wanted to make sure we were getting
 18 best value from the work that he'd already done.
 19 Q. Is it right that you also regarded it as an important
 20 document to ensure that decisions and approvals were
 21 recorded in an orderly way?
 22 A. Yes. I mean, I would still need to formalise decisions
 23 like instructions to the -- as employer's agent to the
 24 contract, but this was a sort of precursor to that,
 25 because there might have been things that changed, they

212

1 don't decide to do, et cetera.
 2 Q. Was it within your role to make sure that Rydon were
 3 managing the design approvals process in an orderly way?
 4 A. Yeah, to check that they had a system and process in
 5 place for managing the design.
 6 Q. Yes.
 7 A. I think --
 8 Q. Yes.
 9 A. -- that's reasonable.
 10 Q. Now, you discussed this tracker and these documents in
 11 your first witness statement -- for the transcript,
 12 that's {ART00008527/52}, paragraph 175 -- but you don't
 13 say what happened thereafter. Do we take it from that
 14 that this wasn't progressed beyond Rydon's draft? Can
 15 you help us as to what happened?
 16 A. I remember it being used more at the sort of -- as
 17 a document going forward. So I think it didn't die
 18 here; it was continued to be used.
 19 Q. Yes.
 20 A. But, again, because I wasn't in the design meetings,
 21 I didn't see all of the iterations of it going through.
 22 I would only see when a decision was made and therefore
 23 I needed to instruct the change as part of the contract.
 24 But ...
 25 Q. So, to your knowledge, was this tracker in fact used?

213

1 A. I think it was.
 2 MS GRANGE: Okay.
 3 Now, Mr Chairman, I note the time.
 4 SIR MARTIN MOORE-BICK: Yes.
 5 MS GRANGE: I am aware that this witness needed a slightly
 6 longer break before. Ideally I would, because we lost
 7 a little bit of time, perhaps go on for another
 8 ten minutes and finish this subtopic, but obviously
 9 subject to the witness feeling able to do that.
 10 THE WITNESS: I'm fine with that.
 11 SIR MARTIN MOORE-BICK: We're getting a little bit behind
 12 time, but would you feel able to carry on for
 13 ten minutes, perhaps quarter of an hour?
 14 THE WITNESS: Yes, absolutely.
 15 SIR MARTIN MOORE-BICK: Good, thank you.
 16 MS GRANGE: Thank you.
 17 So I just want to finish now and look at the design
 18 flowchart, picking up on this point about the design
 19 approval process.
 20 You say in your first witness statement -- this is
 21 paragraph 180 {ART00008527/54} -- that in December 2014,
 22 Claire Williams expressed confusion about the design
 23 approval process. Let's look at what you say there. So
 24 you say:
 25 "On 4 December 2014 I received an email from

214

1 Claire Williams in which she expressed that she still
 2 had some confusion on the design approval process. She
 3 explained that her assumption was that Max Fordham
 4 reviewed the drawings first and then the TMO would get
 5 the final version to comment on, but this was not what
 6 Rydon were doing. I recall that following this email
 7 I produced a flow chart to clarify the arrangements for
 8 signing off on design changes, which I circulated on
 9 5 December 2014. I believe that the reason for
 10 confusion was that there was more change than would
 11 normally be expected on a D&B project that was designed
 12 up to the level the Project had been at tender. My aim
 13 was that the chart I had prepared would control the
 14 process better. During Progress Meeting No. 6 on
 15 11 December 2014 it was agreed that the design approval
 16 process set out in the chart would be followed by the
 17 team."
 18 So that's what you say there, and you referred to
 19 this earlier in your evidence of you introducing this.
 20 Let's look at that flowchart. This is
 21 {ART00008757}. So this is I think a flowchart, and it's
 22 headed "Grenfell drawing approval process", and it's
 23 a draft. I think what we can see there is that there's
 24 a number of routes by which you get to construction
 25 issue drawings on the right-hand side. Is that correct?

215

1 A. Yes.
 2 Q. Now, did this chart only apply to the M&E aspects of the
 3 work, the M&E changes, or was it intended to apply to
 4 other parts of the project?
 5 A. No, it was all drawings from what was issued, like at
 6 the contract, through to construction.
 7 Q. I see. So even though we've got Max Fordham here in
 8 a number of the boxes --
 9 A. So it's --
 10 Q. -- are we to read this as having applied, for example,
 11 to the drawing approval process for any cladding
 12 changes?
 13 A. So it's not very easy because of the colours, but the
 14 bottom arrows are different colours. So you have
 15 contract drawing on the left --
 16 Q. Yes.
 17 A. -- and the colour for M&E changes is going out the top
 18 of contract drawings, because it would be an M&E
 19 proposed change from the contract to construction. So
 20 Max Fordham would look at -- I don't know, if they're
 21 changing the boiler arrangements, that will be something
 22 that would be within their sphere of reviewing.
 23 Q. Yes.
 24 A. So they would look at it, comment on it, and then if the
 25 change was agreed, it would be sent to Artelia for

216

1 instruction , and then, you know, we would instruct it
 2 and it would go to construction drawings.
 3 Q. Yes.
 4 A. So -- and if there was no change between the contract
 5 drawings and construction drawings, that's the arrow
 6 that comes out the bottom, that just goes straight from
 7 one to the other.
 8 Q. Yes. Yes, I understand that.
 9 A. And architectural changes, which would be like cladding,
 10 is the middle arrow. So TMO review the change, comes to
 11 us, instruct and then goes to construction.
 12 Q. I see. So you --
 13 A. But that's if the contract --
 14 Q. So if there's a change to a contract drawing in relation
 15 to the cladding design, it would go first to the TMO to
 16 review the change --
 17 A. Yeah.
 18 Q. -- and then, if the change was agreed, the revised
 19 drawing was sent to Artelia for instruction by either
 20 the TMO -- well, here it would be the TMO.
 21 A. Yeah.
 22 Q. And then you go straight to the construction drawing.
 23 A. Yes.
 24 Q. I see.
 25 So is there a step in this process whereby the

217

1 change is reviewed by a design professional? We can see
 2 that that would be the case for the M&E change where
 3 Max Fordham review the change, but what about the
 4 cladding change in the middle route?
 5 A. So I think at this time we knew that the TMO were
 6 performing that duty. That's why that middle box is
 7 there.
 8 Q. Yes. And had the client design adviser been appointed,
 9 would it have gone to the client design adviser --
 10 A. Yes.
 11 Q. -- and then the TMO?
 12 A. Yes.
 13 Q. Where does Rydon sit in relation to this process?
 14 A. So they're in control of the overall design, so their
 15 duty is to take contract drawings and develop them up to
 16 construction level so they can build it. So at contract
 17 we'd -- the design had been developed to a certain RIBA
 18 stage, and there were still further design stages to go
 19 through before they could actually be built. So Rydon
 20 sort of sit as overall --
 21 Q. Overarching all of this?
 22 A. Yes, yes.
 23 Q. I see.
 24 A. What I tried to pull out in that little box there, "TMO
 25 wish to alter the tender drawings" -- because part of

218

1 this was also Rydon saying to me, "Look, we were just
 2 going to build the contract drawings, we don't -- we're
 3 not proposing -- we don't really want to propose
 4 changes, we just want to make this simple, what you have
 5 asked for we will build", and I wanted to factor in:
 6 well, if TMO want to change a contract drawing, that
 7 needs to be also factored in, instructed, so that it's
 8 fair to Rydon to know, "Okay, we've got to change that".
 9 Q. I see.
 10 We saw, as we just read in your first witness
 11 statement, you explained that the reason this flowchart
 12 was needed was because the project had more change than
 13 would normally be expected on a D&B project that was
 14 designed up to the level the project had been at tender;
 15 that's correct, isn't it?
 16 A. Yes.
 17 Q. Did the fact that there were more than the usual number
 18 of changes prompt the need for this process, or would
 19 you have expected a similar process to be in place in
 20 any event?
 21 A. So I put this -- I mean, I think the process -- this was
 22 to help clarify because there was -- for Claire, really.
 23 This is not unusual within, you know, any construction
 24 project.
 25 Q. I see.

219

1 Is it right that before you proposed this draft
 2 flowchart, there was no agreed process for circulating
 3 and approving design decisions?
 4 A. No, I think what was happening was it was happening in
 5 design meetings between Rydon and TMO, and there was
 6 just -- it was getting more intricate and more volume,
 7 hence why needing more governance and structure and
 8 clarity on how everyone was going to do it.
 9 Q. I see.
 10 Given that Rydon was sat really above this and had
 11 overarching responsibility for getting that design
 12 approval, should it have been Rydon in fact proposing
 13 this sort of system and flowchart on the project?
 14 A. Yes, it wouldn't have been unusual for them to do that.
 15 I took it upon myself to help with clarifying roles, and
 16 that's my role, so it could have been as well.
 17 Q. I see.
 18 We can see that you sent the flowchart to
 19 Claire Williams on 5 December 2014. For the transcript,
 20 that's {ART00008600}.
 21 Can you recall, was there any discussion between you
 22 and Claire Williams about it after you sent her this
 23 flowchart?
 24 A. Yes, I think I walked it through with her similar to
 25 what I've just said here.

220

1	Q. Yes.	1	(Pause)
2	We can see if we just look -- this is the last	2	Right, well, thank you, Ms Grange.
3	reference I'll take you to and then we'll stop -- at	3	MS GRANGE: Thank you.
4	{ART00003302}, these are the minutes of progress meeting	4	SIR MARTIN MOORE-BICK: 10 o'clock tomorrow.
5	number 6 on 11 December 2014. We can see in the	5	MS GRANGE: Thanks.
6	"Present" list that you and Claire Williams are present.	6	(4.41 pm)
7	If we go to page 2 {ART00003302/2} under item 3.1, we	7	(The hearing adjourned until 10 am
8	can see it says under the heading "Design Development":	8	on Thursday, 8 October 2020)
9	"All agreed to follow presented drawing approval	9	
10	process presented by PCB."	10	
11	Is that you there, PCB?	11	
12	A. Yeah, my middle name snuck in there somehow.	12	
13	Q. Yes. We won't ask you what it is.	13	
14	A. Charles.	14	
15	Q. A fine name.	15	
16	A. Thank you.	16	
17	Q. Did you present the flowchart at this meeting?	17	
18	A. I did.	18	
19	Q. Was there any discussion about it at this meeting?	19	
20	A. Definitely. It was a topic of, you know, importance at	20	
21	the time because of, you know, the concerns raised by	21	
22	both Claire and Rydon, so ... I mean, it wasn't a long	22	
23	discussion, I think everybody said, "Actually, that	23	
24	helps, it clarifies, let's follow this". So that was	24	
25	the point of doing it, so I was pleased.	25	

221

223

1	Q. Okay.
2	To your knowledge, was that then followed going
3	forwards, including on non-M&E elements?
4	A. I believe it was followed, yes.
5	MS GRANGE: Yes.
6	Mr Chairman, thank you very much for letting me have
7	that extra time.
8	SIR MARTIN MOORE-BICK: Is that a convenient point to stop?
9	MS GRANGE: Very convenient moment, yes, thank you.
10	SIR MARTIN MOORE-BICK: Thank you.
11	Well, Mr Booth, we didn't go on longer than
12	I thought we might. So we will stop there for the day.
13	THE WITNESS: Okay.
14	SIR MARTIN MOORE-BICK: I must ask you, I'm afraid, to come
15	back tomorrow to answer some more questions.
16	THE WITNESS: That's fine.
17	SIR MARTIN MOORE-BICK: 10 o'clock, please, to start, and
18	please don't talk to anyone about your evidence or
19	anything related to it once you leave the room.
20	THE WITNESS: Of course.
21	SIR MARTIN MOORE-BICK: All right? So we will see you at
22	10 o'clock tomorrow.
23	THE WITNESS: Thank you very much.
24	SIR MARTIN MOORE-BICK: Thank you very much. Would you like
25	to go with the usher.

222

1	
2	INDEX
3	MR SIMON CASH (continued)1
4	Questions from COUNSEL TO THE INQUIRY2
	(continued)
5	
	MR PHILIP BOOTH (affirmed)108
6	
	Questions from COUNSEL TO THE INQUIRY108
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	

224

225

A	94:25 96:4,7,7,14 97:1	191:25 192:9 194:16	74:12,20 83:23 95:8	205:18 207:3 208:21	apply (6) 184:17 185:23	architects (3) 145:1
	98:17 114:1 119:15	197:24 198:11 202:2	96:20 98:7 120:11	amassed (3) 80:22	188:11 191:7 216:2,3	171:24 173:16
	129:14,17,23 130:1	218:8,9	121:8 151:6 153:4	82:11 90:2	applying (1) 185:7	architectural (10)
able (15) 17:1,4 24:11	136:1 141:6 159:8	advisers (2) 161:25	158:10,16 162:5	amend (2) 85:10 86:13	appoint (23) 38:17	152:25 156:4,7,19
31:20 37:2,6 43:1 47:5	168:2 170:15 180:6,10	182:25	165:19 182:17 185:22	amended (1) 48:25	45:18 46:11,13 47:2,5	165:1,10 174:12,16
60:19 75:16 81:25	194:7,19 201:18 205:4	advising (5) 64:16 67:7	187:22 188:3 190:24	amongst (2) 132:18	52:11 55:20 58:7	199:25 217:9
97:20 186:5 214:9,12	209:17 218:19 221:23	71:22 72:15 168:5	209:3	168:15	60:25 61:5,10	architecturalservices (1) 166:17
abolished (2) 45:2	ad (2) 42:1 111:18	advisor (4) 166:25	agreed (23) 7:3,21,23	amount (3) 21:4 22:5	63:16,23 72:19 96:17	area (5) 77:21
62:10	add (4) 85:11 86:13	167:6,9 184:16	82:15 88:1 92:3 94:24	193:10	163:23 170:16 174:22	
above (7) 6:7 9:1 16:11	171:16 207:16	advisors (1) 7:25	125:1,2,6 131:19	analyse (1) 17:5	181:8,9 187:13 190:4	arise (1) 18:19 187:4
17:21 189:10 191:11	added (2) 57:20 181:18	advisory (1) 97:19	132:2 142:22 147:7	analyses (1) 33:6	appointed (33)	areas (6) 93:17 94:2
220:10	adding (1) 153:25	aesthetics (1) 205:20	151:4 171:13 205:13	analysis (12)	12:10,21 14:5,15,24	184:19 186:13 191:8
absolutely (6) 37:17	addition (3) 13:16	affect (1) 195:15	211:17 215:15 216:25	4:6,9,12,18,22 5:10	21:13 22:15 38:19,21	211:10
62:17 124:20 155:23	128:13 189:23	affirmed (2) 108:6	217:18 220:2 221:9	10:24 29:24 30:6,11	44:7 47:8,10 49:19	arent (1) 93:16
200:14 214:14	additional (14) 16:10	224:5	agreeing (1) 77:1	35:22 36:10	58:10 89:5 104:13	arises (4) 7:24 8:6 41:1
academy (1) 121:21	28:14 32:13 66:7	affordability (1) 131:23	agreement (6) 7:4 95:3	anderson (4) 15:22 16:9	128:6 150:14 159:24	51:17
accept (21) 16:25 19:13	101:8,8 137:1 178:25	affordable (1) 9:24	136:18 137:4 143:1,2	124:7 161:2	161:12 165:1,9,21	arising (1) 162:21
25:4,7 26:20 30:14	179:20 180:17,20	afforded (1) 130:16	ahead (2) 94:4 180:13	andor (1) 91:3	167:14 171:1 174:19	arm (1) 97:20
35:20 40:23 49:21	192:22 196:3 198:1	afraid (3) 106:22	ail (2) 152:23 154:21	andrew (15) 57:3,10,15	189:25 191:23	around (18) 70:5
61:2,8 78:24 79:24	additions (1) 131:24	122:12 222:14	aim (2) 207:10 215:12	60:21 73:3 90:6,9,24	195:8,14 197:13	114:10,19 116:1
118:25 132:25 135:16	addressed (3) 31:14,14	after (27) 2:8,18,19	al (1) 57:17	91:8,10,18,20 93:7	202:18 218:8	120:10 129:2,20
136:8 141:12 152:1	123:11	7:20,23 23:8 31:20	alarm (1) 142:16	96:6 97:14	appointee (1) 32:19	130:10 132:3 136:17
169:7 186:5	addressing (1) 30:16	36:8 41:22 44:22,22	alarmed (1) 164:7	andrzej (1) 15:7	appointing (8) 56:6	154:14 178:10 186:25
acceptable (3) 14:17	adequacy (2) 21:5,20	46:7,9 47:6 49:18 68:3	albeit (2) 38:16 59:24	another (13)	96:14 149:9 179:8	187:1 203:5 204:16
96:8 169:8	adequate (3) 20:11	113:13 114:4,5 116:7	alive (2) 55:5 61:10	32:15,16,20 52:10	190:12 197:24	205:20,21
acceptance (1) 18:18	22:5 77:2	133:19 159:24 166:7	allow (1) 66:18	70:11 91:17 116:2,12	198:1,10	arrange (1) 94:2
accepted (5) 10:22	adhere (1) 163:18	178:12 179:23 202:18	allowance (1) 5:15	138:12 156:5 175:13	appointment (32) 15:14	arrangement (2) 67:8
14:19 21:12 78:2	adjoined (1) 223:7	220:22	allowed (3) 4:6 5:14	200:4 214:7	36:15 39:11 41:22	174:7
155:12	adjournment (1) 123:2	afternoon (3) 108:4	210:6	answer (8) 8:18 33:15	45:11 58:11 61:16	arrangements (5) 76:25
accepting (1) 202:4	adjust (1) 7:12	184:13 198:25	almost (2) 134:13	52:17 60:19 81:21	66:20 92:19 104:19	77:2,7 215:7 216:21
access (3) 11:16 15:19	adjustment (1) 8:9	afterwards (3) 154:4	185:25	192:1 208:12 222:15	114:8 118:24 119:1	arranging (1) 77:1
77:21	administer (1) 117:16	181:19 182:2	alone (1) 94:12	answered (2) 6:17 54:10	129:15 133:10	arrived (1) 3:17
accordance (1) 177:23	administering (2)	again (35) 2:17 21:3	alongside (1) 28:17	answers (2) 28:22 29:25	135:8,10,20,23 144:17	arrow (2) 217:5,10
according (3) 98:6	118:3,15	31:1 32:1 35:9 42:1	already (21) 23:15	anybody (11) 10:24	145:17 146:5 150:8	arrows (1) 216:14
196:15,23	administration (4)	44:5 49:16 50:6 63:25	24:19 33:1 58:16	20:6 27:5,7 38:19	155:5 159:2 177:7,11	art (1) 138:24
accordingly (2) 97:11	118:10 119:21,23	78:2 82:13 83:12	59:23 107:8	39:19 43:14 44:10	184:15 189:17	art00000088 (1) 15:6
177:9	194:3	90:17 103:25 105:15	144:5,7,14	81:22 109:22 120:18	191:1,15 202:1	art00001219 (1) 126:23
account (4) 152:13	administrative (5)	109:16 111:2,4 116:15	149:6,9,10,15 161:12	anyone (14) 13:22 16:5	appointments (6) 12:2	art000012192 (1) 128:1
178:2,7,8	110:9 117:20	148:12 149:5 156:6	189:11 190:3,20	24:23 52:8 70:19 94:1	34:11 104:22 134:17	art000012194 (1)
accountant (1) 120:16	119:11,20 209:2	166:13 171:19	191:1,5 206:14 212:18	103:7 122:19 129:25	190:21 191:6	127:18
accreditation (1)	administratively (1)	182:14,23 183:13	also (47) 8:1 20:23	139:14 156:22 157:11	appreciate (2) 154:6	art000012195 (1) 127:3
120:17	208:7	186:15 188:11 198:4	31:19 33:11 34:9 35:4	183:14 222:18	174:18	art00002111 (1) 164:12
achieve (3) 6:22 31:10	admittedly (1) 199:5	199:20 202:17 209:1	45:1 47:22 48:3 51:22	anything (24) 6:15	appreciated (1) 108:17	art0000211136 (1)
102:8	adopt (1) 211:8	213:20	53:12 55:18 80:17	10:5,5,13,13 30:10,13	approach (4) 31:8 57:25	166:12
achieved (5) 3:3,24 7:5	advanced (1) 37:2	against (3) 53:1 94:14	83:3 88:15 96:5 100:9	70:20 78:12 87:9 91:2	58:19 195:23	art0000211140 (1)
8:8 120:17	advantage (1) 115:1	188:5	111:5,7,14 114:16	94:10 102:11,13	appropriate (6) 42:8	166:20
achieving (1) 8:2	adversarial (1) 190:25	agent (65) 21:7,16	117:4 118:13 123:23	106:3,5 108:19 122:20	43:15 44:3 178:5	art000021115 (1)
acknowledged (1) 196:3	adverse (2) 29:22 30:5	27:15 40:6 59:19	141:9 150:6,9,22	148:17 193:12 198:6,6	186:2 211:21	164:23
acm (2) 5:20 11:5	advice (15) 17:1 18:4	111:11,13	165:5 168:5 173:5	212:14 222:19	appropriately (1)	art00002256 (2) 2:14
acop (4) 22:15 74:8	21:24 22:25 23:12	114:13,16,25 115:10	174:24 175:19 179:13	anyway (2) 7:12 207:9	178:13	35:7
85:20 86:12	39:14 42:1,4 82:19	116:8	180:14 182:19 189:25	anywhere (2) 77:4	approval (13) 18:6	art000022562 (1) 2:21
acronyms (1) 178:9	137:6,9 174:4 196:2	117:3,13,15,18,21	195:8 196:15 199:9	129:5	158:7,9,17 211:19	art000022564 (1) 35:12
across (6) 23:18 64:19	198:2 199:24	118:15,17,23	200:22 206:24 207:13	apart (1) 28:9	214:19,23 215:2,15,22	art00002752 (1) 180:25
120:7 126:13 178:21	advise (13) 40:15 41:1	119:2,6,9,11 120:6	211:10 212:19 219:1,7	apmp (1) 110:15	216:11 220:12 221:9	art000027522 (1) 181:6
188:23	49:21 57:19 69:20,24	121:6,10 123:21	alter (2) 197:1 218:25	apologies (1) 190:14	approvals (2) 212:20	art00003302 (1) 221:4
acted (1) 128:12	84:3 137:18 148:24	124:15,22 126:20	alteration (1) 211:11	appalling (2) 97:13 98:6	213:3	art000033022 (1) 221:7
acting (7) 133:13 134:6	150:3,7 165:9 166:16	128:20 134:10 135:9	alterations (1) 211:19	apparently (3) 53:16	approve (3) 159:16	art00004398 (2) 53:10
135:6,18 141:25	advised (9) 58:17	138:25 139:16	alternative (3) 3:11	90:12,13	176:9 201:21	54:23
142:3,8	131:21 161:11 162:3	141:1,22 142:23	77:2 168:3	appear (4) 116:12	approved (17) 17:20,24	art00004399 (1) 53:17
action (7) 14:17,21,23	167:15 168:20 174:6	144:20 146:15 147:20	although (3) 8:1 59:1	126:15 152:24 154:22	18:3 21:9 22:16 84:13	art00004418 (1) 55:10
57:23 59:1 73:19	181:12 202:10	148:22,23 149:7,24	85:19	appears (4) 95:21	131:21 133:2,7 160:22	art00004765 (1) 86:19
129:9	adviser (51) 71:12,20	152:6 153:17 155:9,21	altogether (1) 11:20	168:23 181:17 199:17	173:7 196:9,16,22,23	art00005461 (1) 99:13
actively (1) 153:19	72:3,10,20 74:9,9	157:25 158:10 161:15	aluminium (5) 3:5,8,12	append (1) 78:3	197:7,8	art0000574245 (1)
activities (1) 137:1	75:24 76:2 156:12	176:9,11 179:1,4	113:1,1	appendix (4) 32:4 33:2	approving (1) 220:3	142:24
actual (5) 54:8 139:11	164:10,25	182:18 189:12	alun (13) 11:25	137:2,3	april (13) 2:13 35:8	art0000574247 (1)
141:19 159:2 186:22	165:4,6,9,15,20,21,23	191:13,20,22 192:5	15:2,3,8,21 16:8	appleyards (14) 12:1,4	39:23 44:22 45:14	149:23
actually (55) 6:3 9:12	166:14,15,22	212:12,23	17:12,15,25 20:10	13:9 14:21 15:20	47:13,15 113:7 114:10	art0000574248 (4)
10:19 16:13 20:7,12	167:22,24	agents (2) 95:19 115:15	21:16 160:22 161:15	16:1,16 17:12	129:3 138:14 152:6	103:25 143:5 150:20
21:9,24 26:11 31:16	168:17,20,24 169:4,22	ago (6) 35:10 42:18	always (17) 35:25 60:22	113:6,12,19 128:12	153:4	157:25
32:13 33:17 34:3	170:17 171:1,21 172:2	93:18 110:19 111:2,4	106:8,10 125:20	130:4,17	architect (8) 74:19	art0000574261 (1)
36:25 38:16 46:22	174:19 175:13 178:20	agree (29) 16:5 19:25	134:13,17 142:3	applicable (1) 29:10	144:12 146:2,19	82:14
50:9 52:7 61:22 62:7	179:5 181:8,10 184:10	22:18,24 25:24 56:8	147:18 165:11,15	applied (3) 34:18 113:2	157:18 162:24 177:7	art0000574262 (1) 83:5
68:5 69:17,24 73:9	185:4 186:4 187:23	59:18 66:17,22	197:18,20 204:17	216:10	200:6	art0000574263 (1) 31:1
74:10 75:9 89:16 93:5						

art000057428 (1) 31:22	art000094167 (2) 60:12	21:10,14 22:1 42:18	automatically (1) 65:4	71:17 84:15 88:14	217:4 220:5,21	151:15
art00005918 (1) 4:21	68:11	65:12,17 81:13 133:12	autonomously (1) 24:12	91:13 100:8,9,13	beyond (5) 55:23 89:17	bruce (6) 15:7
art0000591820 (1) 5:4	art00009420 (1) 109:14	142:5 143:16 168:1	available (14) 78:23	109:22 112:9 124:6	92:20 105:7 213:14	17:12,16,21 141:23
art00006195 (2) 62:20	art000094202 (1)	169:8 197:5 219:5	79:1 80:9,24 81:12	130:7 147:19 150:20	bidder (1) 2:9	142:16
71:16	176:22	asking (7) 52:25 53:9	85:18,23,24 86:1,16	156:13 158:23 161:22	bidders (3) 140:8,14,16	budget (4) 8:1,7 17:5
art000061962 (1) 62:8	art000094203 (2)	92:23 137:12 181:23	89:15,24 90:3 92:24	164:9 185:10 199:13	bidding (1) 140:9	180:15
art00006247 (1) 11:22	182:10 192:21	198:12 202:5	avoided (2) 106:6 212:1	206:22 207:23 214:6	big (2) 166:2 206:6	build (20) 37:8 38:13
art00006279 (1) 172:3	art000844511 (1)	asks (1) 48:24	awaiting (1) 15:16	218:19 220:1	bill (1) 115:24	39:9 41:15
art000062796 (1) 172:6	161:13	aspect (1) 119:21	award (1) 172:18	begin (1) 1:4	bit (22) 1:15 12:3	117:16,17,20
art00006286 (2) 48:11	art00085275 (1) 116:1	aspects (4) 42:3 145:23	aware (38) 3:7,23 5:21	beginning (2) 160:3	13:1,2 16:24 37:19	118:19,25 144:25
52:21	art00093513 (1) 91:8	174:16 216:2	6:10,10,15 13:20 16:5	164:5	75:25 85:9 120:10	171:5 174:25 184:19
art000062862 (1) 49:25	artelia (138) 1:6 2:16	assess (1) 202:24	25:20 27:1 30:1,8	begins (1) 128:3	129:1 130:23 140:19	186:13 189:24 197:5
art000062866 (1) 49:13	4:13,22 10:24 13:3	assessing (2) 21:4	35:15 41:21 42:10	behalf (5) 21:8,8 40:11	145:11 153:15,23	207:4 218:16 219:2,5
art000062867 (1) 48:18	14:11,18 16:5 17:7	188:17	45:21,22 46:2,25 47:4	134:18 176:1	166:6 179:12 193:24	buildability (1) 155:6
art00006358 (1) 124:5	18:5 20:6 21:1,3,24	assessment (5) 25:25	76:19 100:7 111:13	behind (2) 121:20	201:10 202:21	building (32) 18:19,23
art00006390 (1) 138:12	22:4 23:10,10 24:23	98:7 203:18 204:14,20	123:15 125:4 126:2	214:11	214:7,11	19:5,25 22:1 26:8
art000064641 (1)	25:4 27:5,7 28:10	assessments (2) 178:6	142:7,11 143:8 147:19	being (65) 7:2,14 9:25	bite (1) 97:20	27:21,22 28:24 29:22
195:19	29:14 30:14 31:12	200:23	148:6 156:7,22 170:18	11:3,4,8 12:17 22:1	bits (1) 145:5	31:13 33:7 35:23
art000064642 (2)	33:24 38:7 39:14,22	assigned (3) 114:10	194:19,21 204:20	24:11 26:11 27:23	blake (2) 99:17 100:13	69:13 80:9 112:24
184:11 195:5	40:1,15 42:14,19,22	116:2,12	214:5	31:20 33:6 35:2,3,15	block (1) 19:11	117:16 118:10
art00006523 (1) 175:16	43:14 47:1,19 48:1,9	assist (2) 14:11 149:8	away (2) 89:12 182:1	39:2 42:10 51:23	blythe (6) 2:16 115:10	121:14,21 148:25
art0000654468 (1)	49:15 50:13,18,23	assistance (2) 14:10	ay (2) 12:4 14:2	52:16 56:16 61:8	136:17 138:15,20	151:9 155:25
61:23	51:19,23 52:2,7,9,15	82:19		64:12 67:11 68:1 69:8	184:14	171:15,16 173:3,13
art0000654470 (1) 62:1	53:1,4,25 54:3,6,14,17	assistant (5) 113:13	B	88:11 89:4 91:2	board (4) 65:4 115:3	178:13 188:18
art00006629 (1) 152:4	55:5 56:1 57:18,23	115:15 138:20	b (2) 110:20 173:8	104:15 113:2,13	180:8 203:11	196:15,23 209:18
art00006672 (1) 100:17	58:17 59:14,20 60:22	148:11,15	b12 (2) 5:5,5	126:20 128:22,24	boiler (1) 216:21	buildingarea (1) 77:1
art00006731 (1) 60:15	61:17 62:16 67:6	assisted (1) 115:9	b4 (3) 29:19 31:13	129:6,13 130:3 132:17	boilers (2) 200:24	buildings (4) 43:12
art000067317 (1) 60:20	71:11 73:4 76:14	assisting (3) 75:13	35:23	134:10,24 135:24	201:14	112:11,13,18
art000073992 (1) 6:17	80:12 81:1 82:15	106:14 108:15	back (50) 2:6 10:18	137:16 140:21 145:3,7	booth (14) 2:15 107:17	built (1) 218:19
art000073993 (1) 3:21	86:25 90:5 92:7	associate (1) 24:9	22:12,15 31:3,22	155:8,11 163:7 164:7	108:5,6,7 122:11	bullet (6) 29:7 31:6
art00008445 (1) 160:18	94:1,14 95:16,17,20	associated (5) 92:1	44:15 52:21,23 54:23	166:2,7 168:2 177:21	123:4,9 131:16 138:24	63:21 64:10 65:5
art0000844510 (1)	96:11,13 98:3 113:13	93:20 94:6 117:18	57:8 58:5 63:25 70:17	178:15 186:19 187:11	183:12,25 222:11	71:18
160:24	115:3 117:7,7	145:22	71:16 80:5 82:14	193:21 194:1 195:25	224:5	bundle (3) 93:20 94:5
art0000844515 (1)	123:10,18 124:21	association (3)	90:25 91:18 93:18,22	196:2 197:18 204:20	born (1) 110:22	95:9
162:11	125:8 128:18 129:25	110:10,14 126:19	103:6 105:25 106:2	206:12 213:16	both (18) 15:16	burdensome (1) 208:7
art0000844516 (1)	132:8,15 133:2,6,21	assume (5) 46:2 51:18	126:2 130:15 138:8	belief (1) 120:19	19:21,25 20:2	burrows (24) 47:22
163:15	134:3,6 135:6,18	57:25 60:3 199:8	143:12,14,18	believe (45) 9:6 12:12	21:2,6,25 48:13 93:22	48:1,6,21 49:16 52:17
art000084453 (1)	136:13 137:11 140:12	assumed (3) 142:3,10	147:2,4,18 149:23	14:4 16:9,11 18:4 19:7	99:24 112:15 114:24	57:11 62:5,21 63:22
160:20	141:16,21,24 142:3,8	204:17	150:19 157:24,25	30:18 33:4,11,16	115:8,15 120:1 165:8	69:23 70:2 71:19
art00008527 (2) 109:3	143:13 144:8 148:9,14	assuming (3) 29:25	160:8,14 177:19	36:14 41:11,14,20	168:25 221:22	73:5,7,18 86:20
110:3	151:5 155:16	60:18 93:10	183:13 194:1,11,22,23	42:22 47:8 52:10	bottom (18) 17:13	87:3,10 90:6 91:18
art0000852711 (1)	156:12,23 158:2 165:8	assumption (4) 52:4	195:4 197:6 199:7	63:4,6,9 65:14,23	49:14 50:1 53:21 57:2	93:7 94:24 96:4
196:6	170:13 173:17 174:4	142:12 190:23 215:3	202:9 222:15	66:18,25 74:7 77:8	58:22 82:22 90:23	87:3,10 90:6 91:18
art000085272 (1) 112:1	178:2 189:10,23	assurance (1) 163:24	background (1) 110:1	82:2,3 94:24 95:6,13	110:5 136:20 138:8	23:5,10,25 24:23,24
art0000852744 (1)	190:3,7,12 191:5,11	assurances (1) 185:11	backwards (2) 62:25	96:23,25 99:10 104:12	161:6 162:19 164:23	47:14,18 81:16 82:2
187:18	192:17 198:12 201:21	assured (1) 189:5	64:7	120:14 127:23 149:2	172:5 184:12 216:14	123:24
art0000852749 (1)	216:25 217:19	aston (1) 110:8	badges (1) 120:21	156:24 157:7 177:11	217:6	bushells (1) 24:1
200:16	artelias (29) 4:5,8 20:19	asyougo (1) 85:22	bailey (3) 63:2,3,17	199:11 215:9 222:4	box (5) 84:19 161:22	business (1) 24:10
art0000852752 (1)	22:10,13 26:17 33:20	attached (5) 50:3,5	balances (1) 183:6	believed (2) 141:24	162:2 218:6,24	businesss (1) 74:8
213:12	40:6 41:10,12,17 81:5	58:11 91:21 206:22	bands (1) 170:3	193:4	boxes (1) 216:8	buy (1) 149:14
art0000852754 (1)	82:13 83:23 94:19	attaches (1) 53:15	bar (1) 186:7	believes (1) 68:13	boxing (4) 184:20	
214:21	97:1,12 98:5 104:10	attachment (2)	based (6) 14:5 27:22	bell (1) 27:11	186:14 188:2,8	C
art00008532 (1) 210:22	143:7 147:5,15 149:3	207:21,24	44:7 67:6 81:11 148:1	below (6) 57:16,20	break (16) 70:12,16	c (4) 25:16 83:8
art00008591 (1) 169:22	152:13 172:8 188:1	attempting (2) 199:23	basic (2) 44:17 193:8	83:19 93:12 138:23	71:3,17 103:3,12,17	111:5,14
art00008592 (1) 210:9	189:17 191:1 198:13	200:19	basically (1) 206:24	162:2	107:18 108:1,22	call (6) 65:6 94:3 97:10
art00008600 (1) 220:20	asandwhen (1) 42:8	attend (1) 26:10	basis (13) 18:2 36:22	benefit (6) 6:23 7:6,9	122:7,13 183:10,12,23	120:18 135:3 157:2
art00008627 (1) 198:19	asbestos (1) 206:5	attendance (1) 100:3	37:2 41:21 42:4,5,9,11	8:7 10:6,14	214:6	called (5) 4:12,22 5:10
art00008757 (1) 215:21	ashton (3) 17:15,25	attended (1) 111:5	78:15 85:22 87:25	benefitted (1) 3:24	breakdown (1) 10:25	113:6 178:23
art00008782 (1) 136:16	161:23	attention (2) 137:20	92:19 126:21	best (6) 9:22 92:4	brief (9) 126:23	calling (2) 136:5 142:13
art000087822 (1)	ashtons (1) 105:13	151:16	aud (2) 207:11 208:14	106:17 158:20 193:5	127:10,24 131:18,21	calls (1) 95:11
136:23	aside (1) 39:24	audit (2) 207:11 208:14	august (5) 105:6 123:11	212:18	132:3 133:7,22 164:2	came (18) 12:21
art00008861 (1) 206:16	ask (29) 1:9 17:20	august (5) 105:6 123:11	181:1 184:12 195:6	better (8) 1:19 106:9,11	briefed (1) 93:13	27:6,16 46:21
art00009106 (1) 131:7	40:13 59:7 65:10	177:1,5,8,10	45:22 81:24 113:18	179:12 187:19,23,24	briefing (2) 124:12	67:1,21,24 68:7 99:10
art00009332 (1) 56:21	84:22 99:1 102:22	auk (6) 51:13,14	become (13) 6:10,15	215:14	130:8	104:8 115:3 126:13
art00009351 (2) 90:4	103:23,24 105:24	177:1,5,8,10	28:12 33:12 64:8 86:1	between (31) 4:1 9:9,16	briefly (3) 79:10 107:16	143:14 149:5 180:8,8
93:6	107:21 108:20 110:13	auks (3) 177:2,3,7	111:11 143:19 151:10	10:1 16:20 21:18	162:11	188:17 204:2
art000093512 (1) 91:17	114:22 117:2 122:15	author (2) 131:10,11	199:13 208:6	24:23 34:2,11 40:13	brigade (1) 26:9	cannot (5) 37:11 49:20
art000093513 (1) 73:2	153:2 164:10 170:2	authored (2) 138:15	209:15,20	44:21 45:14 48:6	bring (3) 33:7 110:4	67:7 68:16 93:14
art000093514 (1) 90:8	171:19 183:13 194:5	160:21	becomes (5) 81:12	55:25 64:7 69:24	146:21	cant (28) 3:10,13 9:10
art00009356 (1) 97:5	201:2,3 202:21 206:15	authorities (1) 118:14	85:18,23,24 207:8	55:18 96:9 116:14	british (1) 172:21	12:12 19:23 23:20
art000094164 (2) 51:3	221:13 222:14	authority (5) 24:12	becoming (1) 100:25	117:3,13 136:16	broader (1) 152:14	29:2 33:16 36:2,25
71:10	asked (19) 3:11 15:20	118:21 134:12,25	before (33) 2:13 3:7	139:4,15 140:15	broadly (1) 119:6	42:25 56:23 60:8 70:4
art000094165 (1) 51:15	16:1,19 17:25	141:3	15:23 20:4 35:9 38:6	175:21 178:19 209:5	brought (2) 150:16	73:16 76:18 78:6
			42:17 44:1 47:15			

81:18 90:21 98:24	56:10,17 62:9,10 79:6	52:25 66:22 143:12	clarifying (3) 144:18	closer (1) 188:9	188:16	concern (7)
99:4 101:17,18	81:2,25 82:15 85:21	155:5 163:10 169:2	190:25 220:15	closure (1) 97:15	competence (1) 178:5	101:7,9,16,23 102:1
102:13,15 110:18	86:24 87:2,5,13,18	177:22 213:4	clarity (2) 130:24 220:8	club (4) 184:20 186:14	competency (5)	199:3,19
114:1 127:11	88:3,10 123:23 177:8	checked (7) 2:17 78:19	clause (4) 164:24	188:2,8	23:1,12,16,23 24:25	concerned (10) 16:14
capabilities (1) 135:12	189:11,12 190:8,13	138:16 160:22 163:6	166:13,21,24	clunky (2) 208:6 209:1	22:14	44:19 75:8 171:25
capacity (1) 93:13	191:13,20,22 192:5	194:22 199:10	cleaning (1) 107:18	code (2) 22:16 84:14	93:17 94:2 126:13	193:11 195:15 202:23
capital (2) 75:10 126:7	cdmcsic (1) 190:4	checking (15) 20:16	clear (31) 45:23 49:2	cold (1) 94:4	175:7	211:4,12 212:14
care (2) 112:5 149:21	cdms (1) 44:18	135:23 155:20,24	55:24 62:17 64:2	colin (10) 47:18,23 48:6	compile (2) 66:19 98:2	concerns (9) 99:23
carried (11) 23:25 35:3	ceased (1) 116:4	156:1 169:13,19	96:15 108:25 124:20	49:16 52:12 53:11	compiled (2) 88:11	170:4 184:19 186:12
37:10 40:10 41:7,9	ceases (1) 63:14	173:2,6 175:1,3	125:23 135:10 137:13	54:3 55:11 58:5 94:1	105:6	198:25 199:4 200:18
112:20 177:6 178:11	centre (1) 121:21	176:14 182:16 194:15	139:20 140:15 141:21	colin james artelia (1)	compiling (2) 85:16,21	201:6 221:21
201:22 211:11	certain (3) 105:24	198:7	147:5,15 148:9,13	54:1	complaint (1) 99:16	concluded (1) 191:4
carry (11) 23:18,21	143:5 218:17	checks (3) 23:25 163:24	152:24 154:22,25	collaboration (1) 9:5	complaints (1) 101:23	condition (2) 18:19,21
31:16,17 33:24 36:2	cetera (3) 26:10 34:8	183:6	155:23 157:17 162:7	collaborative (1) 203:12	complete (40) 8:7 34:25	conditions (4) 123:16
37:10 69:13 97:1	213:1	choice (3) 9:8 64:25	168:24 175:21 176:15	collaboratively (1)	36:2,3,8,12,13,13,21,24,25	132:24 133:9 147:8
123:4 214:12	chain (19) 6:5 39:9	205:12	177:4 179:16 191:14	205:15	37:1,4,9,11 39:25	conduct (1) 16:18
carrying (4) 34:21 48:17	49:5,14,23 50:13	choices (1) 59:7	192:3	collating (1) 92:21	40:2,17 66:17,23,25	conference (2) 140:8,16
75:9 184:10	51:7,11,19 52:20,23	chopped (1) 120:9	clearance (6) 167:5,7	collect (1) 30:21	67:11,17,19,22,25	conferences (1) 111:7
cash (32) 1:5,9,11,13	53:7 57:1 90:4,22	chris (3) 15:7,13 16:21	168:25 169:3,11,19	collective (1) 188:21	68:7,14,17 69:9,16,16	confined (1) 64:18
2:4 22:16 27:1 31:5	136:16,19 195:4,20	chronology (1) 175:16	clearer (1) 191:11	colour (1) 216:17	72:12,14,17 87:24	confirm (6) 15:21 16:8
36:22 41:13 57:23	chairman (12) 1:8,17	churchman (2) 15:7	clearly (6) 61:9 141:17	colours (3) 57:4	94:5 110:17 111:2	17:18 48:25 109:19
59:2 67:1 70:16 71:5,8	2:3 70:7 102:17	16:21	158:13 159:13 180:15	216:13,14	166:11	189:18
92:23 102:24	103:14,22 108:4 122:6	chweecheen (3) 123:23	185:14	column (2) 150:2 158:1	completed (25)	confirmed (7) 17:19,24
103:20,24 105:22	183:8 214:3 222:6	161:16 164:18	clerk (7) 154:24	combination (1) 132:19	4:16,24,25 26:3 31:21	18:2 29:23 30:6 143:8
106:13,18 115:19	chairmans (1) 138:7	circulated (1) 215:8	155:2,4,19,23 162:2	come (36) 1:9 21:15	35:14,16	161:8
117:6 123:20 151:3	challenging (1) 101:10	circulating (1) 220:2	163:23	22:19 29:14 46:8	36:1,5,16,18,20,24	confirming (2) 14:23
169:23 175:17 195:8	change (51) 42:13	circulation (1) 147:18	clerks (1) 100:23	52:13 53:4 55:7	37:15 38:10,23	21:11
196:7 224:3	44:16 48:10 55:18	circumstance (1)	client (145) 6:5 7:6,7,24	59:1,21 68:15 70:17	69:15,17 86:8 87:20	conforms (1) 169:14
cashes (2) 195:20 196:4	62:2 66:14,16 151:22	106:23	8:1,6,9,12,21,25 9:23	91:3 93:4 94:23	89:8 98:2 99:8 110:11	confused (1) 151:10
cassette (1) 3:6	154:4 162:13,15,18	circumstances (3) 12:17	10:6,13,14,14 14:5	102:17 103:1,6 107:21	180:6	confusing (1) 135:16
cassette fixed (1) 11:5	167:18 169:7,10,12	80:10 106:24	17:19 28:15 32:6,7,10	120:7 143:12 147:2,10	completely (1) 31:14	confusion (11) 119:17
catch (1) 207:8	182:14 187:1 188:8	cladding (38) 2:24	38:9 45:18,19 46:10	148:3 162:15 163:12	completing (1) 25:24	134:1,4 141:15,15,19
cause (3) 101:23 102:1	194:8 199:23 200:19	3:3,9,12 5:19,25 10:20	53:14 55:3 20 56:6	168:12 171:19 178:21	completion (10) 49:8	200:22 201:10 214:22
141:19	201:12 203:4	37:18 39:17 40:3,18	57:19,24 58:7 72:6,7	180:11 183:2,13	68:19 87:22,23	215:2,10
caused (1) 142:16	205:4,10,12,13	41:3 112:14 113:2	75:7 76:1 81:23 82:20	185:11 194:1,11	89:9,11 97:9 100:1	conjunction (3) 57:22
causing (1) 134:1	206:14,18,25	182:19,21,25 183:2	83:21 84:11 85:12	222:14	102:9 128:7	133:1 207:13
cc (2) 16:21 185:1	207:14,25 208:13	184:17	93:10,13,21,23	comes (8) 52:23 58:5	completions (2) 86:6,7	connection (3) 48:16
ccing (1) 198:20	210:17 213:23 215:10	185:7,9,12,16,21,24	94:4,11 96:14,15	91:18 171:2 174:24	complex (6)	124:16 150:5
cda (30) 170:1,8	216:19,25	186:8 191:8	97:25 99:24 104:4	175:6 217:6,10	19:13,19,22 43:23	consequence (1) 209:13
174:5,5 175:19	217:4,10,14,16,18	197:10,17,18 202:21	118:14,16,21 119:3	comfort (1) 155:19	121:9 171:14	consequences (3) 56:5
176:13,17,25 177:4,10	218:1,2,3,4 219:6,8,12	205:12,19 206:2	125:20,24 127:1	comfortable (2) 108:8	complexities (1) 19:16	74:25 206:9
178:9,25 179:5,9	changed (8) 44:18 49:9	216:11 217:9,15 218:4	129:7,18	187:2	complexity (2) 22:6	consider (14) 20:7,9
180:4 181:13 185:14	120:10 151:20 163:2	claire (86) 49:24	134:13,13,18,22	coming (14) 70:13	165:12	23:11 42:7 43:13,14
187:13 188:1	185:17 207:12 212:25	50:2,15 51:6,11,18	135:21 138:5 143:23	88:16 106:14,19,25	compliance (26)	44:2,11 68:25 134:6
190:14,19 191:5,14,18	changeover (2) 67:20	52:6,14,23 54:5 55:12	144:2,23 145:14	108:15 109:22 146:8	29:12,19 31:10 57:24	177:25 180:11 209:24
192:4,22 194:20	68:3	58:17 62:2,13,24	146:18 147:19 148:25	153:12 163:8 182:25	71:12,20 72:3,10,20	212:5
195:7,9 198:7	changes (55) 3:2 29:21	63:23 65:24 73:11	149:11 150:3,7 151:10	197:6,22 210:1	75:24 102:2 153:1	considerable (1) 153:10
cdm (83) 22:13,22,24	30:24 80:25 131:21	75:12 86:20,23 87:23	153:24 156:11 158:5	comment (11) 19:23	155:5,20,24,25	consideration (8)
23:4,5,7,11 24:24	132:2,7,23 151:16	90:13,15 91:11 94:25	161:24 164:10,25	23:20 137:12 174:15	156:4,7,20 172:15,17	157:11 175:20
25:4,5,12,14,20 26:17	153:24 154:15,16	97:10,12,19 98:6,17	165:4,6,9,16,20,21,23	175:8 184:25 185:18	173:2,6 188:18 194:15	180:15,18 187:12,15
27:24 30:18,20	159:15	101:10 125:17,22	166:14,15,15,16,22,25	193:18 211:22 215:5	196:2	193:3 203:3
34:17,18,19,23 42:13	162:13,20,21,25 163:8	126:2 135:17	167:6,9,21,24	216:24	compliant (3) 173:12	considerations (1)
44:16 45:1,8	167:25 168:18,21	136:3,17,21,22 137:20	168:16,16,20,23	commented (4) 51:12	198:6 205:21	185:20
55:16,16,25 62:9	175:9 193:23	139:14,17 140:10	169:4,5,9,22 170:16	52:5 54:6 211:6	complicated (6)	considered (17) 13:24
63:14 66:14,16 67:9	196:9,12,17,19	141:9 151:16 152:6,11	171:1,2,6,9,21 172:2	commenting (1) 68:12	121:11,12,17,19	22:25 29:21 39:18
69:25 71:12,20	197:6,11,16	156:15 169:25	174:8,18 175:7,13	comments (10) 54:22	154:19 171:5	40:4,19 72:4 107:7
72:2,10,19 73:8,19,23	199:1,7,13,18	170:8,16 176:7,15	176:1 178:12,19 179:5	57:19,21 127:17,19,22	complications (1)	131:3 152:21 187:19
74:10,13 75:24	200:7,12 203:19	177:20 178:16,24	181:8,9 184:10 185:3	136:24 210:10,11	129:21	198:13 203:4
76:1,7,9 79:6,13	204:2,3,3,6,15,16,21	179:3 181:9,23	186:4 187:23 191:24	211:20	complied (3) 25:6 26:18	205:7,8,11 212:4
75:7,10,15 86:12 87:1	205:19 206:22 209:14	182:11,23 188:15	192:9 194:8,16	commercial (2) 9:8	189:14	considering (5) 116:20
88:23 90:12,19	212:4 215:8	189:6 192:21	197:8,24 198:10	207:7	comply (2) 25:18	170:3,12 177:5 194:20
93:13,17,20 94:2,5	216:3,12,17 217:9	194:17,21 195:2,10	200:6,7 202:1 204:11	commission (1) 16:11	199:10	considers (1) 97:12
95:9,11,19 97:8,12,19	219:4,18	198:11,24 199:17,22	206:19 207:15 218:8,9	commitment (1) 116:3	complying (3) 25:8	consistent (1) 58:1
124:16 161:17	changing (8) 3:3,4	200:19 202:3 210:24	clients (9) 9:16 10:1	common (5) 42:24	175:4,5	consolidate (1) 160:15
178:1,3,9,10,19	160:8 200:1,10 202:24	212:9,10,16 214:22	25:8 64:17 71:22 85:6	43:5,10 64:11 120:5	component (1) 15:17	consolidating (1) 86:24
189:15,20 191:15,24	204:24 216:21	215:1 219:22	151:2 158:8 207:5	commonly (3) 7:23 43:3	components (2) 93:21	constantly (1) 153:19
205:25 206:7,11	charge (1) 154:13	220:19,22 221:6,22	clientside (5) 71:21	121:2	94:6	construction (34) 7:16
cdm2015 (3) 57:19,25	charles (1) 221:14	clare (1) 55:15	118:9 125:17 129:24	communication (2)	composite (1) 113:1	26:1 38:23 42:3 45:25
60:25	chart (6) 151:22,25	clarification (1) 190:7	138:1	118:7 129:22	comprehensive (1) 41:2	79:20 80:17 91:24
cdmc (38) 22:11,20,24	215:7,13,16 216:2	clarified (1) 159:1	climbed (1) 113:23	communications (1)	comprise (1) 177:16	92:1 99:15 116:24
27:24 30:14 31:3	chasing (2) 212:6,15	clarifies (1) 221:24	close (8) 62:9 87:22,23	33:5	comprises (1) 29:7	118:3,7,8 119:25
42:15 45:1 46:7	cheaper (1) 10:20	clarify (3) 62:25 215:7	100:20 102:7 114:6	company (1) 113:9	concentrating (2)	120:5,22 121:20
47:15,21 48:3	check (10) 20:14 50:19	219:22	134:11 151:5	comparable (2) 169:8	133:8,10	131:20 149:12 154:19

164:14 172:19 207:2	161:7 167:23,23	49:7,10 50:7 54:19	david (11) 15:9 17:16	depend (1) 6:24	215:11 219:14	129:14 131:4 136:5
211:20 215:24	168:9,13,14 169:16	55:9 56:7 61:21 72:18	100:12 160:21 184:21	depending (2) 145:21	designer (87) 22:19	140:17 141:3
216:6,19	175:1 197:12 203:21	76:12 80:2 84:9 88:15	185:2 187:7 188:16	165:18	23:1,6,12 25:1 26:15	146:23,23 149:8 151:1
217:2,5,11,22 218:16	contractors (17) 4:6 5:6	96:11 99:12 111:9	193:20 194:14,19	depends (1) 165:12	30:15 34:20	154:7 155:15,16
219:23	22:14 85:6,7 91:23	113:8,11,17	dawson (11) 11:25	derived (1) 167:8	45:5,11,19,20	156:9,9,16 157:15,21
constructions (1) 191:8	111:17 140:19 141:7	114:11,12,14	15:2,3,8 17:12,15,25	describe (3) 62:1	46:11,13,15,18	160:2,14,15 161:19
consultancy (1) 61:1	150:4 166:16 167:5	115:11,12 116:5,9,25	20:10 22:8 160:22	170:23 192:8	47:3,6,9,11 49:19	164:22 170:19 173:15
consultant (35) 12:5,22	172:19 173:2 180:10	131:11,12 143:9	161:15	described (6) 98:5	50:14,18,24	179:18 180:6 185:23
13:15,23,24	208:5,25	173:18 185:4	dawsons (1) 21:16	120:24 124:9 138:9,19	51:13,14,20,23,24	190:24 191:18 195:2
14:3,11,15,21	contracts (3) 8:24	190:15,18,25 192:7	day (6) 9:21 57:7 58:5	189:10	52:11 53:1,4,24	200:9 210:11 212:16
32:3,8,15,16 39:2,18	117:16 119:23	209:9 215:25 219:15	93:7 106:1 222:12	describes (4) 101:12	54:4,7,14,18	213:17,21 222:11
40:10,16 42:20 43:14	contractual (9) 7:11	corrected (1) 54:21	day7671317 (1) 142:1	127:1 137:23,24	55:1,7,17,21	die (1) 213:17
44:3,12 63:4 67:6	21:18 41:18,21 42:5	correctly (4) 73:22	days (4) 15:23 106:21	describing (5) 118:23	56:3,6,10,16	difference (8) 40:12
99:24 104:14 105:2	123:10,18 142:21	115:13 129:24 199:8	166:5 201:17	136:9 137:6 152:2	58:7,11,18 59:21	55:25 117:3,13
126:20 128:14 129:13	149:16	correlation (1) 34:2	daytoday (2) 161:4	201:5	60:4,25 61:6,11,17	118:1,17 139:15
133:16 138:2 145:7	contractually (2) 125:8	correspondence (7)	201:24	description (2) 127:2	62:11 63:11,16,24	140:14
161:19 163:18,21	149:1	16:20 135:22	db (6) 65:7 119:1 140:9	210:16	64:9,22 66:21	differences (1) 69:24
consultantemployers	contradicting (1) 139:3	142:13,17 153:10,22	159:24 215:11 219:13	descriptions (2) 77:5	67:13,23 69:22,25	different (27) 11:20
(1) 161:15	contribute (1) 84:5	194:24	deadline (2) 93:24	163:16	72:7,8,25 74:12,17	19:16,17 40:14 42:12
consultants (9) 9:17	contributed (1) 81:17	cost (10) 3:24 6:22,23	94:11	descriptor (1) 117:22	75:9,17 87:1,6 88:1,18	61:24 63:2 74:18
10:2 34:25 43:3 44:7	contributing (1) 130:9	8:2,8,12 193:7 200:13	deadlines (1) 211:13	design (188) 7:15 11:23	89:3 96:15,17 97:2	91:14 92:16 99:14
63:10 104:23 150:4	control (15) 49:20	203:6 210:20	deal (6) 7:20 26:7 73:20	13:16 15:24 26:11	146:2 162:24 175:3	108:21 111:17 113:9
161:12	52:8,15,18 58:10,20	costly (1) 199:13	74:4 162:12 186:22	27:23 30:19 31:16	189:20,21 199:24	115:21 119:16 126:17
consulted (3) 33:12	61:19 161:16	costs (5) 4:1 131:19,20	dealing (3) 73:23 196:1	35:1,2 36:2,23,24	205:11	145:20 159:25 160:13
140:3 195:3	162:13,16 163:20	132:4 192:22	198:22	37:1,5,7,8,8,14	designers (22) 22:14	178:9,23 192:10
consulting (1) 202:5	205:10,13 215:13	couldnt (8) 65:1,3 79:1	dealings (1) 146:24	38:10,12 39:9 41:6,15	25:6,17 35:13 58:10	194:23 203:23 206:10
contact (1) 194:22	218:14	88:3 95:2 96:16	dealt (1) 162:18	43:19,25 49:20	65:13 70:1 81:14 85:6	216:14
contacted (1) 98:8	controlled (1) 110:23	182:17 203:13	debated (3) 39:24	52:8,15,18 58:20 59:8	128:9 145:20 157:16	differently (1) 106:4
contained (1) 102:9	controls (2) 29:11,13	counsel (5) 2:2 102:25	145:5 204:11	61:20 65:8,9 66:17,23	168:15 175:5 178:4	difficult (3) 43:9 129:25
containing (1) 79:19	convenient (3) 70:7	108:13 224:4,6	debates (1) 205:19	67:11,21 68:4,15,18	189:13,18 197:3 198:5	211:23
contains (1) 29:11	222:8,9	couple (4) 103:22	december (6) 214:21,25	69:8,15 76:1,1 87:24	199:6 204:10 205:22	difficulty (3) 19:17
contemplated (1) 19:12	conversation (11)	110:13 154:24 201:17	215:9,15 220:19 221:5	101:9,10 105:13	designs (8) 31:18	108:19 155:1
contents (7) 45:16 83:9	62:5,24 64:1 71:11,18	course (4) 86:4 122:21	decide (4) 140:20	117:15,17,20	dilapidations (1) 121:15	dilapidations (1) 121:15
84:7 85:2 87:11	90:15,17,18 101:21	183:16 222:20	194:13 204:12 213:1	118:18,25 119:24	199:3,9,23 200:10	diligent (2) 120:4
109:10,19	124:11 186:24	courses (1) 111:6	decided (10) 10:3 39:20	128:5 144:25	211:19	135:21
context (5) 8:6 22:11	conversations (6) 25:2	cover (1) 15:18	72:19,21 73:1 156:14	145:10,22 146:21	desire (1) 59:13	direct (10) 15:14,15
32:23 91:13,16	61:12 62:18 64:6	covered (4) 177:1,11	181:19 182:2 195:9	151:22 154:17	despite (6) 62:17 89:20	21:13 28:16 59:10
continue (4) 116:21	190:22 194:25	190:20 191:1	203:14	156:12,21	93:24 97:11 101:1	66:20 99:10 104:8
117:24 128:6 173:25	coordinate (1) 168:14	cow (2) 152:25 154:24	decides (1) 10:10	157:3,5,12,13,21	198:10	155:5 209:25
continued (5) 1:11 2:2	coordinating (2) 119:3	cows (1) 100:23	decision (11) 9:15 13:3	161:7 162:12,18,20	detail (13) 5:12 16:25	direction (2) 49:22
213:18 224:3,4	194:9	cps (1) 172:19	39:21 72:25 171:9	163:8 164:10	37:15 56:15 57:13	118:16
continuing (1) 93:1	coordination (2) 161:16	create (2) 158:11	180:9 193:25 195:15	165:6,9,10,21,23	72:5 76:19 85:2	directly (6) 8:25 18:1
contract (62)	212:8	209:22	203:25 212:11 213:22	167:21,23,24	104:18 122:9 189:10	52:8 189:25 212:7,9
4:1,5,8,8,12,22 5:10	coordinator (31) 22:25	created (4) 62:11	decisionmaking (2)	168:15,16	198:17 201:2	director (11)
7:2,4,7,20,23 8:10,14	23:4,5,11 24:24	158:21 162:25 186:19	118:20 202:22	169:4,5,15,18,22	detailed (2) 157:3	24:2,3,5,10,14 95:24
9:9 28:3,17 30:25 31:5	25:5,15,20 26:17	criticised (1) 47:1	decisions (19) 118:14	170:16 171:1,5	173:23	98:13,23 113:19,25
37:8 41:18 82:13	27:24 30:21	criticising (1) 95:16	134:18,24 141:3,5	172:2,14,15,17	details (4) 29:10 77:17	115:18
83:3,24 84:21 103:25	34:18,19,23 45:2	crossed (2) 143:6,6	144:24 202:20 206:2,9	174:19,25 175:2,4,13	85:20 144:22	disappear (1) 56:2
111:15,16 117:9,16	55:17 56:1 63:14	crossover (1) 178:18	207:5 208:3 209:6,14	176:5 177:5,9	detected (1) 155:1	discharge (2) 46:17
118:3,4,11,16,19	69:25 76:9 79:7,13	current (2) 63:14 99:23	210:5 211:9,24	178:15,19 179:5,16	determine (2) 9:15	81:25
123:13,15 125:1,2	85:15 88:24 124:16	currently (1) 177:1	212:20,22 220:3	181:8,9,14 182:15	57:22	discharged (1) 159:17
128:1 140:9,23 147:10	161:17 178:1,3,19	curtain (1) 112:14	dedicate (1) 134:23	184:10,16,19 185:1,3	develop (2) 212:8	discuss (1) 152:13
152:22 164:13,17	205:25 206:12	curtains (2) 28:18 33:19	defined (9) 24:19 28:2	186:4,12,18,23 187:23	218:15	discussed (14) 2:24
167:13 173:23 189:24	coordinators (4) 30:19	custodian (1) 170:1	32:12 80:8 117:15,20	188:18 189:21,23,24	developed (4) 27:23	44:16 48:10 68:20
212:24 213:23	85:7,10 86:13	custom (1) 144:7	119:14 144:11 146:18	190:8 191:24 192:9	82:8 163:9 218:17	93:12 100:7 109:21
216:6,15,18,19	copied (20) 2:20 15:8	cut (1) 26:14	defining (3) 146:16	193:20,22	developing (1) 154:17	127:15 132:17 165:24
217:4,13,14 218:15,16	17:12,15 48:21 49:16	cutting (2) 5:12 10:21	147:7 156:11	194:8,9,15,16,20	development (5) 37:9	181:21 186:15 204:11
219:2,6	50:9 53:12 55:13,14	cw (3) 60:25 181:8,12	definitely (8) 126:25	196:2 197:24	162:18 211:9,18 221:8	213:10
contracted (3) 42:15	57:7,10 58:5 86:21		171:4 182:21 192:16	198:10,12,21,25	devoted (1) 20:14	discussing (2) 2:5 96:24
117:6,8	90:6,10 91:1,18 93:7		195:3 200:11 209:23	199:10,25 200:7	diagram (3) 151:19	discussion (30) 23:9
contractor (58) 2:12	99:18		221:20	202:2,19,24	159:3,12	24:22 44:10 55:5
7:8,12,14 8:15,19,23	copies (3) 17:8 83:20	d (1) 41:11	definition (7) 22:19	204:1,3,17 205:17,23	diagrams (1) 205:14	67:1,4,17 68:8,15,25
9:3,10,13,17,18	84:10	daft (1) 94:10	23:7 32:2,24 33:8	206:14,20 208:3	didnt (75) 4:24 6:15	73:13,14 79:4 91:14
10:2,3,9,18 34:7 35:8	copy (2) 89:3 105:11	date (14) 46:24 49:8	104:5 175:21	209:14,14	9:18 11:11 19:18	130:15 132:10,14
37:10 38:13 39:12	copying (2) 73:4 100:18	55:23 89:9 128:6	degree (1) 110:8	211:5,9,10,11,18	20:9,14 22:7 26:6 27:7	139:13 162:13 170:7
41:15 45:12 65:7	core (3) 17:6 70:14	132:20 152:17 155:10	delegated (1) 118:13	212:4,7,8 213:3,5,20	28:6 30:23	181:17 184:18 185:6
66:19 74:19 76:11,23	107:4	160:20 163:1 172:5	deliver (4) 38:11 76:10	214:17,18,22	33:10,12,24 37:24	186:9,12 193:10
77:9 81:14,24 83:7	corporate (1) 74:9	184:25 193:19 210:18	83:20 84:10	215:2,8,15 217:15	38:4 44:6 47:6 59:13	204:16 220:21
101:3,11 104:6,9	correct (54) 10:16	dated (10) 28:24	delivered (2) 31:9 38:9	218:1,8,9,14,17,18	65:2,15,19 69:6	221:19,23
116:21 117:17 118:25	11:15,18 16:19 17:9	53:12,19 76:15	delivering (4) 26:2	220:3,5,11 221:8	75:20,22 81:4 82:2	discussions (7) 52:2
119:1 128:10 138:13	18:7 21:21 22:3	109:5,15 126:24	35:17 126:18 133:10	designated (1) 122:4	86:15 87:9,10,17	59:14,15,24 60:6,8
140:25 143:23 145:15	44:13,25 45:6	160:19 172:4 175:17	delivery (1) 34:5	designed (6) 31:8	88:22 89:18,19,25	133:20
149:16 158:6 159:24	46:12,16 47:17,20,25	dates (3) 27:11 70:4	departments (1) 129:23	184:18 185:8 199:8	101:19,19 126:12	displace (1) 76:24
		159:16				

distinction (2) 40:12 209:4	132:19 138:5 159:5 163:7 199:2 200:6 201:19 202:25 203:18 204:21 206:5 207:1 208:1 212:6,18	dumped (1) 93:10 dumping (1) 94:18 dunkerton (3) 11:25 125:19,25 duplication (1) 176:17 duration (1) 142:2 during (15) 7:15,15 79:20 80:22 85:16 99:14 113:12 114:23 116:16 124:25 142:7 146:13 156:6 165:10 215:14 duties (28) 22:13 25:6,18 26:16,19 44:8 45:19,23 46:3,17 69:1,4,20 79:13 85:7 94:19 117:19 118:4 123:20 126:9 133:16 138:4 189:14 191:12,20 192:5 202:4,7 duty (14) 40:22 41:14,17 79:25 83:16,24 144:19 149:7,20 159:17 168:13 169:13 218:6,15	else (24) 10:24 20:6 21:23 24:23 27:5,7 38:19 39:1,2,20 41:4,9 44:10 52:9 64:23 65:3 73:20,22 74:3 89:4 125:12 139:14 156:22 192:13 elsewhere (3) 126:6 189:3 202:7 email (93) 15:6 16:7 17:11,14 18:9,10 20:10 48:12,18,20 49:5,14,15,23 50:8,13,15 51:6,19 52:1,10,20 53:7,10 54:1,12,22 55:12 56:9 57:1,3,16,17 58:13 59:3 62:5,21 67:4 71:17 73:3 86:19 90:4,22 91:7,13,17 93:6,12,18 94:15 96:7 97:5,18 98:11 99:16 100:5,7,9,18 101:16 102:11 136:16,19,20 137:21 138:8 152:5,8,12,21 153:3,7 169:23 175:17,18 184:13 186:17 187:10 193:16 195:4,6,10,12,20 198:20,23 206:16,18 207:1 208:1 210:23 214:25 215:6 emailed (1) 66:12 emails (5) 48:13 94:4 101:9 194:24 207:13 embarrassed (1) 97:14 emergency (2) 77:15,24 employed (3) 15:10 48:1 134:21 employee (1) 28:17 employer (1) 21:8 employers (74) 21:7,16 27:15 40:6,20,23 59:19 95:18 111:11,13 114:13,16,25 115:10,15 116:8 117:3,13,15,18,21 118:15,17,23 119:2,6,9,11 120:6 121:6,9 123:21 124:15,22 126:20 128:20 134:10 135:9 138:25 139:15 141:1,22 142:23 144:20 146:15 147:20 148:22,23 149:7,24 152:6 153:17 155:9,21 157:25 158:10 167:18 168:1 169:9 172:20 173:11,25 176:9,11 179:1,4 182:18 189:11 191:13,20,22 192:5 212:12,23 employment (1) 115:3 encompass (1) 169:11 encompassed (1) 145:16 encompasses (1) 117:23 encouraging (3) 146:5 170:15,24 end (29) 9:21 16:17 17:20 30:22 36:1,17	37:13 46:9 80:23 82:11 85:12,17 86:2,16 88:16 90:1 93:4,5 94:8,23 100:21 102:17,25 105:22 129:14 133:12 136:1 178:11 192:15 endeavour (1) 172:20 endeavouring (1) 101:7 ended (2) 145:7 201:16 endless (1) 101:8 engage (9) 17:20,25 38:16 39:19,20 40:7 59:9 65:3,3 engaged (18) 23:14 32:6,10,14,16 33:6 35:18 39:8,10,16 40:2,17 43:20 64:12,24 162:8 203:9 212:7 engagement (1) 123:12 engaging (4) 13:14 43:19,25 64:23 engineer (8) 40:16 42:21,23 43:24 144:12,13 157:18,19 engineered (1) 203:13 engineering (16) 2:6 6:18 10:11 168:19 175:12 202:19,25 203:1,10,19,21 205:3,16 206:1,7,10 engineers (5) 43:11,20 145:1 146:19 171:24 enough (4) 47:7 54:10 103:4,8 ensure (25) 22:14 25:5,17 26:18 31:8,12 34:20,25 39:17 40:2 41:15 57:24 72:16 79:21 97:11 98:16 101:1 102:9 172:20 173:24 175:20 176:24 189:13 211:25 212:20 ensured (1) 30:15 ensuring (6) 31:18 35:1 71:23 72:11,13 178:4 enterprises (1) 126:8 entire (1) 106:3 entirely (2) 171:12 188:20 entitled (1) 77:15 environment (2) 110:24 207:4 envisaged (1) 165:8 eot (3) 49:1,2 89:10 equivalent (1) 126:16 erm (1) 130:21 error (1) 139:12 ers (1) 172:21 es (1) 13:3 escalated (1) 99:1 escalation (1) 98:12 escape (3) 26:9 77:16,18 escaped (1) 137:19 essentially (2) 54:16 98:11 establish (9) 104:3,10 143:22 144:1,16 145:13 146:12 156:21 158:7 establishing (5) 104:24	150:21 157:11 158:16 159:4 estate (1) 189:3 estimate (2) 4:9,17 et (4) 26:10 34:8 57:17 213:1 etc (5) 101:10,11 199:7 207:1,13 european (1) 172:22 evaluation (1) 11:7 even (12) 10:12 16:15 24:5 59:18,19 60:6 86:12 94:3 134:11 147:18 197:19 216:7 event (2) 26:8 219:20 events (2) 106:7 111:19 eventually (2) 81:11 89:25 ever (56) 6:10 13:23 16:12 20:6 21:24 27:6 28:25 30:10,11 39:14 40:1,15 41:1 42:7,19 43:13 44:2 67:7 81:22 99:8 101:2,15 112:25 126:3 133:20 135:5 142:7 148:8,13 156:7,21 157:3,6,8,11 158:21 159:22 162:15,23 163:6,10 178:18,24 179:3,6,8,25 190:5,19,21 193:9,21 194:19 201:25 204:20 206:11 every (4) 134:13 135:24,24 191:15 everybody (12) 104:16 135:8 140:1 141:20 144:7 159:14 160:5,13 191:23 194:3,13 221:23 everyone (7) 1:3 107:12 147:5 176:14 199:2 212:4 220:8 everything (6) 78:19 153:25 186:5,7 203:2 204:18 evidence (21) 1:5 21:15 31:23 44:17 47:16,22 53:2,8 68:22 70:20 103:7 106:19,20 107:1 109:21 122:20 141:23,24 183:14 215:19 222:18 evidently (1) 129:12 evolving (1) 36:23 exactly (13) 5:9 9:2 24:16,20 30:3 57:17 62:13 110:18 113:24 137:24 143:12 162:8 196:24 examine (1) 32:1 examining (1) 24:25 example (20) 8:3 41:25 127:18 146:4,7 147:24 151:14,18 152:1 153:1 156:5 168:18 173:7 186:9 188:19 200:22 204:23 205:11,19 216:10 examples (6) 112:2 136:15 141:13 154:23 200:17 201:6	exams (1) 120:20 exasperated (1) 153:23 exceeds (1) 7:25 exchange (1) 96:9 exchanges (1) 106:1 excluded (3) 182:20,21 185:10 excluding (1) 204:4 exclusion (2) 125:4,5 exclusions (1) 150:11 execution (15) 104:13,18 144:9 158:3,12,22,25 159:19,21,23 160:2,4,11 161:24 164:4 executive (2) 48:16 49:6 exercise (4) 168:19 173:10 175:12 180:6 exercises (1) 203:10 exert (1) 97:17 exist (2) 63:15 81:4 existed (1) 84:1 existence (4) 45:15 77:13 85:1 105:19 existing (20) 15:18 18:18,19,21,23 19:25 26:3 27:21 34:1 55:18,22 65:1 77:24 80:7 105:5 171:17 177:2,7,11 190:21 exists (2) 79:17 83:14 exo00001106 (1) 28:20 exo000011064 (1) 29:4 exo000011069 (1) 29:18 exova (78) 11:21 12:10,16,17,21 13:4,11,14,18,22,23 14:5,11,12,14,23 15:16 17:11 18:11,25 20:3,14 21:6,10,18,19 22:1,10,18 23:1,6,12,14 26:15 27:2 28:2,6 30:11,15 31:12,14,24 32:9,11 33:6,17 34:20 35:14,16 37:4,17 38:9,15,16,20,21,25 39:10,15,21 40:1,7,13 41:4,9,21 42:2,8 104:8,11,16,17,25 105:6 146:4,5,13,23 exovas (13) 15:14 16:2,6 17:2,8,24 20:7,16 24:25 26:1,23 35:21 36:9 expect (8) 27:24 29:14 38:20 106:21 146:2 167:23 198:4 209:10 expectation (1) 38:24 expectations (1) 88:22 expected (18) 27:15 38:8,11 80:12 88:19 89:14 92:17 97:15 165:20 168:20 169:2 173:5,10 191:12 208:2 215:11 219:13,19 expecting (5) 93:11 98:1 196:12,13 199:6 experience (15) 8:11 86:15 111:19
---------------------------------------	---	---	--	---	---	--

112:10,17,22 120:22 121:2 126:4,6 145:22 154:12 155:4 179:17 207:2 experienced (2) 126:18 134:19 experiences (2) 126:17 137:18 expert (2) 111:22 136:3 expertise (8) 33:23 74:15,21 75:14 179:17 187:4 188:11 199:25 expired (1) 97:25 explain (13) 21:1 51:4 55:3 89:13 93:14 95:4 117:12 178:24 179:3,8 192:8 198:10 201:14 explained (6) 9:1 139:15,22 144:10 215:3 219:11 explaining (1) 93:19 explains (2) 29:6 206:19 explanation (2) 94:6 180:1 express (3) 101:6,15 125:4 expressed (4) 65:23 190:5 214:22 215:1 expressing (2) 54:17 199:19 expression (3) 66:25 68:7,13 expressly (3) 36:9 177:8 180:19 extend (1) 55:22 extended (2) 89:13,16 extension (1) 49:3 extent (6) 3:23 8:19 173:11 174:4 178:2 192:25 external (13) 29:19,23 30:5,17 35:23 37:20 38:1 39:17 40:3,18 41:3 42:3 168:6 extra (6) 98:3 155:19,20 179:18 183:6 222:7 extras (1) 193:9 extremely (1) 106:15	fair (13) 54:10 103:8 106:5 112:7 128:21 140:1 175:15 196:20 198:14 199:20 211:21 212:2 219:8 fairly (3) 49:11 56:9 114:6 false (1) 5:25 familiar (27) 45:13,15 84:22,23 85:1,19 111:22 139:24 140:25 141:4 143:14,15 145:3 149:11,12 153:8 157:8,19 162:17 164:16,22 166:10 173:17 184:23 187:8,11 208:24 familiarity (1) 75:15 far (17) 5:2 16:14 24:22 28:21 29:3 44:18 75:7 82:7 101:4 111:13 117:22 148:5,6 179:16 195:24 199:13 202:23 farce (2) 100:25 101:13 farreaching (1) 118:20 faster (1) 208:12 february (4) 172:4 175:17 180:3,12 fee (15) 16:24 17:8,19,24 18:3,6,13,18 21:4 98:4 124:5 150:8 152:13 170:1 193:8 feel (11) 9:18 33:10 34:14 75:20 108:22 134:8 159:17 165:18 171:3 207:16 214:12 feeling (3) 183:25 209:23 214:9 fees (16) 15:5,21 16:1,2,6,17 17:2 20:9 22:5 131:19,22 132:4,16 179:21 180:17,20 felt (12) 14:17 76:2 96:6 153:12 157:14 160:9,13 170:18 179:17 187:3 188:20 208:22 fetch (1) 107:21 few (6) 15:23 114:20 132:23 136:15 160:23 198:16 fightingfire (1) 76:24 figure (5) 3:8,10,13,16 4:24 figures (1) 4:25 file (53) 30:22 46:1 66:20 69:10,11,18 72:6,9,12,16 79:3,5,8,18 80:7,8,11,19,22,23 81:4,6,9,15,18 82:24 83:9,15 84:1,4,8,10 85:8,11,22 86:7,14 87:14,18 88:4 89:1,15 90:2 92:3,8,18,22,25 98:2,3,20 99:6,8 final (10) 30:15 36:16 38:8,11 40:17 41:2 109:4 164:13 206:9 215:5 finalisation (1) 197:13	finally (1) 54:8 finances (1) 34:7 financial (2) 11:7 207:14 find (11) 47:2,7 56:23 59:22 78:11 79:12 101:18 160:18 195:25 207:6 208:11 finding (1) 209:17 fine (6) 74:25 184:2 199:1 214:10 221:15 222:16 finish (4) 117:1 138:7 214:8,17 finished (1) 38:22 finishes (1) 49:18 fire (79) 12:5,22 13:15,22,23,24 14:3,10,15,21 15:18,19 17:5 18:23 19:5,7,8,21,23 20:1,1,4 25:25 26:2,7,8,9,11,23 27:2 28:23 29:11,12,19,23 30:5,17,20 33:25 34:1 35:14,17,23,25 36:3,7,25 37:4,23,25 38:1,8,12 39:2,3,8,17,18 40:3,9,11,16,18 41:3 76:21,24 77:6,24 85:16 104:13 105:2,5 146:6,17 161:23 171:24 173:8 188:25 205:21 firefighting (2) 77:6,10 fires (1) 26:10 firmly (2) 61:9 201:22 first (46) 11:22,24 18:10,12 27:9 48:11 53:20 61:7,9,13,23,25 62:8,12 64:2 65:6 66:7 73:9 77:1 83:25 109:3 115:25 123:11 124:8 136:23 138:14,18 144:5 147:7 164:12 181:3 186:11 187:17 189:8 190:1 195:19 196:6 198:9 200:15,17 206:19 213:11 214:20 215:4 217:15 219:10 fit (1) 126:8 five (2) 29:7 189:8 fiveminute (1) 107:18 fix (2) 155:14,14 fixing (3) 3:4,5 205:20 flag (1) 100:25 flashing (1) 209:7 flat (3) 199:7,18 200:4 flats (4) 184:20 186:13,22 187:21 flavour (1) 140:19 floor (1) 200:2 floors (1) 171:18 flow (7) 151:19,22,25 159:3,12 205:14 215:7 flowchart (9) 214:18 215:20,21 219:11 220:2,13,18,23 221:17 focus (2) 45:17 206:6 focused (1) 167:17 follow (12) 3:15 7:19 10:8 11:13,19 21:22	44:9 67:10 81:1 98:22 221:9,24 followed (4) 167:14 215:16 222:2,4 following (13) 7:21 39:11 77:17 82:20 97:9 131:22 137:1 152:15 172:18 200:24 206:19 211:5 215:6 followon (1) 23:24 follows (1) 66:14 followup (1) 103:23 force (1) 46:8 fordham (9) 28:18 33:18 151:23 174:8 185:15 215:3 216:7,20 218:3 forefront (1) 180:8 form (14) 37:2,6,21 48:15 49:6 50:5 51:13 54:8,18 77:5 110:22 130:18 189:17 207:10 formal (6) 60:2,5 66:20 99:16 120:12 125:13 formalise (1) 212:22 formalising (1) 67:4 formally (11) 33:3 58:24 59:25 61:7,14 117:8 120:14 123:13 199:2 206:23 208:3 format (2) 55:19 210:12 forming (1) 155:17 forth (1) 130:15 forthcoming (1) 64:22 forthwith (1) 17:22 forward (31) 21:10 93:11 106:10 126:9 128:19,22 129:9 130:6 131:6 132:21 133:13 156:12,14 159:15 169:21,25 170:13 172:3 181:1 193:25 195:10 203:2,3,14,23 204:7,18 205:17 211:25 212:17 213:17 forwarded (3) 49:23 51:6 52:1 forwarding (1) 94:17 forwards (3) 62:25 64:7 222:3 found (3) 59:13 103:20 155:11 four (2) 51:4 138:19 fourth (2) 12:15 66:5 fourthly (1) 84:10 framework (3) 61:1 63:4,10 free (1) 107:3 frequently (2) 143:11,15 friction (2) 95:18 96:6 friday (1) 211:6 front (1) 172:5 frustrations (1) 99:22 fulfil (11) 45:19 69:17 71:22 122:5 126:9 128:14 129:17 130:1 143:16 170:13 191:12 fulfilled (4) 94:18 117:24 126:10,12 fulfilling (8) 125:21 133:16 134:15 149:16 150:21 187:14 192:4	202:4 full (8) 6:4 9:25 69:17 94:16 128:13 131:22 191:12,19 fuller (1) 192:5 fulltime (3) 114:24 116:2,13 function (1) 139:6 functions (2) 82:1 194:20 fundamental (1) 26:1 fundamentally (12) 66:17,23,25 67:11,16,22,25 68:7,14 69:9,16 87:24 further (10) 1:5 21:19 41:7,8 58:13 80:25 97:9 124:11 200:16 218:18 furthermore (1) 189:17 future (7) 27:22 29:24 30:6,11 35:22 36:10 182:12	56:12,13 59:14 81:1,2,4 87:24,25 89:11 95:23 98:25 106:21 118:21 122:12 134:12 156:5 167:6,12 179:25 184:5 202:11 205:22 209:24 211:21 220:10 gives (2) 152:9 154:23 giving (5) 47:1 69:1,4 137:5,9 glen (1) 112:5 goes (14) 8:12 16:8 29:9 54:12,23 63:12 67:3 93:18 97:24 110:6 143:18 203:21 217:6,11 going (74) 1:4,23 10:4 37:13 38:17 53:4 56:2 59:20 62:25 63:25 64:6 67:19 68:3 70:16 73:20 99:19 106:10 109:25 117:1,2 126:2 129:20 130:15 132:13,21 133:13 135:20,22 140:20 144:22,24,24,25 145:6 147:4,20 150:19 151:25 154:15 159:8 166:4,5 177:19,20 180:5 182:11 183:12 184:21 187:7 192:13 193:17 195:7 196:18 197:5,21 198:17 200:3 201:2,12 202:5 203:4,5,6 204:24 205:21 206:5 211:25 212:17 213:17,21 216:17 219:2 220:8 222:2 gone (5) 149:9 179:16 181:1 202:14 218:9 good (26) 1:3,8,12,13 2:4 9:8 57:16 67:12 107:23 108:4 120:21 122:6 123:6 126:8 146:4,7 151:18 160:9 175:14 183:8,9 184:7 210:13 211:7 212:15 214:15 governance (1) 220:7 graduated (1) 110:7 grand (1) 180:22 grange (28) 107:17 108:3,4,12,14 109:2 122:6,9 123:7,8 137:19,22,24 183:7,21 184:8,9 190:11,14,17 214:2,5,16 222:5,9 223:2,3,5 grateful (2) 106:15,25 great (3) 183:7 186:22 192:11 greater (1) 37:15 greatest (1) 93:9 green (1) 133:6 grenfell (33) 12:19,22 13:11,25 15:12 26:25 43:15 48:14 53:16 55:7 61:18 63:5 64:18 75:13 80:11 112:9 113:15 114:2,9 116:4 117:5 121:8 124:17,25	125:13 137:10 146:14 157:12 171:13 174:23 179:9 198:21 215:22 guarantee (2) 184:18 185:8 guarantees (2) 183:2 185:12 guidance (2) 78:11 173:7 guide (1) 199:10 guilty (1) 139:6 guys (1) 91:2		
						H		
						hadnt (7) 72:4 87:20 89:19 93:4 96:25 153:7 195:13 hale (3) 15:9 17:16 160:21 half (4) 17:13 31:4 106:1 149:25 halfway (1) 183:9 hand (3) 88:16 95:19 99:7 handed (3) 88:19 99:8 178:12 handing (4) 93:20 94:21 95:9 116:16 handover (16) 68:5 94:3,23,25 95:4 96:3 98:1,19 99:5 100:3 114:21,23 115:6 116:15 128:25 175:25 handson (1) 134:19 happen (7) 14:22 16:7 30:23 86:15 94:9 95:9 151:21 happened (18) 41:10,12,16 66:1 93:23 95:6,13,14 106:7 116:14,15 152:3 162:6 169:21 190:22 207:9 213:13,15 happening (4) 62:14 186:18 220:4,4 happens (2) 55:2 132:23 happily (1) 94:2 happy (1) 182:16 hard (2) 134:9 207:8 hardinge (3) 173:18 177:6 195:7 hardinges (1) 188:17 harley (4) 5:18 6:13 11:8 168:6 hasnt (1) 211:12 hats (1) 201:21 havent (3) 30:13 199:10 212:14 having (13) 38:18 68:25 139:13 141:12 147:7 153:19 183:5 189:25 199:23 201:16 209:7,21 216:10 headed (1) 215:22 heading (5) 2:22 7:2 79:14 162:19 221:8 health (59) 30:22 34:21,23,24 45:25 48:15 49:6 69:9,11,18 72:5,8,12,16 74:8,9 79:3,5,7,18,21,25 80:7,8,10,18,21,23		

81:3,6,9,15,17 82:23,24 83:9,15,20 84:1,4,8 85:8,16,22 86:7 87:14 88:4 89:1,15 90:1 92:7,12,18,22,25 99:8 112:5 189:1 205:23 hear (4) 1:6 107:1 116:6 212:10 heard (3) 117:6 141:23 151:3 hearing (3) 1:4,4 223:7 heating (1) 186:23 heavily (3) 122:1 136:2 141:20 hed (1) 212:18 held (1) 211:5 help (32) 4:19 13:10,13,13,18,20 27:20 76:2 98:2 110:21 113:24 116:13 118:9 128:22 130:20 135:14 136:5 140:6 141:18 144:16 150:10 151:13,13 169:1 170:7 176:3 187:14 196:24 208:14 213:15 219:22 220:15 helpful (5) 107:1 118:22 143:19 210:13,14 helps (2) 140:5 221:24 hence (2) 37:20 220:7 here (34) 14:8 20:11 32:2 34:16 46:19 49:15 52:7,25 53:18 55:12,19 62:1 109:22 130:17 134:1 135:1 137:5 139:3 146:11,19 147:12 153:9 159:18 160:24 162:12,14 166:23 174:8 189:9 202:17 213:18 216:7 217:20 220:25 heres (1) 194:10 herself (2) 137:23,24 hes (3) 154:24 156:5 198:22 hi (4) 55:15 58:6 86:23 93:8 high (1) 164:4 highlevel (2) 144:21,21 highlight (2) 55:25 207:14 highlighted (1) 203:24 highlighting (2) 66:12 186:8 highrise (6) 19:11 43:4,5,7 112:11,24 himself (2) 194:14,20 hindsight (4) 106:7 191:10 202:12,16 history (2) 90:7 110:1 hit (1) 129:4 hoc (2) 42:1 111:18 hold (2) 99:24 152:17 holders (1) 83:16 hospital (2) 112:6,21 hospitals (2) 112:5,19 hour (3) 70:11 122:12 214:13 house (1) 181:13 housing (7) 126:6,8,18 184:23 186:2 187:9,12	however (6) 8:14 24:15 54:25 58:9 65:6 195:24 hs (5) 66:20 91:24 92:3 98:1,2 hse (3) 54:3,9 93:24 hybrid (1) 207:10 I id (3) 67:4 139:21 212:10 idea (4) 66:2 67:21,25 175:14 ideally (1) 214:6 identified (16) 18:10 20:23 23:6 28:8,10,14,19 38:17 41:6,11 43:22 51:22,23 52:10 104:12 203:22 identify (4) 17:4 29:8 33:21 150:23 identifying (5) 69:25 81:16 82:5 151:4 158:4 idiosyncrasies (1) 121:22 ie (4) 4:1 61:3 184:19 186:13 ill (8) 5:17 40:13 117:2 140:6 159:20 199:10 207:16 221:3 im (61) 1:17 4:18 19:15 23:4,8,24 26:6,14,19,21 29:25 33:20 34:13,16 44:9 47:4 52:3 53:9 54:7 57:8 59:2,17 60:18 61:12 81:1 92:23 99:19 106:22,25 108:20 109:25 111:13,22 117:1,2 122:12 123:15 130:17 134:3,21 137:14,17,22 142:14 143:15,16,17 148:4 151:25 153:7 164:22 182:23 183:8 184:2 188:20 190:4 201:2 208:18,24 214:10 222:14 immediate (1) 93:15 immediately (1) 83:19 imminent (1) 89:12 impact (7) 30:16 200:12,13 202:24 205:11 210:20,20 implementation (1) 77:2 implication (1) 210:20 implications (2) 94:13 200:10 implicit (1) 204:19 implied (1) 204:17 importance (2) 179:8 221:20 important (4) 35:21 195:25 212:3,19 importantly (1) 88:2 imposed (2) 34:22 69:2 impression (2) 62:16 187:18 improvement (1) 124:17	improving (1) 106:11 inc (1) 98:1 inception (2) 63:19 64:14 incident (1) 201:1 incidents (1) 201:3 include (7) 77:19 87:9,14 137:1 151:4 158:16 181:24 included (17) 5:6 78:7,17 87:8 105:8,14,18 153:11 158:11 166:5 168:5,7 173:1,5 176:11 189:12 198:17 includes (1) 91:22 including (10) 79:22 131:19 132:3 135:17 150:3 172:9 173:12 188:12 202:20 222:3 inclusion (1) 131:22 incomplete (2) 78:16,25 incorporated (2) 105:14 146:13 incorporating (2) 31:9 83:15 incorrect (1) 190:23 incorrectly (1) 139:6 incur (3) 180:17,20 192:22 indepth (1) 74:10 index (1) 224:2 indicate (1) 184:4 indicated (2) 30:17 205:6 indicates (1) 53:2 indication (1) 16:16 indirectly (1) 8:25 individual (2) 143:5 162:22 individuals (2) 95:17 188:23 induction (3) 2:12 10:18 35:8 industry (6) 64:19 86:9 120:8,9,16 134:9 industryrelated (1) 111:7 industrys (1) 110:23 infer (1) 56:11 inference (1) 68:4 infers (1) 93:12 influenced (1) 106:6 info (1) 50:19 informal (1) 60:6 information (70) 11:12 30:21 36:4 69:12,15 76:7,10,14 77:4,5,9,13 78:5,8,16,22,25 79:1,19,22 80:1,5,21,24,25 81:8,11,13,14,18,20,24 82:5,10,23 83:16 84:3 85:18,23 86:1,16 87:4,15,17,20 88:5,6,17,25 89:2,19,21 90:12,14,19 91:21 92:7,12,21 93:3 94:21 96:5 98:9,18 102:10 105:9 139:3 178:12 208:6 210:17 informed (4) 126:3	187:20 203:24 207:7 inhibiting (1) 151:1 inhouse (3) 129:24 149:14 181:20 input (2) 199:24 206:1 inq0001131510 (1) 79:11 inq0001131511 (2) 25:11 79:15 inq00011316 (1) 45:7 inq000113166 (1) 45:9 inq00013936 (1) 84:13 inq0001393658 (1) 84:16 inquiry (8) 2:2 105:24 106:14 108:13,16 109:3 224:4,6 insert (1) 131:19 insolvency (1) 34:7 instance (1) 200:24 instances (5) 41:25 43:1 48:9 147:21 210:4 instigation (2) 7:24 43:21 instruct (8) 12:4 14:3,12,21 16:17 213:23 217:1,11 instructed (2) 13:7 219:7 instructing (2) 15:15 212:12 instruction (6) 14:18 15:16 16:12 21:11 217:1,19 instructions (3) 21:9 175:25 212:23 intended (3) 108:18 114:23 216:3 interchangeably (1) 120:7 interest (1) 65:23 interested (2) 140:18 190:4 interesting (1) 140:22 internal (4) 49:15 141:10 177:24 187:21 internally (2) 90:5 176:14 interpret (1) 169:4 interpretation (2) 32:21 36:18 interprets (1) 86:9 intervening (2) 47:10 60:8 into (20) 2:7 46:8,21 51:4,18 66:21 81:15 84:4 89:15 101:4 122:9,11 140:23 144:22 178:2,7,8 192:18 196:1 206:1 intricacies (1) 74:2 intricate (2) 144:22 220:6 introduced (3) 123:19 126:5 141:6 introducing (3) 140:17 147:9 215:19 introduction (2) 29:6 138:13 investigations (2) 106:15 108:16 involve (3) 8:1 72:11 120:12	involved (30) 7:14 13:3,9 14:25 21:1,4 25:3 32:23 42:20,23 43:10 47:23 53:22 63:18 64:14 112:12,13,25 118:5 122:1 128:5,25 134:20 141:20 155:16 171:4 172:12 177:5 206:3,12 involvement (7) 21:14 58:9 92:20 106:2 116:3 124:6 152:17 involving (2) 112:17 139:25 iron (1) 199:12 irregular (1) 198:6 isnt (13) 4:5 17:7 39:4 111:8 161:24 164:2 171:3 172:10 174:19 176:11 178:10 185:4 219:15 issued (22) 12:24,25 36:6 78:5,8 81:16 82:5 86:25 89:20 91:3 100:8 101:9 105:15 155:11 163:4,5,11 167:22 180:3 199:5,12 216:5 issues (14) 27:1,20,22 30:19 34:24 38:3 66:13 99:23 165:10 166:17 196:1 198:12,12 202:13 issuing (1) 21:8 item (8) 12:3 15:17 82:22 83:8 131:15 181:6 197:18 221:7 iterations (2) 158:23 213:21 iterative (1) 132:22 its (108) 1:15 3:25 4:1,5,12 7:24,25 8:7 9:6,12 13:14 14:8 16:25 17:6,7 21:4 23:21 28:24 30:20 34:21 43:9,10,20 44:23 46:5,22 53:19 55:24 57:4 59:24 60:16,22 67:15 73:10 74:23 76:8,15 77:3 81:19 85:1,2 91:1,1,16 93:20 94:17 99:18 106:5 107:1 108:16,16 109:5,15 110:22,22,24 117:19 119:11,15 120:16 124:7,7 126:24 128:2 134:8,21 136:21 138:1 140:1 141:13 148:10 149:16 151:21 153:21 154:11 160:3,3,21 164:2 165:11 167:25 169:9 171:15 172:3 173:18 174:24 175:2 177:11 178:3,9,9 180:22 183:9 194:13 198:21 202:1 203:22 205:5 206:9 208:1 210:9,18,19 215:21,22 216:9,13 219:7 itself (7) 10:11 45:25 46:15 134:6 135:18 148:15 154:9	ive (11) 20:4 31:25 66:2 86:11 111:17 147:21 149:20 178:21 206:21 207:9 220:25 J j (2) 12:14,16 jackson (1) 136:2 james (13) 12:16 47:18,23 48:6 49:16 52:12 53:11 54:3 55:11,11,24 58:5 94:1 january (2) 113:6 169:23 jenny (1) 136:2 job (15) 18:25 20:15 26:17 41:10,12 81:5 121:22 134:2 137:17 139:9 141:10 142:15 146:11 153:9 170:25 john (1) 65:21 joined (5) 113:5 116:19 124:21 144:6,13 joining (1) 125:22 july (26) 4:13 17:15 21:2 33:5 41:19 48:12,20 49:24 50:2 51:7,12 52:24 53:3,13,20 54:12 55:12,13 57:18 60:7 114:19 117:9 123:13 125:2 142:22 147:11 jump (2) 49:25 142:14 june (15) 11:23 12:19 15:6,23 21:2 116:4,13,14 126:23,24,25 129:3 131:7,9 133:19 justifiable (1) 37:22 justification (1) 191:7 justify (1) 67:22 K kalc (8) 12:11 15:8,10,15 23:14,24 172:9,12 katrina (1) 53:11 kctmo (5) 66:19 140:11 199:5,10 211:9 keep (3) 10:10 108:23 160:8 keeping (1) 208:14 keith (12) 12:1 23:5,10,25 24:1,23,24 47:14,18 81:16 82:2 123:24 kensington (1) 121:21 kept (1) 198:11 kevin (3) 15:8,9,10 key (2) 118:1 180:15 kickoff (2) 24:19 206:4 kind (6) 129:4 142:3,8 146:7 157:6 198:4 kindly (1) 184:5 kitchen (1) 186:3 knew (25) 24:16,18,20 25:22 45:15 69:4 75:5 89:25 100:12 104:16,17 105:19 126:13 144:8,23,24 145:3 154:14 157:13	159:14 194:3,13 197:11,20 218:5 know (192) 3:16,16 5:12,18 9:9 12:17,21 13:7,8,10,17,22 14:1,2,8,20 16:4,19 18:2 19:17 20:4 22:8,9,21,23 23:2,3,13 26:6 27:7 29:16,17 32:9 36:7,14 38:4 39:7,7 41:5 42:4 45:1 46:1 49:21 56:14 59:13 61:17 63:6,8 69:6,23 70:2,4 72:19,20,22 73:1 74:16 75:18 77:9,10 78:4 82:3,9 85:1,13 87:19 88:5 89:7,18,20 92:15 95:23 98:19,21 105:4,5,10,10,13,15,15 107:6 108:23 115:5 119:24 120:16 122:1 123:9 124:1 125:1 127:15 129:8,12 130:14,23 133:9,25 134:12,16 135:7,22,22,23 138:4 139:8 140:3,5,14 141:3,4,6,17,18 142:4,15 143:19,19 147:7,10,22 149:11 152:5,7 154:12,18 155:7,14,22 157:16,17 159:3,4 160:3 162:23 165:12 166:1,3,5 168:13 170:2,10 173:16 174:24 176:7 179:23,24 180:14,22 181:23 182:23 185:16,17 186:2,3,23 187:4 188:7,9,25 189:2 192:14 194:2,21 197:25 198:5 200:2,5 201:11 202:6,18 204:2,17,19 205:7,17,18,18,23 206:4 208:7,10 210:1 212:8,9,11,16 216:20 217:1 219:8,23 221:20,21 knowledge (21) 23:9 27:5 39:3,14 42:19 43:13 58:24 74:10,21,22 75:18 82:7 111:16 135:5 158:20 165:23 179:19 203:18 205:25 213:25 222:2 known (7) 5:22 6:1,2 84:15 113:12 131:23 136:13 kussell (1) 15:7 L l144 (1) 84:15 label (1) 135:2 lack (3) 30:5 97:14 192:4 lady (1) 108:24 lambeth (1) 72:1 landing (1) 101:1 large (4) 149:12 157:16 166:7 197:19
--	---	--	--	--	--	---

largely (7) 129:20 130:10 150:14 154:13 197:1,4 204:10	liaise (2) 83:7 84:7 liaison (2) 129:22 152:25 lifespan (1) 8:3 light (4) 28:21 31:2,25 133:6 like (52) 1:15 4:14 6:15,19 34:7 42:12 66:6 70:23 75:25 77:6 78:12 93:10 103:9 107:11 110:19 120:16,16 122:22 125:19 129:21 132:9,22 134:2,9 135:1 144:9 151:17 157:1 160:4 162:24 169:12 173:7 174:22 175:11 176:9,10 178:15 179:5,9 183:17 188:3 190:22 195:23 200:3,5 203:21 205:6 209:17 212:23 216:5 217:9 222:24 liked (1) 139:25 likelihood (1) 184:16 likely (5) 79:20 175:7 181:25 185:7 207:14 lim (2) 123:23 161:16 limited (7) 33:18 82:10 148:9,14,16 152:17 196:8 limits (2) 134:12,25 line (14) 3:22 24:3,6 48:13 73:9 115:20,23 124:13 134:9 135:24 136:23 152:14 206:19 210:2 lines (3) 51:4 138:19 189:9 link (1) 21:18 linked (1) 118:24 list (10) 12:15,16,18 139:4,7 146:12 150:22 152:9 181:3 221:6 listed (4) 32:3 33:1 127:7 144:11 lists (1) 120:4 little (11) 12:3 13:1,2 84:19 85:9 151:25 153:23 202:21 214:7,11 218:24 live (1) 196:19 loads (1) 196:12 location (1) 77:20 log (5) 162:21,23 163:10,11,13 long (14) 10:21 52:1 59:2 66:16 103:4 114:23 135:25,25 147:18 156:13 179:25 180:2,14 221:22 longer (4) 8:3 103:13 214:6 222:11 longish (1) 99:18 look (109) 2:21,21 3:20 4:13,19,21 5:5 6:19 7:22 11:8,21,23 12:2,14 17:23 18:12 21:19 22:10,13 25:10,16 29:3,18 30:25 31:1 45:9 48:8 49:13 50:14 51:2,3,15 53:20 60:20,23 61:24	62:4,20 65:5 66:4,10 68:10 71:13,16 73:2 76:13,20 77:12,15 79:10 80:4 82:17 84:16 85:4,9 99:13 100:17 102:20 106:10 109:4 111:25 124:4 127:17 128:1 131:15 134:14 136:15 142:21 143:21 151:5,23 152:3 158:1 160:17,19,23,24 161:6,13,14 162:11,15 164:23,24 166:20 167:4 172:2,6 176:22 178:12 180:25 184:11 186:1 189:6,8 191:2 195:5 197:4 198:16,19 200:12 210:8 214:17,23 215:20 216:20,24 219:1 221:2 looked (12) 11:1,6 30:25 35:10 81:3 84:15 104:1,5 141:12 143:11 163:6 210:13 looking (30) 2:7 5:12 13:10,18,20 15:25 17:23 18:21 28:24 34:5 35:20 52:17 56:8 59:22 79:24 83:25 84:20 88:20 94:10 95:15 105:25 106:2 142:24 147:11 150:19 168:7 177:17 185:6 197:1 202:9 looks (2) 5:13 62:12 loop (1) 199:3 loosely (1) 142:5 lost (1) 214:6 lot (11) 119:16 139:17 140:3 153:23 154:15 159:7 166:4 178:9 187:1 203:1 209:16 lots (7) 129:22 130:14 154:4 185:20 196:13 197:6 204:16 lower (8) 7:7 12:3 83:13 85:9 171:18 186:20 187:1 200:2 ltd (1) 53:25 lump (1) 93:4 lunch (1) 122:13	134:17,24 153:6 156:15 178:10 malcolm (14) 57:10 60:21 73:3 90:6,9,24 91:8,18 93:7 94:18 95:3,8,16 96:6 malcolms (1) 57:3 man (1) 170:3 manage (9) 30:19,19 65:8 121:9 153:19 154:16 184:22 187:8 209:2 managed (2) 151:17 159:10 management (28) 110:10,11,15,22,25 111:1,6,6 113:10 120:11,13 124:22 125:5,9,13,21 126:4 130:6,19 135:12 141:25 142:4 145:11 158:4,12 161:4 163:16 164:2 manager (75) 24:3,6 67:5 74:19 112:4 113:14,14 115:21,23 117:4,14,22,23 118:2,13,19 119:7,9,14,18 120:6,18,23 121:3,10 122:4 126:11,21 127:8 128:19 129:17,19 130:1 132:8,14 133:3,14,17,21 134:2,7,10,15,21 135:4,6,11,18 136:6,9,13,25 137:6,10,11,16,24 138:1,2,9,20,21 139:16 140:11,12 141:7 142:9,14 147:4 148:10,11,15,15,18 161:1 managerial (1) 110:8 managers (1) 71:24 managing (7) 125:24 201:18,24 208:3 211:18 213:3,5 manner (2) 69:13,14 manufacture (1) 167:7 many (4) 64:12 196:17,19 197:16 march (10) 2:10 5:18 42:1 99:17 109:16 116:10,14 136:17,20 202:18 margaret (2) 17:11 18:10 margin (5) 3:25 4:1,6 5:14,15 mark (4) 15:22 16:9 124:7 161:2 martin (54) 1:3,9,13,16,23,25 70:8,15,19,23 71:5,7 102:19,23 103:6,9,15,19 106:18,24 107:3,6,10,14,20,24 108:3,7,11 122:8,10,15,22 123:4,6 137:19,23 183:11,17,25 184:3,7	190:11,15 214:4,11,15 222:8,10,14,17,21,24 223:4 massive (1) 171:23 material (3) 3:4 8:3 204:2 materials (9) 37:5 113:1 167:7 168:21,24 197:13 205:12 206:2,10 matrix (6) 156:21 157:3,6,8,12,22 matter (6) 9:7 39:15 49:11 94:7 99:1 166:2 matters (4) 73:7,18 100:4 102:7 max (9) 28:18 33:18 151:23 174:8 185:15 215:3 216:7,20 218:3 maxfordhamsic (1) 211:22 maximum (2) 70:11,14 maybe (11) 25:10 33:20 111:4 118:7,8 134:25 135:19 170:23 202:12 206:5 208:11 mean (32) 7:11 19:15 49:2 50:5 60:2 64:16 73:23 78:10 89:7 119:16 129:16 132:16 133:25 134:8 135:21 153:7,21 155:24 157:15 167:8 173:15 176:4 188:23 190:13 196:7,24 198:4 202:3 212:7,22 219:21 221:22 meaning (2) 56:9 166:15 means (5) 32:2 37:11 77:16,17 156:19 meant (2) 190:14 197:7 meantime (1) 54:25 measures (3) 77:11 82:20,21 mechanical (4) 145:2 151:21 157:18 174:9 meet (5) 94:25 98:17 172:20 173:25 211:9 meeting (55) 2:12,15,18,19 3:7 5:23 10:19 11:23,25 12:8,18 15:23,24 35:8,9,16 39:23 60:13,14,16,21 61:3,13 66:22 94:3 95:1,4 97:9 100:3 131:7,8 132:11,15 133:5,13,19 134:14 135:5 138:13 140:15,16 152:13,15 181:2,3,18,21 198:22 206:20 211:5,17 215:14 221:4,17,19 meetings (10) 24:19 94:11 101:8 127:15 134:14 144:19 147:9 160:12 213:20 220:5 member (7) 28:8,15,19 32:13,20 74:7 110:10 members (4) 13:16 43:21 65:1 84:5 memory (10) 27:8	129:11 132:6,9 148:18 170:9 182:20 186:10 194:7 200:2 mental (1) 112:5 mention (2) 172:15 177:15 mentioned (3) 47:15 164:9 199:9 message (2) 64:5 93:22 met (1) 31:18 method (1) 3:4 methodology (5) 111:1,18 200:23 206:4 208:4 michelle (1) 93:15 microphones (1) 1:17 mid2012 (1) 13:11 middle (6) 50:15 172:14 217:10 218:4,6 221:12 midjune (1) 116:1 midnovember (1) 211:1 midseptember (2) 59:18 61:3 might (23) 56:11,15 87:11 114:4 117:19,19 118:5 119:19 127:11 135:16 141:14,15 142:18 145:25 165:20 168:7 174:5 179:14 186:1 192:14 203:22 212:25 222:12 millet (24) 1:7,8,17,20,22 2:1,3 70:6,10 71:7,8 102:16,20,24 103:5,12,14,20,22 106:12 107:6,14,16,23 mind (5) 69:8 121:18 178:18 197:10,17 mine (2) 146:17 170:9 minute (6) 60:21 85:25 122:15 132:1 159:20 181:7 minuted (2) 66:24 135:5 minutes (26) 11:22 35:7 38:17 60:15,16,18 61:4 131:6,8,10,13 132:12 133:1 138:13,15,23 139:5 144:19 147:21 159:3 160:12 180:25 181:5 214:8,13 221:4 misleading (2) 5:25 35:21 missed (3) 102:21 191:18 211:13 missing (2) 94:11 150:24 mistake (1) 50:10 misunderstanding (1) 192:15 mitigated (1) 35:3 mixing (1) 34:14 mixup (1) 52:22 moment (8) 35:10 42:18 70:7 102:20 107:21 122:6 183:8 222:9 money (4) 3:6 193:1,10,14 monitor (2) 184:24 193:17	monitored (1) 158:21 monitoring (5) 153:1 156:4,8,20 193:21 month (1) 89:12 monthly (1) 207:16 months (6) 94:12 96:19,21,24 114:20 179:23 moorebick (54) 1:3,9,13,16,23,25 70:8,15,19,23 71:5,7 102:19,23 103:6,9,15,19 106:18,24 107:3,6,10,14,20,24 108:3,7,11 122:8,10,15,22 123:4,6 137:19,23 183:11,17,25 184:3,7 190:11,15 214:4,11,15 222:8,10,14,17,21,24 223:4 moral (1) 9:8 morass (1) 41:17 more (47) 6:14 16:24 89:14 92:17 99:25 101:4 103:20 105:23 106:20 111:2 117:22,23 118:5,18,19 119:8 121:16 122:9 126:20 132:4 140:7 144:20,22 147:2 153:15 169:19 171:5,9 178:10 180:8 197:13 201:3 202:17 206:3,15 209:22 210:1,1 212:14 213:16 215:10 219:12,17 220:6,6,7 222:15 morning (6) 1:3,8,12,13 2:4 104:5 most (10) 3:6 7:23 120:22 140:22 149:5 184:18 186:12,18 203:5 204:1 motivation (1) 193:2 move (6) 47:12 61:16 129:8 130:6 131:6 169:21 moving (4) 49:13 148:22 198:9 210:22 ms (35) 50:12,22 53:3 54:11 66:4 71:11 107:17 108:3,4,12,14 109:2 122:6,9 123:7,8 137:19,22,24 177:12 183:7,21 184:8,9 190:11,14,17 214:2,5,16 222:5,9 223:2,3,5 much (34) 9:13 35:22 37:15 70:14,23 81:19 88:7 97:18 102:16 103:14 106:12,14 107:4,10,12,20,24 108:7,15,16 118:19,24 126:18 132:20 165:18 171:3 175:7 180:21 192:17 197:1 206:8 222:6,23,24 must (11) 23:21 45:19 55:20 63:16,23 84:18 85:5,10 86:13 122:13
---	--	--	--	---	--	---

222:14	58:6,14,15,22 59:5,19	112:6 129:6 130:9	ofss (5) 26:23 27:2 30:2	28:23 29:12 33:25	part (46) 17:6 20:8,18	pcs (1) 71:24
myself (7) 93:16 129:25	60:21 62:5,21 65:24	141:12 153:25 157:16	37:17 38:3	112:6 124:11 164:16	24:13 28:2,6,12 30:18	pd (9) 55:21 59:6 60:1
134:1 159:17 185:1	66:12 67:5,5,7 73:5	166:21 181:2 196:9	often (7) 93:3 105:24	outlined (2) 88:6 191:11	31:24 32:11	63:18 64:17 65:9
193:20 220:15	90:10,11,14,24 91:19	202:19 215:24 216:8	112:23 165:16 207:5,6	outside (8) 103:2	33:12,17,21 35:21	73:12 91:12 93:14
	93:15,22 97:6 99:16	219:17 221:5	209:14	118:2,7,10 140:5	38:12 39:8	pds (1) 71:24
N	100:8,18,21 116:6	numbered (1) 152:9	ohp (3) 5:6 6:8,14	141:14 192:18 198:13	40:6,20,22,23	people (15) 26:9 28:9
	153:9,12	numbers (1) 210:18	ojeu (1) 164:14	outstanding (4) 35:24	41:14,17 61:24 62:8	33:11 73:4 74:18 96:9
name (7) 53:25 115:13	neilpaul (1) 62:23	nursery (2) 184:20	ok (1) 59:12	36:10 88:1,2	83:3 121:12,23 124:2	102:22 103:2 119:17
131:11 138:18 165:1	neither (1) 19:21	186:13	okay (28) 15:11 52:19	over (32) 6:7 16:10	128:24 130:19 132:10	125:19 142:13 147:23
221:12,15	network (1) 104:11		85:3 95:14 105:21	118:2,7,10 140:5	143:1 145:13 163:19	148:3 175:3 194:23
named (1) 161:23	never (11) 21:23 36:16	O	114:5 122:14,21 145:9	79:15 83:5 88:16,19	166:7 172:16 186:11	peoples (1) 140:4
namely (5) 35:22 42:15	39:10 44:9 105:7	objective (1) 152:15	146:25 148:7,20	93:20 94:21 95:9	190:8 193:1,4 194:24	perception (4) 99:25
52:15 76:6 96:11	125:9 134:12,17	obligation (16) 7:12	157:23 160:15	98:9,17 99:7,8	200:18 205:9 209:21	130:4 152:8,18
names (1) 33:1	135:1,19 205:21	8:15 25:5,21 34:20	164:8,15 169:12	106:2,20 111:19	213:23 218:25	perfection (1) 106:10
narrow (1) 118:18	nevertheless (1) 190:17	8:15 25:5,21 34:20	178:22 184:1 186:25	116:16 121:15 135:25	partial (1) 98:1	perform (20) 10:24 16:6
nature (1) 68:21	newbuild (3) 208:12	38:18 76:9 80:19 81:2	194:13 195:18 202:15	136:22 139:18 152:9	participants (2) 70:14	20:11 33:6 42:15
nbs (2) 172:21 173:12	209:11,12	83:2 96:13 104:10,10	203:16 214:2 219:8	178:12 184:19 186:13	107:5	46:14 50:13,23 61:18
near (1) 68:18	newbuilds (1) 209:5	150:21 151:11 158:11	222:1,13	197:4 200:23	particular (21) 16:12	65:22 72:3,25
necessarily (13) 23:18	next (20) 7:1 44:15	obligations (16) 23:22	old (2) 91:25 171:16	overall (13) 14:17	23:11 24:15 25:2	75:5,16,23 82:15
38:15 52:3 56:11 69:5	50:8 58:5 65:10 66:22	25:9,22 34:21 41:18	older (1) 121:14	24:7,7 36:3 78:5,7,17	38:24 67:25 74:6 86:9	138:24 139:21 179:4
72:13 74:22 89:3	72:24 90:22 94:8	71:23 72:16 75:15,17	oms (1) 100:23	131:19 132:4 161:15	88:22 110:25 111:10	181:12
92:13 153:18 180:16	105:4 107:16 130:24	82:17 94:19 97:1	once (7) 38:9 69:15	203:25 218:14,20	121:22 145:25 146:1	performance (1) 95:17
200:5 209:18	132:13 136:7,22	123:10 149:17	85:22,24 86:16 173:23	overarching (2) 218:21	148:1 166:6 188:7	performed (4) 117:7
necessary (5) 14:10	137:21 150:20 152:14	177:2,25	222:19	222:11	193:12 195:12 198:11	125:18 165:16 172:8
20:11 37:12 44:6	173:22 186:11	obliged (8) 8:20,24 9:4	onerous (2) 195:24	overbudget (1) 130:14	207:7	performing (14)
200:14	nice (1) 108:25	31:11 59:9 125:9	196:8	overcladding (10) 29:8	particularly (22) 19:22	67:12,15 71:11 123:20
need (56) 10:19 22:15	nick (2) 115:10 198:21	148:25 149:18	ones (3) 20:22 177:10	30:16 37:5,20 43:4,5,7	24:11 31:25 34:6	125:12 141:16 143:13
25:10 49:22 55:2	night (1) 2:5	obtaining (1) 44:11	194:10	112:10 171:17 188:12	43:12,23 48:7 69:23	144:10 147:9 154:10
56:21 57:19 60:3 62:7	nobody (2) 21:23 67:24	obvious (1) 150:25	online (1) 208:25	overheads (3) 4:7	72:5 121:19 130:12	157:14 173:17 194:19
63:1 71:9 74:5,23 84:5	nonchalance (2)	obviously (18) 9:21	onto (1) 51:6	5:16,17	134:8 147:1 159:9,23	218:6
88:16 90:23,25 93:19	101:3,14	16:20 21:7 23:14 26:7	onus (1) 204:6	overlap (1) 34:11	179:14 184:17 185:23	perhaps (15) 4:19 51:2
98:2 99:7 101:6	none (6) 29:8 65:1	30:23 34:18 64:4 68:2	open (2) 112:23 210:1	overlapped (1) 114:15	193:11 196:11 201:10	57:12 62:20 114:6
103:12 107:18 108:22	79:17 83:14 84:1	89:19 142:10 145:17	opening (1) 205:4	overly (1) 19:19	206:3	134:22 166:1 175:13
119:8 120:1 130:24	132:7	153:9 182:24 197:11	operate (3) 69:13	overview (1) 207:12	parties (7) 6:23	178:3 190:15 201:25
138:4 143:16 146:3	nonetheless (4) 10:5	199:5 203:7 214:8	143:15 204:25	own (20) 13:6,8 23:21	81:12,17,19 152:23	209:23 210:5 214:7,13
149:8 153:11	17:7 24:6,15	occasion (1) 122:19	operating (3) 101:3,13	24:12 34:21 72:24	154:21 158:14	period (14) 44:21 45:14
155:14,14 165:18	nonme (1) 222:3	occupancy (1) 121:13	149:10	95:21 101:15 103:23	partly (3) 192:15,16	46:9 47:10 68:5 89:13
170:11 171:3,11	nonoffline (1) 56:24	occupants (1) 112:21	operation (2) 26:8	106:2 141:9 148:10	196:11	114:21,24 115:2,4
179:18,20 180:21	nor (2) 13:9 93:13	occupation (1) 121:23	76:25	163:22 179:19 188:25	partners (1) 65:22	134:5 135:25 197:12
181:13,24	normal (4) 76:25 86:4	occupied (2) 112:18	operational (2)	189:1,1 195:2,9 199:7	parts (3) 121:16 207:6	202:22
182:12,15,17 183:5	102:20 205:4	171:15	27:20,22		216:4	permission (1) 167:8
190:19 193:14 196:9	normally (9) 43:21	occur (2) 44:6 113:25	opinion (6) 137:12,14	P	partyway (1) 116:23	person (7) 24:20 29:15
200:6 201:13 204:18	80:21 82:11 86:5	occurred (2) 61:12	174:21 178:25 190:10		party (3) 6:22 82:6	79:21 129:16 143:18
208:11 212:22 219:18	207:1 208:1 210:6	202:13	202:6		133:25	169:2 174:22
needed (40) 39:16	215:11 219:13	occurs (1) 7:4	opinions (1) 140:4	pack (6) 78:5,8,18,19	pass (11) 8:15,20,24	personal (2) 19:20
40:1,16 41:2 55:6	note (12) 2:24	oclock (6) 122:16,25	opportunity (2) 86:3	105:9,18	9:4,7,18 10:4 95:1	95:21
61:5,10 79:20 81:25	14:2,13,22,23 17:18	184:13 222:17,22	191:19	package (2) 168:17	98:8,17 155:22	personally (2) 82:2
87:18 95:4 122:3,5	105:13 108:25	223:4	option (3) 10:20 64:22	197:19	passage (1) 139:18	94:10
130:5,23,25 139:21	181:11,18 182:3 214:3	oct (3) 49:1 211:6,6	65:10	packages (1) 185:11	passed (5) 9:13,25 47:9	pertaining (1) 87:5
141:4 146:1,10,15	noted (3) 51:14 59:25	october (47) 1:1 17:13	options (2) 11:6 203:2	pages (4) 51:18 57:2,9	94:5 96:5	pertains (2) 45:23 79:12
149:13 150:17	61:14	21:3 27:9,10 30:2,3	oral (1) 141:23	160:23	passing (1) 6:4	pertinent (1) 145:25
153:8,15 157:22	notes (5) 2:13,17,18	44:22,23,23 45:14	orchestrating (1) 135:3	paid (1) 4:2	past (1) 206:23	peter (5) 115:10 136:17
159:16 170:20,25	12:8 60:14	46:9,22 47:6 49:18	orderly (2) 212:21 213:3	panned (1) 202:11	paul (38) 11:25 47:22	138:15,20 184:14
176:12 180:12 191:23	nothing (5) 37:17,22,24	53:5 55:2,8,20 58:8	organisation (4) 75:10	paracetamol (1) 184:6	48:1,6,21 49:16 52:17	phase (7) 7:16 45:24,25
193:25 194:2 208:15	151:21 180:4	59:21 62:10 63:15	113:20 179:19 188:24	paragraph (57) 2:22	57:11,17,22 59:13	86:6 91:24 92:1 99:15
212:5,11 213:23 214:5	nothings (1) 151:20	66:12 67:19,20 68:18	organisations (1) 64:12	3:22 6:19 7:1,21 8:18	62:5,21 63:22 69:23	phasing (1) 77:22
219:12	notice (2) 47:2 115:2	73:4 74:14 82:7	organised (1) 120:1	15:25 18:12,17 22:16	70:2 71:19 73:5,7,18	phelps (1) 115:24
needing (5) 179:14	notification (4) 32:23	89:8,9,17 90:7,9,25	organising (2) 135:2	25:14 29:19 49:17	86:20 87:3,10 90:6	philip (7) 107:17
180:9 199:9 209:6	33:7 53:18 60:2	91:8 92:8,17,20,24	178:5	51:4,16 60:24 61:22	91:3,18 92:5 93:7,8	108:5,6 131:16 138:24
220:7	notified (6) 2:8	97:6 200:17 201:6	original (2) 88:7 93:18	62:4 66:11 68:6,11,12	94:24 96:4	195:22 224:5
needs (16) 49:19 55:3	32:13,17,17,19,20	206:17 211:1 223:8	originally (1) 106:21	71:10 73:6 76:21,22	97:10,16,17 98:8,16	philips (1) 176:16
57:24 58:7 74:1 91:3	notifies (1) 32:7	offcentre (1) 1:21	others (13) 33:10,14	82:17 83:6,13 84:17	125:19,25	pi (1) 170:3
97:19 102:25	novate (1) 128:9	offer (5) 76:4 97:20	55:4 100:18 102:21	85:4 95:15 104:1	paulcolin (1) 58:24	pick (7) 42:17 47:12
132:19,20 151:21	novated (2) 161:7 197:4	124:8 176:25 193:2	125:19 136:3 140:2	110:2 111:25 112:4	pauls (1) 97:20	141:17 154:23 173:10
171:21,22 187:20,25	novation (1) 35:13	offered (9) 5:19 6:11,13	156:15 170:3,12 195:3	115:25 124:8 128:3,4	pause (9) 56:22,25	176:20 211:1
219:7	november (12) 27:11	10:25 11:4,8 124:21	207:10	167:4 172:7 173:22	70:25 103:11 108:10	picked (4) 173:14,20
negotiated (1) 135:24	28:24 30:3 36:9	177:10 191:5	otherwise (5) 6:6 79:17	175:18 176:23 182:9	122:24 130:22 183:19	201:11 202:12
negotiating (1) 132:24	76:15,16 80:12 81:5	offering (4) 11:14 72:1	83:14 84:15 132:11	186:11 187:6,17 189:8	223:1	picking (2) 203:17
negotiation (2) 9:16	105:9 159:21 160:19	75:25 179:21	ought (3) 62:20 101:5	190:1 192:20 196:6	pausing (1) 63:3	214:18
10:1	210:25	office (2) 67:6 200:4	105:18	198:22,23 213:12	paying (2) 7:8 176:17	picture (1) 131:23
negotiations (1) 130:11	number (22) 2:14 11:6	officers (2) 188:25	ourselves (5) 64:7 136:5	214:21	pb (5) 127:19	piece (3) 19:13 164:19
neil (43) 48:20,24 49:18	15:24 60:13 67:10	189:1	147:9 172:1 195:25	paragraphs (5) 66:10	131:16,18,21 138:24	203:12
50:2,16,17 53:11,13	78:12 94:15 99:23	official (1) 111:12	outline (8) 26:23 27:2	111:24 112:1 191:2	pcb (2) 221:10,11	pieces (2) 20:2,3
55:13 57:3,5,6,9		offline (2) 56:20,23		200:15		

place (14) 5:20 6:25 37:12 44:24 62:19 96:4 112:22 144:7 149:6 160:15 191:15 205:10 213:5 219:19	181:11,18 182:3 posttender (1) 44:1 potential (6) 3:1 5:24 141:7 203:18 204:14,21	45:5,11,12,18,20 46:11,13,14,18 47:2,5,8,11 49:19 50:14,23 51:20,23 52:11 53:4,24 54:3,18 55:1,6,17,21 56:2,6,9,16 58:7,11,18 59:21 60:4,25 61:5,11,17 62:11 63:11,16,23 64:9,21 65:13 66:19,21 67:13,23 69:21,25 70:1 72:7,7,25 74:12,17 75:8,17 76:23 83:7 85:6 87:1,6 88:1,17 89:2 91:23 96:14,17 97:2 128:10	32:2,11,12,14,20 33:8,12,17,18,22 34:10 43:22 97:15 104:4 119:3 130:19 132:18 137:14 139:25 143:20,23 144:2,11,17 145:15 146:18,20 149:6,10 150:13 158:5 171:7 174:14 203:9 218:1 professionals (8) 16:18 32:3,6 120:5 141:13,20 148:25 151:9 profit (5) 3:25 4:7 5:16,17 6:7 programme (5) 200:13 203:7 207:14 210:20 211:10 progress (5) 60:13 68:14 181:2 215:14 221:4 progressed (2) 105:7 213:14 progresses (2) 85:11 86:14 progressing (1) 130:11 project (356) 3:25 6:11,24 7:16 9:5 11:21 12:11 13:15,19,25 15:10,17 17:5,21 19:12,18,24 22:6 23:14,15,16,18,19,21,24,24 24:2,3,4,5,5,14,14 26:3,25 28:13 30:23 31:7 32:7 33:22 34:6 36:1,17 37:13 42:20 43:16 44:3 46:5 49:9 53:23 55:7 57:24 58:9 61:18 63:5,18 64:12,18,24 65:6 66:13,16 67:18 68:2,15,17,19 71:20,24 74:18 75:11,14,20 79:19 80:1,22,24 82:12 85:11,12,17 86:2,14,25 87:20 88:8,15 89:7,11,16 90:1 92:2 93:4,5,15 95:20,23,24 98:12,22 99:17,24 100:21 101:5 104:12,18 106:3 110:10,11,14,22,25 111:1,6 112:4,10 113:9,14,14,15,18,25 114:2,9,10,15,17,19 115:4,17,18,18,18 116:2,4,7,13,20,23 117:3,5,13,22,23 118:1,5,6,13,19 119:7,9,14,18 120:6,11,13,18,23 121:3,8,9,10,24 122:3,4 124:1,2,6,21,22,25 125:5,9,13,21,22,23 126:4,11,21,22 127:1,2,4,7,10 128:6,7,19,25 129:3,8,17,19,20,21 130:1,3,5,6,8,9,19 131:18,19,23,25	132:3,4,8,14 133:3,13,17,21 134:2,7,10,15,21,23 135:3,6,11,11,18 136:5,9,13,25 137:6,9,11,16,24 138:1,2,9,20,21,25 139:11,16 140:1,11,11,19 141:6,14,21,25 142:2,4,7,9,11,14 144:1,5,6,9,14 145:11,21,25 146:6,14 147:4,6 148:3,10,11,15,15,18 149:1,4,5 150:5 151:1,8,10,15 152:4,7,8 154:13 156:6,10,22 157:4,12,15 158:3,11,12,14,18,22,23,24 159:7,19,21,23 160:2,6,10,11 161:1,4,5,24 162:7 165:5,10,13 170:17 171:13,14,20 172:9,12 174:22,23 175:8,11 177:3,5 179:9,15 180:16 185:21 187:13 190:6 194:1 195:16 201:8 202:11 203:1 206:1,4,22 207:6 208:20 209:15,20 215:11,12 216:4 219:12,13,14,24 220:13 projects (47) 19:16 42:22 43:4,5,5,7,9,11,20,22 55:22,22 58:1 64:14 80:17,18 86:4,6 110:23 112:2,5,7,12,13,17,20,23,24 117:21,24 120:22 121:1,2 126:7,7,11,19 145:4,18 149:13 153:21 157:9 160:5 171:4,5 172:9 174:19 promised (1) 35:22 promotion (1) 113:24 prompt (2) 27:8 219:18 properly (11) 31:14 39:16,18 40:2,4,16,19 120:23 121:3 163:7 212:4 proposal (37) 12:24 13:4 14:6,16,19 18:6,13,18,22 21:12 124:5,14 128:19,22 132:8 133:1 169:25 170:13,18 172:2,4,16 174:7 175:19 176:13,18,25 177:10 179:11,24 185:4 192:23 194:4 195:4 203:23 204:8 208:13 proposals (24) 16:24 17:8 18:11 20:7,13,23 21:6,10,25 166:8,16 170:1 172:19 173:2 180:10 184:25 185:1 193:18,20,24 202:4 203:13,22 204:2 propose (2) 152:14	219:3 proposed (22) 2:22 3:2 10:20 16:2 17:19,24 18:3 19:10 21:5 25:25 29:21 123:12 124:17 131:21 133:22 168:2 173:25 182:14 207:23 210:25 216:19 220:1 proposing (13) 20:15 130:18 169:7,16 174:5 188:7 194:11 198:5 199:1,18 210:8 219:3 220:12 proposition (2) 19:14 25:7 protect (1) 9:22 protection (2) 76:24 77:6 provide (10) 17:1 23:12 59:14 77:4 81:19 23:25 9:147:25 172:17 200:16 210:10 provided (10) 11:12 22:25 30:11 76:14,25 79:2,22 151:5 177:8 191:6 provides (1) 45:10 providing (4) 82:23 189:11 190:3 199:2 provision (2) 32:21 124:15 provisions (1) 66:18 ps (1) 57:25 pull (2) 88:3 218:24 pulled (1) 164:18 purely (3) 136:24 155:19 201:14 purposes (3) 22:20,22 200:2 pursuance (1) 79:22 pursuant (1) 151:11 push (2) 64:8 96:2 puts (2) 101:13 164:19 putting (6) 26:14,19 72:8 91:16 128:19 204:7 puzzled (1) 34:16	39:2,4,6,10,14,22 40:6,8,12,21,23 41:1,8,12,17,21,25 42:7,12,24 43:1,7,13,18,25 44:5,9,14,21 45:1,4,7,17,23 46:4,10,13,17,21,24 47:5,12,18,21 48:1,3,5,8,18,24 49:5,8,11,13 50:5,8 51:1,10,25 52:6,13,19 53:7 54:10,14,20 55:10 56:5,8,13,19 59:18 60:2,6,10 61:8,15,22 62:20 63:5,7,12 64:10,21 65:5,15,17,19,21 66:3,3 67:21 68:6,10,24 69:8,19 70:2 71:16 72:10,15,19,22,24 73:17 74:3,11,20,25 75:4,12,22 76:5,13,20 77:9,14 78:2,9,15,20,24 79:3,10 80:3,15 81:1,21 82:3,7,13 83:2,5,12 84:3,7,10,13,25 85:3,19,25 86:11,18 87:7,13,16,22 88:9,13,19 89:6,18,23 90:3,22 91:7,16 92:11,15,23 93:6 94:22 95:2,7,11,14,23 96:1,10,19 97:5,24 98:10,15,19,22,25 99:4,8,11,13 100:9,12,16 101:18,23 102:1,4,11,14 104:15,21,24 105:3,12,17,21 109:8,10,12,19,21,24 110:13,17,20 111:2,5,10,14,21,24 112:9,16,25 113:5,9,12,18,22,24 114:2,5,7,13,15,19,22 115:7,9,13,15,17,20,23,25 116:6,10,12,16,19,23 117:1,12 118:12,22 119:6,10,13,19,23 120:3,5,11,15,22 121:1,5,8,12,18,25 122:3 123:17,25 124:3,20,25 125:4,8,12,16,22 126:1,10,15,22 127:7,10,12,14,16,22,24 128:1,18,22 130:2,13,17 131:1,5,13,15,18 132:7,13,25 133:5,12,18,24 134:5 135:5,13,15 136:7,11,15 137:9,15 138:3,6,12,18,23 139:3,8,10,13 140:7,14 141:2,6,9,12,23 142:11,20 143:11,21 144:4,15
--	---	--	---	--	--	---

145:9,13,19,24	204:7	really (20) 9:11,12 21:3	67:5	102:1	139:6	175:4,23 176:3,4
146:4,11,25	quantity (4) 17:1	23:8 26:14 61:4,9	refer (7) 5:9 59:15	reiterate (1) 198:4	request (9) 12:24,25	178:4 182:15 186:6
147:2,10,14	123:22 124:15 189:12	64:1,24 89:11 133:23	60:17 72:11 77:17	reiterating (1) 191:11	13:4 66:19 89:21	187:3 189:21,24
148:2,7,13,20,22	quarter (1) 214:13	155:16 169:15 175:2	80:16 110:14	rejected (2) 193:16	93:25 169:10 208:5	201:13,23 205:17
149:3,16,22 150:15,18	queried (2) 66:14	176:15 206:7,9	reference (14) 14:8	195:5	210:19	220:11
151:3,8,13,25	178:15	219:3,22 220:10	18:13,17 19:24 23:13	rejecting (1) 193:2	requested (4) 20:12,22	responsible (17) 59:8
153:14,16,20	queries (2) 153:25	reappointment (1) 97:2	60:12 83:12,17 84:18	rejection (3) 185:3	162:20 210:18	65:8 72:14 73:7,18
154:3,5,20 155:18,23	194:5	reason (14) 28:13	89:10 164:25 166:13	193:1 202:1	requesting (1) 78:22	104:22,24 145:10
156:4,18,21	query (3) 66:15 78:21	52:7,14 67:12 87:17	168:25 221:3	related (4) 34:6 101:9	require (4) 74:21,22	146:16 151:18 157:1
157:3,8,11,23	177:19	128:23 130:20,21	referenced (1) 2:23	210:17 222:19	131:24 175:8	163:21 169:18 175:4
158:16,20 159:6,11,18	question (33) 8:18	175:13 190:3 199:14	referencing (1) 90:15	relating (12) 35:19	required (16) 19:18	177:9 201:18 211:17
160:7,15,17	13:17 15:5 37:3,20	209:21 215:9 219:11	referred (10) 12:18 34:3	68:14 73:8,19 79:19	22:6 36:5,13,19 42:8	rest (1) 132:18
161:4,11,22	38:6 39:24,25 40:14	reasonable (4) 25:17	47:21 53:19 73:14	80:1 100:19 112:5	48:15 82:6 84:8 116:2	restructuring (1) 171:18
162:2,5,11,18	41:1 42:7,17 48:24	26:18 189:13 213:9	88:13 110:20 165:5	119:23 122:20 166:23	150:5 157:15 186:23	resubmitting (1) 49:5
163:3,6,10,14	51:17 52:13 54:10	reasons (6) 6:6 51:20	190:12 215:18	196:1	191:16 196:13 211:24	result (4) 7:6 168:19
164:2,6,8,21,23	58:16 96:12 99:2	61:19 152:15 191:4	referring (8) 13:13 16:4	relation (12) 27:21	requirement (5) 16:10	202:24 203:20
165:4,8,14,17,19,23	101:19 104:7	205:3	33:14 87:3 148:10,14	29:22 30:4 31:19 32:7	38:15 43:23 86:9	retained (2) 174:8,14
166:9,11,20	105:4,4,23,24 108:20	reassurance (2) 171:6	176:2 196:22	35:3 66:13 75:13	191:25	retaining (1) 6:14
167:4,12,20	126:12 132:13 155:8	198:7	refers (1) 175:24	202:20 206:2 217:14	requirements (14) 28:3	return (2) 3:12 122:16
168:4,11,18,23	176:24 190:12,17	reassured (2) 182:24	reflected (1) 8:9	218:13	31:9,13,18 40:20,24	returning (1) 54:22
169:17,21	192:1	183:5	reform (1) 129:7	relative (1) 67:19	167:19 168:1 169:9	reverse (1) 185:25
170:7,14,22,25	questions (29) 2:2 6:17	recall (23) 18:22 24:22	reforming (1) 129:2	released (1) 76:17	172:21,23 173:11	review (37) 11:4 15:20
171:8,10,12	57:16 60:19 70:11,13	25:2 67:7,16 68:9,16	refresh (1) 159:23	relevance (1) 69:8	174:1 205:24	16:1,2,6,16,18,20 19:2
172:2,12,14	94:15 99:14	73:16 110:18 114:1	refreshed (2) 129:11	relevant (6) 31:9 73:10	requires (3) 73:23,25,25	79:17 83:14 85:10
173:1,5,10,18,21	102:18,22,25	123:14 127:10	162:7	83:15 87:5 187:12,15	requiring (1) 74:14	86:13 153:22 158:7,17
174:4,11,13,17,21	103:1,20,23 105:22	132:9,14 139:13	refurb (2) 174:23 207:3	reliant (1) 81:19	residency (1) 112:22	166:25 167:24 168:17
175:10,16 176:19	107:4,7 108:13,18	166:2,6 170:15 186:8	refurbishment (20)	relinquish (1) 107:19	resident (2) 129:21	172:18 173:23
177:15,25	109:25 110:13 136:7	193:21 206:11 215:6	12:22 13:12	reluctant (1) 192:21	152:25	177:2,15,16,21,24
178:17,22,24	164:11 201:4 202:17	220:21	19:6,10,11 20:1	remain (1) 128:6	residential (4) 19:11	178:1 179:14 180:5
179:3,8,22	206:15 222:15 224:4,6	receive (4) 6:23 17:8	26:2,4,5,24 27:3 29:7	remained (1) 35:24	112:18,24 121:13	185:18 188:4 196:13
180:19,23,25 181:17	quick (1) 211:23	142:13 175:8	80:17 117:8 121:1,2	remains (1) 121:13	residents (6) 112:20	203:12 211:22
182:5,7,19,22 183:3	quicker (1) 210:5	received (8) 50:6	125:14 126:7,19	remains (3) 98:3	121:13,22 187:20,25	217:10,16 218:3
185:6,19,22	quite (25) 26:4 37:19	88:5,24 92:10 165:19	137:10	106:13,18	201:16	reviewed (14) 11:1,3
186:8,11,21	42:24 70:10 82:9 93:3	176:15 199:23 214:25	112:14 189:3 208:10	remedy (1) 151:13	resolved (1) 210:19	14:16 20:13 100:12
187:5,15,17	96:15 97:14 103:12	receiving (2) 29:15	209:5	remember (43) 3:10,13	resource (3) 100:3	128:10 129:7 132:18
188:6,11,14,23	115:4 119:11,16	207:20	refuse (1) 50:23	10:22 12:12 29:2	134:22 171:2	175:22 189:2 197:19
189:4,6,22	134:11 140:3 153:23	recent (1) 124:11	refused (3) 61:17	30:13 33:16 42:25	resourcehungry (1)	204:11 215:4 218:1
190:10,19,24 191:2	159:7 162:5 164:2,4	recently (3) 109:8 111:3	65:15,19	43:1 47:14 48:5 60:9	154:16	reviewing (7) 34:9 35:1
192:2,11,20,25	171:14,16 175:11	211:24	refusing (1) 50:13	65:22 68:1 70:4 76:18	resources (2) 23:1 25:1	129:10 174:9 181:25
193:7,15 194:6,14,19	185:25 208:6 209:1	reclad (1) 43:12	regard (6) 24:13 28:6	78:6 90:20,21 98:24	respect (21) 6:18 11:5	188:4 216:22
195:1,4,15,18	quotes (1) 189:15	recognised (1) 212:1	97:13 102:5,5 166:23	99:4,9 101:17	12:19 13:11,13,18	reviews (5) 91:23
196:14,22 197:9,23	quoting (1) 20:10	recognising (1) 170:11	regarded (2) 212:2,19	102:13,15 147:14	15:8 17:21 18:18	178:15 185:20 190:8
198:3,8,16 199:17,22		recollection (3) 23:8	regardless (2) 93:1	148:8 151:14,19	29:11 33:21,22 34:17	203:8
200:8,15,22		43:2 50:24	96:10	156:10 176:7 178:8	37:5 42:2 43:3,15	revised (10) 50:2,5
201:2,20,25		recommendation (2)	regards (2) 58:2 92:4	181:21,23 182:6,10	66:13 85:8 93:9 98:8	53:16 55:19 89:8
202:8,15,17 203:16		14:4 136:25	regime (1) 44:24	193:12 194:1	respond (4) 179:24	126:22 127:10 131:18
204:5,9,13,20		recommendations (1)	register (3) 34:4,24	200:20,25 201:1	184:25 194:5 209:24	133:1 217:18
205:1,9,25 206:9,14		158:8	170:9	207:20 213:16	respondby (1) 193:19	revisit (1) 159:22
207:20,23 208:8,16,18		recommended (3) 14:14	regrettable (1) 195:11	remit (4) 20:8	responded (2) 57:5	revisiting (1) 131:24
209:3,9,11,13,20		58:25 65:24	regs (1) 189:20	104:20,21 130:1	201:17	rfis (5) 207:1,13
210:3,7,14,16 211:16		reconciled (1) 207:9	regularly (1) 171:4	removal (1) 131:24	response (16) 17:14	208:1,4,24
212:19		reconsider (1) 202:1	regulation (15)	remove (1) 76:23	51:11 55:11,11,12,24	riba (1) 218:17
213:2,6,8,10,19,25		reconsidered (1) 202:10	25:10,13,13	repeat (2) 51:16 108:20	56:8 57:7 58:21,22	richmal (8) 173:18
216:2,7,10,16,23		record (9) 63:25 69:15	45:9,20,23,24	repercussions (1) 94:14	64:11 102:11 177:21	175:19,22 177:6
217:3,8,12,14,18,22,24		77:12 79:18,25 206:25	79:12,16 81:2 82:1,24	replaced (6) 45:4,4	195:20 196:4 209:25	188:17 195:7,13
218:8,11,13,21,23		207:11,25 211:10	83:12,17 84:19	47:18 55:16 116:7,10	responsibilities (35)	202:12
219:9,17,25 220:9,17		recorded (3) 61:7	regulations (56)	replacement (2)	34:9,13 104:3	rics (5) 117:17 119:15
221:1,13,15,17,19		210:21 212:21	22:13,22 23:7	56:10,17	118:2,20 128:14	123:11 143:3 145:17
222:1		recording (1) 208:3	25:4,12,18 26:16,21	reply (1) 137:20	132:17,21 139:18,23	rid (1) 150:11
qa (1) 163:18		records (5) 2:25 71:17	31:13 34:17,22 35:24	report (19) 19:7	143:22 144:2,16,18	righthand (4) 127:19
qs (4) 17:4 128:13		152:8 207:1 208:1	42:13,16 44:16	29:10,24 30:7,12,16	145:14 146:12,17	149:25 210:21 215:25
161:16 177:8		reduction (1) 203:19	45:2,8,13 46:7,18	36:9 39:23 40:17	147:16,22 150:22	rightly (1) 129:18
qualification (6)		reed (34) 48:20,24	55:16,21 66:14,16	41:2,11 80:5 115:17	151:9 152:23 154:21	ring (1) 27:11
74:3,4,6 110:15,24		50:2,16 53:11,13	67:9 69:2,3,7 71:23,25	129:2 155:11	156:25 157:20	rise (3) 107:15,16,20
111:12		55:13 57:3,5,9	74:1,2,10,13,24	172:15,17 175:25	158:5,13 159:9	risk (8) 34:4,24 178:6
qualifications (1) 110:3		58:14,22 59:11,19	75:1,16 76:7,8	207:17	160:1,14,25 162:8	197:23,25 200:23
qualified (7) 73:20,22		60:21 62:5,21 65:24	79:6,10,23 80:9,16	reporting (5) 115:20	175:2 176:8 201:8	204:15,21
74:4 93:16 94:1 177:7		66:12 67:7 73:5	83:2,24 84:14,21	155:10,20 158:7,17	responsibility (33)	risks (6) 33:21
205:10		90:10,24 91:19 97:6	86:10 155:25 173:3,13	reports (7) 22:1 27:6	24:7,9,14 48:5 97:3	34:3,3,5,6 35:2
quality (15) 20:17 24:8		99:16 100:18,21	188:18 189:15	30:1 31:17 41:6 92:1	98:25 104:11,15,25	ritual (1) 1:15
101:24 102:6 155:6		101:12,16 116:6,17	191:15,24	155:12	129:19 150:23 156:21	road (1) 53:16
163:16,17,20,22,24		152:5 153:4	regulatory (2) 94:13	represented (1) 138:24	157:5,21 159:18	robert (5) 114:16 115:1
164:2 203:8,17,20		reeds (3) 54:22 57:6		representing (2) 134:23	169:5,15,20 170:21	123:19 127:7,11

role (207) 11:21 18:5 20:18,19,19 21:16,17 22:10 24:20 30:19,20 33:21,24 34:18 38:12,25 40:5,6 42:14,15 45:1,4 46:7,14 47:9 48:3 49:21 50:14,23 51:20 53:24 56:1,3 58:19 59:7 60:1,3 61:18 62:9,10,11,16 63:5,11,14,17 64:17 65:2,4,10,11,22 67:12,15,23 69:21 70:1 71:12,20,21,21 72:1,10,21,25 74:12,17,20 75:5,8,21,23 76:2 81:5 87:5,6 88:15 93:1 94:23 95:23 96:16,18 97:2,19,21 98:22 104:9,10,15,25 114:13 115:9 117:15,20,24 118:23 119:2,11,12,21 122:5 123:21 125:13,17,18,21 126:10,12 128:13,15 129:17 131:4 132:15 134:15 138:25 139:20 140:17 141:16,21,25 142:4,15 143:7,16,18 144:10 146:16 147:4 148:4,17,22,24 149:3,4 150:12,23 151:13,14 154:10 155:7,9 156:12,17 158:10 161:19 164:10 165:23 167:14,21,22,25 170:1,8,13 171:3 172:8 173:1,14,17 175:1,6 176:16 177:4 178:3,14,25 179:1,4,5,5 180:12,22 181:12,22,24 182:12,16 185:7,15 187:14,20 188:22 189:5,12 190:4,9,13,14,20 191:7,14,18 192:4,9 193:5,7,9,13,16 195:13 198:13 201:13 205:9 206:7 212:12 213:2 220:16 rolecarriers (1) 24:16 roles (52) 24:17,18 34:9,12 64:13 104:2,3 117:4 120:1 132:17,21,24 134:11 139:11,18,22 140:15 143:12,22 144:1,1,16,18,22 145:4,14 146:12,17 147:5,8,15,22 148:1 150:21 151:8 152:23 154:21 156:24 157:13,20 158:4,13,25 159:8,13,25 160:13,25 165:7 178:18 201:7 220:15 room (6) 1:18 70:21 103:2 122:18 183:15 222:19	round (2) 13:1 207:8 route (3) 37:14 144:25 218:4 routes (1) 215:24 routine (1) 49:11 rowan (1) 65:21 royalarteliawe (1) 94:12 run (3) 86:5 100:1 206:23 running (1) 149:12 rushed (4) 209:14,15,19,20 ryd00092644 (1) 76:13 ryd0009264414 (1) 76:20 ryd0009264415 (1) 77:14 ryd0009264418 (1) 80:4 rydon (83) 2:8 3:9,23 4:16 5:7,14,19 6:6,12,13,13 11:4,9,13,17 38:9,11,16 39:11,15,16,20 41:22 42:2 59:7 65:7,9,11,12 81:23 84:7 99:5,6,7,14,25 100:19 101:13,23 102:12,14 116:23 136:18 140:24 152:19 153:8 154:5,9,9,14 155:13 157:21 165:19 168:14 180:8 189:23 194:7 196:15,23 197:1,4 200:18 201:15,18,23 202:18 203:10 204:10 206:24 207:24 208:2,20 211:17 213:2 215:6 218:13,19 219:1,8 220:5,10,12 221:22 rydons (15) 3:11 6:4 36:24 39:11 40:11,22 41:14 58:19 78:18 99:10 101:24 153:5 167:15 195:23 213:14 S sadly (2) 195:9,11 safe (4) 69:13,14 204:18 205:22 safely (3) 31:19 35:4 178:11 safer (1) 205:5 safety (79) 25:25 26:24 27:2 28:23 29:11,12 30:22 31:20 33:25 34:1,21,23,24 37:6 39:17 40:3,18 41:3 45:25 48:16 49:6 69:10,11,18 72:6,9,12,16 74:8,9 79:3,5,7,18,21 80:1,7,8,11,19,22,23 81:4,6,9,15,17 82:23,24 83:9,15,20 84:1,4,8 85:8,16,22 86:7 87:14 88:4 89:1,15 90:2 92:8,13,18,22,25 99:8 101:24 105:5 161:23 173:8 189:1 204:15,22 205:18,23	same (9) 3:13 8:3 47:23 57:7 93:7 131:15 165:5 188:2,20 sat (8) 129:18,23 156:13 157:5 180:18 194:12 198:24 220:10 save (1) 3:6 saving (13) 3:1 5:24 6:5,22,23 7:5,9 8:2,8,13,16 9:25 193:1 savings (26) 2:23,24 3:3,8,24 5:19 6:11,13,18 8:20,24 9:4,7,13,19 10:4,7,10,15,25 11:1,2,3,4,8,13 saw (17) 2:18 12:8 28:25 33:5 54:15 71:17 89:9 91:13 97:22 100:5,9 149:21 155:19 163:8 193:16 194:24 219:10 saying (27) 9:12 34:15 36:4 52:3 54:6 63:2 74:6 80:19 99:20 108:20,25 137:17 154:1 155:10 169:6 172:8 176:10 181:19 186:1,3 190:2 191:17,18 194:10 197:4 201:17 219:1 schedule (6) 31:3 82:14 142:22 149:24 157:24 177:17 schedules (1) 147:24 scheme (3) 117:17 129:19 172:14 schemes (1) 31:8 school (1) 112:23 schools (3) 112:6,23 113:3 scope (34) 15:21 16:2,3,6,17 20:7,23 21:5,25 58:8 98:3 118:18 119:15 130:15 140:5 152:19,25 153:5 154:5,8,10,24,25 155:2,17 175:22 176:12 177:3,15 178:1 191:4 192:19 198:13 204:4 scopes (1) 170:2 scratch (1) 19:1 screen (2) 86:21 100:20 scrutinised (1) 136:2 sea00000074 (1) 17:10 second (20) 3:20 6:16 18:17 27:9 31:6 59:3 63:21 64:10 73:6 76:22 105:4 109:13 124:13 136:19 149:25 176:21 181:5 182:9 187:6 192:20 secondly (1) 84:3 secret (1) 6:7 section (3) 77:15 80:6 160:25 sectional (1) 86:6 sections (2) 86:8 162:12 see (214) 2:16,23 4:3 5:2,5,7 7:17 10:19,20 11:24 12:2,2,6,14 14:2,7,25 18:5,8,12,14	20:9,14 21:2,15 28:12,20 30:10 34:2 35:6 37:16 39:22,22 45:10 46:19 48:12,19,22 49:15,24 50:1,3,6 51:8,19,25 52:7,21 53:18,21,23 55:10 57:3,4,6 58:4,11 59:3 60:10 62:1,3,7 66:4 68:6 70:6,12 72:15 73:5 75:22 76:15 77:19,25 78:9 79:13,16 82:25 83:6,10 84:17,18 90:3,9,24 91:5 98:3 100:2,19 101:12 102:20 103:19 104:4 109:5,15 110:15 111:21 112:3,16 116:16 118:1,12 124:5,7,10,18 126:22,24 127:4,5,8,16,18,19 128:16 131:7,9,15 133:4 135:13 136:4 137:5,7 138:8,10,14,16,18,21 139:1,5 140:10,12 142:24 143:5 146:5 149:25 150:6,15 152:9 153:12 156:18 158:2 159:18 160:20,21,24 161:1,2,7,9,14,22,25 162:2,12,18 163:14,17,25 164:6,24 165:2,17 166:18,21,24 167:2,10 170:5 172:4,7,24 174:2 175:19 176:16 177:13 180:15 181:2,15 184:12,22 187:6,7 188:6,23 189:19 191:6 194:12 195:21 196:14 199:15 200:8 202:8 207:18,24 210:16 211:14 212:6 213:21,22 215:23 216:7 217:12,24 218:1,23 219:9,25 220:9,17,18 221:2,5,8 222:21 seeing (1) 30:13 seeking (2) 171:15 211:19 seem (3) 19:18 127:16 137:5 seemed (5) 62:15 63:1 65:21 126:8 196:17 seems (4) 90:14 95:16 190:2 191:17 seen (21) 2:13 13:1 15:24 20:10 30:13 34:16 35:9 41:18,23,25 54:12,20 60:7 153:7 157:8 167:12 193:8 202:13 211:4,12 212:14 selection (1) 150:7 seminars (1) 111:7 send (4) 90:14 185:1 193:19 206:22 senior (3) 24:11,15 113:14	sense (4) 19:19 115:5 148:9,14 sensible (2) 75:4,23 sent (12) 14:23 53:14 54:5,11,20 88:7 100:10,13 216:25 217:19 220:18,22 sentence (2) 128:3 152:16 separate (2) 15:17 179:2 september (17) 42:1 57:1,4,10 60:13 61:2 62:3,6,22 71:12 73:14,15 86:20 88:21 90:18 109:5 195:21 serve (1) 207:11 service (5) 20:24 22:6 75:25 120:21 150:16 services (39) 31:4 44:11 82:15 117:7 118:18 119:15 124:9,16,22,23 125:5,10 142:22,23 143:3,6 144:12 146:19 149:13,24 150:3 151:4 157:24 161:8 171:17 175:23,24 176:5,12 177:1,3,9,16,17,23 179:18 189:11 190:2 191:5 set (23) 23:21 48:9 57:21 58:25 62:6 82:21 99:22 100:3 110:3 112:2 127:4 132:20 136:7 143:2 144:6,14 158:13 159:25 162:14,16 166:22 180:25 215:16 sets (2) 18:11 66:15 setting (4) 124:14 143:7 144:20 157:4 several (1) 207:10 shall (6) 1:5 25:15 76:23 107:19 163:21 167:5 share (1) 140:2 sharing (1) 137:14 shed (2) 126:6 140:2 sheet (2) 163:12 207:12 sheets (1) 163:4 shop (1) 167:1 short (14) 10:21 17:18 70:12 71:3 76:6 103:12,17 108:1,18 123:2 164:7 183:12,23 211:8 shorter (1) 109:14 shortly (1) 166:7 shortterm (3) 129:9 130:25 133:11 should (55) 4:19 7:6 8:14 14:5 16:7 22:25 24:25 30:14 37:22 42:18 44:11 50:12,18,22 51:13 55:1 57:1,12 58:19,25 59:1 63:18 65:7 68:4,5,18 71:25 73:9 77:10 78:21 79:2 85:15,21 89:7 95:9,11 99:25 120:12,14,19,20,20 130:18 131:3 149:20	151:17 158:2 179:11 195:24 200:13 201:25 202:9,10 203:24 220:12 shouldnt (3) 198:5 209:16,18 show (3) 66:6 73:9 77:6 showed (1) 205:15 showers (1) 188:8 showing (2) 54:2 101:18 shown (2) 32:1 103:24 shut (2) 200:25 201:14 si (1) 59:12 sic (1) 55:20 side (10) 125:24 126:19 127:19 129:18 149:25 163:1,13 207:7 210:21 215:25 sign (8) 123:15 175:23 176:4,9 177:20 181:13 182:12 183:5 signature (2) 109:6,16 signed (10) 28:4 31:5 41:19 117:9 123:14 136:1 143:2 147:11,17 210:19 significant (3) 20:2 152:21 175:12 signing (3) 134:16 176:5 215:8 signoff (5) 176:2 193:22,23 200:23 209:13 similar (11) 52:11 68:20 71:25 119:6 145:4 158:4,12 165:7 172:9 219:19 220:24 similarities (3) 119:8,19,20 simon (30) 1:5,11 57:23 67:1 90:13,16 91:3 93:23 97:7 100:22 115:19 123:20 169:23 175:17 176:14 195:8,20 196:4,7 198:20 199:19 206:17 208:19 209:4 210:23,25 211:3 212:6,8 224:3 simons (1) 93:12 simple (6) 59:6 108:18 155:15 204:4 208:13 219:4 since (2) 64:14 197:12 sir (54) 1:3,9,13,16,23,25 70:8,15,19,23 71:5,7 102:19,23 103:6,9,15,19 106:18,24 107:3,6,10,14,20,24 108:3,7,11 122:8,10,15,22 123:4,6 137:19,23 183:11,17,25 184:3,7 190:11,15 214:4,11,15 222:8,10,14,17,21,24 223:4 sit (5) 108:8 185:14 201:22 218:13,20 site (7) 31:19 35:3 77:21 101:8 121:20 201:19,24	sits (3) 78:4 169:16 175:5 sitting (1) 108:24 situation (5) 10:9 58:1,25 64:11 101:12 six (5) 51:18 96:19,21,24 179:23 size (2) 200:19 201:12 skill (2) 17:6 120:12 skills (8) 73:24,25 119:6,9 126:3,15 188:16,17 skillset (2) 16:25 188:21 skip (1) 7:1 slick (1) 208:25 slide (1) 141:8 slides (1) 140:7 slightly (5) 1:21 122:9 139:3 140:4 214:5 slow (2) 96:12,22 smooth (3) 96:2 97:12 101:1 snuck (1) 221:12 social (1) 120:23 social (6) 126:6,8 184:23 186:2 187:9,11 software (1) 164:19 solely (4) 21:13 38:24 75:11 97:1 somebody (17) 39:1,2,3,8,20 41:4,9 56:11,15 64:23,23 65:3 89:4 115:21 122:5 149:19 203:22 somehow (2) 191:17 221:12 someone (8) 15:10 59:10 98:2 107:21 125:12 167:14 171:19 199:24 someones (1) 184:5 something (29) 4:21 13:1 68:20 104:19 110:19 117:4 120:9 133:23 134:25 149:19 150:25 152:3 153:18 157:14 163:6 170:19 173:7,13 178:23 185:16,22 186:15,16 188:9 189:15 192:13 197:21 208:11 216:21 sometimes (10) 103:1 106:24 119:17 120:5 132:23 135:14 149:6 192:18 202:5 208:10 soon (2) 2:19 107:22 sort (44) 73:19 74:4 94:12 96:14,20,21 98:15 112:19 118:13 120:1 122:3 129:1,2 130:10 139:9 140:6 141:5 143:17 144:7,20 145:5 153:22 154:18 155:12,13 168:14 177:19,22 179:13 180:7,17 181:25 185:18 194:24 201:22 202:6 203:7 206:4 208:12,25 212:24 213:16 218:20 220:13 sorted (1) 96:25 sorting (1) 96:12 sorts (1) 194:23
---	---	---	---	---	--	---

sought (3) 42:2,4 190:7	162:6 167:12 168:2	20:1,1 26:2,7,11,24	suitable (1) 82:19	145:5,12 147:21	96:4,5,8 102:7,7 114:8	thereby (1) 6:14
sounds (1) 116:11	172:18 180:4 197:3	27:2 28:23 29:12	sum (7) 4:1,5,8,12,22	155:24 159:3 166:2	119:20 120:6	therefore (13) 7:7
soures (4) 15:7	201:5 218:18	33:25 34:1	5:10 18:19	184:15 203:17	123:12,16 126:17	9:10,24 24:10 37:11
17:12,16 141:23	stages (2) 160:10	35:14,17,25 36:3,7,25	summarise (1) 62:4	talking (17)	129:14,16 132:3,24	75:11 81:10 93:25
speak (1) 65:24	218:18	37:4,23,25 38:8,12	summarising (1) 83:23	4:9,15,17,18 19:23	133:9 134:11,15	181:13 193:13,25
speaking (1) 140:17	stakeholders (1) 118:8	39:3,8 40:11 41:3	summary (2) 196:20	63:7 103:7 112:3	135:17 146:23	196:16 213:22
spec (1) 188:8	stalled (1) 130:10	105:5 146:6	198:14	126:14 129:13 131:2	147:8,10 148:23	therefrom (1) 167:8
specialist (29) 13:23	stand (1) 49:2	stride (1) 122:11	summer (1) 180:9	159:13 160:12 181:23	150:7,11 155:1 159:22	theres (15) 34:14 83:12
14:10 39:2,3,18 40:15	standalone (1) 23:21	string (3) 48:19,21 52:1	superseded (1) 161:18	200:1 204:23 208:9	171:14 174:4 175:9	106:8 111:12 117:17
41:4 42:21 44:12	standard (4) 123:11	strong (1) 170:9	superstars (1) 93:16	tall (1) 112:12	179:15 187:12	127:19 135:22 153:21
73:24,25	174:21 207:2 208:21	stronger (1) 130:5	supervision (2) 24:7,9	task (4) 26:1 35:16	189:20,21 190:1	162:13 164:19,25
74:14,15,16,21,23	standards (1) 172:22	structural (3) 144:13	supervisor (1) 24:1	195:24 196:8	197:11 203:19	168:13 206:7 215:23
75:14 111:16 120:11	stands (1) 208:5	145:2 157:19	suppliers (1) 150:4	tasks (3) 72:2 166:21,23	204:7,15,21 205:16	217:14
145:20 146:7,16,20,22	start (10) 57:2 79:4	structure (2) 210:11	supply (4) 6:5 39:9	tba (2) 161:11 162:3	209:5 210:17	thereunder (1) 75:17
150:3 158:6 182:25	109:25 111:25 114:15	220:7	81:13,14	team (67) 9:17 10:2	terry (5) 17:15,17,25	theyd (7) 35:18 36:4
191:7 198:1	117:1,2 142:25 160:4	structures (1) 150:8	support (17) 76:2	13:16 15:20 16:1,16	105:13 161:23	102:2 149:9,10 197:3
specialistdesign (4)	222:17	stuck (1) 130:10	149:13,14 151:24	24:20	test (1) 23:15	210:4
104:6,25 143:24	started (2) 123:17	studies (1) 110:9	153:15 165:18	28:2,7,9,11,13,15,19	thank (51) 1:25 2:3	theyre (11) 134:10
145:15	137:25	studio (28) 12:24,25	167:22,25 170:11	31:7,24 32:2,12,14,20	13:21 70:18,22,23	135:21 145:22 165:7
specialists (3) 146:1,3,9	starting (1) 180:10	13:3,10,17 14:4,9,15	171:3,6,11 179:18,21	33:8,13,17,18 34:10	71:1 102:16,19	169:5 175:7 178:23
specific (19) 11:3 23:13	starts (5) 25:13 90:23	16:21 17:21 18:1,4	186:5 194:2 198:2	43:19,22,25 65:2	103:8,10,14,15 105:21	188:20 201:23 216:20
43:1 69:6 71:21 87:9	99:20 110:5 136:21	20:12,20 28:18 33:18	supported (1) 208:13	66:16,22 93:15 95:12	106:12,13,16,17,19	218:14
102:13 118:4 121:24	statement (48) 3:20	65:10,17 141:24	supporting (3) 144:17	99:24,24 104:4 119:3	107:2,4,9,10,12,14,20,24	theyve (2) 5:8 172:8
132:14 133:9 139:13	5:23,25 6:16 48:8	142:7,11 145:8,11	185:15 194:17	127:4 128:5 132:18,24	108:7,9,15 109:12,24	thin (2) 92:11 93:2
147:14 148:8,13	50:11,12,21 51:2	146:5,9 161:19 189:25	suppose (2) 85:15	143:23 144:5,11,14	118:22 122:10,25	thing (5) 120:7,8
204:14,20 206:25	53:2,8 60:11,18	197:2	208:18	145:15 146:8,18,21,21	123:6,8 183:21	145:17 186:2 188:7
207:25	61:23,25,25 66:5,8	subconsultant (1) 28:16	sure (42) 1:17 9:25	149:6,10 150:14	184:2,5,9 214:15,16	thinking (5) 10:3,11
specifically (19) 3:10	68:10 71:9 87:10	subcontractor (9)	19:15 21:17 23:24	157:13 158:5 161:7	221:16	49:11 153:13 197:14
8:19 12:12 25:22	92:14 109:4,8,13,14	8:20,23 9:7,10 47:19	24:15 25:8 26:6,21	162:20 163:18,21	222:6,9,10,23,24	third (16) 3:22 12:3
33:16 34:17 39:16	110:2,5 111:24 113:5	105:1 168:6,7,8	34:10,13 41:10,12	171:23 189:1 203:9	223:2,3	15:25 27:10,10 48:8
41:5 46:2 69:5 70:4	115:25 136:12	subcontractors (5)	50:18 51:12 54:7 58:8	204:1 207:6,15 211:11	thanks (6) 53:14 57:25	49:17 50:11,21 60:11
72:2,4 75:19 76:18	176:20,21 177:15	104:6 143:24	59:17,20 61:12 72:6	215:17	58:2 59:12 152:12	65:5 68:10 71:8 128:3
81:7 98:21 186:8	182:8,9 187:17 189:7	145:16,21 150:4	81:1 96:3,5 104:16	teams (2) 144:2,18	223:5	152:16 175:18
189:10	192:20 196:5,6	subcontractorssuppliers	105:19 109:1 129:8	technical (13) 78:21	thats (108) 1:13,16	thirdly (1) 84:7
specification (2) 173:12	198:9,18 200:16	(1) 158:6	147:5 148:4 151:17	164:25 165:4,15,20	5:6,8,10,15 7:11 9:19	though (10) 10:12
197:12	213:11 214:20 219:11	subject (10) 2:7 48:13	156:15 176:8 178:10	166:14,15,22,25	12:16 13:14 17:9	16:15 17:7 22:18
specifications (7)	statements (5)	63:7 121:15 131:20	188:20 192:17 205:9	167:6,9 168:20,24	26:19 32:21 35:19	24:6,13 45:16 86:12
168:18,21 172:21	109:2,21 200:24	136:7 166:2 198:21	206:23 211:21	telling (8) 11:17 18:5	36:11 39:4 46:24	114:6 216:7
184:23 187:9,11,21	stating (1) 191:13	206:18 214:9	212:3,17 213:2	31:2 32:9 54:2 63:22	49:11 50:10,10 52:4	thought (15) 14:9 33:20
specifics (3) 87:7	status (1) 129:2	submit (2) 12:24 13:4	surely (1) 23:22	71:18 182:10	53:17 54:2 57:7 58:21	58:16 95:14 142:16,18
144:23 145:21	statutory (7) 29:10,13	submitted (3) 48:16	surprise (2) 54:17 92:25	template (5) 58:12 82:5	60:14 62:14 66:5,7	149:19 179:11 194:17
specifying (1) 169:6	31:10 76:9 79:25	54:8 175:23	surprised (5) 88:10	67:2 71:13 79:2	67:2 71:13 79:2	195:17 197:15 210:14
specs (1) 189:2	172:22 173:6	subparagraphs (1)	92:6,11,13 208:19	86:4,4,8 92:9 103:12	86:4,4,8 92:9 103:12	211:7 212:15 222:12
speed (1) 124:2	staying (1) 121:23	168:25	surprises (2) 207:15	105:25 111:7 113:8	105:25 111:7 113:8	thoughts (2) 95:3
spell (2) 56:5 81:22	step (1) 217:25	subregulation (1) 45:17	212:16	116:9,22 117:11,18,21	116:9,22 117:11,18,21	137:18
spelling (2) 62:13 64:4	steps (10) 14:20 25:17	subsequent (2) 79:20	surveying (1) 124:15	118:22,24 122:1,6	118:22,24 122:1,6	three (7) 27:1,8 28:9
spelt (1) 159:13	26:18 98:15,16 130:24	122:19	surveyor (4) 17:1	128:21 131:2,12 134:2	128:21 131:2,12 134:2	100:2 123:20 124:9
spend (3) 156:14 159:7	147:15 148:8,13	subsequently (2) 89:16	123:22 161:23 189:12	135:25 137:3,22	135:25 137:3,22	146:19
193:14	189:13	158:24	surveys (3) 131:20,22	141:11 142:5 147:11	141:11 142:5 147:11	through (55) 3:2,24
spent (7) 132:20 139:17	steve (3) 99:17,21	substance (1) 96:11	132:5	149:7 150:6,9 152:1	149:7 150:6,9 152:1	5:12 8:8 23:15 26:15
156:10 159:7 166:4	100:13	substantial (2) 19:13	system (2) 213:4 220:13	153:5 156:19 159:16	153:5 156:19 159:16	52:1 58:4 64:5 65:11
179:10 200:11	stick (1) 57:13	20:2	systems (2) 113:4	167:21 169:12,16	167:21 169:12,16	76:18 94:2 98:22
sphere (1) 216:22	sticking (1) 148:23	substantially (1) 6:12	208:24	171:4 172:10	171:4 172:10	105:8 111:18,19
spirit (1) 9:5	still (21) 36:2,10,23,23	substantiation (1) 11:2		173:13,17 174:15	173:13,17 174:15	116:24 124:1 125:1
split (1) 91:1	37:9 41:6 52:16 59:22	substantive (1) 147:2		175:6,15 176:11,12,16	175:6,15 176:11,12,16	128:7 129:2 131:2
spoken (5) 73:11 90:13	64:5,8 68:22 97:19	subsubregulation (1)		180:13,17 182:2,6,20	180:13,17 182:2,6,20	134:16 135:20,23
91:11 184:21 187:7	128:25 136:14 175:5	83:22	taken (11) 14:20 61:4	183:8 184:7 185:4,22	183:8 184:7 185:4,22	139:17 140:2 144:19
spot (1) 151:13	180:3 182:17 183:4	subtopic (1) 214:8	62:18 74:17 96:4	189:20 190:9 196:11	189:20 190:9 196:11	147:9,23 154:19
spread (7) 29:20,23	212:22 215:1 218:18	succeeded (1) 152:5	98:16 107:8 139:22	197:7 198:6 201:22	197:7 198:6 201:22	156:24 158:24
30:5,17 35:23 38:1	stock (1) 103:1	succinct (1) 14:8	177:18 202:20 205:16	204:4,18 205:22	204:4,18 205:22	159:2,8,13
106:20	stoneley (1) 53:11	sucked (1) 101:4	takes (1) 6:24	209:12 213:9,12	209:12 213:9,12	160:11,12,12,12 163:8
spreadsheet (1) 206:21	stood (2) 19:5 37:7	sufficient (3) 20:15 33:7	taking (22) 63:10 64:17	215:18 217:5,13 218:6	215:18 217:5,13 218:6	166:4,6 167:14 168:12
spring (1) 2:7	stop (4) 94:10 221:3	82:19	67:22 69:21 75:20	219:15 220:16,20	219:15 220:16,20	179:10 180:5,11 182:1
staff (1) 148:10	222:8,12	sufficiently (4) 37:2,4	107:17 123:22 132:15	222:16	222:16	183:9 204:1 213:21
stage (40) 6:24 19:12	stopped (1) 2:6	75:14 87:23	139:17 147:14 148:8	terms (78) 9:9,23 11:6	terms (78) 9:9,23 11:6	216:6 218:19 220:24
35:14,17	story (4) 10:21 47:12	suggest (4) 85:14,14	156:16 166:6 170:20	19:15,17 23:23	19:15,17 23:23	thursday (1) 223:8
36:5,8,14,20,22	184:10 210:22	133:2 201:25	178:8 179:10 182:1	25:8,24 27:20,21	25:8,24 27:20,21	tickbox (2) 135:24
37:4,18,23 38:22	straight (4) 56:10,17	suggested (4) 50:21	185:10 187:2 189:13	31:18,19	31:18,19	158:1
39:24 41:11 44:2,5	217:6,22	97:18 101:16 185:23	197:23,25	34:5,10,12,14	34:5,10,12,14	ticked (6) 104:2
59:20 60:4 68:2,19	strategies (4) 19:21,23	suggesting (2) 3:9	talk (6) 4:15 70:19	35:2,4,18	35:2,4,18	150:6,9,13 158:2
87:18,21 88:4,11,20	20:4 30:20	152:12	122:19 130:3 183:14	36:6,11,15,15,19 63:1	36:6,11,15,15,19 63:1	177:23
101:5 128:23 130:18	strategy (34) 15:18	suggests (1) 16:7	222:18	64:4 67:14 72:5 75:19	64:4 67:14 72:5 75:19	tiltandturn (2) 205:2,5
140:23 152:7 154:18	17:5 18:23 19:5,7,8	suit (1) 49:1	talked (12) 42:14 63:9	84:20 86:10 88:5	84:20 86:10 88:5	time (115) 3:18 6:11
			119:19 133:23	92:21 94:21 95:21	92:21 94:21 95:21	

12:8 13:2,18 19:20	201:25 202:10 209:23	64:13 97:12 115:4,5	understands (1) 160:5	vehicle (1) 155:13	32:11,13,17,19 35:9	108:9 109:1,2 110:2
20:15 21:17 22:4	211:22,24 215:4	transitional (1) 44:21	understood (26) 19:1	vehicles (1) 160:11	43:19,25 60:17 61:19	116:6 122:14,21 123:5
25:20 29:1 31:11	217:10,15,20,20	transparent (1) 210:1	32:22 33:8 50:12,22	versed (1) 56:15	65:13,17 78:20,24	136:12 176:20,21
32:22 35:11,15 39:10	218:5,11,24 219:6	transpires (1) 97:10	53:3 61:5 87:13 104:7	version (7) 50:20	85:19 104:22 147:17	182:8,9 183:16
43:6 47:7,23 49:3	220:5	treanor (1) 17:11	125:20 126:5 135:7	56:23,24 127:16	150:13 196:12,13	184:2,5 187:17 189:7
52:12,16 53:12	tmo00853697 (1) 66:6	treanors (1) 18:10	139:23 142:8 143:25	160:17 162:25 215:5	200:5	192:20 196:5 198:9
61:7,9,13 62:12,15	tmo008536974 (1) 66:8	treat (1) 94:7	148:24 152:20 153:5	via (3) 91:3 207:1 208:1	weve (27) 12:25 15:24	213:11
64:3,21 67:16,18	tmo008536977 (1)	tried (4) 96:2,2 98:16	154:6 156:15 160:13	views (2) 95:21 137:14	34:16 35:8 39:24	214:5,9,10,14,20
68:17 70:5 75:4,12	189:7	218:24	177:12 190:17 192:16	visibility (1) 209:22	41:18,23,25 42:14	219:10
76:16 80:11 81:8,9	tmo008561364 (1)	trouble (3) 89:22,23,25	196:7 200:11	visits (1) 101:8	52:20 54:12 60:7	222:13,16,20,23
85:20 86:2 89:18 90:3	140:9	true (6) 44:1	undertake (2) 111:11	vividly (1) 132:9	117:6 132:1 139:3	witnesses (2) 1:6
92:6,8,9 93:1,18 94:20	tmos (6) 61:1 72:24	109:10,19,20 183:4	163:23	vociferous (1) 135:20	141:23 156:4 161:22	105:24
95:3 102:25 104:8	187:22 193:1 195:15	188:13	undertaking (1) 69:21	voice (1) 108:23	167:12 177:18	wondering (2) 54:25
111:2 113:12,15	201:7	truly (1) 178:25	underwent (1) 175:11	volition (1) 13:8	181:6,11 193:7 202:13	101:6
116:16 121:15 122:12	today (5) 1:4 97:9,25	trust (1) 174:25	unexpected (1) 209:6	volume (1) 220:6	206:14 216:7 219:8	wont (7) 70:22 107:15
123:10 125:4 129:3	108:15 109:22	try (10) 9:22 26:14 27:8	unfortunate (1) 106:22		whatever (10) 57:23	117:1 137:19 197:16
130:7 132:16,22	today's (1) 1:4	29:4 56:23 62:24	university (1) 110:8	W	74:20 77:12 88:17	199:6 221:13
133:5,8,15 134:6	together (15) 72:8 81:3	85:13 92:16 108:23	unlikely (6) 51:14,24	walked (1) 220:24	91:2 119:3 135:2	wording (1) 69:6
135:25 139:17,22	88:3 112:15 114:20	192:7	53:1 54:7,14 196:16	wall (3) 42:3 129:4	162:25 180:22 186:3	work (43) 17:5 19:13
143:8 146:13	119:4 133:11 139:19	trying (9) 8:6 9:23,24	unpriced (1) 4:23	168:7	whats (9) 36:22 139:4,5	20:2,3,11 21:5 24:8
147:18,19 149:11	164:18,20 176:13	11:1 64:8 102:7 134:5	until (14) 36:3,17,24	walling (1) 112:14	160:5 203:3,5,6,7,23	30:16 31:7,12,17
154:8 156:6,11,13,15	205:16 206:21 207:9	171:16 180:13	47:14 61:2 82:11 86:1	wanting (5) 140:3 176:8	whenever (1) 163:11	35:22 38:21,22
158:23 159:8 162:24	208:19	tuesday (1) 184:15	88:14 116:13 117:8	179:12 180:16 192:16	whereas (1) 37:18	40:2,17 41:7,8 79:21
166:3,4 170:8,25	told (7) 9:2 14:13	turn (10) 11:20 26:23	147:11 180:7,7 223:7	wants (2) 152:14 171:6	whereby (1) 217:25	101:24 102:2,6 113:9
171:20 179:10 180:2,7	52:7,14 62:2 123:19	38:6 42:12 62:7 72:24	unusual (5) 13:15	warranties (3) 183:1,1	whilst (3) 93:16 147:17	116:24 124:25 143:9
181:1 183:9 185:21	190:22	76:6 79:3 86:18	153:21 174:24 219:23	185:12	186:1	146:6 152:19 153:5
188:1,15 192:25	tomorrow (3) 222:15,22	126:22	220:14	wasnt (68) 5:21 10:4	whoever (2) 47:10	154:5,8,11 163:22
194:9,12 200:9,11	223:4	turning (1) 16:24	upcoming (1) 198:22	13:9,20 20:8,18 21:3	72:13	164:14 176:5 187:25
205:24 209:5 211:21	tone (2) 96:8,10	tutelage (1) 81:22	update (4) 79:18 83:15	30:8 31:16 33:5	whoever's (1) 204:7	196:3 203:12
212:1,3,13 214:3,7,12	too (3) 63:20 193:6	twice (1) 176:17	160:2,14	36:7,12 37:3	whole (1) 8:12	207:3,8,16 212:18
218:5 221:21 222:7	197:16	twothirds (1) 53:21	updated (2) 86:8 91:25	39:6,13,19 40:5,6	whoops (1) 52:25	216:3
times (4) 2:14 129:10	took (16) 51:25 76:3	type (4) 97:19 110:25	upgrade (2) 18:13,15	42:10 45:15 48:1 53:4	whose (2) 20:19 148:4	worked (6) 28:17 101:2
136:8 194:2	115:1 124:1 131:10,13	113:3 211:25	upon (5) 148:1 184:18	61:2 64:5,5 72:4,7	wider (4) 117:22 118:6	112:3,25 158:24
timescale (1) 209:24	135:25 147:22 152:9	types (4) 74:18 111:18	186:12 211:9 220:15	74:6 75:11 78:22 79:1	129:19 130:1	203:25
timescales (1) 211:8	154:17 161:19	145:18 185:21	urgency (1) 94:7	81:5 83:2 85:1	williams (59) 49:24	working (15) 1:18 26:25
timings (1) 207:4	179:23,25 180:2,14		used (11) 41:22 42:10	89:21,22,23,23 92:13	50:2,12,15,22	28:13 31:19 112:4
title (5) 55:18 119:16	220:15		43:3 68:1 142:4	95:5 96:7 102:5	51:6,11,18 52:6,14,23	114:2,20,24 115:2,8
127:1 134:3 141:10	tool (3) 158:4,12,20		193:23 197:14 208:21	127:12 129:4 130:11	53:3 54:5,11 55:12	139:19 184:24
titles (1) 139:9	tools (1) 209:1	uk (1) 53:25	213:16,18,25	133:23 137:16	62:2,13 63:23 65:24	193:17,22 205:15
tmo (139) 4:2 6:12	topic (8) 11:20 42:12	ultimate (1) 189:23	uses (1) 55:18	148:5,17 149:3,20	66:4 71:11 75:12	works (33) 7:8,25 8:7
11:5,14,17,25 12:10	72:24 76:6 117:1	ultimately (7) 10:21	usher (7) 70:24 103:9	150:16 154:8 157:14	86:20 87:23 94:25	18:14,15 31:20
14:24 15:14 16:12,17	147:3 183:9 221:20	113:18 131:4 140:24	107:11 122:16,22	166:7 171:25 180:12	98:6 125:17,22 126:2	35:3,4,5 48:17 69:14
17:23 18:2	topics (1) 100:2	145:7,10 169:18	183:17 222:25	186:22 190:25	135:17 136:17,21	75:10 100:24 117:18
21:8,9,13,18,24 27:20	touched (2) 192:23	unacceptable (2) 67:8	using (4) 3:5 141:9	192:3,12 201:12	137:20 139:14 140:10	124:17 154:25
28:17 31:5,12	206:14	100:23	208:23,23	208:20 209:17 212:7	141:9 152:6 170:8,16	155:2,3,4,19,23 157:4
32:10,18 39:15	tower (18) 12:22	uncertainties (1) 208:11	usual (2) 174:21 219:17	213:14,20 221:22	176:7 177:12 178:24	162:2 163:23 167:8
40:1,15 41:1,22 44:10	13:11,25 15:12,18	uncomfortable (1)	usually (13) 8:23	179:3 181:9 182:11	179:3 181:9 182:11	173:24 178:10
46:10,13,14 47:1,5	26:25 43:15 55:7	75:20	118:14 134:21 145:22	188:15 189:6 192:21	195:10 198:11	201:15,19,22,24
48:10 49:24 56:5	61:18 63:5 64:18	uncommon (1) 138:1	153:25 160:3,4 162:24	199:17,22 200:19	210:24 214:22 215:1	206:5,24
58:19 59:9 60:3 61:4,9	80:11 112:9 114:9	underneath (3) 35:12	163:12 164:4 167:21	210:12 17:4 36:17 38:4	220:19,22 221:6	wouldnt (28) 5:23 9:9
63:1,16,23 64:2,7,22	121:8 124:17 125:13	131:11 146:22	205:7 208:4	40:14 52:1 53:22	willing (1) 51:19	10:12 17:4 36:17 38:4
67:12,22,24	137:10	understand (38) 5:2		59:13,22 64:14 85:13	window (2) 205:4,6	43:9 56:11,13
69:1,20,24 72:15,19	track (2) 58:3 194:8	8:17 19:19 31:11	V	86:4 89:14 92:16	windows (6) 186:24	59:23,25 67:14
75:5 77:13 81:13,23	tracker (17) 193:24	32:22 37:21 40:12	valente (2) 115:10	97:18 106:24 108:21	200:20 201:10,12	74:16,22 80:18 87:19
84:3 89:5 94:18 95:2	194:8 206:14,18,21	54:15 73:23 75:8	198:21	126:23 143:15 178:6	204:24 205:2	89:3,14 92:20 111:22
96:24 97:3 98:20	207:23 208:14 209:22	81:21 87:2,7,9 98:11	value (20) 2:5 6:4,18	194:15 203:21 207:4	windowsmetering (1)	142:16 143:14 161:18
99:9,10 100:13	210:8,12,24	105:17 117:21 125:12	8:2 10:10 168:19	208:2,23 212:21 213:3	211:24	164:7 185:14 188:1,11
101:6,15 102:12 104:9	211:4,8,12 212:2	126:10 136:11 142:18	175:12 202:19,25	ways (3) 8:2 106:8,11	wish (3) 136:25 191:10	220:14
116:20 122:1 129:7,23	213:10,25	146:11 149:3 150:10	203:1,9,13,19,21	wed (6) 24:19 133:11	18:25	wrap (1) 97:17
131:8 133:20	trackers (1) 159:14	170:20 171:12 174:17	205:3,16 206:1,7,10	147:18 151:23 177:23	wishes (2) 169:25 200:7	write (9) 19:1 58:25
135:10,17 139:13,14	tracking (2) 159:15	178:17 179:12,13	212:18	218:17	218:25	91:8 101:6,15 120:4
140:18 141:5,10,14	209:17	187:24 191:21 194:14	variation (4) 32:25	wednesday (1) 1:1	wished (1) 9:18	154:7 164:22 173:15
143:2 148:24 149:12	traditional (1) 37:14	200:10 217:8	123:12 158:7,17	week (2) 66:22 94:8	wishes (2) 169:25 200:7	writes (2) 90:9,24
154:8 155:5,10,20	traffic (1) 152:21	understanding (30)	variations (4) 159:4,10	weeks (6) 47:2,6 68:3	wishneed (1) 57:18	writing (3) 99:22
156:11 161:2 163:23	trail (2) 207:11 208:14	34:12 50:10 59:12	197:7,21	194:4,11 210:5	wisley (2) 59:14,15	101:22 134:1
165:8,24 166:3 170:16	trained (3) 120:14	74:1,23,25 76:11 79:8	various (11) 41:25 42:3	welcome (1) 1:3	withdrew (1) 107:13	written (4) 96:8 118:4
171:23 174:14	121:3 122:4	85:21 86:11 108:19	66:13 81:12,16 82:21	went (12) 37:19 113:13	witness (58)	160:3 173:16
179:17,23 180:14	training (9) 110:4,11	117:10,12 123:17	111:5 158:23,25	134:14 140:2 144:5	1:12,15,19,21,24 3:20	wrong (7) 33:20 35:20
181:12,19 182:11	111:6,10,15,18 120:12	124:20 125:8,23 130:5	160:10 185:21	151:23 155:10 162:7	48:8 50:11 61:23,25	46:6,25 56:14,14
184:22 187:19 188:21	126:3,15	133:5 149:17 154:8,10	vat (2) 18:14,20	182:1 192:7,11 194:22	66:5,7 68:10 70:18,22	199:12
191:4,10 192:22	transcript (5) 9:3 142:1	155:2 156:1 173:19	ve (13) 3:25 6:22,24	werent (30) 6:4 11:12	71:6,8 103:8	wrote (4) 127:10
193:11,22 194:23	190:15 213:11 220:19	178:14 188:2 192:12	7:2,4,5,20,23	14:25 24:2,6	106:17,23	131:14 142:17 164:18
195:3,9 197:23 198:11	transition (5) 46:9	199:22 201:7	8:1,6,8,12,25	28:8,14,18 30:1 31:24	107:2,4,9,12,13,16	
						X

x (1)	146:3	138:23 182:9 192:20 210:25	2015 (57)	42:1 44:18,22,22,23 45:2,8,14 46:6,22 47:6,13,15 48:10,12,20 49:1 51:12 53:3,13,20 55:2,16,20 57:1 58:8 59:18 60:13 61:3 62:3,9,22 66:12 67:9 68:18 69:2 71:12 73:4 74:14 76:16 82:8 86:20 87:1 88:21 89:8,9 92:8,17 97:6 116:1,4,10,13,14 152:6 153:4 189:16	4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
y			2016 (4)	99:17 100:19,20 113:7 2019 (1)	109:5 201a (1)	82:24 201c (2)	83:12 84:19 2020 (3)	1:1 109:16 223:8 202c (1)	25:13 202e (4)	79:16 81:2 82:1 83:17 20b (1)	51:16 21 (5)	2:22 55:13 66:10 68:6,12 214 (1)	76:21 215 (1)	77:15 217 (1)	61:22 21st (1)	57:18 22 (1)	115:25 221j (1)	79:23 222 (1)	62:4 22nd (1)	211:6 23 (9)	67:19 68:18 73:4 89:9,17 90:9,25 91:8 92:16 23rd (1)	49:1 24 (4)	27:10 86:20 206:17 211:1 24th (1)	211:6 25 (10)	11:23 12:19 15:23 17:13 62:3,6,22 68:11 71:12 76:16 259 (2)	84:17 85:4 26 (2)	90:7 92:17 27 (3)	97:6 109:5 136:20 2865 (1)	18:20 29 (2)	184:12 195:6 2e (1)	84:20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
yeah (20)	4:15 128:21 132:6 136:14 142:10 165:15 174:20 177:19 182:6,14 186:10 188:3 196:11 202:12,16 205:8 213:4 217:17,21 221:12	1223 (1)	103:16 1230 (5)	103:4,6,15,18 136:21 1236 (1)	107:25 1244 (1)	108:2 125 (6)	4:6 5:6,14 6:7,14 150:1 128 (1)	150:6 13 (2)	48:20 83:13 133 (3)	104:1 143:21 150:19 14 (2)	76:20 83:19 141 (1)	158:1 148 (1)	187:17 15 (4)	60:13,13 77:14 162:11 158a (1)	166:13 159 (1)	175:25 15odd (1)	111:19 16 (2)	51:4 163:15 165 (1)	200:15 167 (1)	200:15 17 (1)	71:10 171 (1)	79:23 175 (1)	213:12 18 (3)	2:10 5:18 17:15 180 (1)	214:21 182 (4)	25:19 26:16,21 79:23 19 (1)	181:1 195a (1)	164:24 1970s (1)	19:11																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
youre (27)	16:14 26:4 34:15 38:7 48:21 50:9 53:7 58:5 60:18 70:20 86:21 89:12 93:10 96:23 107:22 108:25 112:3 122:18 132:23 138:19 169:7 171:16,17,17 176:2 183:14 196:22	2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										