

OPUS 2

INTERNATIONAL

Grenfell Tower Inquiry

Day 11

March 10, 2020

Opus 2 International - Official Court Reporters

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1 Tuesday, 10 March 2020
 2 (10.00 am)
 3 SIR MARTIN MOORE-BICK: Good morning, everyone. Welcome to
 4 today's hearing. We are going to hear further from
 5 Mr Crawford today, so I'm going to ask the usher to ask
 6 Mr Crawford to come in.
 7 MR NEIL CRAWFORD (continued)
 8 Questions from COUNSEL TO THE INQUIRY (continued)
 9 SIR MARTIN MOORE-BICK: Good morning, Mr Crawford.
 10 THE WITNESS: Good morning.
 11 SIR MARTIN MOORE-BICK: Are you ready to carry on?
 12 THE WITNESS: Yes.
 13 SIR MARTIN MOORE-BICK: Thank you very much.
 14 Yes, Mr Millett.
 15 MR MILLETT: Mr Chairman, thank you.
 16 Mr Crawford, good morning.
 17 Yesterday, when we finished, we were tracing through
 18 the progress of cavity barriers through the Harley
 19 drawings in early 2015, and so the next stop is the
 20 drawings of 3 March 2015, which you will find, please,
 21 at {SEA00012850}.
 22 This is an email from Kevin Lamb to Simon Lawrence,
 23 copied to you and Bruce Sounes and others at Harley, of
 24 3 March 2015:
 25 "Simon,

1

1 "Please find attached drawings now showing the fire
 2 breaks, both horizontal and vertical.
 3 "We assume a requirement of 90min integrity & 30min
 4 insulation is sufficient, if not please advise.
 5 "The vertical breaks are not on all columns, just
 6 party walls."
 7 If we could next go to {SEA00003160/2}, we can find
 8 your comments on those drawings. We can see those in
 9 your usual red capitals.
 10 Those are yours, are they?
 11 A. Yes.
 12 Q. You can see the stamp on the right-hand side, marked
 13 with a B, and a date next to your initials,
 14 6 March 2015. Do you see that?
 15 A. Yes.
 16 Q. You can see in those drawings that they show the
 17 location of the horizontal and vertical cavity barriers
 18 on the elevations; am I right?
 19 A. Correct.
 20 Q. But we don't see any cavity barriers at all around the
 21 windows, do we?
 22 A. No.
 23 Q. I don't think you commented there on the absence of
 24 cavity barriers there at the time, did you?
 25 A. Round the windows, no.

2

1 Q. No. Was that because you had understood from Mr Sounes
 2 that they weren't required?
 3 A. That was from -- as I mentioned previously, the strategy
 4 was just dealing with the compartments, and that's
 5 correct, not round the windows.
 6 Q. Right, I see.
 7 If we can go down to page 12 {SEA00003160/12} in the
 8 same document set, please, we can see there a horizontal
 9 cavity barrier set above the window within the cladding,
 10 can't we?
 11 A. Yes.
 12 Q. Just so that everyone else understands what we're
 13 talking about, could you just point it out for us on the
 14 drawing?
 15 SIR MARTIN MOORE-BICK: How do you want him to do that?
 16 MR MILLETT: That's a very good point.
 17 Let me put it to you, then. It's the big shaded
 18 oblong on the left.
 19 A. Yes, so what you're seeing here is the horizontal cavity
 20 barrier, which is -- has an intumescent front, so it's
 21 held 25-mil or thereabouts off the front face of the
 22 metal panel, so that allows the -- it's a pressure
 23 equalised façade, so it allows the air to freely move up
 24 and down the façade.
 25 Q. Right.

3

1 The cavity barrier position has moved from the head
 2 of the window on the Studio E drawings to further up.
 3 Do you agree that that means that it's now out of line
 4 with the compartment floor?
 5 A. No, it's lined with the compartment floor. The concrete
 6 behind is the floor.
 7 Q. But it's not at the head of the window, is it, anymore;
 8 it's further up, as you can see.
 9 A. Well, where it should be -- where it should correctly be
 10 is in the -- at the extent of the compartment, which is
 11 correct, where it's drawn there.
 12 Q. But it's in the middle of the concrete slab; it's not at
 13 the line of the concrete slab and the compartment
 14 ceiling, is it?
 15 A. Well, you couldn't, because you can see there is
 16 a chamfer at the bottom of the concrete slab.
 17 Q. It doesn't comply with diagram 33 of ADB because it's
 18 not in line with the line of the compartment.
 19 A. But it is in line.
 20 Q. Do you accept that? You think it is.
 21 A. No, that's not correct. It is in line with the
 22 compartment line. The compartment line is the floor.
 23 Q. Can you explain why it's different from Studio E's
 24 original drawing?
 25 A. But it fundamentally isn't.

4

1 Q. Fundamentally, you say, it isn't?

2 A. As I recall -- I can't -- I don't have the drawing in
3 front of me, but the drawing would have shown the cavity
4 barrier within the compartment floor or wall -- in this
5 instance, floor -- construction, so it's lining up with
6 the compartment floor.

7 Q. I see, okay.

8 Now, if you could look at {SEA00003160/12}, the note
9 next to the drawing -- do you see that? -- on the
10 left-hand side says -- and it needs to be expanded,
11 I think, so that we can all read it:

12 "Firebreak cut around cladding rails. All joints
13 taped on top face."

14 Did you think about, looking at that, whether the
15 proposal to cut the cavity barriers may affect the
16 ability of the cavity barrier to inhibit fire spread
17 within the cladding?

18 A. No.

19 Q. Why is that?

20 A. Because the contractor's drawn on his philosophy of
21 bringing it round the rails. I mean, this would be
22 a fairly standard way of introducing the cavity barrier
23 across the rail system behind. I mean, there would be
24 no other way to do it.

25 Q. Right.

5

1 Should it not have occurred to you at the time that
2 Harley needed to explain to you why cutting the cavity
3 barriers was safe or appropriate?

4 A. Not at all. It's a specialist item, and Harley are
5 specialist contractors. This is what they do every day,
6 so I would expect them to know what they're doing and
7 how they're doing it, in terms of at that level of
8 technical construction. That's the specialism you're
9 paying for when you employ them.

10 Q. I see.

11 Did anybody at Harley or, indeed, Siderise ever
12 raise with you the potential for there being a weak link
13 for fire around the windows? Do you recall that being
14 the subject of discussion?

15 A. No.

16 Q. We've now looked at Harley's overall design of where
17 cavity barriers should be located. I'm now going to
18 turn to the question of what fire rating the cavity
19 barriers should have had. Okay?

20 A. Yes.

21 Q. Just so we're clear about the topic.

22 Now that we've got to March, at this point,
23 March 2015, construction was well under way, wasn't it?

24 A. Yes.

25 Q. Still, there was no final design reached with regard to

6

1 the cavity barriers.

2 A. That's correct.

3 Q. Do you agree with me that that should have been
4 something which had been resolved some 14 months earlier
5 at the tender stage?

6 A. Well, it was at the tender stage because the strategy
7 remained the same from tender stage to now.

8 Q. The strategy for the cavity barriers around the windows
9 I can see remained the same, but the strategy for the
10 cavity barriers being in line with the compartment
11 floors had changed through the Harley drawings, as we've
12 seen; yes?

13 A. No.

14 Q. You say no?

15 A. No.

16 Q. All right.

17 Go to {EX00001315}, please, and I would like you to
18 look at the second email down on the page. This is the
19 email of 3 March 2015 from Kevin Lamb to Simon Lawrence,
20 copied to you and Mr Sounes. We've seen that.

21 Then the one above it is from you to Terry Ashton,
22 3 March, do you see that one?

23 A. Yes.

24 Q. If we move up to that, you ask the question:

25 "Hi Terry

7

1 "Just a quick question relating to Grenfell Tower.

2 As part of the re-clad we are we have [sic] added fire
3 breaks around the apartments as per the email below.

4 Can you comment on the level of protection (90+ 30) as
5 to whether this is suitable. My only query might be
6 that we have different levels of party wall at the lower
7 levels - see attached fire plan with some 60 some 120
8 walls."

9 Okay?

10 Now, at that stage, my question is: did you
11 understand Harley's drawings to show cavity barriers or
12 firestops?

13 A. I understood them to show cavity barriers. Part of the
14 pretext to Kevin Lamb's email was that we had been
15 having a number of meetings with building control
16 on site. They were quite often at the back of the
17 design team meetings, and when the -- the reason that
18 this figure of 90/30 came up was from a meeting with
19 building control, where building control would request
20 that we had ratings that matched the compartment
21 ratings.

22 Q. Right.

23 A. The reason Kevin put 90 on instead of 60 was because
24 they couldn't source 60-minute cavity barriers, so he
25 ended up spec'ing it up to 90.

8

1 Q. I see.
 2 If we could look at your witness statement at
 3 paragraph 113, which is at {SEA00014275/41}, you can see
 4 in paragraph 113, in the second line there, you say you
 5 referred the query to Exova and you say:
 6 "... as they had produced the fire strategy and so
 7 would be best placed to respond to the query.
 8 Essentially, I was trying to be proactive in resolving
 9 the issue of cavity barriers in a neutral way, which
 10 I discuss further from paragraph 229 below."
 11 What did you think was your relationship with Exova
 12 at this point which allowed you to use them for advice
 13 as and when you felt you needed it?
 14 A. I thought they were employed as consultants.
 15 Q. So same as yesterday, because we looked at the same
 16 question yesterday. So nothing had changed?
 17 A. Yes.
 18 Q. I see.
 19 Why did you want to resolve the question, as you put
 20 it here, in a neutral way?
 21 A. Because, as I alluded to earlier, we had had meetings
 22 with building control and clearly building control's
 23 interpretation of both cavity barrier and firestop and
 24 the ratings of them were quite different to what --
 25 well, what originally Harley had proposed in their RFI,

9

1 and then what I was saying based on what my belief was
 2 we should be putting in, ie in line with the employer's
 3 requirement scheme.
 4 So going to a higher fire authority, in a way,
 5 seemed like a logical way to check: okay, you know,
 6 let's get an authority's view on what the correct level
 7 and rating should be.
 8 Q. I see. I see.
 9 So would this be right: you were really acting as
 10 a go-between as between Harley on the one hand and
 11 building control on the other, and had gone to Exova to,
 12 as it were, break the deadlock?
 13 A. I wouldn't necessarily use the word "go-between".
 14 Q. What would you say?
 15 A. Part of the process, trying to resolve the problem.
 16 Q. As an architect or someone occupying that role, was it
 17 not up to you, Mr Crawford, to understand the issue and
 18 to advise your clients and not act as a neutral party?
 19 A. But I was that, and that's why I took, I suppose,
 20 exception to the last phrase you used, is that I was
 21 part of that process. But you have to understand,
 22 you've got a specialist who has more experience than
 23 you, installing these systems every day, who is saying
 24 one thing; you've got building control, who ultimately
 25 you have to satisfy, they had the last word in terms of

10

1 signing the building off in terms of achieving building
 2 compliance, so, respectfully, you have to understand
 3 what their understanding is. If that contradicts what
 4 the specialist's understanding is and what your
 5 understanding is, then it's perfectly logical to then go
 6 to a fire consultant, in my view, to help resolve that
 7 whole scenario.
 8 Q. Why would you think that building control would have
 9 a better understanding of the regulatory requirements
 10 than you?
 11 A. Because they sign them off every day.
 12 Q. But as the project architect, using the title that was
 13 given to you, was that not your responsibility, at least
 14 in part, to understand and have a view?
 15 A. But I did understand and have a view, but it was being
 16 contradicted by the other parties.
 17 I mean, you can probably appreciate just from the
 18 volume of email correspondence on it, and I've also
 19 alluded to the fact that there were meetings which
 20 generated some of those proposals, that it was something
 21 that had to be resolved, and in co-ordinating the
 22 building control approvals process, I had to get it into
 23 a shape that was recognised and agreed by everyone to
 24 achieve that.
 25 Q. Okay.

11

1 You refer to 60-minute and 120-minute party wall
 2 ratings. Is that because you thought Harley was
 3 proposing firestops and not cavity barriers?
 4 A. No, I think Harley were always proposing cavity
 5 barriers. I think building control for quite some time
 6 became fixated with the idea that it was firestops, and
 7 to my mind and to Harley's mind they weren't.
 8 Q. Right. Well, we'll look at that a bit more closely as
 9 we go through the documents next.
 10 Can you go, please, to {SEA00012906}. This is
 11 an email from you to Mr Lamb and Simon Lawrence at
 12 Rydon -- Kevin Lamb is at Harley, Simon Lawrence at
 13 Rydon -- copied to Bruce Soules and others. You can see
 14 that there is an attachment, "Fire Strategy":
 15 "Hi Kevin
 16 "As per telephone conversation I have asked the
 17 question of Exova on the fire break [note the words] but
 18 not had anything back. To me the fire breaks would have
 19 to follow the ratings of the party walls which are shown
 20 on the fire plan attached. You can see some of the low
 21 level apartments are separated by 120mins and others by
 22 60mins."
 23 It looks from that -- and correct me if I'm wrong,
 24 Mr Crawford -- that you were thinking about firestops,
 25 firestopping, and not cavity barriers; yes?

12

1 A. No. I can see why you might think that, but the issue
2 had originally come from the correspondence and the
3 meetings with building control, who kept coming back to
4 this notion that it was a firestop. Our
5 understanding -- it was my understanding at the start
6 that it wasn't. They were making some arguments as to
7 why it might be, and I put myself in their frame of
8 mind, to think, "Well, maybe it could be", but
9 I couldn't see how it could be. So, in a sense, I'm
10 challenging that, that proposition.

11 I mean, collectively, as a team, we were trying to
12 work out what the actual solution was. And there are
13 parts lower down the building where it is actually
14 a firestop because it's a curtain wall coming into the
15 floor slab as opposed to a bit of overclad. So there's
16 also -- there's a room for slight misinterpretation,
17 depending on which part of the building you're looking
18 at.

19 Q. I think two things come out of that answer which I just
20 want to follow up briefly, if I can.

21 The first is you say the issue had originally come
22 from the correspondence and the meetings with
23 building control.

24 A. Yeah.

25 Q. I think it's right that we don't see you engaging

13

1 building control on this issue until later in March.

2 A. Yes, but we'd had workshops on site with
3 building control, and one of the things that was
4 discussed was the cavity barrier strategy.

5 Q. Yes. You say workshops, and you mentioned these
6 workshops yesterday. Do you remember whether any
7 written record was made of these workshops at which
8 these matters were discussed?

9 A. I personally, beyond the notes I had in my sketch pad,
10 was not making formal notes.

11 Q. We saw one of those yesterday, the one that said
12 "Fire strategy not approved". You didn't make any other
13 notes of these workshops; correct?

14 A. Not that I have been able to trace, no.

15 Q. Have you seen or been shown any other written record of
16 these workshops in the course of putting your witness
17 statement together?

18 A. Not from the information that we had. But they were
19 very -- I think sometimes -- sometimes it's mentioned on
20 the back of the design team meetings, because what would
21 happen is you would have the design team meeting, then
22 Rydon would bring in either Harley and/or
23 building control, and you would have a sort of workshop
24 off the back of it, let's say.

25 Q. Forgive me for just taking a timeout on this for

14

1 a moment, Mr Crawford, and just pursuing this.

2 You came into the project in the summer of 2014.
3 When was the first workshop with building control you
4 attended?

5 A. I would have to go back and check.

6 Q. All right. You can't remember?

7 A. I tried to put together, based on the meetings I had in
8 my Outlook diary when I thought those occurred, because
9 there are sort of references to meetings in some emails,
10 and also in relation to some of the design team
11 meetings. Also, Rydon was having separate meetings with
12 building control, so whether I ended up just sitting in
13 those ... it's very difficult to definitively say when
14 all of them were.

15 Q. How regularly did they happen?

16 A. There was probably ... there were distinct meetings
17 where the strategy was discussed and mark-ups were done,
18 and those ones are easy to pinpoint. The ones in
19 relation to the cladding, there were at least two or
20 three.

21 Q. Two or three during the whole of your involvement in the
22 project?

23 A. Yeah, I think there was one before Christmas, I think
24 there was one about middle of February, there was one
25 late March/Aprilish, something like this.

15

1 Q. Those are quite specific recollections, Mr Crawford, of
2 these meetings.

3 A. Yes.

4 Q. I don't think we see any sign of those in your witness
5 statement.

6 A. Possibly not because we couldn't pin down --

7 Q. Why is that?

8 A. Because we couldn't pin down precise dates and times.
9 They were quite informal meetings, and this is why I'm
10 making the sort of connection to them happening off the
11 back of maybe design team meetings and so on. But
12 drawings were put out and they were discussed, and you
13 remember them because you remember items in the
14 meetings.

15 Q. You have given us three such meetings: Christmas 2014,
16 February 2015, March 2015.

17 A. March/April. And this is the problem, I can't say
18 definitively, because --

19 Q. No.

20 A. -- I don't have --

21 Q. Trying the best you can to remember, who was present at
22 each of those meetings?

23 A. Harley and building -- well, there were building control
24 meetings, there were two or three Harley, there were at
25 least two or three workshops, and some of them had both.

16

1 Q. Who from Harley? Let's start with them. Who was
2 present at each of those?
3 A. In some instances it was Ray and Ben, and in some
4 instances Kevin.
5 Q. Who from building control, please?
6 A. John and Paul.
7 Q. And --
8 A. But Paul not necessarily at all of them, but John
9 certainly.
10 Q. Can you remember what occasioned or caused each of these
11 meetings to happen when they did?
12 A. Rydon were meeting the parties in the background, and
13 I think they strategically saw them as, "Let's have
14 a discussion on this or that", or let's say they were
15 aware of the issues that were arising from the
16 development of the cladding package.
17 Q. What issues arose from the development of the cladding
18 package that occasioned the Christmas 2014 meeting?
19 A. I couldn't say specifically.
20 Q. What issues that arose out of the cladding package
21 occasioned the February 2015 meeting?
22 A. I mean, I think the way I'd phrase it is there was the
23 initial conversation about the cavity barriers that
24 precipitated a meeting with building control and Harley
25 to help resolve it, and I suspect that was the one

17

1 before Christmas, and possibly again the one round about
2 mid to end February.
3 Q. Right.
4 Same question in relation to the March/April
5 meeting: what issues arising out of the cladding package
6 occasioned that meeting?
7 A. That was a discussion, the progress of the building and
8 the materials that were being used on the building.
9 Q. Okay. You have given us some quite detailed evidence
10 just now about three meetings at which Harley and
11 building control individuals were present, and we don't
12 get any of that from your witness statement. My
13 question is: why not?
14 A. Well, I suppose for the reasons that I'm making clear
15 now, that we didn't have anything concrete to pin the
16 date -- we couldn't pin the dates on them, and we
17 couldn't pin the precise, let's say, conversations, the
18 notes. I mean, this is purely recollection, my memory,
19 and I knew meetings took place. Even the dates I'm
20 giving you, I'm not sure; it could be a month this way
21 or a month that way. We don't have records to
22 definitively say, I just know those meetings took place.
23 Q. Can you explain to us, please, why you can remember
24 those meetings in a little bit of detail at least now,
25 when giving evidence to the Inquiry today, but couldn't

18

1 do so or didn't do so when you produced your statement
2 in November 2018?
3 A. I did have that recollection when I wrote the
4 statement -- the witness statement.
5 Q. But we don't, I think, find any reference to these
6 workshops or meetings in the statement, do we,
7 Mr Crawford?
8 A. No, because --
9 Q. Really I just want to know why that is.
10 A. It's a good point. Probably they should have been in
11 there. I mean, they were discussed in putting the
12 statement together, but the statement was done with
13 limited resources and time, and I couldn't be
14 definitive. I suppose there's reluctance to put
15 anything in when you can't be -- pinpoint -- it's like
16 you know something's happened and you remember bits of
17 it, but, you know, was it -- was it December, was it
18 January, exactly who was at which one ... I mean,
19 it's ...
20 Q. Right.
21 The second thing that arose out of that answer which
22 is now several pages back in the transcript -- I have it
23 at page 13 {Day11/13:13-19} -- is where you were talking
24 about:
25 "... parts lower down the building where it is

19

1 actually a firestop because it's a curtain wall coming
2 into the floor slab as opposed to a bit of overclad.
3 So ... there's a room for slight misinterpretation,
4 depending on which part of the building you're looking
5 at."
6 A. Oh, I don't think that's necessarily what was being
7 discussed there.
8 Q. Well, looking back at the email, if we can come back to
9 where we were, you are expressing an opinion, aren't
10 you, to Mr Lamb that the firebreaks would have to follow
11 the ratings of the party walls, because you say, "To me
12 ... [they] would have to follow the ratings of the party
13 walls"?
14 A. Yeah, I think this is after I'd had the conversation
15 with Paul Hanson where he had kind of implied that
16 that's what they should do. I probably adopted his
17 opinion in that respect.
18 Q. When was that conversation?
19 A. There was a ... there was an email, I think -- what date
20 is this?
21 Q. 6 March 2015.
22 A. Well, it might have been in one of the workshops or it
23 could have been in one of the emails round about then,
24 I don't know.
25 Q. Right.

20

1 A. There was certainly -- there was a lot of confusion over
2 the -- let's say there was difference of opinion on what
3 the ratings should be and where it should apply.

4 Q. Coming back to my original question, having gone through
5 this, would you accept that in this email you are
6 expressing the opinion about firestopping and not cavity
7 barriers, which is why you say that they would have to
8 follow the ratings of the party walls?

9 A. No, I've used the term "firebreaks", which is not
10 firestopping. To be honest, I never thought there
11 should have been firestopping within the build-up. The
12 notion of the firestopping came from building control.
13 I was trying to reconcile in my head why they thought
14 that, whether they thought -- actually the building has,
15 let's say the upper floors, a concrete slab, and it has
16 a built-in -- there's a built-in beam that runs between
17 the columns, so it's cast in, it's actually part of the
18 structure.

19 Because building control kept putting forward this
20 notion that it's firestopping, I thought: well, okay,
21 are they seeing this as the edge of the slab and somehow
22 the cladding fitting in front of that and it being
23 firestopping?

24 So there's a confusion as to -- because normally the
25 firestopping would go to the back line of a cladding

21

1 wall. So, for example, say you didn't have that
2 concrete upstand and you had SFS, for example, sitting
3 on the slab, or structural SFS right at the front, you
4 would have firestopping to the back of the, let's say,
5 CP board or something. That's how you would do it in
6 a new construction -- typically you might do it in a new
7 construction.

8 So I think what's happened was seeds of trying to
9 understand the thinking of building control. I had to
10 get to a point where building control agreed with our
11 interpretation of what was being proposed, and that was
12 part of this process. It may be that the terminology
13 was getting confused in some of the emails, or the
14 adopted position was shifting in thinking. But from my
15 perspective, it was always started as cavity barriers.
16 I didn't agree with the cavity barrier strategy that
17 Harley had, but I was trying to get to a position with
18 building control that they would accept what we were
19 proposing, that our interpretation was acceptable to
20 them. At the end of the day, they were signing it off,
21 and they had the last word on compliance, so there had
22 to be an agreed position.

23 Q. Two further questions on this, and then we will move on
24 from it.

25 First, it's right, isn't it, that we don't see

22

1 anywhere in this email you telling Mr Lamb that you had
2 had a discussion with Paul Hanson about the firebreak
3 requirements and that you were reflecting his views?
4 Why is that?

5 A. Well, not in this email, but --

6 Q. No. Why is that?

7 A. Well, as I said, there were a number of workshops and
8 that's where Kevin got the 90 from, or 60, he got 60 at
9 that point, because there was definitely a meeting, and
10 I'm sure it was the pre-Christmas one, where we sat with
11 building control and they made -- and they put forward
12 this notion of marrying up to the compartment wall
13 ratings. So that's where that's coming from, and
14 there's been conversations obviously in between and then
15 that's generated what I've written in that email.

16 Q. Where did these workshops take place?

17 A. On site.

18 Q. You see, according to the RBKC records, we have the
19 dates of site visits of 29 August, 29 September,
20 24 November, 27 November, and then none until
21 15 May 2015. If that's correct, where do these
22 workshops fit into that?

23 A. Sorry, you're talking about site visits by RBKC. That's
24 completely separate.

25 Q. Right. RBKC, yes, building control.

23

1 A. Oh, sorry, RBKC building control.

2 Q. Yes. Sorry, by RBKC I meant building control site
3 visits.

4 A. Right.

5 Q. So how do your workshops fit into that?

6 A. Can you read the dates again, sorry?

7 Q. Yes. 29 September, 24 November, 27 November, all 2014,
8 and there is one in August as well, and then none until
9 15 May 2015, Mr Crawford.

10 A. Okay. To me, they were definitely on site within the
11 early half of -- early portion of 2015. I mean, those
12 earlier dates could all have been credible ones, which
13 I may or may not have been at.

14 Q. Right. You can see why I'm pressing this, because there
15 are other people we will have to ask about this and this
16 is the first we've heard --

17 A. Yes, no, I understand. This is perhaps the reason why
18 I was so reticent to put it into the witness statement,
19 because I didn't have the precise dates. I was just
20 aware that there were a series of meetings and I can't
21 specifically point to when they were.

22 Q. I see.

23 Well, let's move on, because later on the same day,
24 you actually emailed Paul Hanson at RBKC
25 building control, and let's look at that. It's

24

1 {SEA00000252}. This is an email from you to him, as
 2 I say, at 15.49, copied to John Hoban at RBKC
 3 building control, Simon Lawrence, Kevin Lamb and others.
 4 You make reference to some attachments at the top there:
 5 "Hi Paul
 6 "Following our conversation this afternoon, this
 7 reminded me of another issue. Where we are over
 8 cladding what fire rating do we need to allow for within
 9 the wall build up between apartments (see below and
 10 attached)?"
 11 Now, it looks from that that you were actually
 12 raising this issue with Mr Hanson for the first time on
 13 6 March.
 14 A. Yeah. I mean, what I would say is that most of the
 15 conversation is with John, John Hoban. I considered
 16 Paul to have a greater fire knowledge than John, so in
 17 this instance I've deliberately -- this is as I recall,
 18 that I was deliberately giving sort of, if you like,
 19 an abstract description of where -- asking about where
 20 I thought the cavity barriers were going to go in order
 21 to get his view, in order for him to quantify what he
 22 thought was the appropriate solution in those locations.
 23 Because I felt with John, you know, I was being shown
 24 things that I didn't agree with.
 25 Q. Why didn't you ask the question to John Hoban?

25

1 A. But I think the conversations before were with John.
 2 Q. Why were you asking this question of Paul Hanson and not
 3 John Hoban?
 4 A. Because, in my view, Paul had a greater fire
 5 understanding than John.
 6 Q. I see.
 7 Turning to the question itself, "Where we are over
 8 cladding what fire rating do we need to allow for within
 9 the wall build-up", you don't identify the design or the
 10 materials in the cladding system or the wall build-up as
 11 you refer to it, do you?
 12 A. Not in this email.
 13 Q. Were you expecting him to work that out from the
 14 drawings you were attaching?
 15 A. Paul had sat in workshops with us, he knew the scheme,
 16 he knew where we were and what we had been working on,
 17 so it's not like I'm -- it's something out of the blue.
 18 Q. Let's look at the drawings which we can see listed in
 19 your statement at paragraph 230, if we can look at that,
 20 please, {SEA00014275/71}. You can see at the bottom of
 21 the page, in the fourth line, you say you attached
 22 Harley drawings. If you just go over the page, please,
 23 Mr Operator, to the top of page 72 {SEA00014275/72}, you
 24 say -- and I'm afraid it's split over two pages:
 25 "I note by the combination of Harley Drawings and

26

1 C1059-100 rev A, building control could have been aware
 2 of a number of the materials proposed for the over
 3 cladding system."
 4 Yes?
 5 A. Mm-hm.
 6 Q. So you say they could have been aware. They could have,
 7 of course, but you didn't draw to their specific
 8 attention the materials that you were proposing to use,
 9 did you?
 10 A. We had a workshop where the specific materials were
 11 discussed.
 12 Q. I see, workshops.
 13 Was this email the first time you had provided
 14 drawings relating to the overcladding system to
 15 building control?
 16 (Pause)
 17 A. That depends when the workshop took place, because we
 18 had been having systematic meetings with them,
 19 discussing --
 20 Q. Right.
 21 A. -- what was happening in terms of the building envelope.
 22 So I don't agree that they wouldn't have known what was
 23 going on, but I can't specifically give you dates and
 24 times.
 25 Q. Was Mr Soules at any of these workshops that you refer

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1 to?
 2 A. Not that I recall, no.
 3 Q. Right. Did you report back to Mr Soules about what you
 4 had discussed at these workshops?
 5 A. I may have done.
 6 Q. Did Mr Soules know about the workshops?
 7 A. He would have known that the workshops were going on,
 8 there was a meeting on site.
 9 Q. You say he would have done; do you have a recollection
 10 of actually telling him, such as, "Bruce, I'm going to
 11 a workshop" or "I have just been at a workshop"?
 12 A. Six years ago, no.
 13 Q. Now, you don't explain in your email what you wanted
 14 Mr Hanson to do with these drawings, did you? We can go
 15 back to the email, if you like.
 16 A. Well, as I mentioned before, we had had a series of
 17 workshops and the cladding had been discussed, so
 18 I don't think this was a case of just firing something
 19 off to someone blindly, because they had followed --
 20 they had followed and understood, in my mind, what was
 21 happening with the scheme from the workshops and
 22 interactions that had taken place on site.
 23 Q. At these workshops, did you hand drawings to RBKC
 24 building control for them to take away, or did you show
 25 them the drawings and then take them away yourself?

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1 A. No, they were quite informal, and I remember they were
2 almost always with Simon. He kind of orchestrated them,
3 Simon Lawrence, and we sat with him, sometimes John,
4 sometimes Paul as well, and Harley representatives, and
5 we would discuss the drawings on the table, and John
6 usually took things away.

7 Q. Right.

8 A. I mean, John I would summarise as being quite old school
9 in terms of he liked paper copies, and he would always
10 say, "Oh, I've got to go to the next job so I'm going to
11 take this with me" and this kind of thing.

12 Q. Right, I see, okay.

13 So when you emailed Mr Hanson on 6 March 2015 --

14 A. Yeah.

15 Q. -- and sent him these drawings, were you just expecting
16 him to refresh his memory about what had happened at any
17 of these workshops and then answer the question from
18 that?

19 A. I mean, he knew the project, he knew the scheme.

20 Q. I see.

21 Let's see the response he gives to you.
22 {SEA00012927/1}, please. It's a response to you, copied
23 to John Hoban at RBKC building control, 10 March, 11.49:
24 "Hi Neil,
25 "This is a B3 matter so it's really John Hoban's

29

1 reference but effectively, if you mean fire resistance,
2 the walls between apartments are compartment walls so
3 the construction should achieve the same fire time as
4 the elements of construction for the building - the fire
5 time depends upon the height of the building as
6 described in 1.A of Table A2 ADB)."

7 Do you see that?

8 A. Yes.

9 Q. He is saying cavity barriers should have the same fire
10 resistance as compartment walls.

11 Let's just go back to your statement, please,
12 page 72 {SEA00014275/72} and let's look at paragraph 231
13 together. You say there, having referred to his email
14 of 10 March:

15 "I did not agree with Building Control's response
16 because I think Paul had misunderstood the question I
17 was asking which was in relation to the fire rating
18 within the [external] wall cavity on the compartment
19 lines as opposed to party walls between apartments on
20 the floor plate which were already defined on the fire
21 strategy drawings. I asked a further question to
22 clarify the nature of my query the next day."

23 So you say you thought that building control had got
24 it wrong; yes?

25 A. Yes.

30

1 Q. And that he had misunderstood the question.

2 Is one of the reasons that he had misunderstood the
3 question that you hadn't given him proper context and
4 told him what the materials were, and given him any kind
5 of guidance as to the design of the overcladding system?

6 A. No. I think, going back to what I said earlier, you had
7 Kevin's email. Kevin's email I understood off the back
8 of the workshop that he had assumed the rating that had
9 been implied in the workshops. I was going back to Paul
10 because I understood his, let's say, fire understanding
11 generally overall to be greater than John's, and so what
12 I was doing is -- and I knew he was primarily concerned
13 with B1 and B5 issues, but I thought: okay, if
14 I describe it in abstract terms, let's see if his
15 response marries up with John's, because it may be that,
16 you know, they operate in different portions of the part
17 B regs, but his insight may be more in line with ours,
18 which would satisfy me that we were doing the right
19 thing and that we could get it signed off, which was the
20 ultimate objective.

21 Q. Either way, one thing you're not talking about here is
22 cavity barriers, are you?

23 A. Erm --

24 Q. Neither of you.

25 A. Well, I'm trying to get him to say whether his

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1 interpretation is -- should it be a cavity barrier or
2 firestop, because John's interpretation had been
3 firestop.

4 Q. Well, let's move on.

5 Your initial view that you had given to Exova and
6 Harley, as you had said, was that the firebreaks had to
7 match the rating of the party wall. We saw that, didn't
8 we?

9 A. Yes, which had come from building control.

10 Q. You say that had come from building control, and so it's
11 right, isn't it, that at the time you actually agreed
12 with Mr Hanson's advice, didn't you?

13 A. Well, I think that advice had come from John originally.

14 Q. All right. Mr Hoban's advice. Your initial view that
15 you had expressed to Exova and Harley was that
16 firebreaks did have to match the rating of the party
17 wall.

18 A. Well, I was adopting his view. I mean, I'm not sure if
19 it was clear in my mind what the rating should be at
20 this point. I mean, this is why I was trying to --
21 let's say, okay, there's a Studio E strategy which
22 I understood, there is the Harley strategy and there is
23 the building control strategy.

24 Q. Right, okay. Well, let's look at the --

25 A. I --

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1 SIR MARTIN MOORE-BICK: Sorry --
 2 MR MILLETT: I'm so sorry, finish your answer.
 3 A. What I'm trying to do is get to a position where
 4 building control were in agreement, because ultimately,
 5 for the building to be complete, they need to agree that
 6 it's compliant. If there's a difference of opinion, the
 7 only recourse I've got to try to resolve that is either
 8 having the conversation between the parties to resolve
 9 it, or and then going to the fire specialist to try and
 10 clarify it, let's say, from a perspective of someone at
 11 a higher level of authority, at least in terms of fire
 12 related matters.
 13 So that's the context in which I was operating. The
 14 problem is you're seeing a lot of emails that are all
 15 jumbled up with other things, so I appreciate it's very
 16 difficult to assemble that, but that's in my head what
 17 was happening and what I was doing at the time.
 18 Q. Let's see how far we go with this.
 19 If you go to the next document, which is your email
 20 the next day, it's {SEA00000260}. Now, this is your
 21 response both to Paul Hanson and John Hoban at RBKC
 22 building control; yes?
 23 A. Yes.
 24 Q. 11 March at 12.30, copied to Harley and indeed Rydon:
 25 "Hi Paul/John

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1 "To clarify what we were trying to understand here
 2 was the requirement for fire stopping within the wall
 3 build up where the cladding cassettes are mounted over
 4 the old cladding. Are you saying these should mirror the
 5 internal compartments (ie 60min and 120min [60min
 6 horizontally at floors])?"
 7 Do you see that?
 8 A. Yes.
 9 Q. What did you think the right answer was at that point?
 10 A. I thought the right answer was to have cavity barriers
 11 at the compartment lines in line with our employer's
 12 requirement strategy. I mean, that is personally what
 13 I believed the correct strategy to be.
 14 Q. But Mr Hanson isn't talking about cavity barriers in
 15 that or, indeed, any other location, is he?
 16 A. Quite.
 17 Q. He is talking about --
 18 A. Firestopping.
 19 Q. So why, when you responded to him did you not say to
 20 him, "Look, we're at cross-purposes. I want to know
 21 about where to put cavity barriers and what those cavity
 22 barrier resistances should be, not firestopping?"
 23 A. But in a sense that's what I am asking, because -- and
 24 I explained this in the sort of pretext beforehand --
 25 I didn't -- I was trying to get my head round why he was

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1 thinking it was firestopping. I think we all were
 2 trying to understand, because to me, the ratings were
 3 following what you would do if you were using
 4 firestopping, and this is why I was giving him this
 5 description of the position rather than anything else to
 6 try and precipitate out his thinking of, you know, why
 7 was he adopting a firestopping perspective rather than
 8 a cavity barrier perspective.
 9 Q. But, Mr Crawford, your reply to him, which we have just
 10 looked at, where you clarify what you are trying to
 11 understand, is, "the requirement for firestopping within
 12 the wall build up". So you're not talking about cavity
 13 barriers; you're asking him about firestopping.
 14 A. Yes, but that's because I'm quoting what he's asked for.
 15 Q. Well, did you understand the difference between cavity
 16 barriers and firestopping?
 17 A. Yes. I mean, I've spent my entire career doing curtain
 18 walling systems, stick systems, where you do
 19 firestopping, and then brick-skin windows where you put
 20 a brick-skinned SFS construction external walls where
 21 you use cavity barriers. So I understood the difference
 22 and where you can apply them.
 23 What I was trying to understand was where he was
 24 coming from, particularly in relation to the fact it was
 25 overcladding and what he perceived as the edge of the

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1 slab or back of slab relative to the back of cladding.
 2 So back of slab to the back of the new cladding or back
 3 of slab to the old cladding.
 4 To me, I didn't understand. I didn't understand
 5 where he was coming from in terms of his firestopping
 6 classification, full stop, so I was trying to get inside
 7 his head to get him to explain it or qualify it.
 8 Q. I mean, this is a gentleman with whom you say you had
 9 had these informal workshops on a number of occasions;
 10 would it not have been simpler just to come clean,
 11 explain your view and ask him to comment?
 12 A. But I think we had up to then -- the proposals that we
 13 had discussed with them was a cavity barrier solution.
 14 Q. Let's look at another email. {SEA00012953/1}, please.
 15 This is an email to you from Ben Bailey, and I should
 16 just show you the emails below it. We start with the
 17 one I showed you earlier from Kevin Lamb. This is at
 18 the bottom of page 1 over to 2. Do you see that?
 19 A. Yes.
 20 Q. Which we looked at before, and indeed yesterday.
 21 Then up the page we have your email to Kevin Lamb of
 22 10 March, "Please see response from Paul Hanson
 23 regarding cladding firebreaks (attached)", which is how
 24 it gets in to Harley. Do you see that?
 25 A. Mm-hm.

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1 Q. Then Ben Bailey's response comes back to you 18 March at
 2 11.17, to you and to Simon Lawrence. So this is coming
 3 from Harley to you:
 4 "Hi Neil
 5 "The firebreak supplier (who it seems was involved
 6 with Grenfell at the specification stage) has made a
 7 comment and I'd like to clarify what firebreaks are
 8 required.
 9 "Could you confirm what the vertical and horizontal
 10 requirement is please, the spec and supplier technical
 11 rep say very different things!"
 12 Do you see that?
 13 A. Yes.
 14 Q. Now, let's just pursue this a bit further, because you
 15 say something about this in your statement. Can we have
 16 that, please, at page 72 {SEA00014275/72}. At
 17 paragraph 233, towards the bottom of page 72, you say
 18 you have had a conversation with building control in the
 19 morning:
 20 "... and John Hoban (Building Control) emailed me
 21 afterwards saying ..."
 22 And we'll look at that email in a moment.
 23 Just on the statement, you refer to a discussion
 24 with building control in the morning; who was that with,
 25 please?

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1 A. I think it was John Hoban.
 2 Q. You think it was John Hoban, okay.
 3 Let's look at the email you refer to. You've given
 4 the reference in your statement. It's {SEA00012963}.
 5 It's his response to the message you had sent to
 6 Paul Hanson, so it looks like your efforts to go to
 7 a higher authority on fire had not succeeded because
 8 Mr Hoban was coming back to you. Mr Hoban says to you
 9 and to Paul Hanson, copied in:
 10 "Dear Neil,
 11 "The Building Regulations 2010 (as amended)
 12 "Grenfell Tower, Grenfell Road, Refurbishment.
 13 "Thank you for returning my call this morning.
 14 "Further to my conversation with you today, I would
 15 confirm that the fire time for the new Elements of
 16 Structure [new columns, beams, sections of compartment
 17 floor etc] in Grenfell Tower is 120 minutes, as
 18 specified in section 1a of Table A2, Appendix A of
 19 Approved Document B...
 20 "I would also draw your attention to diagram 33 of
 21 Approved Document B and highlight the detail between
 22 compartment floors and external cladding. In the
 23 meantime should you wish to discuss any other aspects of
 24 the project Neil, then please do not hesitate to call
 25 me ..."

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1 And he gives you a contact number.
 2 Do you see that?
 3 A. Yes.
 4 Q. So he's saying, when he refers to ADB, he is giving his
 5 view that the fire time for the new elements of
 6 structure should be 120 minutes.
 7 Now, my first question is: what did you discuss with
 8 John Hoban during your conversation with him that
 9 morning which preceded that email?
 10 A. Erm ... I think this may have been in relation to the
 11 new works that were going on on the lower floors. So
 12 I think there's changes that were happening around about
 13 then with the entrance lobby and the community space and
 14 some new steelwork going in, supporting steelwork.
 15 I think it might have been connected to that.
 16 Q. I see. He says in his email:
 17 "Further to my conversation with you today, I would
 18 confirm ..."
 19 And he goes on to talk about the new elements of
 20 structure and 120 minutes, et cetera.
 21 Was what he was confirming there all in relation to
 22 matters in the lower part of the building?
 23 A. I believe so.
 24 Q. So the conversation, and indeed this email, or at least
 25 that paragraph of this email, is not about cavity

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1 barriers within the cladding structure, is it?
 2 A. I don't think so, no.
 3 Q. Did you have any other discussion with him about other
 4 elements of the cladding, such as insulation, ACM
 5 panels, et cetera?
 6 A. At that time, in relation to this email? I couldn't say
 7 definitively.
 8 Q. Did you go back to him and say, "Look, actually my
 9 question" -- and you can see this from the second email
 10 down -- "was where we are overcladding, what fire rating
 11 do we need to allow for within the wall build-up between
 12 apartments"? Did you not think to press him on that
 13 issue so that his answer didn't simply relate to the
 14 lower part of the building but the whole building?
 15 A. I may have done, I don't recall.
 16 (Pause)
 17 I mean, this first section, it may have been that he
 18 misinterpreted that in relation to John Hoban's --
 19 sorry, Paul Hanson's commentary. I'm not sure,
 20 actually.
 21 Q. Right. Okay. Let's then move on.
 22 It's right to say, isn't it, that you didn't respond
 23 to Mr Hoban and say that you disagreed with him, did
 24 you?
 25 A. I couldn't say. I don't recall.

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1 Q. Let's look at {SEA00013001}, please, moving on in time.
 2 This is an email from Kevin Lamb of Harley to you of
 3 25 March where he sends you some drawings. You can see
 4 them there set out as attachments. He says:
 5 "Simon,
 6 "Further to our meeting yesterday ..."
 7 I'm so sorry, this is an email to Simon Lawrence,
 8 but it's copied to you and Bruce Sounes:
 9 "Simon,
 10 "Further to our meeting yesterday, please find
 11 attached details for the firebreaks, all now upgraded to
 12 120min."
 13 So that's where that happens.
 14 Next, before I start asking you about that, I would
 15 like you to go, please, to {SEA00013022}. Now, we will
 16 need to look at the whole email chain.
 17 As you can see, the last email in it is at the top
 18 of page 1 from you to Simon Lawrence, copied to
 19 Simon O'Connor, of 27 March 2015. But if you scroll
 20 down to the bottom, please, you can see that the first
 21 email in it is an email from Ricky Kay. If you could be
 22 shown that bottom email, which is on page 2
 23 {SEA00013022/2} and over to page 3 {SEA00013022/3}.
 24 Page 2 at the bottom will do.
 25 This is an email that you didn't receive yourself,

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1 but it was sent by Ricky Kay of Siderise to Ben Bailey,
 2 copied to Kevin Lamb and Mark Stapley at Harley, among
 3 others. It's 26 March 2015:
 4 "Hi Ben,
 5 "Apologies for the day ...
 6 "Please find below extract from the Approved
 7 Document B of the Building Regulations."
 8 Then he sets out an extract from it. You can see
 9 that it says cavity barriers, integrity: 30, insulation:
 10 15. Do you see?
 11 A. Yes.
 12 Q. Mr Kay, who I should say is the national façades manager
 13 at Siderise, says:
 14 "Here you can see that it clearly states that 30
 15 minutes fire integrity and 15 minutes insulation is all
 16 that is required from a cavity fire barrier. This is
 17 reference to rainscreen cladding applications where the
 18 cavity barrier is deemed to be on the outside of the
 19 building. Our RH25-90/30 will offer 90 minutes fire
 20 integrity and 30 minutes fire insulation, therefore
 21 exceeds minimum requirements.
 22 "120 minute fire rating is generally the industry
 23 standard for curtain wall to concrete slab edge
 24 firestopping where the firestop is located on the inside
 25 of a building and is considered to be a continuation of

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1 the floor slab.
 2 "Please get in touch ..."
 3 So you see that, and this is, as I say, part of the
 4 email string that you received in copy, and we see that
 5 from the next-but-one email. I'll just run up with you,
 6 if I can.
 7 The next one is Ben Bailey to Simon Lawrence and
 8 Simon O'Connor at Rydon, copied to others in Harley
 9 {SEA00013022/1):
 10 "Simon,
 11 "As discussed, please see the email below from the
 12 firebreak supplier. There is quite a large cost
 13 difference between what Siderise and the spec recommend,
 14 and upgrading to the 120min barriers we discussed on
 15 Tuesday.
 16 "Could you forward this to the client's
 17 representative for approval please."
 18 Then it comes to you, you see? Simon Lawrence on
 19 27 March sends the email string to you:
 20 "Hi Neil,
 21 "Following Tuesdays design meeting, Harley via their
 22 supply chain are questioning the rating of the cladding
 23 firebreaks. Apparently by going to 2hrs as we discussed
 24 has a cost increase of around £12k. Their supplier is
 25 saying it only needs to be 30mins everywhere as per the

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1 Regs extract below.
 2 "Could you take a look to see what you think and
 3 discuss with John Hoban please?"
 4 Do you see that?
 5 A. Yes.
 6 Q. Then your response to that is on 27 March, a little bit
 7 later in the morning, to Simon Lawrence, copied to
 8 Simon O'Connor:
 9 "Hi Simon
 10 "Have spoken with John and he wasn't happy with
 11 Harley's email as we are talking about fire stopping as
 12 opposed to cavity barriers. I have explained again the
 13 specifics of our scenario and he will have a
 14 conversation with Paul Hanson to see if there is a
 15 reduced spec they can agree to and will then speak with
 16 Harley's directly."
 17 Now, I've shown you the whole of that email string,
 18 so my questions on it are this: do you accept that the
 19 long and the short of this email exchange is that if you
 20 were talking about cavity barriers as opposed to
 21 firestops, then 120 minutes was not necessary and that
 22 the upgrade to 120 minutes for cavity barriers would be
 23 to increase cost and possibly delay?
 24 A. Absolutely.
 25 Q. Yes.

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1 Do you agree that there was some pressure on site,
2 so far as you could understand, to avoid having to
3 specify cavity barriers with a resistance of
4 120 minutes?
5 A. Yes.
6 Q. And the main concern was cost and delay as opposed to
7 fire safety.
8 A. Well, I can't speak on behalf of the other participants
9 in that conversation, but you might read that into what
10 they had written, yes.
11 Q. If we then move forward, we can see what you say to
12 John Hoban. Go, please, to {SEA00000264}, because we
13 can see you forward Mr Kay's email to John Hoban. You
14 see that? Here we see on page 1 the Ricky Kay 26 March
15 email; yes?
16 A. Yes.
17 Q. Which you then send on to John Hoban on 27 March at
18 10.53 in the morning:
19 "Hi John
20 "There has been a lot of conversation on site about
21 the cavity fire barrier requirements to be fitted
22 between the existing concrete external wall panels and
23 the new external rain screen aluminium cassettes.
24 "Can you please see the proposal by the cladding
25 contractor below and confirm if this is acceptable to

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1 you."
2 So you're now talking -- quite clearly, I would
3 suggest to you -- about cavity barriers; yes?
4 A. Yes.
5 Q. Yes, and we've seen what Mr Kay says, and you ask
6 Mr Hoban if he will confirm Siderise's proposal.
7 If we go back, please, to {SEA00013022}, here is the
8 email we looked at a moment ago of 11.03. So about
9 15 minutes or so after you send the Ricky Kay email to
10 John Hoban, you tell Simon Lawrence at Rydon:
11 "Hi Simon
12 "Have spoken with John ..."
13 I'm assuming that's John Hoban?
14 A. Yes.
15 Q. "... and he wasn't happy and he wasn't happy with
16 Harley's email as we are talking about fire stopping as
17 opposed to cavity barriers."
18 So there we see the issue.
19 A. Yeah. So can I just add that, to me, I mean, that's
20 making quite clear that you can see that John thinks
21 it's firestopping and he wants the higher rating.
22 Q. Yes, indeed, and this is an email from you to
23 Simon Lawrence at Rydon, but you don't give your view in
24 this email, do you? You don't say that he's at
25 cross-purposes.

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1 A. Well, let's just say, from the outset, we had
2 a strategy, and that's our strategy and I've stuck by
3 it. The fact is that other people have not accepted
4 that strategy or put forward other strategies. In
5 co-ordinating building control submission, it is my role
6 to get to a point where there was an agreement that
7 building control could sign it off.
8 Q. Right.
9 Did you actually think that the issue was about
10 firestopping as per your initial view, as we saw
11 earlier, or was your main concern just to go easy with
12 building control in order to get a sign-off?
13 A. No, my view was that it was cavity barriers to start
14 with. I wanted to entertain some of -- or try to
15 entertain some of building control's thinking to
16 understand whether we'd collectively as a design team
17 missed something, so, for example, there may have been
18 some legitimacy to their thinking of it as firestopping
19 and hence the higher rating, test that with the design
20 team, and then get to a position where there was
21 a collective agreement.
22 Ultimately, building control had to agree to
23 whatever solution was being proposed. If they were
24 insistent on a cavity barrier or firestopping of
25 a higher value, then -- well, first of all, you couldn't

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1 do firestopping, that's the reality, but if they
2 insisted on a cavity barrier solution of a higher
3 rating, and that was the only way to get them to sign it
4 off, then you would put in a higher rating, and you
5 would say, well, okay, you might have been able to
6 a lower rating, but a higher rating is going to err on
7 a positive side, so it's ...
8 Q. You were under contract to Rydon at this point.
9 A. Yes.
10 Q. Why didn't you simply set out your professional advice
11 to your client in this email to Mr Lawrence --
12 A. Well --
13 Q. -- about what the cavity barrier rating should be?
14 A. Well, he knew. He knew what our position was.
15 Q. Right.
16 Why didn't you tell Rydon that you were going to go
17 back to building control and put them right?
18 A. Simon knew that's what I was trying to do.
19 Q. Right.
20 A. He knew that -- I mean, he had asked me to speak to
21 building control, and the reason he had asked me to
22 speak to building control was to try and broker
23 an acceptable solution.
24 Q. I see. So you were really acting as a broker -- your
25 word -- between two conflicting views?

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1 A. No, I said to broker a solution. I don't consider
2 myself a broker as such.
3 MR MILLETT: All right.
4 Mr Chairman, that may be a convenient moment for
5 a break.
6 SIR MARTIN MOORE-BICK: Yes. I'm just wondering, since we
7 have gone over the hour, if we had a slightly longer
8 break at this stage and came back, let's say, at 11.20,
9 we might then run up until 1 o'clock or nearly. Would
10 that be acceptable?
11 THE WITNESS: Erm ... yeah.
12 SIR MARTIN MOORE-BICK: Let's do that. We will break now
13 until 11.20, and then we will see if we can get through
14 the rest of the morning.
15 THE WITNESS: Okay.
16 SIR MARTIN MOORE-BICK: Would you like to go with the usher,
17 please.
18 (Pause)
19 Right, 11.20.
20 (11.07 am)
21 (A short break)
22 (11.20 am)
23 SIR MARTIN MOORE-BICK: All right, Mr Crawford?
24 THE WITNESS: Yes.
25 SIR MARTIN MOORE-BICK: Now, I think I was being a bit too

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1 ambitious when I suggested we could go through the rest
2 of the morning without a break, so I have suggested to
3 Mr Millett that he find a convenient place around 12.05.
4 That will give you roughly 45 minutes, then a break, and
5 another 45 minutes. All right?
6 THE WITNESS: Yes, that's fine.
7 SIR MARTIN MOORE-BICK: Yes, Mr Millett.
8 MR MILLETT: Mr Crawford, first of all, can I just correct
9 or fill in some dates of site meetings in the record
10 that we have, and just add a few more so that we're
11 clear.
12 There were meetings on site at 16 January,
13 17 February, 26 March, 17 April and 22 April 2015 --
14 they were site visits, not necessarily meetings on site,
15 and at the moment we are still exploring who was
16 present, but I didn't want you to think that the list of
17 dates I had given you earlier were the only dates that
18 we have in the record.
19 Secondly, just a couple of other questions that
20 arose out of this question about workshops.
21 Did you keep an architect's notebook?
22 A. I have my sketchbooks, which I would generally carry
23 with me and would ... depending on how involved I am in
24 the meetings, I may or may not, you know, take notes or
25 sketch in.

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1 Q. Did you keep a diary of your appointments?
2 A. Generally, if I'm out of the office, it would go into
3 the Outlook diary, so I would put "At Grenfell site" or
4 whatever. It's not foolproof, but if, for example, you
5 knew you had a design team meeting coming up and you're
6 going to be out Tuesday morning, then I usually put that
7 in.
8 Q. From about Christmas 2014, where was your office? Was
9 it at London Bridge or were you still at Rainville Road?
10 A. 2014 ...
11 (Pause)
12 I can't remember precise dates. I need to check.
13 Q. Do you remember whether you entered into your Outlook
14 diary the workshops that you were to attend?
15 A. Some of those workshops were kind of informal off the
16 back of design team meetings and things like that, so
17 that's why I don't have a formal record of them.
18 Q. Just to go back, then, to the email string or traffic
19 that we were looking at before the break, we now come to
20 late March 2015. I will take these quite quickly just
21 to show you the documents and ask one or two questions
22 on them.
23 Go first, please, to {SEA00013034}. This is
24 an email from you to John Hoban at RBKC, 30 March 2015:
25 "Hi John

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1 "Ben Bailey from Harley's is who you might ask for."
2 And you give a phone number.
3 Do you know whether Mr Hoban ever did speak to
4 Ben Bailey?
5 A. I don't know.
6 Q. Did you ever follow it up?
7 A. I can't recall. I mean ...
8 Q. Right.
9 Then we go, please, to the next document, which is
10 {SEA00013036}, please.
11 This is John Hoban's reply to you, which we've seen
12 before. Perhaps we haven't. It's similar to the one we
13 saw before. He says:
14 "Dear All ..."
15 And he refers again to the Building Regulations:
16 "Please find detailed below a copy of an email sent
17 to various persons on the 20th of March 2015 ..."
18 You can see that underneath it. We looked at that
19 earlier this morning, and it is quite similar in layout:
20 "... concerning the topic relating fire stopping of
21 the compartment floors to the building. I would advise
22 you that it is my interpretation of diagram 33 of
23 Approved Document B is that the detail between
24 compartment floors and external cladding is not a cavity
25 barrier, therefore it must be fire stopped to at least

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1 the standard of the existing compartment floor
2 [120 minutes]. Therefore the methods described in
3 clause 9.13 would not be appropriate in this particular
4 case."

5 Do you see that?

6 A. Yes.

7 Q. Then you reply the next day, if we can bring that up,
8 please, {SEA00000265}, and you say:

9 "Hi John

10 "Unfortunately this problem is not going away.

11 "The subject of fire barriers is raising a lot of
12 concern on site not least because of program and cost.
13 I have forwarded a copy of diagram 33 and the typical
14 floor detail and we are all miffed as to why this detail
15 is not a cavity barrier in this location - please see
16 attached."

17 Do you see that?

18 A. Yes.

19 Q. "The relationship between the back of the slab and the
20 cladding remains the same as the original cladding
21 (concrete) is retained and therefore the integrity of
22 this relationship at floor level has not been affected.
23 The new cladding constitutes an additional layer applied
24 on top not a new floor slab interface and therefore the
25 interpretation is that this constitutes a cavity barrier

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1 and not a fire stop. This has now become something of
2 an issue on site due to program bottle neck and so your
3 earliest response to this would be appreciated ..."

4 You attach to that email, as we can see from the
5 attachment, a drawing. Do you see that? And also
6 a copy of "BR PDF AD B2 2013". So there are two
7 documents. Do you see that? So you send him a drawing
8 and you send him ADB?

9 A. Yes.

10 Q. That turns out to be diagram 33.

11 A. Yes, with a red box --

12 Q. With a red box. Let's just look at that: {EX000001296}.
13 We can see the red box at the bottom as you just
14 referred to it:

15 "Our firestopping is in the grey location and not
16 between floor slab/back of retained concrete cladding."

17 You see?

18 A. Yes.

19 Q. Okay. That's your annotation, is it?

20 A. Yes.

21 Q. It is.

22 As I just said before, you also attached a copy of
23 a drawing, which we can see, if we want to look at it
24 again -- let's see if you remember it without having to
25 go to it -- was an employer's requirement drawing which

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1 we looked at when we looked at Studio E's cavity barrier
2 design.

3 A. I know the drawing.

4 Q. The question is: did you appreciate that the Studio E
5 design and the Harley design for the location of the
6 cavity barriers was different, because the cavity
7 barriers had been moved between employer's requirements
8 drawing and the Harley drawings?

9 A. In what respect?

10 Q. Well, they had been moved away from the compartment line
11 slightly.

12 A. Not in a material sense they hadn't.

13 Q. Okay.

14 Why didn't you send the Harley drawing as opposed to
15 the employer's requirements drawing?

16 A. Erm --

17 Q. Let me put that question again.

18 Why did you send them the employer's requirements
19 drawing and not the most up-to-date Harley drawing?

20 A. I had already sent them the Harley drawings.

21 Q. So why were you sending them the employer's requirement
22 drawing?

23 A. More evidence. I mean --

24 Q. But they were different.

25 A. But they're not. You're making a difference that -- and

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1 I'm not agreeing with your difference of interpretation.
2 Both the cavity barriers are on the compartment line.
3 That is the significant point.

4 Q. Did you have any help from Rydon or Harley when you
5 drafted this email that we see?

6 A. I'm not aware that I did. I mean, we were having
7 frustrated conversations, which I'm sure you can detect
8 from just the correspondence, in that there was
9 a bottleneck, and trying to get John to see our point of
10 view, which we believed to be correct.

11 Q. What made you now become so clear and, if I may put it
12 this way, trenchant in your view that we're talking now
13 about cavity barriers as opposed to firestopping? What
14 had made you do that, at this point, as opposed to
15 earlier in the discussions that we've seen?

16 A. Well, I would argue earlier that -- it was pretty clear
17 to me what it should have been. It's a collection of
18 different opinions, and the right thing to do is go
19 through those opinions and verify and check to get the
20 right solution. By this point, it was getting
21 frustrating.

22 Q. I see.

23 Looking at the next document, which is
24 {SEA00013049}, it's an email chain, and again looking at
25 the bottom email on page 1 and over to page 2

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1 {SEA00013049}, if we can, please -- it's not that easy,
 2 they're split -- can you see that you send an email to
 3 Terry Ashton on 31 March 2015?
 4 I'm afraid on the screen you've got the second half
 5 of that. I wonder if the two pages could be put side by
 6 side, pages 1 and 2, please.
 7 Mr Crawford, sometimes the emails go over two
 8 pages and we have to use some magic.
 9 Right, so you see that at the bottom of page 1, this
 10 is an email from you, 31 March at 12.05, to
 11 Terry Ashton:
 12 "Hi Terry."
 13 Then over on to page 2:
 14 "Can you comment on the history of this item -
 15 please see correspondence below as it is not clear to me
 16 why this item is causing such a difference in
 17 interpretation - can't see anything that seems to
 18 reference it in the fire strategy."
 19 Do you see that?
 20 A. Yes.
 21 Q. Did that itself not ring alarm bells with you that the
 22 Exova fire strategy was in some way, at least,
 23 incomplete?
 24 A. Not necessarily. I mean, would you expect the precise
 25 cavity barrier strategy to be covered in a high-level

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1 fire strategy document? Not necessarily.
 2 Q. You just described the Exova outline fire safety
 3 strategy that you had seen the last iteration of --
 4 A. Yeah.
 5 Q. -- as a high-level fire strategy document.
 6 Just to go back to some questions that we were
 7 examining together yesterday, did you ever expect Exova
 8 to produce anything more than a high-level report or
 9 strategy, as you call it?
 10 A. High-level outline, interchangeable.
 11 Q. Right.
 12 Did the fact that Exova had not solved this question
 13 or addressed this question in their outline fire safety
 14 strategy not, as I say, alert you to the fact that this
 15 was a detail that Exova hadn't covered and needed to,
 16 perhaps in the next iteration of the strategy?
 17 A. In terms of their commentary on B4, we didn't drill down
 18 to specifics of firestopping, cavity barriers, issues
 19 like that. Only if they were, let's say, of a highly
 20 specific and non-standard nature.
 21 Q. By this time, late March 2015, you had had to go to
 22 Exova for quite a lot of ad hoc advice, as we've seen,
 23 you say in relation to compliance of the Celotex, the
 24 ACM, you said yesterday, we have heard discussions with
 25 them about cavity barriers and firestopping. Did that

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1 not all tell you that Exova now needed to do a full job
 2 and give full advice as opposed to an outline followed
 3 up by ad hoc, as-and-when, piecemeal questions and
 4 answers?
 5 A. No, my experience on projects is that it's quite normal
 6 to speak to a fire consultant in relation to
 7 interpretational issues of Building Regulations
 8 Q. Then we see Terry Ashton's response to you on page 1
 9 {SEA00013049/1}, and he says to you:
 10 "This isn't something that would necessarily form
 11 part of a fire safety strategy for a building.
 12 Therefore, it would not have been dealt with in the fire
 13 safety strategy for this buildings[sic]."
 14 So he actually thinks it's something outside his
 15 scope. Then he says:
 16 "I agree with Ben Kay. I believe that a cavity
 17 barrier is all that is required in this application.
 18 Even if we were to agree with RBKC, it is difficult to
 19 see how a fire-stop would stay in place in the event of
 20 a fire where external flaming occurred as this would
 21 cause the zinc cladding to fail."
 22 I think we have already looked at that yesterday,
 23 and we looked at the email at the top of that chain
 24 yesterday, and I won't go back to that.
 25 Let's move on in time, then. {HAR00013719}.

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1 John Hoban emails you twice on 1 April, as we see from
 2 this exchange. If we go to page 2 {HAR00013719/2},
 3 please, and halfway down page 2, we can see he emails
 4 you on 1 April at 9.57:
 5 "Thank you for your email and for the attached
 6 drawing, showing typical cladding details. The matter
 7 has now become more clearer.
 8 "I would advise you that I have no adverse comments
 9 to make on the proposals shown on your drawing ... with
 10 regards to compliance with Parts B2 and B3 in Schedule 1
 11 of the building regulations."
 12 Then he asks for the drawings for:
 13 "... the external walls to the boxing club floor,
 14 the mezzanine floor and the mezzanine plus one
 15 floor ..."
 16 So that's the lower part of the building, isn't it?
 17 A. Yes.
 18 Q. Then he says:
 19 "... as it my impression that the cladding I floor
 20 junction detail for those particular floors defer from
 21 that shown on drawing 1279 ..."
 22 Et cetera, and he wants to review those prior to
 23 giving further comments on the cladding.
 24 Going up, then, to page 1 {HAR00013719/1}, about the
 25 middle of the page, he says to you in his second email

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1 of 1 April, in the first substantive paragraph:
 2 "I would advise you that I have no adverse comments
 3 to make on the cladding proposals shown on your drawings
 4 ... with regards to compliance with Parts B2 and B3 in
 5 Schedule 1 of the building regulations."

6 Do you see that?

7 A. On our drawings and Harley's drawing, yes.

8 Q. Exactly. So he has no adverse comments to make.

9 Then if you go to the next -- yes, that's right, so
 10 I don't think we need to see anything else of that
 11 document.

12 At the top of the page you then see that because
 13 Mr Hoban has copied Mr Lawrence into the response,
 14 Mr Lawrence sends that to Harley, Ben Bailey and
 15 Ray Bailey, copied to you, and he says:
 16 "Gents,
 17 "The Building Control officer is now in agreement
 18 with the fire protection in the cladding being a 'cavity
 19 barrier' rather a fire stop as first thought."
 20 That is where it all ends.

21 Now, the emails we have just been through related to
 22 cavity barriers at compartment lines, we have seen that
 23 and we have sorted out the mess on that.

24 Did you ever at any point seek any guidance from
 25 RBKC building control about cavity barriers around the

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1 windows?

2 A. Erm ... I didn't -- I don't recall seeking specifically ,
 3 although the general strategy was discussed in the
 4 workshops/meetings.

5 Q. Right.

6 Did you ever ask RBKC building control to approve
 7 Harley's design as a whole, which omitted cavity
 8 barriers around the windows?

9 A. They were aware of Harley's scheme.

10 Q. Yes, but did you ever actually ask them to approve or
 11 comment on Harley's design as a whole which, as we know,
 12 omitted any cavity barriers around the windows?

13 A. I may have done. I don't recall .

14 Q. You don't recall , okay.

15 We're now going to move on to a different topic ,
 16 Mr Crawford: the crown.

17 Now, we know that the design of the crown -- and
 18 correct me if I'm wrong about this -- wasn't finalised
 19 before the refurbishment went out to tender, was it?

20 A. There were some issues relating to how you dealt with
 21 façade cleaning access that could influence its design.

22 Q. So is the answer to my question: yes, it wasn't
 23 finalised before the refurbishment went out to tender?

24 A. Yes, that would be correct.

25 Q. Thank you.

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1 After novation to Rydon in 2014, I think you were
 2 then involved in the design of the crown, weren't you?

3 A. Yes.

4 Q. Did you give any consideration as to how the crown may
 5 perform in the event of a fire?

6 A. Just understood it as more aluminium panel.

7 Q. Did you consider whether cavity barriers may be required
 8 between the façade cladding and the crown?

9 A. Not outwith the strategy that had been agreed already.

10 Q. You say the strategy that had been agreed already; what
 11 was that? What was that strategy?

12 A. Around the compartments, maintaining the compartments.

13 Q. I see.

14 Did you ever consider whether cavity barriers may be
 15 required along the crown in order to stop lateral
 16 fire spread?

17 A. You mean vertically?

18 Q. I suppose it would be vertically . Vertical cavity
 19 barriers would be required to stop lateral fire spread,
 20 so yes, that is what I'm asking you. Did you ever
 21 consider that?

22 A. They were there in the capacity of the compartments.
 23 The crown itself was open. It's an open element.

24 Q. Indeed, and so there would be no compartments in the
 25 crown itself .

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1 A. No.

2 Q. So does it follow that there were no -- we know there
 3 were no, but you didn't consider any vertical cavity
 4 barriers in the crown in order to stop lateral
 5 fire spread?

6 A. Because there wasn't a requirement for them, no.

7 Q. A requirement where?

8 A. Within the open portions of the crown.

9 Q. You say there wasn't a requirement for them. I'm
 10 interested in the word "requirement". What do you mean
 11 by --

12 A. I'm just trying to quantify what you were saying
 13 earlier , which was that you have the compartment of the
 14 apartment, if you like , below, then the crown itself is
 15 a series of -- was a series of open panels.

16 Q. Yes.

17 A. So they were interlocked. It's like a hit and miss
 18 fence. So you have the panels doing this (indicated).

19 Q. Yes.

20 A. I mean, the design was essentially there. The only
 21 thing that was to be considered was any access coming
 22 over the top and whether that would have any implication
 23 on the design.

24 Q. Can I ask you, then, to look, please, at {SEA00013221}.

25 This is an email exchange in late May 2015. We can see

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1 that the second email down on that page is an email from
 2 Kevin Lamb 29 May 2015 to Simon Lawrence, copied to you
 3 and others at Harley:
 4 "Neil,
 5 "Please find attached drawings for the Crown element
 6 for approval."
 7 Do you see that?
 8 A. Yes.
 9 Q. Clearly he is asking you to approve those -- his word --
 10 and, going up the chain, you see that you returned
 11 comments to him on 12 June 2015, two weeks later or so.
 12 You attach something called "Crown Details SEA
 13 comments":
 14 "Hi Kevin
 15 "Please find attached comments on the Crown
 16 drawings."
 17 Do you see that?
 18 A. Yes.
 19 Q. Can we have a look at those. It's {SEA00003242},
 20 please. We can see there we have the crown. This is
 21 a Harley drawing dated 30 September 2014, at the bottom
 22 right-hand we can see that -- no need to blow it up --
 23 authored by Kevin Lamb, and it looks like revision 0,
 24 because there are no revisions to it, and we can see
 25 your by now familiar red capitals. Those are your

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1 comments, aren't they?
 2 A. Yes.
 3 Q. And the stamp B, dated and stamped 12 June 2015; can we
 4 see that?
 5 A. Yes.
 6 Q. On the columns, vertical firebreaks have been indicated,
 7 haven't they?
 8 A. Yes.
 9 Q. But there is no firebreak or cavity barrier indicated at
 10 the top of the columns, is there?
 11 A. That's correct.
 12 Q. So on these drawings, there was a route for fire to
 13 spread uninhibited from the columns up to the crown.
 14 A. Erm ... each apartment is a compartment, so you have
 15 a compartment below, which is enclosed, then you have
 16 a compartment above, and so there is no requirement to
 17 protect the compartment to atmosphere, at least this is
 18 the interpretation I suppose I might have made from
 19 Harley's decision to omit that cavity barrier.
 20 Q. My question -- I'm going to ask it again. If you look
 21 at the left-hand side -- it's easier to look at the
 22 left-hand side because the right-hand side is obscured
 23 by the stamp -- you can see that there is a vertical
 24 cavity barrier, or firebreak, as it's called, up the
 25 column; do you see?

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1 A. Yes.
 2 Q. And it stops before the crown starts, doesn't it?
 3 A. Yes.
 4 Q. It does. So there is no vertical cavity barrier running
 5 up into the crown, is there?
 6 A. Running up to the base of the crown.
 7 Q. But not beyond?
 8 A. Yes.
 9 Q. Exactly. That means that there was a route for fire to
 10 spread uninhibited from the columns or up the columns
 11 into the crown vertically?
 12 A. You say "up the columns", but there's a horizontal break
 13 at the compartment level below.
 14 Q. At the floor?
 15 A. Yes. So, for example, if you took the floor below, you
 16 would have effectively the compartment delineated with
 17 cavity barriers. So if you -- for example, that dotted
 18 line on the left, where the panel stops, there is
 19 a cavity barrier running across that, just off the
 20 picture.
 21 Q. Yes. Indeed.
 22 A. The point I'm trying to make is that there's not
 23 a continuous column path, which is what you inferred.
 24 Q. No, I understand that, but if a fire broke out in that
 25 flat --

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1 A. Yes.
 2 Q. -- above the highest horizontal cavity barrier, and the
 3 fire came out of the flat into the cladding to the left
 4 on the picture here --
 5 A. It would go straight to atmosphere.
 6 Q. -- it would go straight up into the crown. There would
 7 be nothing to stop it going straight up into the crown.
 8 A. It would go into the atmosphere, because it's open,
 9 effectively.
 10 Q. But there would be nothing to stop it --
 11 A. That's correct, it would travel up.
 12 Q. Yes. And there are no cavity barriers indicated at the
 13 top of the cladding where it meets the crown. There are
 14 no horizontal cavity barriers to stop any fire going up
 15 into the crown.
 16 A. That's correct.
 17 Q. Yes.
 18 Now, earlier we identified that the employer's
 19 requirement drawings had a horizontal cavity barrier in
 20 that location; do you remember that?
 21 A. Yes.
 22 Q. So would you agree that this Harley design represents
 23 a worsening in terms of compliance with the guidance in
 24 Approved Document B, diagram 33?
 25 A. I read Ray Bailey's response, his explanation for not

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1 including that cavity barrier, and I wouldn't
 2 necessarily disagree with it.
 3 Q. Right.
 4 A. Because the primary purpose of the cavity barrier is to
 5 protect the compartment, and there is no compartment
 6 above it, and there is effectively no chimney effect,
 7 because you're only travelling the distance of one
 8 apartment.
 9 Q. Yes.
 10 Just to go back -- I let you answer the question,
 11 but it's not quite the question. You say you read
 12 Ray Bailey's response and his explanation for not
 13 including the cavity barrier, and you say you wouldn't
 14 necessarily disagree with it.
 15 His response is, am I right in thinking, in his
 16 witness statement, not a response as a result of
 17 a discussion you had with him at the time; am I right,
 18 Mr Crawford?
 19 A. That's correct.
 20 Q. So at the time -- this is what I'm focusing on --
 21 Harley's design -- and I'm suggesting to you --
 22 represented a worsening of the original Studio E design
 23 in terms of compliance with the guidance in Approved
 24 Document B?
 25 A. It may have done, yes.

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1 Q. Did you spot that?
 2 A. I don't recall.
 3 Q. You were asked, as we've seen, for your approval, and
 4 you sent back your comment, but you don't say, "Well,
 5 hold on a moment, we need to continue the vertical
 6 cavity barrier into the crown and we need to have
 7 a horizontal cavity barrier at the top of the column".
 8 We don't see that, do we?
 9 A. No.
 10 Q. Do you agree that cavity barriers were in fact required
 11 in that location?
 12 A. Not necessarily. I mean, I think I would agree with
 13 Ray's analysis of it.
 14 Q. Well, let's look at ADB, diagram 33, please. It's
 15 {CLG00000224}.
 16 Now, can I first take you, please, to
 17 paragraph B3.(4) at page 69 {CLG00000224/69}, which is
 18 "Internal fire spread (structure)".
 19 So if you see that, this is internal fire spread,
 20 B3, and look at subparagraph (4) with me, please:
 21 "The building shall be designed and constructed so
 22 that the unseen spread of fire and smoke within
 23 concealed spaces in its structure and fabric is
 24 inhibited."
 25 Were you familiar with that principle at the time

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1 you were asked to approve these drawings, Mr Crawford?
 2 A. General principle, I suppose so, yes.
 3 Q. Therefore, it wasn't simply a question of protecting the
 4 compartment, but the whole structure of the building.
 5 A. But it's going straight to atmosphere, there is no
 6 structure above it.
 7 Q. Well, let's look at the next page in this document,
 8 page 82 {CLG00000224/82}, please. I want you to look at
 9 diagram 33 with me, "Provision for cavity barriers"; you
 10 see that?
 11 A. Yes.
 12 Q. The very top item there -- and we saw this, I think,
 13 yesterday -- says, "Close top of cavity"; do you see
 14 that?
 15 A. Yes.
 16 Q. So there is quite a clear requirement there, isn't
 17 there, that a cavity barrier is required to close the
 18 top of the cavity, as it says?
 19 A. No, I would disagree entirely, and for the reasons
 20 I gave yesterday. First of all, this is guidance.
 21 Secondly, it shows closing a cavity that opens into
 22 a further enclosed space; therefore, it is protecting
 23 the unseen enclosed space within the roof.
 24 Q. Did you ever go back to Harley and ask them or seek to
 25 discuss with them whether or not you actually needed to

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1 close the top of the cavity that you say vented into the
 2 atmosphere, or whether you could essentially treat
 3 diagram 33 as inapplicable? Did you do that?
 4 A. I don't recall having that conversation.
 5 Q. If it was your view at the time that there was no need
 6 for a cavity barrier at the top of the cladding to close
 7 the top off, was there any reason why you didn't express
 8 that to Harley and explain it?
 9 A. I think Harley are pretty seasoned contractors. They
 10 wouldn't be using a diagram like this to orientate what
 11 they were doing.
 12 Q. Is there a reason why you didn't ask Exova, given that
 13 they were a resource that you frequently had resort to?
 14 A. What I would say is that we obviously did show a cavity
 15 barrier in that location. Harley chose to omit it.
 16 Maybe I did see it, maybe I didn't, maybe I trusted
 17 their experience and my interpretation on this.
 18 I wouldn't necessarily verify every move with every
 19 consultant.
 20 Q. Do you actually remember going through the mental
 21 thought processes of looking at diagram 33, considering
 22 the top of the cladding in the diagram we have seen and
 23 thinking to yourself, "Well, diagram 33 doesn't apply
 24 because, in the picture, the cavity to be closed enters
 25 into an enclosed space, we haven't got that here, so

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1 it's irrelevant"? Did you actually go through that
 2 thought process?
 3 A. It's a very long time ago to know what specific thought
 4 processes I went through. I had a familiarity with
 5 section 9, diagram 33, that's built up over many
 6 projects, so it might -- it's probably fair to say that
 7 my intuition in those things is informed by that
 8 experience.
 9 Q. Had you ever come across a situation before in your
 10 professional practice where you had decided for yourself
 11 that a provision or part of diagram 33 didn't apply,
 12 such as closing the top of the cavity, as in this case?
 13 A. That's a very specific question and a very specific
 14 element. I wouldn't be able to commit to you on that
 15 without doing research.
 16 Q. I mean, when not applying the provisions of diagram 33,
 17 were you drawing on any industry learning, education,
 18 CPD, experience?
 19 A. I think, as I mentioned yesterday, diagram 33 to me is
 20 quite a poor diagram, when you consider what it's
 21 expected to cover in its totality, or if you were to
 22 interpret it in the sort of -- the way you're doing.
 23 There are many external wall construction types, some of
 24 which I listed yesterday, specifically double-skin
 25 construction, which is -- by double-skin, I mean

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1 possibly not what you're thinking of, but, for example,
 2 this is really where I suppose I started to question
 3 very much the provisions set out in diagram 33,
 4 section 9.

5 A double-skin façade is typically where you have --
 6 well, it's usually double-glazed and then you have
 7 an outer skin. The inner skin isn't occupiable. It is
 8 used for environmental reasons usually. The two skins
 9 aren't necessarily transparent, but invariably are, and
 10 they can be used for environmental reasons where you
 11 actually utilise the chimney effect, so you have no
 12 cavity barriers and the chimney can either be
 13 horizontal -- you find ones that are horizontal,
 14 vertical or just box. It's not the same as a winter
 15 garden, where you actually occupy the space, so that
 16 space is typically, I don't know, maybe 300, 500 wide.
 17 You can usually get into it for maintenance.

18 Probably the best example that people would know is
 19 The Shard, and there it is in glass, so you can
 20 obviously see what's happening inside that double-skin
 21 façade. There are many buildings that use double-skin
 22 façades like that where you can't see in. The
 23 technical, you would argue, you would have to use --
 24 well, your argument is you would be using diagram 33 or
 25 section 9, but you can't apply that and still maintain

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1 those operational principles.

2 So very quickly you find there's severe limitations
 3 to that sort of literal application of section 9 and
 4 diagram 33. I mean, you can't really apply it, in my
 5 opinion, to curtain walls. For the reasons I mentioned
 6 yesterday, you can't apply it to, for example, many
 7 other forms of complex external wall construction. The
 8 example that's shown here is literally -- it looks like
 9 a two-up, two-down house with traditional double masonry
 10 skin wall, and, yes --

11 Q. Mr Crawford, sorry, I don't want to cut across you, but
 12 it was really a yes or no answer.

13 Was the thinking that you're now explaining at some
 14 length to us here in this hearing room something which
 15 went through your mind at the time, or is this something
 16 that you have rationalised after the event?

17 A. I think I used the word "intuition" before. I think
 18 what happens is you glean knowledge and gain knowledge
 19 as you go along, and some processes of what you do are
 20 almost -- are subconscious, become subconscious to you,
 21 based on your experience. What I thought specifically
 22 at that time, I don't recall. I mean, it was six years
 23 ago.

24 Q. Before I leave this topic, let me just ask one more
 25 question.

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1 You were asked to approve this drawing by Harley;
 2 did you ever give any thought to how a fire might be
 3 able to spread uninhibited between or among a set of
 4 PE-cored panels across the crown of this building in the
 5 absence of any cavity barriers, either within the crown
 6 or at the top of the columns?

7 A. In the absence of any cavity barrier, I would understand
 8 the fire just to go straight out to atmosphere.

9 Q. You say you would understand it; was that your thinking
 10 at the time?

11 A. I've no idea what I thought at the time. I wasn't
 12 consciously noting everything I thought at the time.
 13 This is what I'm trying to explain. I mean, I don't
 14 know what I thought at the time. I mean, I obviously
 15 thought it was ...

16 Q. Right, now we're going to go to a different topic, which
 17 is windows. We will have a break very shortly again,
 18 Mr Crawford, for your benefit. Can we first get into
 19 the topic.

20 I'm going to turn to drawings of windows first, if
 21 I may. Can I ask you, please, to be shown
 22 {SEA00003040/7}.

23 Before we get into the detail of that, let me ask
 24 you a more general question: were you aware that there
 25 were two Harley drawings which have the drawing number

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1 C1059-302, revision D, each marked "Approved for
2 construction"?
3 A. Sorry, what do you mean by that? There's two different
4 drawings with the same number?
5 Q. Yes.
6 A. With different content?
7 Q. Yes.
8 A. No, but then I've only been looking at the content per
9 drawing.
10 Q. Right. Let's look at the first, which is the one on the
11 screen. That's page 7.
12 Now, we're looking here, just so you're clear, about
13 the window jamb condition. Okay?
14 A. Yeah.
15 Q. That, as you can see, is stamped by you on
16 16 January 2015, and you mark it status A; yes?
17 A. Yes.
18 Q. So you're recording that it conforms to design intent
19 and is approved for construction.
20 A. No, no, no, we don't approve for construction.
21 Architects don't approve drawings; they comment on them.
22 The "Approved for construction" is something Harley's
23 put on for their own purpose.
24 Q. Okay, but Harley approve it for construction and then
25 you stamp it status A, and really that's it, isn't it?

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1 It then goes to construction. What else intervenes to
2 stop it being constructed based on that --
3 A. Well, Rydon ultimately approve for construction.
4 Q. Oh, I see. Right.
5 A. We don't turn round to Harley and say, "Yes, go and
6 start manufacturing this".
7 Q. I see.
8 Who at Rydon would give the final approval for
9 construction based on the drawing, did you think?
10 A. The Rydon management team.
11 Q. Who?
12 A. I don't know. I don't know who -- I mean, they have
13 their own internal people at the front project managing,
14 people assembling the packages, managing the costs, the
15 procurement, the warranties, everything else on the
16 individual patches. We're not party to that. We just
17 comment in abstract on the architectural intent.
18 Q. Let's come back to this and call this the stamped
19 version because it has your stamp on it; all right?
20 A. Yes.
21 Q. So this is the stamped version. There is a second one,
22 and it would be wonderful if we could put these up side
23 by side. This is the offline version at {HAR00010440}.
24 It would be good if we could have these two side by
25 side. Yes, I think that does it. Thank you.

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1 Now, we will call that the unstamped version. So,
2 just to be clear, we have the stamped version on the
3 left-hand side of the screen, and the unstamped version
4 on the right-hand side of the screen. All right?
5 A. Yes.
6 Q. In both cases, we can see that the drawings are
7 originally dated 20 August 2014 in the little box at the
8 bottom next to the lamb. Do you see that?
9 A. Yes.
10 Q. They're both given construction issue revision D, dated
11 13 January 2015 in the box at the bottom. Do you see
12 that?
13 A. Yes.
14 Q. And they are both, as you can see, drawings of the
15 window jamb condition; yes?
16 A. Mm-hm.
17 Q. Now, Mr Lamb has described in his proposed evidence in
18 his statement at paragraph 31 -- and I just want to put
19 to you what he says, because it's a convenient
20 description. This is {HAR00010419/8}. Perhaps it's
21 easier not to turn that up, because I might lose what's
22 on the screen, which we have taken some time to put up
23 there, but let me just summarise it for you. He says it
24 was decided to remove the return on the cladding facing
25 the window and include an aluminium angle instead.

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1 So can you see that? Can you see that in the --
2 A. The one on the left has an angle and a fixing through.
3 Is that what you mean?
4 Q. Yes. Well, exactly, the one on the left has a return on
5 the cladding facing. Do you see that?
6 A. Yes.
7 Q. The return on the cladding which faces the window. Do
8 you see that? But on the right, that's been changed and
9 there is a L-shaped aluminium bracket --
10 A. Yes.
11 Q. -- between the cladding and the window. Do you see
12 that?
13 A. Yes.
14 Q. He also says that the window vent profile was changed.
15 He also says that he added in the detail of the adhesive
16 foam, and you can see again on the picture that in the
17 stamped version, there is no reference to adhesive foam,
18 just the EPDM. Do you see that?
19 A. Yes.
20 Q. Bonded. Do you see that there, the little dotted black
21 line?
22 A. Yeah.
23 Q. Whereas on the right-hand side you have a larger shaded
24 area with an arrow showing adhesive foam. Do you see
25 that?

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1 A. Yes.
 2 Q. Right.
 3 He also says that he removed the local fixing straps
 4 to reflect things as they had been built. You can see
 5 that, I think, from ...
 6 A. That was what I mentioned earlier.
 7 Q. Exactly.
 8 A. At least that's how --
 9 Q. Yes.
 10 Now, just comparing those drawings, the words "PPC
 11 angle to match panel" have been added to the unstamped
 12 version and it's not in the stamped version. Do you see
 13 that?
 14 A. Mm-hm.
 15 Q. We can also see local fixing straps are shown on the
 16 stamped drawing, showing that they were to be installed
 17 behind the window frame, and they have been omitted from
 18 the unstamped one. I think we have seen that, haven't
 19 we?
 20 A. Yes.
 21 Q. And we have seen the layer of foam.
 22 Looking at those differences, Mr Lamb says in his
 23 statement that he had had a discussion about these
 24 drawings in about February 2015. So that's about
 25 a month after you had stamped the stamped version as

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1 status A.
 2 First of all, do you recall any discussion about
 3 those drawings in around February 2015?
 4 A. I don't recall.
 5 Q. Okay.
 6 A. But it doesn't mean they didn't take place. I mean --
 7 Q. No, I'm not suggesting that it didn't, Mr Crawford, I'm
 8 just asking you for your recollection.
 9 Now, is it right that the unstamped drawing was not
 10 sent to Studio E, so far as you know?
 11 A. If you're telling me that, yes.
 12 Q. Well, I'm just asking you.
 13 Before this Inquiry began, had you ever seen the
 14 unstamped version of this drawing with the changes I've
 15 shown?
 16 A. The only reason I'm caveating that, sorry, is not to be
 17 difficult, but we literally have files with hundreds,
 18 maybe thousands of drawings. I wouldn't be able to
 19 categorically say without checking.
 20 Q. All right.
 21 Now, Mr Lamb says that, in relation to the drawings
 22 that we have been looking at, the fundamentals of the
 23 design drawing were reflected by revision D, issued on
 24 13 January 2015, which is the stamped -- well, which is
 25 both of those, actually -- and that there were ongoing

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1 discussions with Studio E about the cladding gap between
 2 the column cladding and the spandrel cladding.
 3 My question is, in light of what he proposes to say
 4 to the Inquiry: were there ongoing discussions at this
 5 point, January or February 2015, about the cladding gap?
 6 (Pause)
 7 A. Sorry, this is the cladding gap between the column
 8 enclosure and the spandrel?
 9 Q. And the edge of the window, yes. Sorry, no, between the
 10 column cladding and the spandrel cladding, to be more
 11 accurate.
 12 A. Yes.
 13 Q. To be right.
 14 A. But the gap looks the same between the two drawings.
 15 Q. Yes, indeed, and the question is: were there ongoing
 16 discussions in January/February 2015 about how to deal
 17 with that gap?
 18 A. There may well have been. I don't recall.
 19 Q. Do you remember whether there was a proposal about how
 20 that cladding gap would be dealt with?
 21 A. I don't recall. I mean, there were rolling
 22 conversations about multiple aspects in these meetings.
 23 I don't recall specific --
 24 Q. Do you ever recall a discussion with Mr Lamb or anybody
 25 else at Harley about the use of adhesive foam?

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1 A. I don't, no.
 2 Q. Do you ever remember a discussion with him about the
 3 removal of the straps?
 4 A. I can't specifically recall. I mean, as I said before,
 5 there may have been. He may have tabled it. He may not
 6 have.
 7 MR MILLETT: Okay.
 8 Mr Chairman, we are absolutely mid-flow on this, but
 9 I anticipate a short further break --
 10 SIR MARTIN MOORE-BICK: I think if we don't take a break
 11 now --
 12 MR MILLETT: We'll never have one, exactly.
 13 SIR MARTIN MOORE-BICK: I think you would like a break,
 14 wouldn't you, Mr Crawford?
 15 THE WITNESS: Yes, please.
 16 SIR MARTIN MOORE-BICK: We will have a ten-minute break and
 17 come back at 12.20. If you would like to go with the
 18 usher, please.
 19 (Pause)
 20 12.20, please. Thank you.
 21 (12.11 pm)
 22 (A short break)
 23 (12.20 pm)
 24 SIR MARTIN MOORE-BICK: All right, Mr Crawford?
 25 THE WITNESS: Yes.

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1 SIR MARTIN MOORE-BICK: Good, thank you very much.
 2 Yes, Mr Millett.
 3 MR MILLETT: Mr Chairman.
 4 Mr Crawford, just before the break I was asking you
 5 about a discussion with Mr Lamb about adhesive foam.
 6 The next question is: when did you learn about the
 7 change in design so that adhesive foam would now be
 8 installed in the position shown on the unstamped
 9 drawing?
 10 A. I didn't know adhesive foam was used.
 11 Q. You never knew? Is that right?
 12 A. I don't think so, no.
 13 Q. Does it come as a surprise to you that Harley was adding
 14 new products to these drawings and then them not going
 15 through you?
 16 A. Well, it only corroborates what I said earlier, which is
 17 we comment on architectural intent, not on specific
 18 technical details.
 19 Q. Right.
 20 You will recall I said to you that Mr Lamb says that
 21 the unstamped drawing was changed to reflect things as
 22 they had been built. Did you know at the time that
 23 Harley was changing the drawings to reflect things as
 24 they had been built?
 25 A. I can't say I was, no.

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1 Q. Okay.
 2 I'm now going to ask you some questions about the
 3 design of the windows.
 4 Now, the new windows in the cladding system were
 5 outside and forward of the concrete slabs at the window
 6 head and the concrete columns that formed the jambs and
 7 the concrete spandrel panels which supported the cills,
 8 weren't they?
 9 A. Yes.
 10 Q. Do you agree that in order safely to be able to place
 11 the windows outside the plane of the external wall, you
 12 needed to protect any cavity from the risk of
 13 an internal fire migrating around the window edges and
 14 into any cavity lying within the external wall space?
 15 (Pause)
 16 A. The gap between the windows and the internal wall ...
 17 I think originally we showed the birch-faced ply with
 18 insulation and plasterboard sealed up to it.
 19 Q. My question is perhaps a long one, but was supposed to
 20 be a simple one. I'll ask it again.
 21 Do you agree that in order to be able to place the
 22 window safely outside the plane of the external wall,
 23 you needed to protect any cavity from the risk of
 24 an internal fire migrating round the window edges and
 25 into any cavity lying within the external wall?

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1 A. There's slightly conflicting opinions on this.
 2 Traditionally on a building you have an opening and you
 3 have a window and you place the window in the opening.
 4 The opening usually has a tolerance. Traditionally that
 5 seal round there is usually never fire rated.
 6 Q. Yes.
 7 A. As the window itself is not fire rated. So effectively
 8 the opening is an un-fire-rated opening.
 9 Within our spec, we specified the lining should come
 10 up to and fire seal to the opening -- round the opening,
 11 which would have dealt with that scenario anyway.
 12 Q. Right. I'm not quite sure that's an answer to my
 13 question, but let's see how we go with the next one.
 14 Would you agree with me that, in order to comply
 15 with the Building Regulations, it was necessary to
 16 ensure a number of things, and I'll put two to you:
 17 first, that all components and materials within the
 18 cavity within the external wall construction complied
 19 with paragraph 12.7 of Approved Document B, which
 20 governs insulation?
 21 A. Limited combustibility?
 22 Q. Yes.
 23 A. If you are following ADB, yes.
 24 Q. That would include, wouldn't it, insulation contained
 25 within the voids behind the heads, jambs and cills of

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1 the windows; yes?
 2 A. If you're following ADB, yes.
 3 Q. And if you're not following ADB, what would you do?
 4 A. You would have had to have found other means to justify
 5 that compliance.
 6 Q. So you would need to be able to identify the risk and
 7 then fire engineer around it?
 8 A. Yes.
 9 Q. I think that's what you're saying, yes.
 10 Now, it's right, isn't it, that the changes in the
 11 size and the placing of the windows created gaps as
 12 a result of moving the windows out of the plane of the
 13 concrete structure?
 14 A. Erm ...
 15 (Pause)
 16 There's a gap around the windows.
 17 Q. Yes.
 18 A. I mean, do you want to show me on a drawing specifically
 19 what you mean?
 20 Q. I'm asking you, you were there --
 21 A. Yeah, but you're asking me theoretical questions in
 22 words. It's easier for me to -- if you show me on
 23 a drawing what you mean, because I'm frightened I'm not
 24 necessarily --
 25 Q. I can certainly do that. Let's look at {SEA00003040/7},

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1 which is the stamped version. "Window jamb upper
2 levels".
3 Looking at that, that's the stamped version we were
4 looking at earlier. Can you see that there is a gap
5 between the sides of the windows and their adjacent
6 columns on this drawing of between 35 and
7 90 millimetres?
8 A. Yes, that's right.
9 Q. Those are the gaps I'm talking about.
10 A. The original scheme involved keeping the original window
11 frames, and so this is what it's showing us. The gap
12 has been determined by the existing window frame, which
13 is that dotted -- that dotted frame you can see in
14 there.
15 Q. Yes.
16 Perhaps it may be easier to do this by reference to
17 a version of the drawing in Dr Lane's report, if I can
18 just do that. Can you please go to {INQ00011312/7}.
19 So this is the same drawing. Dr Lane has added some
20 colours to it. In that, you can see that the shape of
21 the existing concrete façade leaves channels which
22 appear to be unfilled with insulation. Do you see that?
23 A. Yes.
24 Q. Those are the yellow runnels that sit behind the
25 insulation. So those are some gaps there.

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1 Was that a matter that concerned you at the time or
2 that you thought might need corrections?
3 A. They're very, very small gaps to my mind, but it didn't
4 concern me at the time, no.
5 Q. Right.
6 I misspoke when I said Dr Lane; in fact, I meant
7 Mr Paul Hyett. I don't think anything turns on it.
8 Now, although you addressed changes to the design of
9 the windows in your statement in a number of places,
10 I don't think you ever actually specifically addressed
11 the issue of the size of the gaps between the edges of
12 the window frames and the edge of the concrete window
13 surround, or these runnels that we have seen coloured
14 here. Is there a reason for that?
15 A. Which one, sorry?
16 Q. Well, take the green shaded area, the gaps there --
17 A. Yes.
18 Q. -- which we were talking about a little bit earlier.
19 You don't specifically address the question of the size
20 of those gaps which existed between the edge of the
21 window and the edge of the concrete itself, the
22 surround. You don't address that in your statement, do
23 you? I just wanted to know why that was.
24 A. I'm not even sure what the point is. I mean, the
25 insulation comes up and it closes that gap.

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1 Q. Yes, and my question is really about the choice of
2 materials, which we're going to come to, about that.
3 Do you recall having any input into the choice of
4 materials used to fill that gap?
5 A. Beyond what was in our specification, I think K11 555
6 talks about Rockwool to fill gaps, and then there's
7 reference in the P20 to the birch-faced ply and there is
8 reference to fire sealing of the internal walls to -- at
9 the edge. I mean ...
10 Q. Let's turn, then, to a slightly different topic, but
11 only slightly: insulation materials behind the internal
12 window lining. It's really the same topic in
13 a different way.
14 If we could please look at {HAR00010440}, in the
15 offline version, this is the unstamped drawing we were
16 looking at before. If we could just have that expanded
17 just a little bit, you can see again -- we've looked at
18 this before -- the adhesive foam, the aluminium angle
19 and other changes.
20 At the top of the drawing, to the right of the
21 column, do you see there is a mark-up "Window board &
22 soft joint by others"? It's vertical writing,
23 I'm afraid, but do you see that there, second item down?
24 A. Yes.
25 Q. Right. That rather suggests or indicates the new

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1 internal window reveals that would be installed as part
2 of the internal window reveal; yes?
3 A. Yes.
4 Q. Above that, we can see:
5 "Existing frame remaining in most cases. Remove by
6 others where necessary."
7 You see that?
8 A. Yes.
9 Q. We can see the outline in there, in the dotted line, of
10 the original metal window frame, which was to remain
11 in situ, in place, in most cases; am I right about that?
12 A. That's what you just mentioned, yes.
13 Q. That's it, just to get it right on the drawing.
14 Below the outline of the original metal window
15 frame, we can see the insulation indicated and the
16 mark-up "Insulation by others"; do you see that?
17 A. Yes.
18 Q. There is a drawing pattern which indicates the
19 insulation; yes?
20 A. Yes.
21 Q. Yes.
22 By the way, I should just ask you this question:
23 does that pattern to you indicate an insulation of
24 mineral wool?
25 A. Erm ... I think traditional drawing convention, and

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1 I would say especially when -- before people were using
 2 computers, then you would probably say, yeah, that was
 3 definitely mineral wool. I think what's happened,
 4 particularly in the last 20 or so years, is that
 5 conventions on representing insulation have been relaxed
 6 somewhat, and certainly in my experience I've seen the
 7 foulard pattern and the hatched pattern used
 8 interchangeably to represent different types of
 9 insulation. That may have come about just because there
 10 are more foam type insulations around, but also when you
 11 start using BIM, Revit and and programs like that,
 12 people also started to use other forms of representation
 13 for insulation as well, such as yellow blocking and
 14 stuff like that.

15 So in the era of drawing boards, I would have said
 16 you would have been more inclined to read that as
 17 categorically a mineral wool type insulation, but
 18 I think those boundaries have been very much blurred,
 19 particularly --

20 Q. Now, in this drawing, as you can see, at the very top,
 21 above the label to "Existing frame" --

22 A. Yeah.

23 Q. -- it's quite difficult to see this, but can you see
 24 that there is a 40 in the gap?

25 A. Yes.

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1 Q. Which shows that the cavity there was 40 millimetres
 2 wide at the jamb condition?

3 A. Right.

4 Q. So if we now go to {SEA00000169/243}, please, this
 5 should be, if I'm right, the NBS spec, "P10 Sundry
 6 insulation /proofing work". Do you see that?

7 A. Yes.

8 Q. At paragraph 235, near the bottom of the page,
 9 "Compressible insulation in gaps"; do you see that?
 10 Yes?

11 A. Yes.

12 Q. And manufacturer: Rockwool.

13 A. Yes.

14 Q. Pencoed, Bridgend, and you can see that there is, second
 15 bullet point down -- and we have looked at this
 16 before -- "Material: Mineral wool to BS EN 13162". Do
 17 you see that?

18 A. Yes.

19 Q. Now, if we look back, please, at the drawing -- in fact,
 20 let's go to a different drawing. If we go to the
 21 offline version of {SEA00002499}, I just want to show
 22 you a Studio E employer's requirement drawing. I think
 23 it's one we have seen before, actually. We can see --
 24 and this is a Studio E employer's requirement drawing
 25 from September 2013 -- "Proposed typical bay plans,

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1 section & elevation".

2 We can see there is no indication of any packing
 3 material to the internal window lining there, is there,
 4 if you look at the "Proposed Section - Typical Bay" on
 5 the right?

6 A. I think you might have to blow it up a bit.

7 Q. If you blow that up, please, and focus in on that.

8 If you look down that, you can see that there is
 9 no --

10 A. There's solid wood board in there, though, from what
 11 I can see.

12 Q. Studio E had specified compressible Rockwool insulation
 13 in the NBS, as we have just seen, but neither mineral
 14 wool nor Rockwool is specified on this drawing, is it?

15 A. On this specific drawing, no.

16 Q. That's right.

17 Now, moving away from that a little, do you accept
 18 that Studio E ought to have produced 1:5 detail drawings
 19 which showed in adequate detail how the voids that we
 20 have looked at around the window linings at head, jambs
 21 and cills should have been packed with insulation?

22 A. No.

23 Q. Why don't you accept that?

24 A. The detailed design of the cladding would precipitate
 25 the resolution of that detail and then, from that

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1 detail, and following that detail process, you would be
 2 able to address that at a 1:5 scale.

3 Q. You see, the work is indicated in the NBS specification
 4 as to what's got to go in there --

5 A. No, that's just a general clause, but you would apply it
 6 to that kind of area. The same with, for example, is it
 7 K10 on linings, it mentions about fire sealing of the
 8 linings up to openings.

9 Q. Did you ever have a discussion with Harley about the
 10 choice of insulating materials to be used in the gaps
 11 that we have been looking at?

12 A. In those gaps? No.

13 Q. So are you really saying that you just left it to Harley
 14 to get on with?

15 A. The detailed design of that cladding package was for
 16 Harley. Where -- if Harley have, as I noted, said works
 17 to be completed by others, then this is an issue for
 18 Rydon in their package split.

19 Q. Who did you think the others would be?

20 A. That's an issue for Rydon and its package split and its
 21 subcontractors. That's what they do: they manage the
 22 packages and they manage the interfaces.

23 For example, if they had wanted a detail to resolve
 24 that interface and the problems that had come out of
 25 the, let's say, renegotiated position of Harley in terms

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1 of where that interface started and stopped, then
 2 I would expect Rydon to issue an RFI to me asking for
 3 clarification, at which point we would have produced
 4 that detail, if they had requested it.
 5 Q. Can you go back to {SEA00003040/7}. This is something
 6 we have looked at before. This is the drawing we looked
 7 at twice, I think, now. This is the one which you
 8 stamped on 16 January 2015. This is the stamped
 9 version.
 10 A. Yes.
 11 Q. Do you remember we looked at the stamped and the
 12 unstamped?
 13 A. Yeah.
 14 Q. This is the stamped version. I just want to ask you
 15 about that.
 16 You can see that it's approved for construction and
 17 stamped by you.
 18 A. No, no, it's stamped by me, it's not approved for
 19 construction.
 20 Q. It's stamped "Approved for construction" and then
 21 stamped by you.
 22 A. Yes.
 23 Q. So -- and I'm trying to see it on this version -- yes,
 24 there it is at the top right-hand corner, we looked at
 25 it before:

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1 "Existing frames remains in most cases. Remove by
 2 others where necessary."
 3 And then again:
 4 "Insulation by others."
 5 Just looking at that, you were, were you, quite
 6 content to mark this status A even though this was going
 7 to be insulation to be left for other people?
 8 A. As I've stated before, our comments are based on
 9 architectural intent. The package split in terms of
 10 package responsibilities or the interfaces between
 11 packages is a matter for the main contractor.
 12 Q. Having seen the NBS specification which very clearly
 13 spelt out the use of Rockwool in these gaps, why did you
 14 stamp this status A when the drawing didn't refer to the
 15 use of Rockwool in that space, where it says "Insulation
 16 by others"?
 17 A. But, sorry, that doesn't follow. For example, let's say
 18 Harley have agreed that this isn't within their package
 19 of works, which they would have had to have done with
 20 Rydon, then Rydon would then decide whose package of
 21 works it fell into. In deciding whose package of works
 22 it falls into, Rydon then are responsible for issuing
 23 the design information that that subcontractor would
 24 require to complete their works. That would include the
 25 spec.

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1 Q. I don't understand that, I am afraid, Mr Crawford. What
 2 I'm trying to understand is why you were able to stamp
 3 this drawing as conforming to a design intent in
 4 circumstances where the drawing did not refer to the
 5 specific insulation that Studio E itself had specified
 6 should go into the gap where it says "Insulation by
 7 others"?
 8 A. But that's because what Harley have drawn is indicative
 9 of package works from someone else. What I'm saying to
 10 you is if Harley have agreed -- Harley have agreed their
 11 package of works, which is what they've identified on
 12 their drawing. What they were not completing would be
 13 to be completed by someone else. In order to get to
 14 that position, they would have had to have agreed it
 15 with Rydon. Rydon, as the main contractor, would have
 16 to decide who was completing that portion of works. In
 17 order for them to agree who's carrying out that portion
 18 of works, they would have to give them a brief, a set of
 19 drawings, a set of spec, in order to do that. So that
 20 information would be contained within that package of
 21 works. They wouldn't be giving Harley's drawings to
 22 another subcontractor.
 23 Q. Why didn't you comment on this drawing and ask or insist
 24 that --
 25 A. Well --

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1 Q. Let me just ask the question, please, Mr Crawford, if
 2 I can.
 3 When you stamped this status A, why didn't you
 4 insist that, instead of "Insulation by others", it said
 5 "Mineral wool", because that was what was in the NBS
 6 spec?
 7 A. But, I'm sorry, it just doesn't follow. I mean, I could
 8 sit and insist on any comment on anything. I mean, what
 9 they've noted is, "Here's a portion of work that isn't
 10 ours", so why should I comment on it? I don't know what
 11 they intended to put in there. I don't know what Rydon
 12 intended to put in there. It's a design and build
 13 contract. They could administer it as they saw fit,
 14 assuming they agreed it with the client, KCTMO. Do you
 15 understand?
 16 I mean, I wouldn't comment on the concrete column.
 17 Why would I comment on the concrete column? It's
 18 nothing to do with Harley's work. I'm commenting on
 19 Harley's work.
 20 Q. Mr Crawford, what I'm suggesting to you is that by
 21 leaving the words "Insulation by others" in the drawing,
 22 it might be thought that you were approving the
 23 suggestion that some other kind of insulation other than
 24 that specified in the NBS specification could be used.
 25 A. But why would I be suggesting that by not commenting on

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1 it? That doesn't follow.
 2 Q. Well, I've asked the question and I've noted that you've
 3 responded to it with a question. I shall move on.
 4 A. Again, sorry, just to be clear, I'm not trying to be
 5 difficult, this is just my understanding of how you mark
 6 up subcontractors' drawings.
 7 Q. Now, can we then --
 8 SIR MARTIN MOORE-BICK: Sorry, can I see if I can help here.
 9 I think what Mr Millett is really asking you is why,
 10 when the specification that Studio E had formulated
 11 prescribed mineral wool, did you not comment on the fact
 12 that the drawing which eventually emanated from Harley
 13 did not seem to provide for mineral wool, it provided
 14 for any insulation to be supplied by a third party?
 15 A. But it doesn't say that, it just shows an insulation.
 16 SIR MARTIN MOORE-BICK: Exactly, not necessarily mineral
 17 wool.
 18 A. Yes.
 19 SIR MARTIN MOORE-BICK: That's the question: why was this
 20 not a matter of comment when it allowed for a departure
 21 from the specification?
 22 A. But, for example, if you look at the insulation at the
 23 front in the diagonal, I don't think it says exactly
 24 what that insulation is.
 25 SIR MARTIN MOORE-BICK: Well, maybe, but ...

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1 A. Do you get my point?
 2 SIR MARTIN MOORE-BICK: No.
 3 A. The hatched area inside the window is some form of
 4 neoprene insulation. That's not labelled either.
 5 SIR MARTIN MOORE-BICK: So what you are saying is you didn't
 6 consider it was something that required comment --
 7 A. Yeah.
 8 SIR MARTIN MOORE-BICK: -- simply because it didn't reflect
 9 with exactness what was in the specification?
 10 A. But you can't tell whether it exactly reflects whether
 11 it's in the spec or not from the ...
 12 SIR MARTIN MOORE-BICK: All right. Yes.
 13 A. If it had said styrene foam, something like this, then
 14 okay, you could say that's not what's in the spec. But
 15 even then, it's labelled "by others", as opposed to what
 16 I'm being asked to comment on, which is Harley's
 17 contribution.
 18 SIR MARTIN MOORE-BICK: All right.
 19 Well, I'm not sure I helped you at all, Mr Millett,
 20 but ...
 21 MR MILLETT: There it is.
 22 SIR MARTIN MOORE-BICK: Thank you, Mr Crawford.
 23 MR MILLETT: Mr Crawford, thank you for that.
 24 Can we please turn to {SEA00012940}. This is
 25 an email from Jason North, he is Rydon, to you dated

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1 12 March 2015, copied to Simon O'Connor, also of Rydon.
 2 The subject is, "Windows Grenfell Tower".
 3 Jason North was the site manager at the time; do you
 4 remember that?
 5 A. Yes.
 6 Q. "Afternoon Neil
 7 "We are installing windows at the moment and I can't
 8 seem to find anywhere a detail for insulation behind the
 9 fixed panel alongside the windows, can you point me in
 10 the right direction with this."
 11 Now, from that email, did you know at least by then
 12 that the packing material to be used behind the internal
 13 linings to the windows had not been specified?
 14 A. I don't think that's exactly what that question is
 15 asking.
 16 Q. Well, what did you understand by his question?
 17 A. I think he means the ... I think he means the fixed
 18 panel within the windows where the concrete -- well,
 19 there's pre-cast concrete and there's -- I can't
 20 remember what it was, some sort of thermal creep block
 21 or something came up. I think he was looking for the
 22 insulation detail round the back of that, if I'm reading
 23 that correctly.
 24 Q. Right.
 25 Did you go back and look at the relevant drawings to

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1 try to answer his question in the way you have just said
 2 you understood it?
 3 A. I don't recall, but possibly, yes.
 4 Q. Do you think you went back to check the NBS
 5 specification?
 6 A. I don't recall.
 7 Q. Did you make any enquiry of Harley or Rydon regarding
 8 the type and product name of the insulation that he was
 9 talking about, as you understood it?
 10 A. I don't think that was within Harley's works. If it's
 11 the bit that we were talking -- I think we're talking
 12 about.
 13 Q. Did this not prompt you to go to Rydon or ask someone
 14 else at Rydon, perhaps Simon O'Connor, the question why
 15 you were being asked this question and not Harley?
 16 A. No, because I don't -- if it's the bit I think he's
 17 referring to, it's part of the internal dry lining
 18 package, so it's behind that sort of central column
 19 element, and it sits behind the middle of the windows --
 20 the middle of the windows.
 21 Q. I see. So you think he was talking about the insulation
 22 behind the infill panels? We call them infill panels,
 23 which we're going to come to later.
 24 A. Yeah. There was an infill panel with -- I think it was
 25 a thermal creep concrete element, and I think what he's

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1 talking about is the insulation round and behind that,
 2 I think.
 3 Q. Okay, let's look at your statement, because I think we
 4 get a bit of help from that. {SEA00014275/41}, please.
 5 You deal with Mr North's enquiry at paragraph 118, if we
 6 can look at that, you refer to the email and you say:
 7 "I have not found a response but I believe I would
 8 have pointed him towards Studio E's 1:20 section
 9 drawings."
 10 You see that?
 11 A. Yes.
 12 Q. In fact, it's likely that you didn't respond to this
 13 query at all, given that we have not been able to find
 14 any email response from you. So --
 15 A. Well, you're saying that, but I did speak with
 16 Jason North quite a lot on site, so I'm not sure if
 17 that's necessarily true.
 18 Q. Do you have a recollection of dealing with his query
 19 on site?
 20 A. I don't recall.
 21 Q. You say that you believe you would have pointed him
 22 towards Studio E's 1:20 section drawings, but we have
 23 already seen some of them and they don't indicate any
 24 packing materials to the window lining.
 25 A. Well, sorry, there's more than just the drawing you

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1 showed me at 1:20. For example, the dry lining type
 2 drawings, I think there's a junction detail on that that
 3 might have covered it.
 4 Q. Okay. Let's look at something else on this aspect.
 5 Did you remember that Mr Dixon of SD was engaged
 6 I think by Rydon to undertake some of the internal
 7 lining and plastering works?
 8 A. I don't know Mr Dixon.
 9 Q. Right.
 10 Do you remember having any discussions, either with
 11 Rydon or an entity called SD Plastering, or indeed
 12 anybody else, about the selection of materials for use
 13 within the cavity we have been looking at?
 14 A. No.
 15 Q. Do you know why PIR and sometimes phenolic insulation
 16 was packed behind the window jambs and cills rather than
 17 the Rockwool which was specified in the NBS
 18 specification?
 19 A. I'd no idea that that had happened until after the fire
 20 and saw pictures of the exposed areas.
 21 Q. Did it surprise you when you discovered that fact?
 22 A. Yes.
 23 Q. So can we take it that you and nobody else at Studio E
 24 were ever aware of the decision, whose ever it was, to
 25 use PIR or phenolic as insulation in those areas? When

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1 you went on your site visits, did you not see the use of
 2 PIR or phenolic insulation in those areas?
 3 A. When we had site visits, they were to the lower levels,
 4 to the management office, for site meetings. We truly
 5 didn't have any inspection appointment or monitoring
 6 appointment in that regard, so we weren't looking at
 7 them, we weren't shown them.
 8 Q. Right.
 9 I'm now going to turn to the next topic, which is
 10 the window insulated infill panels and cavity
 11 insulation, which made up part of the fenestration or
 12 window arrangement at Grenfell Tower.
 13 Now, we can look at it again, but we have already
 14 established that in the NBS specification, an
 15 aluminium-faced insulated infill core panel had been
 16 specified. I can go back to the spec if you like,
 17 Mr Crawford.
 18 A. No, I do recall.
 19 Q. I think we have also established -- and, again, we can
 20 go back to it if you like -- that there is no reference
 21 in the spec to a product or type of insulation to be
 22 used as the insulated infill panel in the tender
 23 drawing.
 24 A. There is a performance spec, yes.
 25 Q. Yes. Can we look, please, at {HAR00008886}. This is

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1 a Harley drawing, Kevin Lamb's, 22 September 2014,
 2 "Typical bay levels 1 to 20 west/east elevation"; you
 3 see that?
 4 A. Yes.
 5 Q. This is revision D dated 3 March 2015. Okay? You can
 6 see how the build-up of the revisions went, and this
 7 latest one is "Firebreaks added"; you see that?
 8 A. Yes.
 9 Q. Now, let's look at the window arrangement. You can see
 10 that the window passing between the columns across the
 11 flat partitions is shaded and designated P1. It's not
 12 very clear on what we have on the screen, but perhaps we
 13 can expand the bigger shaded squares. There are two of
 14 them. Perhaps we can expand the left-hand one for
 15 convenience so that everybody can see it. You can just
 16 see in the top left-hand corner a P1.
 17 A. Yes.
 18 Q. Yes.
 19 Mr Operator, I wonder if we could just blow that up
 20 a little bit more so that everybody in the room and in
 21 public can see that, to be absolutely clear, because its
 22 designation P1 is important.
 23 While we're at it, will you also agree with me that
 24 the smaller shaded area, where the shading goes from
 25 bottom right to top left, is marked P2?

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1 A. Yes.
 2 Q. Yes?
 3 Now, if we look, please, next at {HAR00003866} --
 4 and we will come back to that in due course -- this is
 5 the Harley specification notes, some of which we looked
 6 at yesterday. I'm not sure we looked at this one
 7 yesterday. Its date of origin, 15 January 2015,
 8 Kevin Lamb again. Do you see that?
 9 A. Yes.
 10 Q. We can see that Mr Lamb here specifies, if you ignore
 11 the red annotations, "Outer" -- this is on the left-hand
 12 side, under "Glazing - G1 - panels", do you see it says:
 13 "Outer - 2mm aluminium skin ..."
 14 Do you see?
 15 A. Yes.
 16 Q. "... 2mm aluminium skin."
 17 And then underneath that:
 18 "Core - 24mm Kingspan TP10 rigid insulation.
 19 "Inner - 2mm aluminium skin ..."
 20 Do you see that?
 21 A. Yes.
 22 Q. That's for P1. Then for P2, which was the smaller
 23 little square we saw:
 24 "Outer - 2mm aluminium skin ...
 25 "Core - 24mm Kingspan ...

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1 "Inner - 2mm aluminium skin ..."
 2 Yes?
 3 A. Yes. Just to note, this is not my handwriting.
 4 Q. No. Well, I was going to ask you: do you know whose
 5 handwriting it is?
 6 A. No, but it's not mine.
 7 Q. Do you know when those red annotations were applied?
 8 A. I haven't seen this drawing in this form, so, no,
 9 I don't know who or when that was done.
 10 Q. I see.
 11 A. I actually assumed it was someone from your team.
 12 Q. My team?
 13 A. To me it looks like someone is measuring something
 14 against what was actually written.
 15 Q. The short answer is you don't know who added it or when?
 16 A. Yes.
 17 Q. Can I take it from that that you never saw this version
 18 of this document with those additions to it?
 19 A. No.
 20 Q. Right.
 21 More generally, were you aware at the time that the
 22 insulation material had been amended under P1 from
 23 Kingspan TP10 to 25 millimetres of Styrofoam?
 24 A. I don't believe so, but, again, I would have been
 25 commenting on architectural intent as far as drawings

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1 were concerned. But if someone had changed something
 2 beyond this, then I wouldn't have been aware of it in
 3 any --
 4 Q. Let's pursue this a bit more. Can you go, please, to
 5 {HAR00003869}. We will just do this drawing and then
 6 break, because there's a string of these to look at.
 7 This is the same document in printed form, stamped
 8 by you on 26 January.
 9 A. Yes.
 10 Q. I'm sorry, I have just misled you. Let me take it
 11 a different way.
 12 Start with your stamp on the right-hand side,
 13 Studio E. You stamped this B on 26 January 2015; yes?
 14 A. Yes.
 15 Q. Now, if you look at the left-hand side, you can see that
 16 under "Glazing - P1 - panels", we now have "Core - 25mm
 17 Styrofoam" for P1.
 18 A. So they have changed the P1 but not the P2.
 19 Q. Exactly.
 20 Now, when you saw this specification note, did you
 21 notice that change?
 22 A. You mean when I was commenting on this drawing?
 23 Q. Yes.
 24 A. Well, I couldn't say, but I would have been commenting,
 25 as I've maintained up until now, on architectural

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1 intent, so I wouldn't necessarily have been looking for
 2 that sort of change.
 3 Q. Do you know why the amendment was made to Styrofoam in
 4 P1 but not in P2?
 5 A. I've absolutely no idea.
 6 Q. Did you or Kevin Lamb, to your knowledge, ever inform
 7 the author of the red annotations -- and I suppose if
 8 you didn't know who it was, you wouldn't have done, but
 9 did you know whether anybody ever told whoever it might
 10 be who had written that there and had made the change
 11 that the prescription of Styrofoam was not being
 12 followed for P2 and raise that question?
 13 A. I'm getting a little confused, sorry.
 14 Q. Yes, and I'm not surprised, it was a confusing question.
 15 Did you or to your knowledge Kevin Lamb ever raise
 16 the question with anybody as to why TP10 had been
 17 removed for P1 and replaced with Styrofoam?
 18 A. I have no recollection of ...
 19 Q. Did you ever discuss the use of Styrofoam within the
 20 external wall build-up with anybody at Studio E?
 21 A. Not that I recall, no.
 22 Q. Did you ever raise the issue with Harley?
 23 A. Not that I recall.
 24 Q. Did you ever raise it with Rydon?
 25 A. Not that I recall.

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1 Q. Do you know or agree that Styrofoam is a trading name
2 for extruded polystyrene insulation, otherwise known as
3 XPS?
4 A. I'm aware of XPS and that it's used in inverted roof
5 structures, for example, with fire retardant in it.
6 MR MILLETT: All right. We're going to look at P2 after the
7 break.
8 Mr Chairman, I think now is a reasonably convenient
9 time for a break.
10 SIR MARTIN MOORE-BICK: All right.
11 Mr Crawford, we will have a break now for some
12 lunch. Please don't talk to anyone about your evidence
13 over the lunch period. We will resume at 2.05, please.
14 THE WITNESS: Thanks.
15 SIR MARTIN MOORE-BICK: Would you like to go with the usher,
16 please. Thank you.
17 (Pause)
18 Good, 2.05, please. Thank you.
19 (1.03 pm)
20 (The short adjournment)
21 (2.05 pm)
22 SIR MARTIN MOORE-BICK: All right, Mr Crawford?
23 THE WITNESS: Yes.
24 SIR MARTIN MOORE-BICK: Thank you.
25 MR MILLETT: Mr Chairman, before we restart Mr Crawford's

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1 evidence, can I just make a short procedural
2 announcement, subject to you and Ms Istefhan, and that
3 is the next pair of witnesses.
4 After Mr Crawford's evidence today, we will move
5 then to Mr Rek. We will finish him during the course of
6 tomorrow, and then move back to Mr Sounes, who has very
7 kindly indicated that he wishes to return to complete
8 his evidence. That will be the rest of tomorrow and
9 Thursday, and possibly beyond that, but we will see.
10 SIR MARTIN MOORE-BICK: Good, yes.
11 MR MILLETT: So that's the programme, so everybody knows.
12 SIR MARTIN MOORE-BICK: Yes.
13 MR MILLETT: Mr Crawford, can I ask you to be shown again,
14 please, {HAR00003869}, which is what we were looking at
15 before the break, where you have a stamp B on the
16 specification notes on 26 January 2015; do you see that?
17 A. Yes.
18 Q. I just want to look with you, please, now, at the
19 glazing P2 panels, which we looked at briefly before,
20 and you can see there that Kingspan TP10 rigid
21 insulation is prescribed as the core for the P2 panels;
22 yes?
23 A. Yes.
24 Q. Did you ever discuss the use of Kingspan TP10 within the
25 external wall build-up with anybody within Studio E?

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1 A. Not that I recall.
2 Q. Did you ever raise the issue or question with Harley or
3 Rydon about the use of TP10 rigid insulation within P2?
4 A. Not that I recall.
5 Q. Had you actually ever heard of the product Kingspan TP10
6 before?
7 A. I'm aware of various Kingspan insulations. Specifically
8 that one at that time, I couldn't say.
9 Q. Did you take any steps to familiarise yourself with
10 Kingspan TP10 and its specification?
11 A. I may have done, I don't recall, but I would reiterate
12 what I said at the start, which is I was commenting from
13 an architectural intent perspective.
14 Q. Right.
15 Now, the P1 and P2 panels were part of the external
16 surface of the building, weren't they?
17 A. They were part of the window units.
18 Q. They were.
19 Let's see if you agree with my next question: do you
20 agree with me that the insulating material used within
21 those panels should have been a material of limited
22 combustibility in order to comply with paragraph 12.7 of
23 Approved Document B, or else be the subject of an 8414
24 test to comply with BR 135 criteria?
25 A. To comply to those criteria, yes.

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1 Q. Looking at, if we can, {RYD00046822/1}, please, this is
2 revision D of the Harley specification notes. This time
3 you see against the D in the bottom box, 15 July 2015,
4 "R2 & R3 added, fire". You stamp this with status A,
5 can you see that, on 17 July?
6 A. Yes.
7 Q. Just a day or two later. Do you see that?
8 A. Yes.
9 Q. When you stamped it A, did you notice that the
10 specification for P1 was Styrofoam and P2 was Kingspan
11 TP10?
12 A. I stated before I was looking at the spec and the
13 drawings from the -- for the perspective of
14 architectural intent.
15 Q. Yes. Yes. Did you notice that the specification for
16 the material for P1 for the core was Styrofoam and the
17 material for P2 for the material was Kingspan TP10?
18 A. I don't recall.
19 Q. Did you take any steps to satisfy yourself that
20 Styrofoam and Kingspan TP10 were materials of limited
21 combustibility or else had confirmed --
22 A. My understanding of all foams, plastic foams, is that it
23 could be treated with retardant to limit their
24 combustibility.
25 Q. Did you take any steps to find out whether those

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1 materials had in fact been treated with retardant to
 2 limit their combustibility?
 3 A. I don't recall.
 4 Q. If those materials were neither compliant with the
 5 requirements for limited combustibility nor had passed
 6 a full-scale 8414 test in accordance with BR 135, how
 7 could their specification conform to design intent as
 8 you had specified it or you had stamped it?
 9 A. The architectural intent had performance criteria within
 10 it which they were required -- which Harley were
 11 required to conform to, and whatever their proposals
 12 they put forward were required to conform to that.
 13 Q. Could --
 14 A. An issue of -- sorry.
 15 Q. I'm sorry, do you want to finish your answer?
 16 I overspoke. Do you want to finish that answer?
 17 A. No, that's fine.
 18 Q. All right.
 19 How could a drawing or a specification conform to
 20 design intent if it didn't comply with the statutory
 21 requirements?
 22 A. It had to comply with the employer's requirements. In
 23 terms of checking that it complied with statutory
 24 requirements, that was for the subcontractor, to seek to
 25 ensure that they complied with statutory requirements.

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1 Q. How could a drawing or a specification be signed off as
 2 complying with design intent or architectural intent, if
 3 you like, if in fact it did not comply with statutory
 4 requirements?
 5 A. But we were only looking at it from the purposes of
 6 architectural intent. The means of satisfying statutory
 7 compliance was for the subcontractor to satisfy
 8 themselves. They had a performance specification which
 9 they were required to meet. We're not checking, we're
 10 not marking, we're not giving marks out of 10, we're not
 11 approving; we're commenting on architectural intent.
 12 Q. Yes. Really my question is, and I'll ask it one more
 13 time: did you think at the time when marking this
 14 status A, "Conforms to design intent", that in doing so
 15 you didn't have to satisfy yourself either that
 16 Styrofoam or that Kingspan TP10 complied with the
 17 statutory requirements?
 18 A. I thought that was for Harley to satisfy themselves.
 19 Q. You thought that was for Harley.
 20 Did you take any steps to satisfy yourself that
 21 Harley had satisfied themselves that those materials
 22 complied with the statutory requirements?
 23 A. It was for them to satisfy themselves.
 24 Q. Did you know generally at the time that Styrofoam was
 25 expanded polystyrene?

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1 A. XPS --
 2 Q. XPS, indeed.
 3 A. I think I mentioned before, I am familiar with XPS. XPS
 4 is used on external aspects of buildings with retardant
 5 in it.
 6 Q. Would it not have been obvious to you when you saw the
 7 word "Styrofoam" on this document as the material for
 8 the core in the P1 panel that it was, being XPS,
 9 manifestly not compliant with statutory requirements?
 10 A. Not at all, not necessarily. It could have retardant in
 11 it. It was part of the window, so it wasn't part of the
 12 cladding, and it could have been encapsulated.
 13 Q. So when you saw "Styrofoam", are you telling us that you
 14 actually made the assumption that --
 15 A. I made no judgement on it, for the reasons I've already
 16 mentioned.
 17 Q. Right. So if in fact you didn't know whether or not any
 18 fire retardant had been added to the Styrofoam, would it
 19 not be a manifest error to any architect to see
 20 Styrofoam sitting there in the specification for use in
 21 the external wall construction as it was?
 22 A. I think I've answered the question.
 23 Q. Well, I don't think you have, if you don't mind. Would
 24 you mind answering it again, then?
 25 A. Can you repeat it, please?

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1 Q. Yes.
 2 If you didn't know whether or not a fire retardant
 3 had been added to the Styrofoam, wouldn't it be
 4 a manifest error to any architect who sees Styrofoam
 5 sitting there in this spec for use in the external wall
 6 construction as it was?
 7 A. Not if you believed it was the responsibility of the
 8 subcontractor to ensure that it was compliant, then you
 9 would assume that they had exercised that duty.
 10 Q. And you say it wasn't your job to check?
 11 A. As stated already, we were only looking at the drawings
 12 for the purposes of architectural intent. We don't mark
 13 them, we don't grade them, we don't approve them.
 14 Q. Now, I'm going to turn to a totally different topic,
 15 Mr Crawford: building control. I'm going to ask you
 16 some questions about your interaction with RBKC
 17 building control. All right?
 18 A. Yeah.
 19 Q. Okay.
 20 Now, I may sometimes use the shorthand BC or BCB as
 21 building control or building control body. If I do,
 22 I mean the same people.
 23 Just taking a step back for a moment, in terms of
 24 your own personal experience, at the time of your
 25 involvement in the Grenfell Tower project -- so summer

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1 of 2014 to 2016 -- did you have personal professional
 2 experience of preparing and submitting full plans
 3 applications?
 4 A. I would have done in past projects.
 5 Q. Would you agree that doing that is standard work for
 6 an architect?
 7 A. Yes.
 8 Q. Now, turning to the requirements of the
 9 Building Regulations, do you agree with me that the
 10 level of detail in a full plans application should be
 11 sufficient at least to allow a building control person,
 12 whether it's inside the council or an approved
 13 inspector, to be able to assess whether the proposed
 14 works would comply with the Building Regulations?
 15 A. In general terms, yes.
 16 Q. Would you agree with me that it's good practice to make
 17 a full plans application before any work commences
 18 on site?
 19 A. That's the normal process, yes.
 20 Q. Would you agree with me that a completion certificate
 21 issued by a building control body doesn't conclusively
 22 prove that the Building Regulations have been complied
 23 with?
 24 A. Well, that would be a matter of interpretation.
 25 Q. Interpretation of what?

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1 A. If it didn't -- if it didn't imply that, then it would
 2 be a worthless certificate.
 3 Q. Yes.
 4 Now, as a designer, you would have to check for
 5 yourself, wouldn't you, whether or not the completion
 6 certificate was comported with the Building Regulations?
 7 A. In order to issue a completion certificate, you need to
 8 have the building control approval.
 9 Q. Yes. I don't want to take time showing you the
 10 regulations, but can I take it that you were familiar at
 11 the time with regulations 17.1 and 17.4 of the
 12 Building Regulations? We can look at the text if you
 13 like.
 14 A. Yes, show me the text.
 15 Q. If you go, please, to {BMER0000001/23}. Regulation 17,
 16 "Completion certificates". Let's look at (1):
 17 "A local authority shall within the specified period
 18 give a completion certificate in all cases (including a
 19 case where a certificate has already been given under
 20 regulation 17A) where they are satisfied, after taking
 21 all reasonable steps, that, following completion of
 22 building work carried out on it, a building complies
 23 with the relevant provisions."
 24 Then subregulation (4), which is on the next page,
 25 page 24 {BMER0000001/24}, it says:

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1 "A certificate given in accordance with this
 2 regulation shall be evidence (but not conclusive
 3 evidence) that the requirements specified in the
 4 certificate have been complied with."
 5 So you were familiar with that at the time, were
 6 you?
 7 A. In general terms, yes.
 8 Q. Okay.
 9 Were you aware of regulation 38 of the
 10 Building Regulations at the time of the Grenfell Tower
 11 project?
 12 A. I don't think specifically.
 13 Q. At page 24, "Regulation 38 - Fire safety information",
 14 do you see that? If we look together, please, at
 15 subregulation (2):
 16 "The person carrying out the work shall give fire
 17 safety information to the responsible person not later
 18 than the date of completion of the work, or the date of
 19 occupation of the building or extension, whichever is
 20 the earlier."
 21 Do you see that? You see that?
 22 A. Yes.
 23 Q. Was that something you were familiar with at the time of
 24 your involvement in the project?
 25 A. Not specifically, no.

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1 Q. Not specifically, right.
 2 Can I just ask you then about RBKC building control
 3 itself. You, I think, had worked with RBKC's
 4 building control department on the KALC project.
 5 A. Yes.
 6 Q. What was your general impression of RBKC's
 7 building control department before you started working
 8 with them on the Grenfell project?
 9 A. Erm ... I think on the KALC project, the preference of
 10 the main contractor would have been to have gone with an
 11 approved inspector, and -- however, they were left
 12 without the option as they were required to use RBKC's
 13 building control.
 14 However, in the process of getting a completion
 15 certificate for the academy, I think the main contractor
 16 worked with building control and were able to make the
 17 relationship successful.
 18 I think my view would probably be the same: I would
 19 rather have an approved inspector than have used RBKC
 20 building control.
 21 Q. Right.
 22 Had you been required to deal with fire safety
 23 issues as part of the KALC project?
 24 A. When you say "deal with", I'm not quite sure what you
 25 mean.

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1 Q. Well, had you had any involvement in fire safety issues
2 as part of the KALC project?
3 A. Well, yes.
4 Q. And what were those?
5 A. Well, for example, the fire strategy, fire strategy
6 drawings.
7 Q. Did you, in that capacity, liaise with RBKC control over
8 those fire safety issues on KALC?
9 A. Yes.
10 Q. Who was the person primarily that you liaised with at
11 RBKC?
12 A. It was John and Paul, as I recall.
13 Q. So the same individuals?
14 A. Same team.
15 Q. John Hoban and Paul Hanson?
16 A. Yes.
17 Q. Let's look at your statement, please, page 66
18 {SEA00014275/66}, paragraph 206. You say, if we go to
19 the beginning of the paragraph at page 65
20 {SEA00014275/65}, where we can start the paragraph off:
21 "Towards the start of my involvement in the Project,
22 I recall meeting John Hoban (Building Control) with
23 Simon O'Connor (Rydon) on site. This may have been
24 during the week commencing 25 August 2014. I remember
25 that John was very clear about how he wanted information

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1 issued, such as that he was specifically and primarily
2 concerned with fire related matters and wanted a basic
3 set of information so that he could then request further
4 information if he required it ..."
5 Then you say:
6 "He often stressed that he was supposed to oversee
7 several hundreds of projects. However, I had also
8 experienced him to be very diligent, for example I noted
9 that on the KALC project he had 'crawled into almost
10 every conceivable cavity possible with a torch' during
11 the several weeks of fire stopping checks."
12 Did his diligent approach on KALC include, to your
13 recollection, his approach to fire safety issues?
14 A. I think with the two separate officers working on the
15 project, they had quite a clear split, at least in their
16 minds, in terms of which parts of the
17 Building Regulations they dealt with. So, for example,
18 Paul Hanson dealt with B1 and B5, I think they call it
19 the means of escape group, and Paul Hanson was the main
20 point of contact as the surveyor. I think he called
21 himself building officer surveyor, something like this.
22 My experience is that Paul Hanson had more fire
23 experience than John.
24 Q. The split you just talked about, you say Paul Hanson
25 dealt with B1 and B5, what did John Hoban deal with?

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1 A. 2, 3 and 4.
2 Q. So B2, B3 and B4, so including external fire spread?
3 A. Yes. He would also deal with 1 and 5 as a point of
4 contact.
5 Q. Right, I see.
6 So when he was very diligent, crawling into almost
7 every conceivable cavity possible with a torch, you say
8 in your statement that he was doing several weeks of
9 firestopping checks.
10 A. Yes.
11 Q. Is that B3?
12 A. Erm ...
13 Q. His role on B3.
14 A. It would be, yes.
15 Q. Yes, I see. Now --
16 A. I think that -- I mean, that quote has been used. It's
17 been taken from an email --
18 Q. It has.
19 A. -- if I recall --
20 Q. You saw it this morning, in fact. I didn't take you to
21 that part of it. It's one of the run of emails at the
22 end of March we saw when there was discussion about
23 cavity barriers and firestopping, you will recall that.
24 A. Yes, I was using it to try and push forward the notion
25 that --

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1 Q. Indeed.
2 A. Yes.
3 Q. Can I ask you to be shown {SEA00011560}. This is
4 an email from you on 2 September 2014 to Simon Lawrence
5 and others, including Paul Hanson, and you say:
6 "Simon
7 "Paul is a fire engineer and best placed to answer
8 questions regarding the Dry riser and AOVs.
9 "John Hoban won't be able to provide any answers on
10 his own and tends to refer to Paul all the time which
11 can be frustrating when you want answers."
12 Then you provide the contact details for
13 Paul Hanson.
14 Was it your impression at the time, looking at this
15 email, that John Hoban was not experienced with
16 fire safety matters?
17 A. I don't want to say something that would be unfair, but
18 I think it's true to say that Paul Hanson, I think, was
19 ex-London Fire Brigade and he had contacts in LFB, and
20 so was very well informed on fire related matters. So
21 when it came to, in this specific instance, something
22 fairly -- well, as was particularly specialist, the
23 mechanical AOV system, he would be far more likely to be
24 able to comment in an informed way than John.
25 Q. I see, yes.

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1 You point out in this email that Paul is a fire
 2 engineer. Did you have any view about whether Mr Hoban
 3 was a fire engineer, or are you drawing a distinction in
 4 their qualifications, between one and the other?
 5 A. It would be for them to say what their qualifications
 6 were, but as stated, I -- I'm not even sure if fire
 7 engineer is correct, but I understood Paul to be
 8 ex-London Fire Brigade, so he had, let's say, a level of
 9 understanding that I understood to be fairly high for
 10 someone in that position.
 11 Q. Now, you say in this email:
 12 "John Hoban won't be able to provide any answers on
 13 his own and tends to refer to Paul all the time ..."
 14 Was that true in your experience of him in respect
 15 of B2, 3 and 4 issues which you say fell on his side of
 16 the divide?
 17 A. No. I think if it was -- if the questions were
 18 tricky -- I mean, perhaps I wrote this email out of
 19 a certain amount of frustration off the back of
 20 something else, I don't know. But, I mean, it would be
 21 unfair to say that --
 22 Q. Okay.
 23 A. Yeah.
 24 Q. Right.
 25 Your view at the time, I think, as you say in your

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1 statement, was that dealing with him was somewhat
 2 frustrating.
 3 A. I think that's what it says there, in that email.
 4 Q. It says it there as well, yes.
 5 Was that limited to fire safety issues or was that
 6 your general impression of his way of going about
 7 things?
 8 A. He had his own way of doing things.
 9 Q. Right.
 10 Just help me with this: you say that he would be
 11 given to referring issues to Paul Hanson rather than
 12 dealing with them himself and that was frustrating, but
 13 also you found him very diligent, as you say in your
 14 statement.
 15 A. I think he's somebody who meant well and he did try to
 16 do the right thing, but, for example, we had scenarios
 17 in KALC that repeated themselves on the tower where,
 18 for example, in service riser cupboards, there was only
 19 a requirement to firestop at the floor, not the
 20 enclosure, and he insisted on doing both, which became
 21 frustrating.
 22 Q. I see.
 23 A. So it wasn't that he didn't mean well, it's just that
 24 his interpretation could be frustrating for people.
 25 Q. Right.

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1 We can see in the statement at paragraph 206
 2 {SEA00014275/66} that I've just shown you that you refer
 3 to the email where he is quoted as saying that he
 4 crawled into cavities during firestopping checks on
 5 KALC. Did he ever do anything similar on site at
 6 Grenfell, do you recall?
 7 A. He may have done, but, in a sense, John had -- as
 8 I understood it, John had scheduled visits to inspect
 9 the works as they progressed, and he was going to use
 10 those as a means of satisfying himself that things were
 11 being done and being done in a compliant fashion. But
 12 those visits were done in liaising with Simon Lawrence
 13 and his team and so they were not -- I was not involved
 14 or brought into those visits.
 15 Q. So you weren't at the site visits where he might or
 16 might not have crawled into cavities with a torch?
 17 A. Correct.
 18 Q. You say in your statement -- and we can go back to it if
 19 you want to -- that he was supposed to oversee several
 20 hundreds of projects. That's what you say in your
 21 statement.
 22 Did you get the impression that Mr Hoban was
 23 overstretched?
 24 A. I got the sense that he had the tendency to exaggerate.
 25 Q. Exaggerate what sort of things?

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1 A. Numbers.
 2 Q. Numbers of what?
 3 A. Projects he was overseeing.
 4 Q. I see.
 5 Did you think that he was overseeing hundreds of
 6 projects at the same time?
 7 A. No.
 8 Q. Right.
 9 A. I suspected he was very busy, as we all are in the
 10 construction industry, and -- but he -- you know, he
 11 would make sure you knew that.
 12 Q. Was it your experience that RBKC could drag their feet
 13 about things when asked?
 14 A. Well, certainly the planning side did.
 15 Q. Yes. Let's look at your statement, page 66
 16 {SEA00014275/66} at paragraph 207, just below where we
 17 were looking before. You say there:
 18 "From fairly early in my involvement in the Project,
 19 I flagged to Rydon the importance of sitting down with
 20 Building Control to eliminate the risk that Building
 21 Control would disagree with design decisions that been
 22 made and require late changes to the design."
 23 A. Yes.
 24 Q. Then you say:
 25 "In September 2014, I suggested reconsidering the

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1 fire strategy plans in light of revised drawings, albeit
 2 this was a process which was subject to a settled
 3 decision on the layout of the Lower Floors."
 4 Then you identified the importance of early liaison
 5 with building control there.
 6 But if you look at an email, {SEA00011707}, which is
 7 the one you refer to in the body of 207, do you see? If
 8 we go to that email, you see there it's from you to
 9 Simon Lawrence, 18 September 2014, and you have some
 10 attachments to that:
 11 "Simon
 12 "Not sure if you are aware of these building control
 13 preliminary observations that were made at the end of
 14 last year (attached).
 15 "They raise a number of concerns in relation to
 16 additional doors/specification fire ratings/venting.
 17 They will also have ironmongery implications.
 18 "Based on our experience at KALC where the process
 19 dragged on over a long period I am keen to sit with John
 20 and Paul and go through these issues and clarify them
 21 all in order to eliminate risk."
 22 I don't think I need the last sentence with you,
 23 because my question is: you can see that he refers to
 24 the process dragging on over a long period in relation
 25 to KALC; does that tell us that your experience, at

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1 least as at September 2014, was that RBKC could be slow,
 2 could drag their feet over things?
 3 A. Yeah, I think the general process, yes.
 4 Q. Let me ask you some questions about your liaison with
 5 building control.
 6 Shortly after you started working on the
 7 Grenfell Tower project, Studio E submitted the full
 8 plans application to building control, we know that, and
 9 the application was sent in on 4 August by Mr Sounes.
 10 Can we look at that. It's {RYD00014378}.
 11 It says:
 12 "Dear John
 13 "Further to your email last Tuesday please see
 14 attached the completed Full Plans application form for
 15 Grenfell Tower. Hard copy and drawings to follow."
 16 Do you see that?
 17 A. Yes.
 18 Q. How had you and Mr Sounes decided to divide up the
 19 labour on the full plans application, or were you not
 20 involved in it at all at that point?
 21 A. I think at this point I wasn't involved.
 22 Q. You don't think you were involved at this point?
 23 A. No.
 24 Q. I see.
 25 Did Mr Sounes discuss the full plans application or

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1 the proposed full plans application with you when you
 2 came into the project?
 3 A. I don't recall what was discussed.
 4 Q. Right.
 5 Do you know whether any record was kept of what was
 6 sent to building control by Studio E as part of the full
 7 plans application?
 8 A. Yes.
 9 Q. There was a record.
 10 Would you agree that, on large projects like
 11 Grenfell Tower, it's common for information and drawings
 12 to be supplied to building control as the project
 13 proceeds?
 14 A. Yes.
 15 Q. And, actually, that's what happened with Grenfell, isn't
 16 it?
 17 A. That's correct.
 18 Q. Did you keep a tracker of which drawings and information
 19 was being submitted to building control and when?
 20 A. I personally didn't keep a tracker.
 21 Q. You personally didn't; did anybody?
 22 A. I don't know whether -- well, my assumption is
 23 building control, in order to satisfy themselves that
 24 they were signing stuff off, would have kept their own
 25 tracker.

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1 Q. Maybe they did, maybe they didn't, Mr Crawford, but I'm
 2 asking really about Studio E.
 3 A. We didn't keep a tracker.
 4 Q. You didn't keep a tracker?
 5 A. No.
 6 Q. Do you know why that is?
 7 A. We weren't required to, we weren't asked to.
 8 Q. Did you have any other method, other than a tracker, of
 9 keeping track of which drawings and documents were being
 10 submitted from time to time to building control by
 11 Studio E?
 12 A. I think they were kept in -- some of the stuff was kept
 13 on file in our consult out folder and some was kept in
 14 emails.
 15 Q. You say some of the stuff was kept on file, and I'm
 16 afraid the transcriber has not picked up what you then
 17 said, some in emails.
 18 A. Yeah.
 19 Q. So some on files, some in emails.
 20 So how was it organised within Studio E, this
 21 material?
 22 A. Well, what happened is that -- and I think this is
 23 covered in my witness statement. I talk about John
 24 being very categoric about what he wanted and not
 25 wanting to be flooded with information at the start, so

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1 we issued him a pack of drawings broadly in line with
 2 what he had requested or what we understood he had
 3 requested. We sent these to him, and then he -- his
 4 instructions were that he would satisfy himself of
 5 building control compliance through his site visits and
 6 asking for information as and when he required it.
 7 Q. My question was: how was the material organised within
 8 Studio E? How did you keep a track internally within
 9 Studio E of what material you were sending to --
 10 A. We had a consult out folder with information in it.
 11 Q. I see.
 12 Now, looking at paragraph 206 of your witness
 13 statement again, we have just looked at it and
 14 I scammed past the meeting that you say you had on
 15 25 August. If we can just go back to that, it is the
 16 previous page, 65 {SEA00014275/65}, the bottom of the
 17 page, you say there in the first line:
 18 "... I recall meeting John Hoban ... on site. This
 19 may have been during the week commencing
 20 25 August 2014."
 21 You see that?
 22 A. Yes.
 23 Q. You say that you remember him being very clear about how
 24 he wanted the information issued.
 25 Now, did you have any drawings with you during that

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1 site visit, do you remember?
 2 A. Yes, I think I probably did.
 3 Q. Did John Hoban look at them?
 4 A. I think he probably would have looked at them and taken
 5 them away.
 6 Q. You think he took them away?
 7 A. Yeah.
 8 Q. Do you know which they were?
 9 A. They would have been the basic project drawings.
 10 I believe he was on site and had looked at drawings
 11 prior to me being there as well with Simon Lawrence.
 12 Q. All right, but I'm asking you about your recollection.
 13 So you have a recollection, do you, of meeting him
 14 on site on that day and showing him drawings which he
 15 then took away?
 16 A. Yeah.
 17 Q. You say you thought they were the basic project
 18 drawings. Are those the employer's requirement
 19 drawings?
 20 A. I don't recall, I just remember sitting and discussing
 21 the project.
 22 Q. Do you remember whether by then you had seen any of the
 23 drawings that Harley were doing, bearing in mind that
 24 Harley's first production of drawings was, I think,
 25 22 August?

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1 A. Yeah, I would suspect that to have been too early.
 2 Q. You say at the meeting, if you go to the very foot of
 3 that page and over to 66 {SEA00014275/66}, that he was:
 4 "... very clear about how he wanted information
 5 issued, such as that he was specifically and primarily
 6 concerned with fire related matters ..."
 7 Do you see that?
 8 A. Yes.
 9 Q. You say he:
 10 "... wanted a basic set of information so that he
 11 could then request further information if he required
 12 it, so that he was not overwhelmed with information."
 13 A. Yes.
 14 Q. So, in general terms, the idea was that he would get
 15 basic information, he could ask for more if he wanted
 16 it, and you would drip-feed him as and when.
 17 A. Yes.
 18 Q. Is that how you worked with John Hoban on the KALC
 19 project?
 20 A. In broad terms, yes, except the main contractor there,
 21 who would have done the role Rydon did, the on-site
 22 visits and so on, I believe they maintained a tracker.
 23 Q. This conversation, was anybody else present at it or was
 24 it just you and Mr Hoban together?
 25 A. No, Simon Lawrence almost certainly would have been at

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1 that meeting.
 2 Q. It was a formal meeting, was it?
 3 A. Yeah, it was an initial introductory meeting.
 4 Q. What about Simon O'Connor?
 5 A. He may well have been, but I couldn't say definitively.
 6 Q. All right.
 7 Did you keep a note of this conversation at the time
 8 or otherwise record it in writing?
 9 A. I don't recall.
 10 Q. Did you or have you looked for a note of this
 11 conversation?
 12 A. I might have done within my sketchbooks.
 13 Q. Right. Okay.
 14 When he said he wanted a basic set of information,
 15 what did you understand that would comprise?
 16 A. I understood that as basic GAs, plans, sections,
 17 elevations, enough to give him an understanding of what
 18 was going on, give him an overview of the project.
 19 Q. Did it include details of the materials to be used
 20 within the building envelope, the new façade?
 21 A. I can't remember without seeing precisely what was in
 22 the pack, to be honest.
 23 Q. Is there any reason why you wouldn't have given him
 24 a basic set of information, including the details of the
 25 materials to be used in the façade?

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1 A. No, except that he'd obviously had a number of meetings
 2 with ourselves as Studio E explaining the progress of
 3 the building up to then. But, no, in answer to your
 4 question.
 5 Q. Did it occur to you at the time to bring specifically to
 6 his attention, as part of that basic set of information,
 7 the design, even though basic, of the façade at that
 8 time and the materials specified to be used within it?
 9 A. I think he knew what they were already.
 10 Q. You say you think you did; was that a thought you had at
 11 the time?
 12 A. It was my understanding from conversations with Bruce
 13 and the fact that they -- Bruce had had meetings with
 14 them prior to my involvement.
 15 Q. Right, I see.
 16 So let me be clear: was this an assumption that you
 17 made, or was your understanding something that you had
 18 derived from a discussion you had with Mr Sounes prior
 19 to meeting Mr Hoban on site?
 20 A. I'm not sure I can recollect in that level of precision.
 21 Q. Do you agree with me that if you were providing Mr Hoban
 22 with a basic set of information that he wanted, you
 23 would have wanted to make sure he had the details of the
 24 materials to be used in the new façade?
 25 A. I would want him to have an understanding of the project

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1 at that point in time, where it was, the basic
 2 build-ups, materials, yes.
 3 Q. Can I ask you to go to paragraph 40 of your statement,
 4 please, on page 17 {SEA00014275/17} of this same
 5 document. You say in paragraph 40, about halfway down:
 6 "Building Control set its own agenda for checking
 7 off items, and it made it clear to me that I would be
 8 contacted should further information be required.
 9 Rydon's style was very much of dealing with issues
 10 directly, I believe for expediency and because Rydon was
 11 efficient at doing so. To this end my understanding is
 12 that I was not party to everything Building Control
 13 agreed on."
 14 I just want to focus on the sentence that contains
 15 the words "set its own agenda for checking off items".
 16 Is that a reference to your conversation that you
 17 had with John Hoban on site in the week of
 18 25 August 2014?
 19 A. Yes.
 20 Q. Is it common in your experience, or was it common in
 21 your experience then, for building control to tell the
 22 contractor what they needed to see on a project?
 23 A. Ultimately, building control has to satisfy itself that
 24 it's performed its duty, and building control itself
 25 would know what those things were.

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1 Q. Yes.
 2 Let me ask the question again: is it common for
 3 building control to tell the contractor what they needed
 4 to see on a project as opposed necessarily to the
 5 architect, the project architect?
 6 A. Sorry, say that again?
 7 Q. Yes. Was it common in your experience for
 8 building control to tell the contractor what
 9 building control needed to see on a project, as opposed
 10 necessarily to the architect?
 11 A. I think building control would speak to both. It
 12 depends on the contract, the type of project, the level
 13 of involvement, the type of -- whether using
 14 building control, approved inspector. There's a lot of
 15 factors that can influence that.
 16 Q. Perhaps a simpler question: was the experience that you
 17 were having with John Hoban's approach an experience
 18 that you had with other building control inspectors on
 19 previous projects?
 20 A. Not dissimilar.
 21 Q. Not dissimilar?
 22 A. Mm.
 23 Q. Do you agree that in relying on building control to tell
 24 you what information building control needs runs the
 25 risk that relevant information may well not be provided

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1 to them?
 2 A. It's a two-way process and it was a two-way process,
 3 inasmuch as you explain the scheme, you explain how
 4 things work, you give them a set of information, and
 5 then they -- they're satisfying themselves against the
 6 building regs that they're satisfied that they've been
 7 met. They need to understand the project to be able to
 8 do that, and you do that with them.
 9 Q. Right.
 10 Well, let's see how we go. Turn, please, to
 11 {RYD00016990}. This is an email of 3 September 2014 in
 12 which Simon Lawrence writes to John Hoban, copied to you
 13 and Bruce Sounes as well as Simon O'Connor, "Morning
 14 John". Do you see that?
 15 A. Yes.
 16 Q. If you look at the second substantive paragraph down, it
 17 says this:
 18 "Studio E are our Architects, lead designers who
 19 will forward all relevant drawings, etc in the future.
 20 I believe you already know them from your work on the
 21 KALC project next door so hopefully this will make
 22 things easier. I will ask them to arrange a meeting
 23 with yourself on site shortly."
 24 Now, looking at that, would you agree with me that
 25 that email suggests that the drawings had not yet

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1 formally been submitted by that time, and bearing in
 2 mind that this is 3 September 2014, was that the case?
 3 A. I can't remember. I know there was a delay in issuing
 4 them which was agreed by -- between Bruce and the KCTMO
 5 and Bruce and Simon Lawrence, because the KCTMO were
 6 making changes -- still in the process of making changes
 7 to the ground floor plans, and the idea was that the
 8 changes would be completed before the drawings were
 9 submitted to avoid confusion.
 10 Q. I see.
 11 If you go back, then, to {SEA00011707}, this is
 12 an email from you to Simon Lawrence of Rydon on
 13 18 September 2014. Do you see that?
 14 A. Yes.
 15 Q. You attach some drawings or plans, and you say:
 16 "Simon
 17 "Not sure if you are aware of these building control
 18 preliminary observations that were made at the end of
 19 last year (attached)."
 20 Do you see that?
 21 A. Yes.
 22 Q. "Based on our experience at KALC where the process
 23 dragged on over a long period ..."
 24 Et cetera. We have seen this before.
 25 My question this time is a bit different. You were

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1 providing him with preliminary comments from
 2 building control that I think had been sent to you --
 3 sent to Studio E, perhaps not you -- nine months
 4 earlier, in other words at the end of 2013; that's
 5 right, isn't it?
 6 A. Yeah, they would have been sent to Bruce at that point
 7 I guess.
 8 Q. Exactly.
 9 My question is: what had prompted you to send these
 10 to Simon Lawrence at that point?
 11 A. Well, I was relatively new on the project, I was
 12 starting the project, and so I wanted to check how much
 13 he knew, I guess is my interpretation of that.
 14 Q. Your interpretation of it?
 15 A. I'm trying to recall, obviously, writing the email and
 16 what it was in relation to.
 17 Q. Right.
 18 A. So I'm sending them the preliminary observations that
 19 were made by building control to make sure that he was
 20 aware of them, not that I necessarily would expect him
 21 not to be, but also because some of these items I was
 22 dealing with at the time, for example the new doors to
 23 the lower levels and the ironmongery.
 24 Q. Before you sent this email, did it not occur to you to
 25 check with Bruce Soules whether or not in fact those

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1 building control preliminary observations had already
 2 been sent to Rydon?
 3 A. I may have done, I don't recall.
 4 Q. Right.
 5 Was it your impression at the time that Studio E had
 6 rather sat on these comments for nine months before
 7 sending them on to Rydon, who by this time were your
 8 client?
 9 A. Well, you're saying that. I don't know if that's the
 10 case. I think Bruce would have to comment on that.
 11 I think the situation is that I was getting involved in
 12 the project, and I was just making sure that everyone
 13 was in the same place that I was. I mean, he,
 14 for example -- Simon, for example, may have known of
 15 more comments or ... I don't know.
 16 Q. You say in the second substantive paragraph in that
 17 email that you wanted to sit down with --
 18 A. Building control, yes.
 19 Q. -- building control.
 20 A. I say that in several emails.
 21 Q. You do. Do we take it that you were advising Rydon
 22 there that early liaison with building control was
 23 particularly important?
 24 A. Yeah, I was just -- I guess I was stressing the
 25 importance of getting the process moving.

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1 Q. Yes.
 2 A. And to initiate that process and make it meaningful.
 3 Q. Yes. Is that partly because at this point -- this was
 4 not early on in the project. Construction had in fact
 5 already started by this point, hadn't it?
 6 A. Well, it was early on the project for me. Construction
 7 had started, but I don't know what pre-construction
 8 agreements there may or may not have been in place.
 9 That's between Rydon and --
 10 Q. Right.
 11 A. -- authorities.
 12 Q. It's fair to say that there was an element of urgency
 13 about this, wasn't there, now?
 14 A. Well, if you work in construction, there's always
 15 an element of urgency.
 16 Q. Right.
 17 Now, you say it was important to eliminate risk, do
 18 you see at the end of the first sentence of the last
 19 paragraph?
 20 A. Yes.
 21 Q. But is it right that you didn't seek any earlier
 22 engagement with building control on the façade? And
 23 I appreciate you had only just come into the project,
 24 but at no time before that --
 25 A. Let me just clarify what I meant by that statement

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1 first .
 2 Q. Yes, please.
 3 A. This was me coming into the project. When I mean
 4 eliminate risk, I meant risk to programme, risk to Rydon
 5 being able to deliver everything on time. So the
 6 earlier you get them involved, the quicker you can get
 7 things signed off, the quicker things can be procured
 8 and built.
 9 Q. Right, I see. So this is project risk, not health and
 10 safety risk?
 11 A. I mean, you could read it as all forms of risk, but
 12 I think it probably would have been referring to --
 13 Q. Right.
 14 A. -- project risk.
 15 Q. I'm sorry. I was about to interrupt you. Did you want
 16 to finish your --
 17 A. That's fine, I've finished.
 18 Q. You provided a batch of drawings to building control
 19 a little bit later in September. If we go to
 20 {RYD00018742}, please, we can see you did that on
 21 24 September. This is an email from you to John Hoban,
 22 copied to Simon Lawrence, and you attach a zip file,
 23 "building control Set". Do you see that?
 24 A. Yes.
 25 Q. You say:

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1 "John
 2 "Following our conversation on site looking whilst
 3 looking [sic] at the Academy on Tuesday, I am forwarding
 4 a pack of drawings for the Grenfell Tower Project as
 5 mentioned.
 6 "I believe yourself and Paul Hanson sat down earlier
 7 in the year and did an initial appraisal of the proposed
 8 layout changes to the lower levels with Bruce Sounes
 9 from our office. I have included Paul's initial
 10 mark-ups of the fire strategy from this time as well as
 11 a new set which shows that there has been some
 12 simplification to the arrangement on these floors.
 13 I know you like to go through the drawings on an agreed
 14 process of release rather than just being swamped with
 15 everything at once so I am just sending the following
 16 drawings to start with."
 17 Then you see them all listed there. I'm not going
 18 to read those out. So I've read you the text of that.
 19 Had you discussed with Bruce Sounes which drawings
 20 would be sent to building control before you sent this
 21 email to Mr Hoban?
 22 A. I don't recall.
 23 Q. Right.
 24 How did you decide for yourself which drawings would
 25 be sent to building control if you hadn't discussed it

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1 with Mr Sounes, given that this was reasonably early on
 2 in your involvement?
 3 A. Well, first of all, I may have done, but also I think at
 4 this point I had already met John on site and maybe
 5 he -- I suspect he had indicated what he expected to
 6 see.
 7 Q. Right. I see.
 8 So we can see that the list is divided into three
 9 parts: fire strategy drawings from previous meetings
 10 with Paul Hanson's mark-up; new fire strategy drawings
 11 showing modifications to the office area and omission on
 12 internal office stair; and then basic plans sections and
 13 elevations GA set.
 14 A. Yes.
 15 Q. So the first two bullet points are to do with the
 16 podium, the lower part of the building? Or is that not
 17 right?
 18 A. No, they're fire strategy drawings generally through the
 19 whole building.
 20 Q. Right. Okay.
 21 Looking at {RYD00018750}, please, this is one of the
 22 drawings that you sent him. If you look at the key on
 23 the top left-hand side -- I'm afraid this is going to
 24 have to be pretty substantially expanded. I don't think
 25 anyone can read it. This may not work.

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1 Let me ask the question: can you see, if you look at
 2 the key, top left-hand side, it refers to a zinc
 3 spandrel panel as item 5?
 4 A. I can see one saying aluminium --
 5 Q. It's not very clear, but if you look, there is a key at
 6 the top which runs from 1 to it looks like 12. I'm
 7 afraid it is hard to read and I'm sorry about that. But
 8 item 5 says "Zinc spandrel panel". Do you recall that?
 9 A. I'm not sure I can see anything from this drawing.
 10 Q. All right. I'm not surprised.
 11 Do you remember, then -- and there are other
 12 references to zinc in that list -- were you aware that
 13 the drawing still had cladding panels labelled as zinc?
 14 A. If these were from the employer's requirements set, yes,
 15 that's possibly the case.
 16 Q. Yes.
 17 Do you remember that by that stage, so late
 18 September 2014, ACM had now been agreed in principle by
 19 RBKC's planning department and had been since July or
 20 so, the only outstanding issue being the colour?
 21 A. I think Bruce was definitely still holding on to the
 22 notion that we may use zinc as the finish, and the
 23 colour and the final planning had to be agreed, as
 24 I recall. I think these drawings showed zinc CM as
 25 opposed to ACM. It's effectively the same product.

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1 Q. These drawings didn't include any details of the
 2 insulation that was going to be used on the columns or
 3 behind the spandrel panels, did they?
 4 A. Well, they wouldn't do as a GA drawing, no.
 5 Q. And they didn't include any details of the cavity
 6 barrier strategy that we see on the ER drawings.
 7 A. They wouldn't, this type of drawing, no.
 8 Q. Is this right: they were 1:100 and 1:50 drawings, so
 9 they were, as you say, general arrangements as opposed
 10 to detailed?
 11 A. Yeah.
 12 Q. Is there any reason why you didn't provide
 13 building control at this stage with the most up-to-date
 14 drawings that you had?
 15 A. Well, these drawings, as I recall from the employer's
 16 requirements, and at this point Harley were working up
 17 the detailed drawings, so the idea was to give them the
 18 project overview, with plans, sections, elevations, fire
 19 strategy, give them the basic pack of information, and
 20 then as the detailed design package got developed by
 21 Harley, provide them with the information as that became
 22 available.
 23 Q. Right.
 24 If we go back to the email, {RYD00018742}, can you
 25 confirm with me that the list you set out there is

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1 a selection of drawings; it isn't the entirety of the
 2 employer's requirement drawings that Studio E had
 3 prepared in 2013, is it?
 4 A. Yeah, it's basic plans and sections and the
 5 fire strategy drawings.
 6 Q. We know you didn't provide the NBS specification to --
 7 well, we can see that in this email. Why is that?
 8 A. Because he asked for a basic set of drawings.
 9 Q. Yes.
 10 A. And the final choice of materials, for example, in the
 11 cladding and build-up were to be confirmed with the
 12 detailed designs that came from Harley.
 13 Q. Did it occur to you that it might be a good idea at the
 14 time to send Mr Hoban the NBS specification so that he
 15 could at least see the basis on which Rydon had won the
 16 tender and might -- might, I emphasise -- be dividing up
 17 its work packages and instructing its subcontractors on?
 18 A. I'm not sure. They may have had the stage E report and
 19 they may have had the NBS spec from Bruce prior to my
 20 involvement.
 21 Q. Did you check?
 22 A. I don't recall.
 23 Q. I see.
 24 You referred to the stage E report. Do you mean
 25 stage E or do you mean something else?

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1 A. Sorry, I mean the employer's requirement, the tender set
 2 that we produced.
 3 Q. Right.
 4 You also don't refer in this email to any emails
 5 that you had sent which asked Harley or Rydon for
 6 up-to-date details of the cladding design to send on to
 7 building control.
 8 A. At this point, Harley were engaged in starting that
 9 process.
 10 Q. Did you go back to Harley at any point to say, "Look,
 11 we're now sending building control all this detailed
 12 information, please give us your up-to-date designs as
 13 fast as you can"?
 14 A. No, but there was a meeting which building control sat
 15 in with Harley in a workshop, one of the workshops
 16 fairly early on, so they would have been aware of what
 17 was going on and how things were being procured.
 18 Q. Right. So, just to be clear about this, when was the
 19 meeting, do you say, in which building control sat in
 20 with Harley in a workshop?
 21 A. I think it was after one of the early DTMs, 1 or 2,
 22 I can't be precise.
 23 Q. Is there a note of that meeting that --
 24 A. Erm --
 25 Q. Can I ask you, first of all, were you at that meeting?

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1 A. Yes, I remember sitting in.
 2 Q. Did you take a note of that meeting?
 3 A. I might have done, but I don't -- I can't find reference
 4 to it.
 5 Q. Right.
 6 Did you ever ask Harley to prepare a standalone
 7 cladding package for a submission to building control
 8 that contained all the relevant information?
 9 A. No.
 10 Q. Do you accept that it was important to send
 11 building control accurate information so that they could
 12 do their job properly?
 13 A. It was important for building control to understand what
 14 was being built so they could do their job properly.
 15 Q. Now, could you please go to your statement,
 16 paragraphs 65 and 66, which you will find on page 26
 17 {SEA00014275/36}.
 18 You say here at the top of page 26, paragraph 65:
 19 "On 22 August 2014, Kevin Lamb (Harley) emailed
 20 Simon Lawrence (Rydon) and stated he had attached some
 21 preliminary drawings ..."
 22 And they're all listed there.
 23 In paragraph 66 you say:
 24 "On 26 August 2014, I emailed Kevin Lamb (Harley)
 25 and Simon Lawrence (Rydon) and included some initial

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1 observations on the preliminary drawings. I referred to
2 discussing them at a design team meeting the next day,
3 but this meeting did not go ahead. On 27 August 2014,
4 I provided further comments and a mark-up on the
5 preliminary drawings and said I would call Harley the
6 next day to discuss the comments. I do not have a
7 record of that call."

8 Then 67:

9 "The Harley Drawing Register states that Harley
10 issued copies of a number of drawings on 29 August ..."

11 Now, what I'm interested in is: do you agree with me
12 that the drawings that you refer to at paragraphs 65 and
13 66 represented the most up-to-date design of the
14 cladding system as at 24 September, a month later, when
15 you sent the list of drawings to John Hoban?

16 A. Sorry, what was the date I sent the drawings to
17 John Hoban?

18 Q. 24 September. We've seen the email. We can go back to
19 it again if you like.

20 A. No, that's fine. Sorry, your question on this was?

21 Q. Let's just take it in stages, then.

22 I have shown you what you say in your statement and
23 I have shown you the original email. So, just to be
24 clear, you provided the batch of drawings to RBKC on
25 24 September 2014, but a month before that, on

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1 22 August, you had received some preliminary drawings
2 from Kevin Lamb --

3 A. Yes.

4 Q. -- and had made some initial observation on those on the
5 26th and again on 27 August.

6 My question is: do you agree that those drawings,
7 including your comments, represented the most
8 up-to-date --

9 A. Yes.

10 Q. -- design of the cladding system at that stage?

11 A. Yes.

12 Q. But you didn't send them to building control as part of
13 your full plans application?

14 A. No, and the reason why I wouldn't is because they're
15 preliminary drawings, and we used those drawings for the
16 basis of the first meeting we had with building control,
17 and that's when the whole issue, for example, of cavity
18 barrier ratings came up and cavity barrier strategy. So
19 those drawings, for example, didn't have the cavity
20 barriers on them.

21 Q. I see. I see.

22 Is there any reason why you didn't send those
23 drawings as part of your 24 September email?

24 A. They weren't ready to send.

25 Q. I see.

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1 I don't think we see in that email anything from you
2 to say to John Hoban, "We are at the moment in the
3 process of examining preliminary drawings from Harley in
4 relation to the overcladding and we will send you those
5 as soon as they're ready". We don't see that. Why is
6 that? Why didn't you forewarn them that they were
7 coming?

8 A. Because we had a sit-down workshop in which the drawings
9 were discussed.

10 Q. Just to be clear in terms of dates, when was that
11 workshop, as far as you can recall?

12 A. This is the problem. I think after design -- one of the
13 design team meetings, so it would have been, I don't
14 know, September-ish, October-ish, something like this.

15 MR MILLETT: Right.

16 Mr Chairman, we're going to have a break. Can
17 I just do one little tiny thing more?

18 SIR MARTIN MOORE-BICK: Yes, all right.

19 MR MILLETT: Or round this off just a bit.

20 Can I ask you to go to paragraph 44 of your
21 statement, please, {SEA00014275/18}, where you deal with
22 a number of meetings. You see that?

23 A. Yes.

24 Q. We can see the dates of some of them, and the most
25 recent one before 24 September is 23 September 2014, and

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1 we have your notes of that meeting, and there is one on
2 2 September.

3 Looking at the list you have set out there, which is
4 the meeting, do you think, at which you discussed the
5 Harley drawings with building control?

6 A. Which of these three meetings?

7 Q. Well, which of the meetings in around September time.

8 A. It's possible it could have been 44.3 or it could have
9 been another one.

10 Q. Right, okay.

11 To be fair to you, these meetings continue right
12 through into 2015, but if you turn the page, we can see
13 the next one over the page is February 2015. Do you
14 think it was as late as that that you discussed the
15 Harley drawings with building control, or was it around
16 September time?

17 A. There was definitely a meeting before Christmas.

18 I mean, it precipitated the whole cavity barrier
19 conversations, you know, between 17/18 September and end
20 of March, so it would have been round about September.

21 MR MILLETT: Very well.

22 Mr Chairman, we may need to pursue that after the
23 break, but I think now is --

24 SIR MARTIN MOORE-BICK: Is that a convenient point?

25 MR MILLETT: It will work well.

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1 SIR MARTIN MOORE-BICK: Yes. We will have a short break
2 now, Mr Crawford. Back at 3.20, if you would, please.
3 Thank you.

4 (Pause)

5 3.20, please.

6 (3.10 pm)

7 (A short break)

8 (3.20 pm)

9 SIR MARTIN MOORE-BICK: Right, Mr Crawford. Last lap with
10 any luck.

11 Yes, Mr Millett.

12 MR MILLETT: Mr Crawford, can I ask you, please, to be shown
13 {RBK00052478/5}.

14 Now, this is an accolade record from RBKC of a note
15 of a meeting, and it's the third box down, plot 1,
16 pre-start visit, 24 November 2014, officer: John Hoban:
17 "Notes: meeting on site with myself, Paul Hanson and
18 various persons from the design team to go through their
19 proposals with particular regard to the fire strategy
20 for the scheme. [see below]."

21 Okay. Note the date of that.

22 Now, I should tell you that Mr Hoban in his witness
23 statement says that the main meeting with you happened
24 on 24 November 2014, and that it was then that he was
25 provided with initial drawings and details and discussed

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1 the work with, as he says, the architect. That is
2 a reference he makes to this note.

3 Now, obviously we will be asking him some questions
4 about that when he comes to give evidence, but I want
5 your take on this.

6 You referred earlier on to a workshop when the
7 Harley designs were discussed with John Hoban. Might it
8 be as late as 24 November when you eventually discussed
9 the Harley drawings with Mr Hoban?

10 A. It's possible, but I don't think so, because the
11 conversations around the cavity barriers were from round
12 about September, and for sure some of that was prompted
13 by the conversations with building control. So it is
14 possible, but I just can't recall.

15 Q. Right. Okay.

16 Now, we know that RBKC planners approved smoke
17 silver ACM panels on 25 September 2014. If you want,
18 I can give you a reference to that. Does that ring
19 a bell with you?

20 A. Yes, there was a further submission to planning for
21 a non-material amendment that went in after, wasn't
22 there, in relation to the windows, the window size?

23 Q. Yes, don't worry about that.

24 A. Sorry.

25 Q. The approval of smoke silver ACM panels was clearly

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1 an important milestone in this project, wasn't it?

2 A. Yes. Sorry, what was the date?

3 Q. 25 September 2014.

4 A. Right.

5 Q. The same day, ironically, as your meeting with Mr Hoban.

6 Studio E would need to update building control of
7 the change from zinc to ACM, wouldn't it?

8 A. Yes, although I'd argue that both are essentially the
9 same product.

10 Q. Well, you may argue that, Mr Crawford, but just to be
11 clear, you are accepting, I think, by your "yes" in the
12 last answer that Studio E would need to update
13 building control of the change from zinc to ACM; do you
14 agree with that proposition?

15 A. Yes.

16 Q. And do you agree that you didn't do that?

17 A. No.

18 Q. No. Why is that?

19 A. Because if I was aware of it, I would have.

20 Q. Right.

21 Now, by this stage, Studio E had, as you told us
22 yesterday, in its possession a copy of the BBA
23 certificate for the ACM panels; yes?

24 A. Yes.

25 Q. Do you agree that the BBA certificate for the ACM panels

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1 should have been sent on to building control?

2 A. Well, I'm not sure if they didn't have that already from
3 conversations with Bruce in the development of the
4 design earlier on.

5 Q. Did you yourself take any steps to find out whether
6 building control had the BBA certificate for the
7 Reynobond panels?

8 A. I don't recall.

9 Q. Now, we know that you forwarded the Exova OFSS, the
10 outline fire safety strategy, version 3, dated
11 7 November 2013 to John Hoban on 29 September 2014,
12 because we have an email --

13 A. Yeah.

14 Q. -- to that effect. We can look at that if you like.
15 It's {SEA00000215}.

16 In fact, can I just go back a question. Could you
17 be please shown again the document I think I scammed
18 over and I should have shown you. It's {IBI00001802}.
19 I just want to pick you up on the answer you gave
20 a minute ago when you said you didn't send on to
21 building control the update from zinc to ACM because you
22 weren't aware of it. Can I just see if that's really
23 right.

24 If you go to that document, you see it there on the
25 screen --

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1 A. I didn't say because I wasn't aware of it, did I?
 2 Q. Well, what you said was:
 3 "Because if I was aware of it, I would have."
 4 A. If I was aware of it.
 5 Q. Can I just be clear, maybe I have misunderstood: were
 6 you aware that there had been a change from zinc to ACM
 7 by September 2014?
 8 A. I mean, I think I would have understood that's what
 9 Harley were progressing the designs on.
 10 Q. Well, were you not aware by September 2015 that planning
 11 at RBKC had essentially approved smoke silver metallic
 12 ACM?
 13 A. From this email, I was certainly copied in to it, yes.
 14 Q. Yes. Given that, did you not think it was appropriate
 15 to update RBKC building control, which is not the same
 16 as planning, and tell them that instead of zinc, all
 17 information they had should show that the panels were
 18 ACM?
 19 A. I may have done. I mean, we sat down, had meetings with
 20 them and discussed the scheme, so that was probably
 21 discussed in the meeting.
 22 Q. Can you recall yourself --
 23 A. I don't --
 24 Q. -- discussing it?
 25 A. I don't have specific recollections, specific words said

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1 at specific times.
 2 Q. You forwarded the Exova outline fire safety strategy,
 3 version 3, 7 November 2013 to John Hoban on
 4 29 September 2014. Now let's look at that. It's
 5 {SEA00000215}, please.
 6 Was that in response to a request from John Hoban or
 7 did you simply volunteer it?
 8 A. I don't recall. I mean, it might have been off the back
 9 of one of the meetings, workshops on site. It's not
 10 clear to me.
 11 Q. Right. I'm not sure we have a record of any workshop or
 12 meeting on site --
 13 A. Well, the ones I was alluding to earlier. I mean, we
 14 have had this discussion about potentially when we had
 15 a meeting in I think it was round about the end of
 16 September.
 17 Q. Is there any reason why you didn't attach that document
 18 to the email below it in the chain on 24 September?
 19 A. I don't recall. I mean, all I'd say is there's
 20 obviously, what, four days between them. Something may
 21 have prompted me to do that. I don't know, I can't
 22 recall.
 23 Q. Right.
 24 We know you met Mr Hoban on site on 25 September,
 25 which is after the 24 September email but before your

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1 29 September 2014 email to him.
 2 A. Ah, well, there you go, that's probably from the
 3 discussions that were had on that, it may have prompted
 4 me to then send it afterwards. It's very difficult to,
 5 I'm sure you appreciate, unpick these things from so
 6 far -- so long ago when you've only really got the
 7 emails to go on, which is only part of the story.
 8 Q. Part of the problem, I think, Mr Crawford, is that we
 9 don't have a full written record of each and every one
 10 of these meetings you tell us you attended, so I'm
 11 having to do my best with your recollection, your
 12 witness statement and these emails, as you will
 13 understand.
 14 In your covering email you say:
 15 "Please see attached the current Exova Study which
 16 was written prior to the Fire Strategy Rev B changes and
 17 also attached the correspondence with Exova relating to
 18 the Rev B changes which we will modify accordingly."
 19 Did you mean that you planned to modify the
 20 fire strategy?
 21 A. I think there's ...
 22 (Pause)
 23 Yes, so because we had been changing the layouts on
 24 the lower floors, I think we had added a flat, we had
 25 got rid of the EMB office, estate manager's office, we

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1 had reconfigured the ground floor, community room and --
 2 I think, no, we had added two flats, I think it was the
 3 mezzanine level. It's to do with the internal changes.
 4 Q. I see.
 5 A. Yeah.
 6 Q. I see.
 7 We know that that current Exova study, as you refer
 8 to it there, issue 3, 7 November 2013, didn't contain
 9 any B4 analysis of the façade, external fire spread. We
 10 went through that yesterday.
 11 You didn't flag here to building control that Exova
 12 was yet to update their analysis on B4, external fire
 13 spread, did you?
 14 A. No.
 15 Q. Why was that?
 16 A. Well, the cladding was still being developed at this
 17 stage. The detailed design of the cladding was still
 18 being developed by Harley.
 19 Q. Was it not important to you at the time to alert
 20 John Hoban to the fact that, because the cladding was
 21 still in development with Harley, at an early stage
 22 perhaps, Exova would be asked in future to provide
 23 a final version of their OFSS which did provide
 24 an analysis of external fire spread?
 25 A. Not if we thought it was not a risk.

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1 Q. Did you think it wasn't a risk?
 2 A. From what we -- from what Exova had put in the report,
 3 no.
 4 Q. But we have seen it yesterday, and I don't want to go
 5 back over old ground, Mr Crawford, but they said that
 6 the proposed changes -- and I'm summarising -- would not
 7 adversely affect compliance with B4, but that would be
 8 confirmed in a future analysis.
 9 A. Well, okay, but --
 10 Q. Are you telling us that, in fact, by this time, you
 11 weren't going to ask them to do a future analysis?
 12 A. No, I didn't say that.
 13 Q. So what are you saying?
 14 A. What I'm saying is that we were not alerted to any risks
 15 and we weren't aware of any risks and we didn't have any
 16 reason to believe that there were any risks, and Harley
 17 were still developing their design at that point, so
 18 there was no reason for me to caveat everything in that
 19 fashion.
 20 Q. Coming back to it, was it not your intention, once
 21 Harley had completed their design work, to put it to
 22 Exova and ask them to perform the analysis that they
 23 said they would perform in relation to external fire
 24 spread?
 25 A. Well, as you said, we did cover this yesterday, and

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1 I discussed the conversations and the emails that we had
 2 with Exova, and in that train of conversation, my
 3 understanding was that ... I think, as I recall, they
 4 intended to go and revisit it, complete the work, but
 5 I don't recall anything after that.
 6 Q. Right. Now if we go, please, to {SEA0000231/2}, this
 7 is John Hoban sending you comments on the full plans
 8 application on 18 November. John Hoban, 18 November, to
 9 you, copied to Paul Hanson. Here is a raft of revisions
 10 to the preliminary scheme and his comments on it. Do
 11 you see that?
 12 A. Yes.
 13 Q. He says at the very start of the email, after the
 14 "Thank you":
 15 "A decision notice will be forwarded to you shortly
 16 on the proposals submitted."
 17 Did you ever receive a decision notice?
 18 A. I don't recall receiving a --
 19 Q. Did you ever chase for one?
 20 A. I don't recall.
 21 Q. It's right, isn't it, that a decision notice can contain
 22 conditions?
 23 A. Yes.
 24 Q. And therefore would it not have been important to you to
 25 have the decision notice so that you knew what work had

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1 to be done and what conditions, if any, were to be
 2 imposed?
 3 A. I don't think he could issue the decision notice until
 4 he'd satisfied himself that the scheme was in the right
 5 place.
 6 Q. Now, let's go to paragraph 219 of your statement, which
 7 is on page 69 {SEA00014275/69}. You say there that:
 8 "I also forwarded building control's comments on
 9 Submission 1 to Terry Ashton ... on 20 November ..."
 10 Do you see that? You refer to an email and you set
 11 out in detail the contents of that covering email.
 12 A. Yes.
 13 Q. You say, and we can take it from your statement:
 14 "I am due to meet with them on Monday ..."
 15 Et cetera:
 16 "On the Academy project we had the situation where
 17 Tony Pearson managed to argue some of their comments
 18 away."
 19 Just pausing there, Tony Pearson is Exova, isn't he?
 20 A. Yes.
 21 Q. "If you had any observations particularly where you
 22 think there comments may be excessive I would be
 23 grateful to know as I can take these with me to the
 24 meeting on Monday."
 25 Is it fair to say that you did not yourself consider

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1 those comments, you just passed them on?
 2 A. I think that's a little unfair.
 3 Q. Well, what would be fair?
 4 A. Well, I'm asking Terry Ashton from Exova, as
 5 an authority on fire regulations, based on his expert
 6 knowledge and insight to comment accordingly.
 7 Q. So is it that you didn't feel sufficiently competent to
 8 comment on fire matters?
 9 A. No, that's not what I said.
 10 Q. You don't think that's fair?
 11 A. I think that's very unfair.
 12 Q. You think that's very unfair?
 13 A. Yes.
 14 Q. Can I ask you whether you actually did yourself have any
 15 input into building control's comments and what went to
 16 Terry Ashton?
 17 A. Without actually seeing them, I can't even remember
 18 precisely what they were, so I would need to see those
 19 comments to make --
 20 Q. Let's perhaps look at the email. I don't want you to
 21 think that I'm asking you an unfair question. It's
 22 {SEA00012189}. It's the email you refer to yourself in
 23 the paragraph in the statement. It is as set out. Top
 24 of the page, it's from you to Terry Ashton, and you say:
 25 "Terry

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1 "I have received these mark ups from
 2 building control regarding the fire strategy ..."
 3 A. Yes.
 4 Q. I mean, take time to look at all of them if you like,
 5 but it looks from that short email you sent to Mr Ashton
 6 that you were simply passing those comments on to
 7 Mr Ashton.
 8 A. Yes, but I can't see the comments. Where are the
 9 comments?
 10 Q. The comments are in the email below, in John Hoban's
 11 email to you, and also in the attachments there.
 12 A. Yes, this is what I'm saying. Unless I can see these
 13 comments, given the accusation you have made --
 14 Q. I'm not making any accusation.
 15 A. Sorry, okay.
 16 Q. I'm just asking for your comments.
 17 Mr Crawford, I will keep going on this, because it
 18 will take me some time to dig out those precise
 19 comments, but I was actually referring to the comments
 20 in the email itself below.
 21 A. Yes, but --
 22 Q. If you want to be shown those comments, I'm very happy
 23 to spend time digging around to find them if we can --
 24 A. With all due respect, these comments have been --
 25 I remember how the comments were made. They were made

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1 as mark-ups on the drawings, so there was a lot of
 2 comments. Some of those comments may have been obvious
 3 to me, some of them may not. But bearing in mind they
 4 related to the fire strategy which Exova had produced,
 5 it's only right that Exova saw those comments and
 6 commented on them in relation to their fire strategy, if
 7 you see what I'm saying.
 8 Q. Yes.
 9 A. So, yes, I would have looked at them and formed my own
 10 opinion on some of them, but it was also highly
 11 important that Exova saw them, given that they related
 12 to the fire strategy and potentially any changes to that
 13 strategy.
 14 Q. I understand that. Perhaps I can take this more shortly
 15 rather than grabbing about trying to find the documents.
 16 Do you remember receiving these attachments from
 17 John Hoban which are the mark-ups and adding to those
 18 before you sent them on to Exova?
 19 A. Adding to them? I wouldn't necessarily add to them.
 20 I would look through the comments and try and understand
 21 them, make my own assessment of them, sent them on to
 22 Exova to get their take on them. For example, things
 23 like the ventilated lobbies, it's definitely
 24 a difference of interpretation sometimes in what size
 25 ventilated lobbies should be, 1 square metre, 0.4 square

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1 metre, and so on, different scenarios.
 2 So it's only right, bearing in mind they had
 3 a relevance to the high-level or outline fire strategy,
 4 that Exova were able to see them and comment on them.
 5 I mean, they were effectively comments on their
 6 high-level fire strategy.
 7 Generally when you produce the fire strategy for any
 8 building, the fire specialist would produce the actual
 9 strategy as a document, but the architect would do the
 10 drawings and they would do them in tandem with the fire
 11 consultant. So, for example, you would do drawings,
 12 they would mark them up, but usually the architect does
 13 the fire strategy drawings, but they are always read in
 14 conjunction with the fire strategy itself, or at least
 15 that's my experience.
 16 Q. Right.
 17 Now, let's move on in time. Can I ask you to go,
 18 please, to paragraph 230 of your statement, page 71
 19 {SEA00014275/71} of that document. You say:
 20 "On 6 March 2015, I emailed Building Control
 21 regarding the fire rating to allow for within the
 22 cladding at the lines between apartments, stating 'where
 23 we are overcladding what fire rating do we need to allow
 24 for within the wall build up between apartments'"
 25 Now, that is an email that you will recall from this

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1 morning.
 2 A. Yes.
 3 Q. You then go on to say, and we didn't focus on this this
 4 morning, "I attached Harley Drawings", and you list them
 5 all there.
 6 A. Yes.
 7 Q. Then you say:
 8 "I note by the combination of Harley Drawings and
 9 C1059-100 rev A, Building Control could have been aware
 10 of a number of the materials proposed for the over
 11 cladding system."
 12 We have been through those already, but my question
 13 here is: apart from these drawings, did you send any
 14 more Harley drawings to building control?
 15 A. No, but we sat with building control and discussed the
 16 drawings, including the specification, with them at
 17 a workshop, and they took drawings away from these
 18 workshops.
 19 Q. I see, so this is --
 20 A. I'm also not sure whether -- well, I know Harley met
 21 building control separately.
 22 Q. Right. So this is back to where we were this morning
 23 and the same evidence you have given in relation to
 24 these workshops?
 25 A. Yeah.

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1 Q. Do you know if Harley ever sent drawings of the cladding
2 system to RBKC directly?

3 A. I know they had meetings with RBKC building control.
4 Whether they handed them stuff in those meetings or sent
5 them directly, I couldn't say.

6 Q. Would you agree with this proposition: if
7 building control didn't have full materials of what was
8 to be used in the cladding system, didn't have full
9 details of the location of cavity barriers, and didn't
10 have full details of the crown design, if all those
11 three things are the case, then RBKC building control
12 would not have been provided with sufficient information
13 for the purposes of being able to progress the full
14 plans application?

15 A. If they didn't have that information.

16 Q. I'm now going to turn to a meeting in April 2015. Can
17 I ask you to look on in your statement, please, to
18 page 75 {SEA00014275/75}, paragraph 245. You say there:
19 "In a meeting which I believe took place in April
20 2015 (possibly the client design sign off meeting on
21 30 April 2015), I recall being told by Simon Lawrence
22 (Rydon) something along the lines of that there was 'no
23 need to ask any more questions as the cladding has been
24 signed off by Building Control.'
25 Do you see that?

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1 A. Yes.

2 Q. Is that just a -- I say "just"; is that a recollection
3 that you have or had when you signed this statement, or
4 did you refresh your memory from a document?

5 A. I think that was a recollection, and it comes back to
6 the fact that -- and, again, this relates to the
7 September session of emails on the cavity barriers and
8 then the March session, and there was a series of
9 workshops taking place or informal meetings taking place
10 with building control and Harley, not always the two
11 together, and by the time we got to, I think it was, end
12 of March, start of April, we agreed the cavity barrier
13 strategy, and we had also talked through the whole
14 cladding scheme.

15 Q. Right.

16 Now, this conversation, I think, as you have just
17 alluded to, followed some queries that had arisen in
18 relation to cavity barriers or firestopping in
19 March 2015, and we've seen, I think, that
20 building control's final position on that subject matter
21 was to agree with the positioning of the cavity barriers
22 in the drawing you sent Mr Hoban when you said, "We're
23 all miffed". Do you remember that one?

24 A. Yes.

25 Q. For the record, that's {SEA00013061}. For the record,

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1 no need to look at it.

2 But it's right, isn't it -- and here's the
3 question -- that building control had not expressly
4 signed off on the cladding as a whole at that time, had
5 they?

6 A. Not as far as I'm aware, no.

7 Q. No.

8 Did you understand Mr Lawrence's statement to you
9 that there was no need to ask any more questions as
10 an instruction to you by Rydon to stop querying any
11 matters about cladding with building control?

12 A. I think ...

13 (Pause)

14 I think there had been quite a series of meetings
15 and correspondence, and perhaps Simon was frustrated
16 that ... that the process was not complete, and then he
17 just wanted to get the stuff constructed and up.

18 Q. Right.

19 Did it trouble you that Simon Lawrence was telling
20 you that the cladding had been signed off by
21 building control?

22 A. Not necessarily, because I think, as I mentioned, I know
23 the cladding contractor had been meeting -- had met
24 building control, or at least inferred that they had met
25 building control, probably with Rydon, when I wasn't

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1 there, for example. So there was a whole series of
2 informal meetings going on, on site, and we were not
3 always party to that information, because the nature of
4 how we were appointed and how we were being used as
5 a consultant was that we were contacted as and when we
6 were needed.

7 So I was aware of things. Obviously I'm only
8 on site when I'm asked to attend a meeting, but there's
9 a whole load of other meetings and things going on that
10 I'm not party to, and -- yeah, well, this came off the
11 back of that, I think.

12 Q. Did you ask Simon Lawrence to clarify or confirm when
13 and by what means building control had signed off on the
14 cladding?

15 A. No. I think I'd probably change that phrase. He said
16 something had been effectively signed off. I mean,
17 I don't know if he -- I don't think he said
18 categorically signed off.

19 Q. You do, to be fair to you, say "something along the
20 lines of", so you've given us the gist. I take that
21 entirely.

22 But my question again: did you actually ask
23 Simon Lawrence to confirm to you when and by whom
24 building control had effectively signed off the
25 cladding?

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1 A. I don't recall doing that.
 2 Q. Did you think to ask John Hoban? Did you go back to
 3 John Hoban and ask him to confirm what Simon Lawrence
 4 was saying?
 5 A. I don't recall doing that, no.
 6 Q. Did you ask him for a document -- presumably not --
 7 confirming what Simon Lawrence had told you?
 8 A. No.
 9 Q. When you heard the gist of what you say Simon Lawrence
 10 told you in April 2015, perhaps at the end of that
 11 month, were you not concerned that building control had
 12 effectively signed off on the cladding when Exova had
 13 not yet updated their B4 external spread of fire
 14 analysis?
 15 A. No.
 16 Q. Why is that?
 17 A. I understood there to be no risk from the conversations
 18 that I'd had with Exova, and it wouldn't have dawned on
 19 me to do that. I mean, I didn't see why I would have.
 20 Q. You had understood there to be no risk from the
 21 conversations you had had with Exova. When was the last
 22 conversation that you can recall that you had had with
 23 Exova prior to April 2015 when they told you or gave you
 24 the impression that the cladding system presented no
 25 risk in respect of external fire spread?

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1 A. It would probably have been the March, end of March
 2 conversations.
 3 Q. End of March conversations.
 4 Do you remember speaking to -- it would be
 5 Mr Ashton, would it, that you spoke to about that?
 6 A. It's when we were discussing the cavity barrier strategy
 7 in relation to the build-up insulation and so on.
 8 Q. Certainly, Mr Crawford, and we have seen the emails
 9 about that. But I just want to be very clear, and I'm
 10 sorry to keep revisiting this question of Exova's
 11 promised future analysis. Are you saying that you had
 12 a conversation with Mr Ashton in late March, perhaps in
 13 the context of the cavity barrier debate that was going
 14 on, in which he told you that the cladding system for
 15 Grenfell Tower presented no risk in terms of external
 16 fire spread?
 17 A. I think that's what Exova said all the way through.
 18 Q. But we've seen the report in which they said that it
 19 would be confirmed in a future analysis in a report.
 20 Are you saying that you had a later conversation in
 21 which Exova told you that no such report was necessary?
 22 A. They didn't say that.
 23 Q. So what did they say?
 24 A. Everything I've said up to now.
 25 Q. Well, that's quite a lot, Mr Crawford. Let's be

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1 precise.
 2 What do you recall Exova told you about the need for
 3 a future analysis which their third issue of their
 4 7 November 2013 report said would be provided in the
 5 future?
 6 A. Okay, I think I mentioned this earlier this morning, but
 7 I believe in the conversation I had in relation to the
 8 cavity barriers that they alluded to the fact that they
 9 may have to go back and complete it at some point.
 10 Again, this is just a vague recollection from
 11 conversations. But after that, I don't recall anything,
 12 and my understanding was that they presented an opinion
 13 that what we were doing was acceptable. Therefore,
 14 potentially, there wasn't even a need for them to do
 15 a further report.
 16 Q. Were you not concerned that building control had
 17 effectively signed off on the cladding when, so far as
 18 you knew, building control had not been given any detail
 19 about the insulation product that was going to be used
 20 in the cladding system?
 21 A. But they had insulation product. They knew what the
 22 insulation product was.
 23 Q. How did they know that?
 24 A. We had discussed it and we discussed the spec in
 25 meetings.

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1 Q. I see.
 2 Now, a brief question on regulation 38 which
 3 I showed you earlier.
 4 Before the building control completion certificate
 5 was issued, were you ever asked to provide any drawings
 6 or information to the TMO for the purposes of
 7 regulation 38?
 8 A. No.
 9 Q. Were you aware of any regulation 38 fire safety
 10 information being provided to the TMO by the rest of the
 11 design team?
 12 A. No.
 13 Q. Did John Hoban ever ask you to confirm that
 14 regulation 38 had been complied with?
 15 A. I don't recall that, no.
 16 Q. Right.
 17 Now, at paragraph 181 of your statement, page 58
 18 {SEA00014275/58}, let's just look at that, you say, and
 19 this is under the heading "Building Regulations and
 20 Associated Guidelines":
 21 "I considered that the Tower did comply with the
 22 relevant Building Regulations because, as I set out in
 23 further detail below:
 24 "181.1. I do not recall being contacted by Rydon or
 25 Building Control to provide any further information to

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1 Building Control after Building Control's feedback on
2 Submission 2, in January 2016."

3 You see that?

4 A. Yes.

5 Q. You give no other reason there, just your reliance on
6 anything back from Rydon or building control. Is that
7 right?

8 A. Yes.

9 Q. Does that mean that you didn't undertake your own
10 independent check of the design against the
11 Building Regulations?

12 A. It was -- we weren't contracted to check. We were
13 contracted to seek to comply with Building Regulations.

14 Q. That's your understanding of the contract, as I think
15 you told us on the first day.

16 In the light of the information that we have been
17 through and the gaps in the information, do you accept
18 that it was not reasonable of you to rely on
19 building control when you hadn't provided them with
20 a full cladding package of information and were relying
21 on other people to do that?

22 A. I understood that they did have all the necessary
23 information and it was not contacted -- contrary to
24 that. I mean, if they signed it off and they didn't --
25 what were they signing off? They had done site visits ,

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1 they had had meetings, they had drawings, they knew what
2 was being built , so what were they signing off?

3 Q. Two final questions on building control, if I may.

4 First of all , do you remember, doing the best you
5 can sitting here, whether there was ever a meeting with
6 John Hoban where the route to compliance with ADB,
7 paragraphs 12.6 to 12.9, was ever discussed?

8 A. I don't recall .

9 Q. Now, you said on Day 9, the first day of your evidence,
10 that Harley confirmed compliance of the cladding with
11 the Building Regulations to building control. Do you
12 remember yourself that happening?

13 (Pause)

14 A. Can you read that out again?

15 Q. Yes. You said on Day 9, the first day of your evidence,
16 that Harley had assured building control that the
17 cladding was compliant with the Building Regulations.
18 We can look at it if you like . Do you want to look at
19 it?

20 A. I don't need to look at it .

21 Q. Let's look at it , then. It's {Day9/113}. I wonder if
22 that could be got up.

23 A. I don't need to look at it , sorry, but if you want to
24 look at it ...

25 Q. I'm sorry.

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1 A. What I was saying is I don't need to look at it .

2 Q. Oh, you don't need to look at it . Okay. All right .

3 So my question is: do you remember when that
4 happened?

5 A. Sorry, because I'm just getting a bit tired . Can you
6 restate the whole question?

7 Q. Yes, of course.

8 The gist of your evidence, which I was going to show
9 you, was that Harley had confirmed compliance of the
10 cladding system with the Building Regulations, and they
11 confirmed that to building control. Do you know when
12 they did that?

13 A. When?

14 Q. Yes.

15 A. Not specifically , but I remember being in the meeting
16 with Harley and building control discussing the whole
17 scheme.

18 Q. Who was it, do you remember, at Harley who confirmed
19 that?

20 A. Specifically , I can't remember. I mean, typically those
21 meetings were Ben, Ray Bailey and/or Kevin Lamb.

22 Q. Who at building control was that confirmation given to,
23 to the best of your recollection?

24 A. It would have been John, almost certainly .

25 Q. Was it done orally or was there a written document which

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1 recorded that?

2 A. I don't recall . I'm certainly not aware of a written
3 document.

4 MR MILLETT: Right.

5 Now, Mr Chairman, I'm conscious that this witness is
6 getting quite tired .

7 SIR MARTIN MOORE-BICK: He has been giving evidence for
8 a long time.

9 MR MILLETT: He has. I have a few more questions to go, but
10 I'm conscious of the time. It may be worth a very short
11 break, and I will endeavour to finish by 4.30 or so.

12 SIR MARTIN MOORE-BICK: Well, it's the "or so" that worries
13 me.

14 MR MILLETT: Yes, I know.

15 SIR MARTIN MOORE-BICK: I would like to give everyone
16 a break, because I think it would help him.

17 MR MILLETT: Yes.

18 SIR MARTIN MOORE-BICK: But we need to try and finish him
19 within a reasonable time.

20 MR MILLETT: Yes, best endeavours. Reasonable endeavours.
21 Mr Chairman, I think a short break.

22 SIR MARTIN MOORE-BICK: All endeavours.

23 All right , Mr Crawford, we will have a break. 4.10,
24 please. Thank you very much.

25 4.10, please. Thank you.

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1 (4.00 pm)
 2 (A short break)
 3 (4.10 pm)
 4 SIR MARTIN MOORE-BICK: All right, Mr Crawford?
 5 THE WITNESS: Yes.
 6 SIR MARTIN MOORE-BICK: Good.
 7 Mr Millett.
 8 MR MILLETT: Mr Chairman.
 9 Mr Crawford, I'm going to ask you one or two
 10 questions now about the technical review that took place
 11 on 28 October 2015. If we could please have the record
 12 of that. It's at {SEA00013508}. Can we please have
 13 that up on the screen.
 14 Now, you can see here that you are involved in it.
 15 The meeting is 28 October, issued 29 October, and the
 16 assessor is Bruce Sounes, associate and project
 17 architect is Neil Crawford, that's you.
 18 A. Yes.
 19 Q. There is a long list of things that are done.
 20 Did you take part in any other technical review
 21 other than this one?
 22 A. Not that I recall.
 23 Q. On this project. Right.
 24 To the best of your knowledge -- so this was the
 25 first and only technical review to have taken place; is

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1 that right?
 2 A. Yes.
 3 Q. At this time, October 2015, do you remember that the
 4 work to the external façade was some 60% complete?
 5 A. Not specifically that number, but I would have known it
 6 was well advanced.
 7 Q. Yes.
 8 Mr Kuszell says in his statement -- and we can look
 9 at it if you need to -- that a technical review usually
 10 occurs at what was previously RIBA Stage E/F, technical
 11 design and production information. Do you agree with
 12 him?
 13 A. Yes.
 14 Q. If this was the first technical review, it's fair to
 15 say, isn't it, that it had been carried out really
 16 woefully late?
 17 A. What I would say is that although this is the first
 18 formal technical review, we were discussing, and I was
 19 discussing with Bruce, way before this the technical
 20 aspects of the building.
 21 Q. Do you know why the technical review wasn't carried out
 22 until late October 2015?
 23 A. I think the formal review was ... I think there had been
 24 a lot of items that were -- the project had been delayed
 25 massively from start to finish, so for all sorts of

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1 reasons, most of them outwith our control -- all of them
 2 outwith our control. So the work had been carried out
 3 sporadically, the project had stopped and started, and
 4 so although we reviewed internally informally, I think
 5 there had probably been a recognition at that point in
 6 the management that we should do a formal technical
 7 review and, therefore, that's what this was.
 8 Q. Are there any records, notes, minutes of the internal
 9 informal reviews that you have just referred to?
 10 A. Not that I'm aware of.
 11 Q. Look at page 2 {SEA00013508/2} of this document under
 12 the heading "Project documents". You can see there at
 13 the second item there, "Building Regulations
 14 Assessment", there is a comment:
 15 "building control sign off drawings have been issued
 16 and incrementally signed off/agreed on site."
 17 Is that right? Is that actually correct, that there
 18 were sign-offs of drawings by building control?
 19 A. Building control asked for things and we gave them and
 20 they were satisfied with them.
 21 Q. Right.
 22 A. And, for example, there were emails on the cavity
 23 barriers that were sent where John says, yes, he's
 24 satisfied this meets B2, B3 and so on.
 25 Q. Yes. We have seen all the emails. I'm interested in

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1 the comment:
 2 "building control sign off drawings have been issued
 3 and incrementally signed off/agreed on site."
 4 Can I just ask you: who actually wrote this
 5 document? Was it you or was it Mr Sounes?
 6 A. I'm not sure. Probably Mr Sounes.
 7 Q. Right. Did Mr Sounes ever get involved in
 8 building control's sign-off of drawings or site
 9 meetings?
 10 A. Not that I'm aware of.
 11 Q. No. So where it says "Building Control sign off
 12 drawings have been issued", et cetera, that would have
 13 come from you to him and he would have recorded it?
 14 A. It would have been within our general discussion, yes.
 15 Q. Yes, I see. But the impression given by what he has
 16 written there -- "Building Control sign off drawings
 17 have been issued" -- rather suggests that there was
 18 a document which building control had issued in which it
 19 had signed off -- in other words approved, okayed --
 20 specific drawings?
 21 A. No, I think that's a general statement that encompasses
 22 what we understood had happened.
 23 Q. I see. Right.
 24 So in fact, rather than there being sign-off being
 25 issued, is what is being said here that building control

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1 had indicated approval on drawings?
 2 A. And aspects generally. I mean, they were visiting site
 3 and, for example, they would look at something, the
 4 stairs, and accept that what they saw was acceptable in
 5 terms of their interpretation of the building regs,
 6 for example.

7 Q. Right.

8 A. With us not always there.

9 Q. If I asked you the question when was that and who was
 10 it, would you say this was during these workshops that
 11 you kept having? Is that right?

12 A. No. I mentioned there specifically stairs because, as
 13 mentioned in my witness statement, there were site
 14 visits that building control were doing in conjunction
 15 with Rydon.

16 Q. Are you able to point to any document in which you can
 17 say that building control signed off specific drawings?

18 A. That would be a question for building control.

19 Q. No, I'm asking you, because you were the one who told
 20 Mr Sounes that building control had signed off drawings
 21 and sign-off drawings had been issued and incrementally
 22 signed off/agreed on site.

23 So my question again, please, for you --

24 A. Well, I think that terminology is a general
 25 understanding of what went on.

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1 Q. Right. So is the answer to the question I've just asked
 2 you, which I would like you to answer -- I'll ask it
 3 again: are you able to point to any document in which
 4 you can say building control signed off specific
 5 drawings?

6 A. Not a document, no.

7 Q. Moving to the bottom of that page, please, the technical
 8 review design standards says:

9 "Comment: Designed to current Housing, Approved
 10 Document Building Regulations and British Standards
 11 where applicable."

12 On what basis could you reach that conclusion?

13 A. Well, Bruce and I had -- well, Bruce obviously has
 14 a long history with the project, and then myself towards
 15 the end. During that period, particularly during the
 16 design stage, early design stage, there were a number of
 17 meetings with building control, and also Bruce was
 18 working up the plans and the layouts in relation to all
 19 those standards listed there, and obviously the final
 20 assessment and sign-off of the building acknowledged
 21 that they were, in the eyes of building control,
 22 compliant.

23 But that's a statement of fact. I mean, they were,
 24 "Designed to current Housing, Approved Document
 25 Building Regulations and British Standards where

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1 applicable". That is the basis on which the building
 2 was designed.

3 Q. If we look at page 3 {SEA00013508/3}, then, please,
 4 "Technical performance". Under that heading we can see
 5 "Fire Detailing", just below halfway down that page,
 6 "Comment: Completed"; do you see that?

7 A. Yes.

8 Q. What does that comment relate to?

9 A. Fire strategy.

10 Q. Does it include or relate to the external façade of the
 11 building?

12 A. I think it's a general comment, so relates to the
 13 fire strategy.

14 Q. Was the detailing of the cavity barriers by this stage,
 15 October 2015, complete?

16 A. October 2015, yes.

17 Q. I'm going to ask you one or two questions about the CDM
 18 and O&M manual. We have already discussed, I think,
 19 your understanding in brief -- and it was brief -- of
 20 Studio E's obligations under the CDM Regulations.

21 In terms of design risk assessment, we know that
 22 Studio E did carry out a design risk assessment, and
 23 we've seen the email of that. Just for the transcript,
 24 for later reference, it's {SEA00009350}, and there is no
 25 need to turn it up.

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1 A. Yes, we carried out risks and latent risk assessments,
 2 yes.

3 Q. Just going back in time to your handover with Mr Sounes,
 4 did you discuss with him in your handover the risk
 5 assessment, which I think predated your involvement in
 6 the project?

7 A. Probably. I couldn't say definitively.

8 Q. Were you ever asked to update it?

9 A. I certainly read it. If I felt there was something
 10 relevant to be updated in it, I would have updated it.

11 Q. Okay.

12 Can I ask you to go to {SEA00013756}, please. This
 13 is a handwritten note of yours on 16 December 2015. Do
 14 you see that?

15 A. Yes.

16 Q. 10.00 am. "BC sign off", that's building control
 17 sign-off.

18 A. Mm-hm.

19 Q. Then two items under that, "O&M". Do you see that?

20 A. Yes.

21 Q. Can you remember what that related to?

22 A. What, the O&M?

23 Q. Yes.

24 A. Operation and maintenance manual.

25 Q. Yes. So what was discussed at that general site meeting

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1 on that day about O&M, do you remember?

2 A. I don't recall specifically, but I suspect the fact that

3 they were looking to assemble them or prepare them.

4 Q. Right, I see.

5 Were you involved in the preparation of the O&M

6 manual, operation and maintenance manual?

7 A. No, although we were asked very late on to provide

8 as-built drawings.

9 Q. Right.

10 Do you know who was primarily responsible, or who,

11 I should say, took primary responsibility, for the

12 compilation of the O&M manual?

13 A. I believe someone was contracted to write it, someone --

14 by Rydon. But I can't remember precisely who it was or

15 whether it was internally by Rydon.

16 Q. Were you ever asked to provide information for the

17 health and safety file for the building?

18 A. Erm ... I don't recall.

19 Q. Now, can I ask you, please, to look -- we're turning to

20 a different topic -- at {EXO00000197}. This is an email

21 from you to Ben Rogerson, 5 November at 14.32, and

22 others, including Mr Sounes. It's the second email down

23 on the page, and the subject is "Grenfell Tower

24 fire strategy". It says:

25 "Ben

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1 "Can you help with the query below from Colin Chiles

2 at Leadbitter. As I understand Colin has been

3 challenged by one of the residents that the current

4 redesign of the landscape surrounding Grenfell Tower

5 compromises the fire access to Grenfell Tower (the

6 individual concerned is a known trouble maker)."

7 Do you see this?

8 A. Yes.

9 Q. This is what you send to Ben Rogerson, and Ben sends

10 that on to Terry Ashton at Exova at the top. I don't

11 think you need to worry about that.

12 The question I have is about your reference there to

13 a known troublemaker. How did you know that the

14 resident in question was a known troublemaker?

15 A. If I'm being honest, I can't even remember writing this

16 email, but it's dated --

17 Q. It is dated 5 November 2012.

18 A. Who was Ben Rogerson, sorry? Because there's no email

19 address.

20 Q. No, there isn't. Well, if you can't remember, I'm not

21 sure I can assist you. It may be I could assist you,

22 but I'm not sure we have time for me to assist you

23 necessarily. I'm not sure it matters.

24 My question is really whether you can remember how

25 you discovered that the individual that you're talking

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1 about, the resident, was a "known troublemaker"?

2 A. I'm not sure. Maybe it was problems we had in terms of

3 trying to agree the landscape in relation to KALC --

4 Q. Why did you feel it necessary to draw to Mr Rogerson's

5 attention that the individual who had made the challenge

6 was "a known troublemaker"?

7 A. To be honest, I'm struggling to remember the context of

8 this.

9 Q. Right.

10 I think the suggestion that might be made is that

11 you were putting the words in brackets, "The individual

12 concerned is a known trouble maker", into the email

13 because you wanted to diminish the importance of the

14 challenge that had been raised by that resident. Is

15 that fair?

16 A. Let me read the whole email.

17 Q. Yes, please do.

18 A. I'm just trying to understand the context here.

19 (Pause)

20 I think I'm just trying to clarify the situation

21 relative to the firefighting access requirement and that

22 the landscaping proposals weren't inhibiting in that.

23 Q. Right.

24 Just so you know, we have discovered Ben Rogerson is

25 actually a senior consultant at Exova.

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1 A. Right.

2 Q. So my question once more, so we're clear about it: were

3 you referring to the individual concerned as a known

4 troublemaker in order to diminish the importance of the

5 complaint?

6 A. I wouldn't have thought so, no.

7 Q. Right. What was the purpose of the words in brackets?

8 A. I must have believed that at the time.

9 Q. How did you get that information?

10 A. This is eight years ago. I don't even know to whom it

11 refers.

12 Q. All right.

13 A. I mean, the issue really -- the gist of this email is

14 trying to establish whether anything's been compromised

15 in terms of fire strategy, which clearly I don't think

16 it was.

17 Q. Well, Mr Crawford, we have come to the end of your

18 evidence, and I'm grateful to you.

19 I have just one more question for you, and it's one

20 you may have heard me ask some people before who have

21 had a significant responsibility for areas of the

22 project, and it's this: looking back on it now, and your

23 role in the project from the summer of 2014, and looking

24 at the material that we've spent time looking at over

25 the past few days, is there anything that you would have

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1 done differently ?
 2 (Pause)
 3 A. I think I'd have designed -- I'd have designed the
 4 building to a different set of regulations, more in line
 5 with what has been implemented in 2019, although
 6 arguably that doesn't go far enough.
 7 But clearly -- clearly the risks of the current
 8 regulations at the time the building was built were
 9 known by government, for example. If you look at select
 10 committee information from as early as 1999, you can see
 11 that the warnings were there about the risk of fire and
 12 combustible materials in buildings, and I think the
 13 reality is that the building regs aren't fit for purpose
 14 and have led to the regularisation of usage of dangerous
 15 and flammable materials.
 16 Unfortunately, the industry only reacts to the
 17 regulations that are in place. Therefore, you need to
 18 have regulations in place that are fit for purpose.
 19 Unfortunately, despite, when you think of those, there
 20 must have been an awareness, there was an awareness, as
 21 far back as then, because you can see it in the select
 22 committee report. Why wasn't it acted on? It was in
 23 Scotland. And so ... Yeah.
 24 MR MILLETT: Mr Chairman, I've come to the end of my
 25 questions for Mr Crawford.

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1 Mr Crawford, thank you very much for your patience
 2 over the last three days.
 3 THE WITNESS: Thanks.
 4 SIR MARTIN MOORE-BICK: Mr Crawford, I would like to
 5 thank you for coming to give your evidence. I'm sure it
 6 hasn't been an easy exercise to undertake and I'm sorry
 7 that it went on as long as it did, but, as you realise,
 8 there were a lot of things we had to ask you.
 9 Thank you for coming. You are now free to go.
 10 THE WITNESS: Sorry, can I just add another bit on that last
 11 statement?
 12 I think one of the implications of that system, the
 13 regulatory system, and the specific mistake that I think
 14 was made, is in B4, when you look at the classification
 15 of -- having the national class 0 was a mistake, and
 16 having it beside the European class. I mean, if you
 17 just had A2, as you have now, effectively, then you
 18 wouldn't have had the situation where you could have put
 19 that panel on the building, and not only that, you
 20 wouldn't have the situation where you had the panel
 21 which -- the problem was definitely compounded by the
 22 fact that the panel was allowed to be re-tested and then
 23 those results not disclosed, because effectively it was
 24 still compliant under national class 0, and this is
 25 a contradiction, and this also, in my view, led to the

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1 fire .
 2 Sorry, that's it. I didn't mean to ... I meant to
 3 say that at the same time.
 4 SIR MARTIN MOORE-BICK: Right. Well, thank you again, and
 5 if you would like to go with the usher, she will look
 6 after you.
 7 (The witness withdrew)
 8 SIR MARTIN MOORE-BICK: Right. So that's it for today.
 9 MR MILLETT: It is it for today, Mr Chairman.
 10 SIR MARTIN MOORE-BICK: Tomorrow we are going to hear from
 11 another one of the architects .
 12 MR MILLETT: We will hear from Mr Rek first thing tomorrow
 13 morning.
 14 SIR MARTIN MOORE-BICK: So we will break there and resume at
 15 10 o'clock tomorrow, when we will hear, as Mr Millett
 16 said, from Mr Rek, who was also one of the architects at
 17 Studio E.
 18 10 o'clock tomorrow, then, please. Thank you.
 19 (4.35 pm)
 20 (The hearing adjourned until 10 am
 21 on Wednesday, 11 March 2020)
 22
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 24
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